

USA Nuclear Physics Graduate Schools

Fall 2025 Brochure



Available at <https://engage.aps.org/dnp/resources/edu-committee>

Released 10/31/25.

This brochure was compiled by the DNP Education Committee in 2025. Its foundation is a list of PhD programs with “DNP-like” characteristics that was initially prepared for the 2023 NSAC LRP exercise. Representatives of each institution on this list were invited by email to provide program information, with three solicitations distributed between February and September. The project was additionally publicized in the Spring and Summer editions of the DNP newsletter.

Inquiries regarding the brochure should be directed to the Chair of the DNP Education Committee. <https://engage.aps.org/dnp/resources/edu-committee> The Committee gratefully acknowledges the assistance of Mr. Donald Vangilder, a Physics and Astronomy undergraduate student at Ohio University, in the preparation of this document.

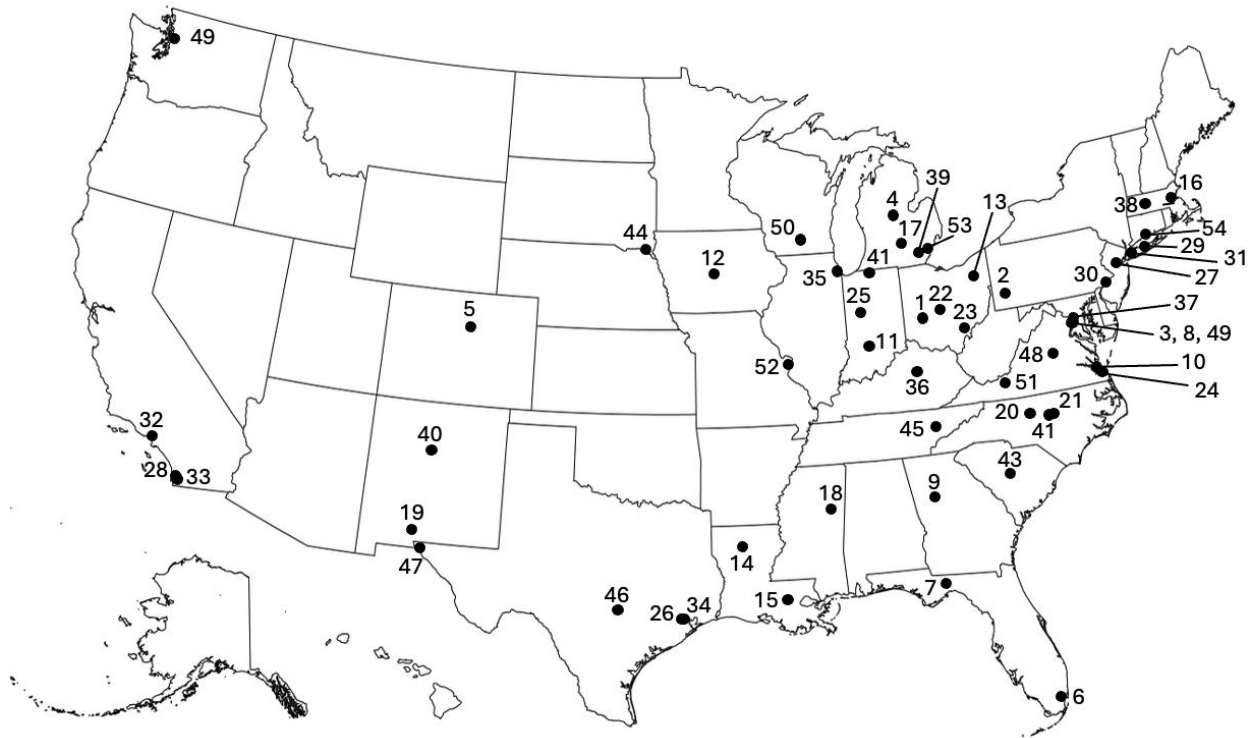
Table of Contents

Click on a school to jump to its entry.

<i>Air Force Institute of Technology</i>	7
<i>Carnegie Mellon University</i>	10
<i>Catholic University of America</i>	13
<i>Central Michigan University</i>	16
<i>Colorado School of Mines</i>	19
<i>Duke University</i>	22
<i>Florida International University</i>	25
<i>Florida State University</i>	28
<i>Georgia State University</i>	31
<i>George Washington University</i>	34
<i>Hampton University</i>	37
<i>Indiana University</i>	40
<i>Iowa State University</i>	43
<i>Kent State University</i>	45
<i>Louisiana Tech University</i>	48
<i>Louisiana State University</i>	51
<i>Massachusetts Institute of Technology</i>	54
<i>Michigan State University- FRIB</i>	56
<i>Mississippi State University</i>	59
<i>New Mexico State University</i>	62
<i>North Carolina Agricultural and Technical University</i>	65
<i>North Carolina State University</i>	68
<i>Ohio State University</i>	71
<i>Ohio University</i>	74
<i>Old Dominion University</i>	77
<i>Purdue University</i>	80
<i>Rice University</i>	82
<i>Rutgers University</i>	85
<i>San Diego State University</i>	88

Click on a school to jump to its entry.

<i>Stony Brook University</i>	91
<i>Temple University</i>	94
<i>The City University of New York</i>	97
<i>University of California- Los Angeles</i>	100
<i>University of California- San Diego</i>	103
<i>University of Houston</i>	104
<i>University of Illinois- Chicago</i>	107
<i>University of Kentucky</i>	110
<i>University of Maryland</i>	113
<i>University of Massachusetts- Amherst</i>	114
<i>University of Michigan</i>	117
<i>University of New Mexico</i>	119
<i>University of North Carolina- Chapel Hill</i>	122
<i>University of Notre Dame</i>	125
<i>University of South Carolina</i>	128
<i>University of South Dakota</i>	131
<i>University of Tennessee- Knoxville</i>	134
<i>University of Texas- Austin</i>	136
<i>University of Texas- El Paso</i>	139
<i>University of Virginia</i>	142
<i>University of Washington</i>	145
<i>University of Wisconsin-Madison</i>	148
<i>Virginia Tech</i>	151
<i>Washington University- St Louis</i>	154
<i>Wayne State University</i>	157
<i>Yale University</i>	160



1. Air Force Institute of Technology
2. Carnegie Mellon University
3. Catholic University of America
4. Central Michigan University
5. Colorado School of Mines
6. Florida International University
7. Florida State University
8. George Washington University
9. Georgia State University
10. Hampton University
11. Indiana University
12. Iowa State University
13. Kent State University
14. Louisiana Tech University
15. Louisiana State University
16. Massachusetts Institute of Technology
17. Michigan State University- FRIB
18. Mississippi State University
19. New Mexico State University
20. North Carolina A & T University
21. North Carolina State University
22. Ohio State University
23. Ohio University
24. Old Dominion University
25. Purdue University
26. Rice University
27. Rutgers University
28. San Diego State University
29. Stony Brook University
30. Temple University
31. The City University of New York
32. University of California- Los Angeles
33. University of California- San Diego
34. University of Houston
35. University of Illinois- Chicago
36. University of Kentucky
37. University of Maryland
38. University of Massachusetts- Amherst
39. University of Michigan
40. University of New Mexico
41. University of North Carolina- Chapel Hill & Duke University
42. University of Notre Dame
43. University of South Carolina
44. University of South Dakota
45. University of Tennessee- Knoxville
46. University of Texas- Austin
47. University of Texas- El Paso
48. University of Virginia
49. University of Washington
50. University of Wisconsin-Madison
51. Virginia Tech
52. Washington University- St Louis
53. Wayne State University
54. Yale University

The table below summarizes the types of research activities conducted at the institutions listed in this brochure.

- **E** indicates *experimental* activities.
- **T** indicates *theoretical* activities.

Research topics are grouped according to the categories defined by NSAC in the 2023 Long Range Plan:

- **QCD**: Quantum Chromodynamics
- **FSNN**: Fundamental Symmetries, Neutrons, and Neutrinos
- **NSRA**: Nuclear Structure, Reactions, and Astrophysics
- **CA**: Crosscutting and Applications

	QCD	FSNN	NSRA	CA
Air Force Institute of Technology			E	E
Carnegie Mellon	ET	E		
Catholic University	E			
Central Michigan		T	ET	
City University of New York	ET			
Colorado School of Mines		E	E	E
Duke	ET	E	ET	
Florida International	ET			
Florida State	E		ET	
George Washington	ET		T	
Georgia State	ET	E		
Hampton	ET			E
Houston	ET			
Illinois-Chicago	ET			
Indiana	ET	ET	ET	
Iowa State	ET		T	
Kent State	ET	ET	ET	
Kentucky	ET	ET	E	
Louisiana State			ET	
Louisiana Tech	E	E		
Maryland	T	ET		
Massachusetts-Amherst	T	ET		
Michigan	E	E		
Michigan State-FRIB	T	E	ET	E
Mississippi State	ET		ET	
MIT	ET	ET		

The table below summarizes the types of research activities conducted at the institutions listed in this brochure.

- **E** indicates *experimental* activities.
- **T** indicates *theoretical* activities.

Research topics are grouped according to the categories defined by NSAC in the 2023 Long Range Plan:

- **QCD**: Quantum Chromodynamics
- **FSNN**: Fundamental Symmetries, Neutrons, and Neutrinos
- **NSRA**: Nuclear Structure, Reactions, and Astrophysics
- **CA**: Crosscutting and Applications

	QCD	FSNN	NSRA	CA
MSU-FRIB	T		ET	
New Mexico		ET		
New Mexico State	ET			
North Carolina - Chapel Hill	ET	ET	ET	E
North Carolina A&T	E		E	
North Carolina State	T	E	ET	
Notre Dame		ET	ET	E
Ohio	E	ET	ET	E
Ohio State	ET	T	T	
Old Dominion	ET	ET	T	
Purdue	E			
Rice	E	E		E
Rutgers	E		E	
San Diego State		T	T	
South Carolina	E	T		
South Dakota	T	E		
Stony Brook	ET	E		
Tennessee	E	ET	ET	
Texas - Austin	E			
Texas - El Paso			T	
UCLA	E	E		
UCSD	T		T	
Virginia	ET	E		
Virginia Tech	E	E		
Washington	T	ET	T	
Washington University - St Louis	T	T	ET	
Wayne State	ET		E	
Wisconsin - Madison			T	
Yale	E	E	T	



Air Force Institute of Technology

Department of Engineering Physics

Dayton, Ohio

Department Website:

www.afit.edu/enp

Graduate Program

Website:

<https://www.afit.edu/ENP/programs.cfm?a=view&D=24>

Admission Website:

<https://www.afit.edu/ADMISSIONS/index.cfm>

Application Deadline:

Rolling

General GRE required?

Yes

Physics GRE required?

No

Median time to PhD:

4.5 years MS + PhD

3 years PhD only

Contact for graduate admission:

AFIT.EN.Admissions@us.af.mil

The Air Force Institute of Technology, with its main campus located at Wright-Patterson AFB, Ohio, is the Department of the Air Force's leader for advanced, multi-disciplinary academic education, as well as its institution for initial technical and professional continuing education. A component of Air University and Air Education and Training Command, AFIT is committed to providing defense-focused graduate education and related research, and operationally relevant initial skills training and professional continuing education to sustain the technological supremacy of America's air, space, and cyber forces. AFIT educates civilians that are interested in research supporting the Department of Defense (DOD), and civilians enrolled at AFIT do not incur any obligation of military service.

We are the Air Force's primary provider of graduate education in physics and nuclear engineering. Our graduate programs emphasize practical research and its transition into operations within the USAF, DOD, and other government agencies. Military officers from sister services, DOD civilians, and DOD contractors may also qualify for admission. AFIT's Department of Engineering Physics has 35 full-time faculty, 16 of which are involved in the nuclear engineering program and 6 of which do research in basic nuclear science. Student research is also supported by laboratory technicians and postdocs. Our faculty-to-student ratios and support cadre are two of our strengths, allowing for high levels of interaction both in the classroom and laboratory. AFIT's student body of military officers and civilian students is unique and synergistic, resulting in an intellectually stimulating learning environment. Our students describe our curricula as rich, in-depth, and challenging and our research efforts as robust, applied, and solution-focused. We currently have 89 students pursuing MS or PhD programs within the department.

Nuclear Physics Research Areas:

Low Energy Nuclear Physics, Nuclear Reactions/Nuclear Data, Nuclear Astrophysics, Nuclear Structure, Nuclear Physics Applications

List of complementary Physics Research Areas:

Nuclear Forensics, Radiation Detector Development, Radiation Transport, Radiation Effects on Materials and Electronics, Pulsed Power, Health Physics, Quantum Computing

of faculty in specific research groups:

Nuclear Engineering: 13, Applied Physics: 13, Atmospheric Science: 5, Materials Science: 3, Optical Science and Engineering: 11

Nuclear People:

Experimental Faculty: 5

Theoretical Faculty: 1

Staff/Research Scientists: 1

Postdoc: 2

Graduate Students: 6

Female physicists: 3

Contact in Nuclear Physics:

Juan.manfredi@us.af.mil

The nuclear physics/engineering student body is currently 21 students in the Master's program and 17 in the PhD program. Each nuclear engineering class is generally consists of 1/3 US Army students, 1/3 US Air Force and Space Force students, and 1/3 civilian or contractor students.

AFIT faculty pursue a variety of efforts in fundamental nuclear science within the broader Nuclear Engineering MS and PhD programs. Many of these efforts are related to specific applications such as radiation effects, nuclear forensics, and nuclear nonproliferation. We collaborate on this work extensively with other labs and institutions including but not limited to Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Oak Ridge National Laboratory, Army Research Laboratory, Ohio University, and University of Notre Dame. In addition, AFIT's membership in the Nuclear Science and Security Consortium (NSSC) allows for ample research interaction and professional development with the Department of Energy national labs.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$33,060/annual for MS graduate assistants. \$35,210 for PhD graduate assistants. These figures are twelve-month salaries. There is no difference between TA and RA salaries, although almost all positions are research-focused.

What are the opportunities for students to be employed in your department during their first summer on campus?

We have classes year-round with no extended summer break. GAs are paid for twelve-month terms.

What is the health insurance premium for graduate students in your department?

Because GAs are part-time federal employees, they can select from a variety of available health care plans. Premiums vary depending on plan selection.

Does your department provide a tuition waiver for first-year students?

Government employees (including our graduate assistant positions) do not accrue tuition. Students who work for defense contractors must pay tuition.

Are graduate students unionized at your school?

No.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

As part-time federal employees, GAs are eligible for 6 weeks of Family and Medical Leave per year. This leave is unpaid except in the case of parental leave. To qualify for Family and Medical Leave, employees must have worked for the federal government for at least 12 months.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No, although those students may be eligible to enroll directly in the PhD program.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

AFIT has yearly climate surveys, and leadership pays close attention to the results in order to work towards resolving any issues that arise.



Carnegie Mellon University

Physics department
Pittsburgh, PA

Department Website:

<https://www.cmu.edu/physics>

Graduate Program Website:

<https://www.cmu.edu/physics/graduate-program/phd/index.html>

Admission Website:

<https://www.cmu.edu/physics/graduate-program/admission.html>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5.5 years

Contact for graduate admission:

Physics-grad-admissions@andrew.cmu.edu

Pittsburgh, Pennsylvania, is a scenic, mid-sized city at the meeting place of three rivers. Affordable and historic, the “Steel City” features world-class arts; world-class sports; and more trees per square mile than any other city in the United States. Our cost of living index for Pittsburgh is about the national average, but in an urban center you get a lot for that money. Your CMU ID gives you free public transport as well as free admission to many museums.

The CMU physics department is very dynamic and collegial with approachable faculty, 30% of whom have been hired in the last 8 years. We are very interdisciplinary and proud of our range of course options; students can take courses in machine learning, statistics, and other cutting-edge subjects, and there are more physics course options due to our proximity to the University of Pittsburgh. Arts at CMU (such as drama and music) are top notch and help foster a vibrant campus culture.

Nuclear Physics Research Areas:

Medium Energy, Fundamental Symmetries & Neutrinos, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

High-Energy Particle Physics, Astrophysics, Cosmology

of faculty in specific research groups:

Astrophysics/Cosmology: 9

Experimental High-Energy Particle Physics: 4

Theoretical Particle Physics: 4

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 1

Staff/Research Scientists: 1

Postdoc: 2

Graduate Students: 8

Female physicists: 4

Contact in Nuclear Physics:

Diana Parno, dparno@cmu.edu

Our nuclear physics groups belong to international collaborations in lattice QCD, hadronic physics (GlueX), and neutrino physics (KATRIN, COHERENT, and Project 8). Our work includes experiments at national labs within a day's driving distance (Jefferson Lab and Oak Ridge National Lab). We build detectors, simulate physics and analyze data. We develop computational and mathematical tools to tackle difficult particle-physics problems, and our students go on to do interesting things with their careers.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.
\$3000/month, 12 months. No difference between different years or support types.

What are the opportunities for students to be employed in your department during their first summer on campus?

The department aims to cover all students through research or teaching assistantship each summer after they matriculate, including the summer after their first year.

What is the health insurance premium for graduate students in your department?

The premium is \$2,697, and it is 100% covered by CMU as part of the standard benefits. However, it does not contain dental and vision, which students can purchase for an annual rate of \$204.64 and \$59.52, respectively.

Does your department provide a tuition waiver for first-year students?

Yes. None of our graduate students pay tuition, unless they are admitted with a fellowship that does.

Are graduate students unionized at your school? No.

Please provide a link to your university's policy regarding family or medical leave for graduate students.
<https://www.cmu.edu/hr/benefits/time-away/fmla.html>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

There is no explicit reduction, but students with or without an MS can opt to place out of required courses if they feel they can demonstrate mastery of the content.

How is your department creating an inclusive and welcoming environment (e.g. department committees, student-led groups, climate visits / site surveys)?

Students are regularly invited to departmental meetings, unless some sensitive issues are on the agenda. Students are regularly asked to be on committees (such as grad admissions, grad program, DEI, outreach, ...) Students organize events on their own (series like "Cookies for your Plots" or outings using funds from the GSA) There are multiple forms of feedback— both direct and anonymous—for students to bring up any issues. Grad program is constantly fine-tuned based on student feedback. First year students are assigned other graduate students as mentors. Yearly town halls help keep students up to date on changes and offer a means for feedback. Ad-hoc information sessions are designed to communicate urgent affairs (e.g. the recent sessions on the impact of executive orders). Bi-weekly grad socials help foster a vibrant community. The office for graduate and postdoc affairs does a lot of programming throughout the year. A recent APS climate study collected a lot of feedback from students, and we made several changes in response to it. Remodeled grad lounge with ping-pong and pool table

Department Website:

<https://physics.catholic.edu/faculty-and-research/nuclear-physics/index.html>

Graduate Program Website:

<https://physics.catholic.edu/>

Admission Website:

<https://www.catholic.edu/admission-aid/graduate-admission>

Application Deadline:

February

General GRE required?

Yes. Waivers may be available

Physics GRE required?

No

Median time to PhD:

5 years

Contact for graduate admission:

John Philip (philip@cua.edu)

In the heart of Washington, D.C., Catholic University's Department of Physics offers unique opportunities and unparalleled access to the nation's top scientific research institutions: the National Aeronautics and Space Administration (NASA), the National Institute of Standards and Technology (NIST), the Vitreous State Laboratory (VSL), the Jefferson Lab, and the European Organization for Nuclear Research (CERN). The Department of Physics specializes in mentoring and matching a student's curriculum with exceptional research scholars, engineers, and faculty throughout their scholastic career. We also offer guidance and assistance along with professional placement following graduation. Our students have continued their careers in national laboratories such as the Army Research Laboratory (ARL), the Naval Surface Warfare Center (NSWC), the Naval Research Laboratory (NRL), the Food and Drug Administration (FDA) the National Science Foundation (NSF), the Department of Energy (DOE), and the Environmental Protection Agency (EPA).

Nuclear Physics Research Areas:

Medium energy hadron physics (experimental)

List of complementary Physics Research Areas:

Astrophysics, Computational Physics, Material Science

of faculty in specific research groups:

Only one research group on: medium energy hadron physics (experimental)

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 0

Staff/Research Scientists: 0

Postdoc: 2

Graduate Students: 4

Female physicists: 2

Contact in Nuclear Physics:

Tanja Horn (hornt@cua.edu)

The Nuclear Physics Group has three faculty members and on average 1-2 postdocs, up to six graduate students, and several undergraduate and high school students who mostly work with us during the summers. Our projects focus on Jefferson Lab in the near and intermediate term to advance our understanding of the atom's nucleus and on the Electron Ion Collider that is being built at Brookhaven National Lab in the longer term to unlock the secrets of the strongest force of Nature.

The CUA group has an active science program in Hall C and D at Jefferson Laboratory and the Electron-Ion collider detector, with specific focus on precision electromagnetic calorimetry. The scientific focus of the group is on deepening our understanding of pions and kaons - their form factors, structure functions, and masses - and validation of the framework for 3D hadron imaging.

The group is also significantly involved in the EIC R&D program. There, our focus is on the development of novel materials for Cherenkov based PID detectors and electromagnetic calorimeters for a possible second detector. The group is interested in the application of ML/AI methods in detector material design and data reconstruction and analysis.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

Typically, \$18k-\$21k/8.5 months for TA stipends. A tuition waiver is included.

Typically, \$27k-\$29k/12 months for RA stipends. A tuition waiver is included.

What are the opportunities for students to be employed in your department during their first summer on campus?

Nearly all physics (and all NP) graduate students have been employed in the department during their first summer on campus.

What is the health insurance premium for graduate students in your department?

For 2025, there are two plans available: BASIC (\$1,920.83) and PREMIUM (\$3,031.03)

Does your department provide a tuition waiver for first-year students?

Tuition waivers are typically available for first-year students

Are graduate students unionized at your school?

No.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Students can request Academic Leave

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Course reduction is available – subject to evaluation on a case-by-case basis

How is your department creating an inclusive and welcoming environment (e.g. department committees, student-led groups, climate visits / site surveys)?

The department is following the overall university guidelines, e.g., <https://lis.catholic.edu/about-us/diversity.html>



Central Michigan University

Physics Department
Mount Pleasant, Michigan

Department Website:

<https://www.cmich.edu/academics/colleges/college-science-engineering/departments-schools/physics>

Graduate Program Website:

<https://www.cmich.edu/academics/colleges/college-science-engineering/departments-schools/physics/graduate-programs>

Admission Website:**Application Deadline:**

February 1

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

4 years (for students coming in with MS or equivalent)

Contact for graduate admission:

George Perdikakis
(perdi1g@cmich.edu)

CMU is a mid-sized regional university located in Mount Pleasant, a medium sized Michigan town surrounded by farmland and smaller towns and villages. Mount Pleasant is an hour's drive from the State Capital, Lansing, and from Grand Rapids. Detroit and Traverse City are within 2 hours drive, as is Lake Michigan and the wood and lake-filled Northern parts of the state.

The campus is easily navigated by foot or bike and houses around 14,000 students.

The CMU Physics Department is home to ~30 undergraduate majors and ~10-15 graduate students. We have 14 teaching and research faculty members and typically around 5 post-docs. Undergraduate students are typically domestic students, while ~50-60% of graduate students are international making for a diverse and lively department.

Nuclear Physics Research Areas:

Nuclear Structure and Nuclear Astrophysics, Fundamental Symmetries and Neutrinos, Theoretical Nuclear Physics

of faculty in specific research groups:

Nuclear Structure and Nuclear Astrophysics: 2

Fundamental Symmetries & Neutrinos: 1

Theoretical Nuclear Physics: 1

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 1

Staff/Research Scientists: 0

Postdoc: 1

Graduate Students: 7

Female physicists: 4

Contact in Nuclear Physics:

George Perdikakis

(perdi1g@cmich.edu)

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

M.S. students: \$15,850

Ph.D. students: \$18,900

What are the opportunities for students to be employed in your department during their first summer on campus?

We strive to ensure that all M.S. students in good standing (having passed their first-year course work) are employed as RA's during the summer at the end of their first year.

All Ph.D. students are required to have a 4-year funding plan that includes summer funding when they are admitted.

What is the health insurance premium for graduate students in your department?

Health insurance is not included for graduate students

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

Yes, but the union has been inactive for 5 or 6 years.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Leave of absence form: <https://www.cmich.edu/offices-departments/office-research-graduate-studies/graduate-studies/student-services/forms>

Graduate student union contract: https://www.cmich.edu/docs/default-source/academic-affairs-division/faculty-personnel-services/cmu-gsu-current-bargaining-agreement5e3d173a-50a9-4967-acba-89abe1c515a2.pdf?sfvrsn=e92a9f61_6

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes (typically an MS from a US institution is required).

How is your department creating an inclusive and welcoming environment (e.g. department committees, student-led groups, climate visits / site surveys)?

Student organizations (Society of Physics Students, Astronomy Club), Social Activities



Colorado School of Mines

Department of Physics

Golden, Colorado

Department Website:

<https://physics.mines.edu/>

Graduate Program Website:

<https://physics.mines.edu/graduate/>

Admission Website:

<https://gradprograms.mines.edu/>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5.5 years

Contact for graduate admission:

Dan Adams

daadams@mines.edu

Colorado School of Mines is a premier public research university addressing society's most pressing challenges related to energy, environment, and fundamental science. Founded in 1874, Mines has grown into a Carnegie R1 institution known for its interdisciplinary research, strong industry partnerships, and emphasis on innovation in STEM fields. Ranked as the No. 38 public university in the nation, Mines provides students with rigorous education and research opportunities in a collaborative and inclusive environment.

The Physics PhD program at Mines is distinguished by its strong emphasis on nuclear physics, quantum engineering, advanced sensing technologies, and fundamental physics research. Our department offers personalized mentorship, cutting-edge laboratory facilities - including the recently commissioned Colorado Underground Research Institute (CURIE), and extensive collaborative research opportunities with leading national laboratories and international institutions.

Nuclear Physics Research Areas:

Nuclear Structure and Nuclear Astrophysics,
Fundamental Symmetries and Neutrinos,
Applied Nuclear Physics

List of complementary Physics Research Areas:

Nuclear Engineering,
Quantum Engineering,
Astroparticle Physics

of faculty in specific research groups:

Nuclear Structure and Nuclear Astrophysics: 2

Fundamental Symmetries & Neutrinos: 3

Applied Nuclear Physics: 2

Nuclear People:

Experimental Faculty: 4
Theoretical Faculty: 0
Staff/Research Scientists: 0
Postdoc: 2
Graduate Students: 14
Female physicists: 6

Contact in Nuclear Physics:

Kyle Leach
kleach@mines.edu

Research and Collaborations

The Mines Physics Department engages in leading research in experimental and theoretical nuclear physics, with a focus on neutrino physics, nuclear astrophysics, precision measurements, and applied nuclear science. Faculty and students benefit from collaborations with national laboratories, including LANL, LLNL, ORNL, NIST, TRIUMF, and FRIB.

Faculty Research Focus:

- **Dr. Uwe Greife** – Nuclear astrophysics, applied nuclear science
- **Dr. Kyle G. Leach** – Neutrino physics, quantum sensing, nuclear structure, precision measurements
- **Dr. Frederic Sarazin** – Low-energy nuclear structure, nuclear astrophysics, ultra-high-energy cosmic rays, applied nuclear physics
- **Dr. Wouter Van De Pontseele** – Neutrino physics, quantum sensing, precision measurements

Mines is at the forefront of quantum sensing and advanced detection technologies crucial for next-generation nuclear experiments, nuclear security, and fundamental physics research. Our students routinely engage in experiments conducted at national and international laboratories, as well as the Colorado Underground Research Institute (CURIE), which provides an ultra-low background environment for groundbreaking work in neutrino physics and dark matter detection.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$38,000/year (TA/RA combined)

- Fall: \$14,250 (4.5 months)
- Spring: \$14,250 (4.5 months)
- Summer: Supported by RA positions

What are the opportunities for students to be employed in your department during their first summer on campus?

All first-year students typically secure RA positions within research groups.

What is the health insurance premium for graduate students in your department?

Mines offers comprehensive health insurance coverage for graduate students (premium information available upon request).

Does your department provide a tuition waiver for first-year students?

Full tuition waiver provided for all graduate students supported by TA/RA positions.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Detailed policy available [here](#).

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Explicit reductions in course requirements for students entering with an MS degree will be evaluated case-by-case.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department supports an inclusive community through active student organizations (SPS, SWIP, GSG), weekly faculty-student coffee hours, regular social events, and representation on departmental councils to continuously address student feedback and improve departmental climate.



Duke University

Physics Department
Durham, North Carolina

Department Website:

<https://physics.duke.edu>

Graduate Program Website:

<https://physics.duke.edu/graduate>

Admission Website:

<https://physics.duke.edu/graduate/prospectivestudents/admissions>

Application Deadline:

December 2, 2025

General GRE required?

Optional

Physics GRE required?

Optional

Median time to PhD:

5 to 7 years

Contact for graduate admission:

Mark C. Kruse

mkruse@duke.edu

Duke University is a private university in Durham, which is one of the cities forming the corners of the North Carolina Research Triangle Area. Duke University offers a rigorous yet collaborative academic environment, set amidst a beautiful campus known for its distinctive Gothic architecture and abundant green spaces. Duke's vibrant academic community includes about 6,500 undergraduate students and 11,000 graduate and professional students. Duke is a diverse community committed to the principles of excellence, fairness, and respect for all people.

The Duke physics department consists of 40 primary faculty members and about 104 graduate students. The Duke graduate program in physics prepares students for careers in research and education, technology industries, and other professions, see <https://physics.duke.edu>. The graduate education experience cultivates students' command of physics concepts, problem analysis methods and science communication skills through course work and research. Students carry out research on topics at the frontier of the field using state-of-the-art research facilities and instruments in collaboration with world experts.

Nuclear Physics Research Areas:

Electroweak Interactions and Fundamental Symmetries, Neutrinos, QCD and Hadron Structure, Nuclear Structure, Relativistic Heavy-Ion Collisions and Quark-Gluon Plasma, Accelerator Physics

List of complementary Physics Research Area:

High-Energy Physics and Astrophysics and Cosmology

of faculty in specific research groups:

2 faculty in Medium-Energy Physics group

2 faculty in neutrino physics group

1 faculty in accelerator physics group

Nuclear People:

Experimental Faculty: 5

Theoretical Faculty: 5

Staff/Research Scientists: 8

Postdoc: 1

Graduate Students: 17

Female physicists: 3

Contact in Nuclear Physics:

Calvin R. Howell

howellc@duke.edu

Graduate students at Duke have opportunities to conduct world-class experimental and theoretical research in nuclear physics. The Duke graduate program in nuclear physics is ranked in the top ten in the nation most in the most recent assessment by U.S. News and World Report. Duke research groups are studying nuclear structure, hadron structure, properties of the quark-gluon plasma (QGP), electroweak interactions, neutrino physics, and ways to detect dark-matter particle. Their research contributes to answering some of the broad questions raised in the most recent Long-Range of Nuclear Science, including:

- How do quarks and gluons make up protons, neutrons, and, ultimately, atomic nuclei?
- How do the patterns observed in the structure and reactions of nuclei emerge from the interactions between neutrons and protons?
- How do we use atomic nuclei to uncover physics beyond the Standard Model?

The experimental program is led by groups at the Triangle Universities Nuclear Laboratory (TUNL), which is a Department of Energy Center of Excellence for nuclear physics. Experiments are carried out at local accelerator facilities, such as the High Intensity Gamma-Ray Source (HIGS), national accelerator laboratories, such as the Thomas Jefferson National Accelerator Facility, the Spallation Neutron Source at Oak Ridge National Laboratory, the SuperKEKB in Tsukuba, Japan, and ultimately at the Electron-Ion Collider, and at deep underground research facilities around the world. Central themes include: understanding the structure of hadrons in terms of quark and gluon degrees of freedom in Quantum Chromodynamics (QCD); testing predictions of Chiral Effective Field Theories (χ EFT) using high-precision measurements of gamma-ray induced reactions on few-nucleon systems, such as Compton scattering on the proton and light nuclei; studying the properties of neutrinos to investigate whether these particles can help explain the observed matter and anti-matter asymmetry in the universe; and measuring cross sections for neutrino-nucleus interactions as a means of probing for undiscovered forces.

Duke theorists investigate QCD from three broad points of view: the derivation of effective quark interactions from first principles; the behavior of elementary particles under extreme conditions; and reactions of particles and nuclei at high densities and temperatures. Their research includes nuclear matter at extreme energy density with emphasis on studying the properties of the QGP, QCD on the lattice, and effective field theories of the nuclear interaction and nuclear reactions.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The 13-month (August 1, 2025 – August 31, 2026) TA/RA stipend for year-1 students in the physics department for the current academic year is \$42,500. This stipend is paid in the amount of \$3,269.23 monthly. The 12-month TA/RA stipend for students beyond the first year is \$42,500 (i.e., \$3,541.67 monthly). The stipend is the same for all research areas in physics.

What are the opportunities for students to be employed in your department during their first summer on campus?

All first-year students will be paid starting in August for 13 months, which includes the first summer.

What is the health insurance premium for graduate students in your department?

All students are required to have health-care insurance coverage. Students may select coverage from [Duke's Student Medical Insurance Plan](#) (SMIP), or provide proof of comparable health-care coverage. The estimated full-year coverage for students in 2025/26 is \$3752 for medical insurance and \$353 for dental insurance. The department will pay the insurance premium for TAs/RAs in years 1-6.

Does your department provide a tuition waiver for first-year students?

No. However, tuition and fees are paid for all TA/RA-supported students.

Are graduate students unionized at your school?

Yes, graduate students at Duke University are unionized, with the [Duke Graduate Students Union](#) (DGSU), which is officially recognized by the National Labor Relations Board (NLRB) and having recently ratified its first collective bargaining agreement with the university.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Graduate student leave policy is given here: <https://gradschool.duke.edu/leave-absence/#:~:text=A%20leave%20of%20absence%20for,Important%20Considerations> and <https://gradschool.duke.edu/parental-leave-phd-students/#:~:text=Students-Parental%20Leave%20for%20Ph.D.,The%20Graduate%20School%20Accommodation%20Policy>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Students can test out of the required core courses. Up to 18 credits of MS coursework may be applied to the 72 total credits of the PhD requirement.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department has formulated a statement on conduct with the intent of establishing a welcoming and collegial environment, see <https://physics.duke.edu/physics-department-statement-conduct>



Florida International University

Physics Department

Miami, Florida



Department Website:

<https://case.fiu.edu/physics>

Graduate Program Website:

<https://case.fiu.edu/physics/phd-in-physics>

Admission Website:

<https://case.fiu.edu/physics/phd-in-physics/admissions/index.html>

Application Deadline:

February 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

jrodrig@fiu.edu

Florida International University is a Top 50, preeminent public research university with 55,000 students (10,000 graduate students) from all 50 states and more than 140 countries. It is a Carnegie R1 institution and located in the global and vibrant city of Miami. FIU is a large Hispanic Serving public institution: 67% of our students are Hispanic.

All faculty in the nuclear physics group have active DOE or NSF grants. The research in the group focuses on hadronic and nuclear physics topics relevant to research at Jefferson Lab and the future electron-ion collider as well as theoretical aspects of lattice gauge theories.

Nuclear Physics Research Areas:

Nuclear Structure, Hadron Spectroscopy, Theoretical medium and high-energy Nuclear Physics, Lattice gauge theories

List of complementary Physics Research Areas:

Astrophysics, Medical Physics (imaging)

of faculty in specific research groups:

2 Theory phenomenology, 1 Lattice, 5 JLab/EIC Experimental Nuclear Physics

Nuclear People:

Experimental Faculty: 5

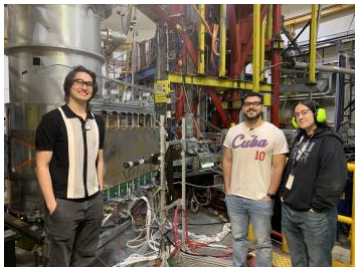
Theoretical Faculty: 3

Staff/Research Scientists: 0

Postdoc: 2

Graduate Students: 10

Female physicists: 3

Contact in Nuclear Physics:jrodrig@fiu.edu

The experimental group works on various hardware and calibration tasks associated with experiments conducted at Jefferson Lab. These projects include work on calibration of CLAS12 detectors along with detector testing and installation in Halls A and C. Drs. Lei Guo and Brian Raue of the experimental group have had leading roles in several electro- and photoproduction experiments in Jefferson Lab's Hall B. During the 6-GeV era of Jefferson Lab, these include kaon-hyperon experiments and the Two-Photon Exchange experiment. Dr. Guo is also a spokesperson on the 12-GeV "Very Strange" experiment.

Dr. Joerg Reinhold is an active member of the GlueX collaboration at Jefferson Lab's Hall D. His recent students have analyzed eta photoproduction data, i.e., beam asymmetries and Primakov production. Reinhold is one of the spokespersons of the JLab hypernuclear collaboration. Currently, there are three approved experiments, two of which are tentatively scheduled to be installed. Dr. Holly Szumila-Vance works on electro- and photoproduction experiments across Jefferson Lab exploring properties of quark-gluon descriptions of nucleons in heavier nuclei. She is a spokesperson of upcoming Hall C experiments that will study color transparency phenomena and strange quark contributions in the proton. She actively contributes to detector research and development at Jefferson Lab and supports User Learning for EIC Software development.

The nuclear physics theory group at FIU has three faculty. Dr. Wim Cosyn's and Dr. Misak Sargsian's research interests closely tie in with the program of Jefferson Lab and that of the future EIC. Their research has provided crucial theoretical support for several experimental proposals. Their research has resulted in computational nuclear reaction frameworks and theoretical studies of topics such as nuclear short-range correlations and nuclear tomography.

Dr. Rajamani Narayanan has been working in the field of lattice gauge theory coupled to fermions for the last three decades. Chiral symmetry, chiral condensate and spontaneous mass generation are some of the areas of research where Dr. Narayanan has made significant contributions.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

1st year stipend is \$30,000 12 months. No difference between RA and TA

What are the opportunities for students to be employed in your department during their first summer on campus?

The contract is for 12 months so perfect.

What is the health insurance premium for graduate students in your department?

About \$450 per year

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

There is no specific policy.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes, it is taken on a case-by-case basis and depends on courses taken as a MS student and grades earned in the course.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We welcome all students, regardless of gender, gender identification, race, or sexual orientation. The physics department has a student success committee aimed at supporting a welcoming climate. FIU has active SPS and Sigma Pi Sigma chapters. The nuclear group holds monthly social events (open to anyone) and are known to enthusiastically celebrate life events of their group members. FIU supports student wellbeing and offers counseling for those with needs.



Florida State University

Department of Physics

Tallahassee, Florida

Department Website:

<https://physics.fsu.edu/>

Graduate Program Website:

<https://physics.fsu.edu/graduate>

Admission Website:

<https://physics.fsu.edu/graduate/how-apply>

Application Deadline:

January 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5.5 years

Contact for graduate admission:

Prof. Sergio Almarz-Calderon

Founded in 1851, Florida State University is one of the nation's elite research universities. Florida State University is located in the heart of the state capital, Tallahassee. FSU is distinguished as a pre-eminent university in the state of Florida and is identified by the Carnegie Classification of Institutions of Higher Education as engaged in very high research activity, the highest status accorded to a doctoral-granting university. The wide-ranging scholarship of FSU faculty and graduate students is nationally and internationally recognized for its contributions to science, business, government, culture, and society. FSU faculty members are also recognized for their exceptional level of instruction. Some facts about FSU:

- 44,308 students from every Florida county and 130 countries
- 17:1 student/faculty ratio
- 403 buildings on 1,715.5 acres; main campus in Tallahassee is 485.7 acres
- 2,760 traditional faculty
- 16,069 total employees
- 272 degree programs: bachelor's, master's, doctoral, specialist, professional

The Physics Department at FSU offers research programs that are well-funded and provide a breadth of learning and teaching experience to over 300 graduate and undergraduate students. Ranked in the top five by the Joint Task Force on Undergraduate Physics Programs and named among the best in the nation for Graduate Physics by U.S. News and World Report, the department is comprised of over 50 faculty members specializing in condensed matter, nuclear, high-energy, atomic, biophysics, and astrophysics. The Physics Department is also associated with unique experimental facilities such as the John D. Fox Nuclear Accelerator Laboratory and the National High Magnetic Field Laboratory.

Nuclear Physics Research Areas:

Nuclear structure and Nuclear Astrophysics, Hadronic Physics, Theoretical Nuclear Physics, Fundamental Symmetries

List of complementary Physics Research Areas:

Astrophysics, High Energy Physics, Condensed Matter Physics, Neutrino Physics

of faculty in specific research groups:

Nuclear physics: 15

Condensed matter physics: 21

High energy physics: 12

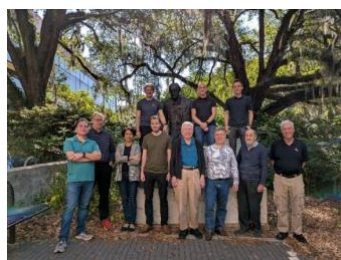
Astrophysics: 6

Nuclear People:

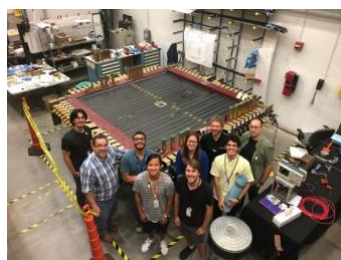
Experimental Faculty: 12
Theoretical Faculty: 3
Staff/Research Scientists: 3
Postdoc: 3
Graduate Students: 25
Female physicists: 5

Contact in Nuclear Physics:

Prof. Sergio Almaraz-Calderon



Part of the nuclear physics faculty at FSU



The experimental hadronic group at FSU

Florida State University hosts strong groups in experimental and theoretical low-energy nuclear physics, as well as in astrophysics and astronomy, who work synergetically to tackle the open questions at the crossroads of these disciplines. The programs are mainly funded by the Department of Energy (DOE) and the National Science Foundation (NSF). FSU plays a major role in the FRIB Theory Alliance. Besides performing experiments at different national and international facilities, the experimental nuclear physics group runs the John D. Fox Superconducting Linear Accelerator Laboratory located on the FSU campus. Operations of the laboratory are funded through the NSF.

The John D. Fox Superconducting Linear Accelerator Laboratory at Florida State University is a busy, teeming place with the radioactive beam facility RESOLUT, the construction of advanced detector systems and nuclear-spectroscopy setups using Compton-suppressed Clover gamma-ray detectors as well as the Enge Split-Pole magnetic spectrograph. Other detector systems are the CATRiNA neutron detector array, and the active target detectors ANASEN and Encore. The John D. Fox lab is also part of the Association for Research with University Nuclear Accelerators (ARUNA) and of the Center for Excellence in Nuclear Training and University-Based Research (CENTAUR), a multi-institutional effort from the Department of Energy's National Nuclear Security Administration (DOE/NNSA). CENTAUR fosters basic research in low-energy nuclear physics and workforce development. More information at <https://fsunuc.physics.fsu.edu/> and https://fsunuc.physics.fsu.edu/research/fox_lab/

The Low-energy nuclear theory at FSU is a dynamic group exploring the mysteries of neutron star, exotic nuclei as open quantum systems, and cutting-edge advancements in AI and quantum computing. As a graduate student, you will receive an excellent education from active researchers and perform theoretical research in close collaboration with experimentalists at FSU and world-class facilities like the Facility for Rare Isotope Beams. We are excited to welcome passionate minds to our research community!

The experimental medium-energy nuclear physics group at FSU has a long-standing commitment to hadron spectroscopy, focusing both on mapping the spectra of ordinary mesons and baryons and on the search for exotic hadronic states. Our work spans detector development and construction, data analysis, and advanced computing, all contributing to a deeper understanding of the strong interaction and the structure of matter. Hadrons form the fundamental building blocks of ordinary matter and exhibit rich spectra of excited states that serve as sensitive probes of quark confinement dynamics. QCD not only describes conventional hadrons but also predicts the existence of new forms of hadronic matter, including **exotic states**—configurations with quantum numbers that cannot be explained by simple three-quark (baryon) or quark-antiquark (meson) structures. These states may explicitly involve gluons as degrees of freedom, such as **gluonic hybrid mesons** or **glueballs** (quarkless gluonic hadrons). More information at: <https://hadron.physics.fsu.edu/page2.html>.



Experimental detector systems at the John D. Fox laboratory at FSU. From left to right, the CEBRA gamma-ray detector, the ANASEN active target detector, the CATRiNA neutron detector array, and the Super-Enge Split Pole Spectrograph.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

There is no difference between TA and RA stipends. The stipend for this year (2025) is \$31,000.

What are the opportunities for students to be employed in your department during their first summer on campus?

It is mandatory for all students to be employed for research in the different research groups in the department. Students attend to faculty presentations during their first semester (fall semester). Students are expected to discuss with different research group in their second semester (spring semester) such that everyone has a research group by their first summer on campus.

What is the health insurance premium for graduate students in your department?

Domestic: \$3,086 for annual coverage (FSU provides a subsidy of \$2,465.71)

International: \$3,135 for annual coverage (FSU provides a subsidy of \$2,504.87)

Does your department provide a tuition waiver for first-year students?

Yes, no student pays tuition during their full career at FSU. For TAs, the college pays tuition, and for RAs, the research grants pay the tuition. Students never pay tuition.

Are graduate students unionized at your school?

Yes, the graduate assistant union GAU.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://hr.fsu.edu/sections/attendance-leave>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No

How is your department creating an inclusive and welcoming environment (e.g. department committees, student-led groups, climate visits / site surveys)?

Our department has a faculty and peer mentoring system to help provide a welcoming environment. All students are assigned a first-year faculty advisor and a peer senior grad student advisor. The graduate affairs committee meets with students regularly and addresses students' concerns. Students are organized in physics graduate student association PGSA which holds regular meetings and events.

Georgia State University

Department of Physics and Astronomy

Atlanta, Georgia

Department Website:

<https://physics-astro.gsu.edu/>

Graduate Program Website:

<https://physics-astro.gsu.edu/graduate>

Admission Website:

<https://cas.gsu.edu/graduate-admissions/>

Application Deadline:

January 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Murad Sarsour
msar@gsu.edu

Georgia State University is in downtown Atlanta, Georgia, and is one of the largest universities in the state. The campus is urban and integrated into the city, offering students access to a wide range of professional, cultural, and recreational opportunities.

- Main Campus: Situated in downtown Atlanta, it includes modern academic buildings, student housing, and research facilities.

- Perimeter College: GSU also operates several satellite campuses through Perimeter College, serving students in the metro Atlanta area.

- Facilities: Includes the University Library, Student Recreation Center, Rialto Center for the Arts, and the Georgia State Stadium (formerly Turner Field).

Georgia State total enrollment is approximately 36,360 students. 22,356 are undergraduates and 5,471 are graduate students. The full-time Georgia State student population is made up of 61% women, and 39% men.

The Department of Physics and Astronomy at Georgia State University (GSU) is part of the College of Arts & Sciences and is located at: 25 Park Place NE, Suite 605, Atlanta, GA 30303. The department offers undergraduate (B.S.) and graduate (M.S. and Ph.D.) programs in both physics and astronomy. Faculty are active in astrophysics, nuclear physics, atomic and molecular physics, condensed matter physics and neural physics. We currently have 3 assistant professors, 2 associate professors, and 17 full professors. There are about equal number of physics and astronomy faculty. Among all faculty (including non-tenure track faculty), 27 faculty are white and 7 are Asian with one Not Reported. Out of these, 29 are males, 6 females and 3 Not Reported.

The nuclear physics group consists of three experimental physicists and one theorist.

Nuclear Physics Research Areas:

Heavy Ions, Medium Energy, Fundamental Symmetries & Neutrinos, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

Cosmic ray measurements at global scale for monitoring the dynamic changes in space and terrestrial weather

of faculty in specific research groups:

3 faculty in Heavy Ions, Medium Energy, Fundamental Symmetries & Neutrinos

1 faculty in Theoretical Nuclear Physics

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 1

Staff/Research Scientists: 0

Postdoc: 2

Graduate Students: 11

Female physicists: 5

Contact in Nuclear Physics:

Murad Sarsour

msar@gsu.edu

The Nuclear Physics Group at Georgia State University is involved in several cutting-edge research projects spanning both experimental and theoretical nuclear physics. The key areas of research include (a) the study of quark-gluon plasma in the PHENIX and sPHENIX experiments at the Relativistic Heavy Ion Collider at Brookhaven National Lab (BNL); (b) probing the inner structure of proton and nuclei in the ePIC experiment at the Electron-Ion Collider (EIC) at BNL; (c) building portable cosmic ray muon telescopes to measure global muon flux variations for monitoring the dynamic changes in space and terrestrial weather; (d) studying parity-violating neutron spin rotation to probe weak interactions between nucleons. More information about the nuclear physics group can be found at GSU Nuclear Physics Group website

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$24,000.00 (minimum 12-month stipend)

What are the opportunities for students to be employed in your department during their first summer on campus?

The stipend is a 12-months therefore there are opportunities for TAing in summer and/or research depending if the student selects a research advisor with funding to support them during the summer.

What is the health insurance premium for graduate students in your department?

The latest information is available here: <https://sfs.gsu.edu/resources/student-health-insurance/>

Does your department provide a tuition waiver for first-year students?

Yes, all admitted students receive a stipend and a tuition waiver.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Could not locate a policy

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

There is an option for course transfer where certificate students can transfer a maximum of 3 credit hours, master's students can transfer a maximum of 6 credit hours into their degree program, and doctoral candidates can transfer a maximum of 30.

How is your department creating an inclusive and welcoming environment (e.g. department committees, student-led groups, climate visits / site surveys)?

They can serve as members of all departmental committees except the Executive Committee. There are also several student-led groups, including the PGSA, Women in Physics, and Astro and Physics PALS.

George Washington University

Department of Physics
Washington, DC

Department Website:

<https://physics.columbian.gwu.edu/>

Graduate Program Website:

<https://physics.columbian.gwu.edu/phd-physics>

Admission Website:

<https://columbian.gwu.edu/prospective-graduate-students>

Application Deadline:

January 15

General GRE required?

Yes

Physics GRE required?

No

Median time to PhD:

5.5 years

Contact for graduate admission:

Physics Graduate Admissions
Director
physGradAdmit@gwu.edu
(presently: Prof. Cheng Zeng)

The George Washington University was established by an act of congress in 1821 out of the desire of our country's first President to establish a national institution of higher learning. Today, GW is the premier urban research university in the nation's capital, with a total enrollment of more than 25,000 undergraduate and graduate students in nine schools. GW is a R1 university in the Carnegie classification and member of the Association of American Universities (AAU). The University's Washington, DC, location—four blocks from the White House and six blocks from the Kennedy Center for the Performing Arts —offers a rich variety of cultural opportunities. The Smithsonian Institutions and the monuments of the National Mall are within walking distance, as is the nightlife of Georgetown, U Street and Adams Morgan. The University's commitment to excellence in teaching and research is exemplified by a new multi-million dollar Science and Engineering Complex. Recently, we finished the transformation of Corcoran Hall, the oldest campus building and home of Physics, into a fully renovated, modern center of physics research and teaching. It was here that Bohr reported the splitting of the atom, George Gamov and Ralph Alpher formulated Big-Bang Nucleosynthesis, and the bazooka was developed.

As a small Department of about 20 faculty, 40 undergraduate majors and 40 graduate students, we feel like family and deeply care about the success of each individual student. We sincerely believe that academic excellence springs from fostering an environment which encourages the frank, fearless and respectful exchange of ideas from everybody, irrespective of their socio-economic background. We hold that formal education needs to go hand in hand with building those meta-cognitive skills that make successful Physicists independent of the profession they choose: critical thought, a passion for Science, managerial and communication experience, and an acute awareness of the needs of society and the nation.

Nuclear Physics Research Areas:

Theoretical Nuclear Physics: Effective Field Theories, Medium-Energy Physics, Hadron Physics, Radiative Corrections

Medium-Energy Experimental Physics: work at HILS, PSI, MAMI, TJNAF

Nuclear Phenomenology: Data Analysis Center (SAID,...)

List of complementary Physics Research Areas:

High-Energy Astrophysics: stellar explosions, supernovae, neutron stars, magnetars

Medical Physics: radiation therapy, tomography.

of faculty in specific research groups:

Nuclear Physics: 9

Astrophysics: 6

Biophysics: 4

Nuclear People:

Experimental Faculty: 3
Theoretical Faculty: 6
Staff/Research Scientists: 2
Postdoc: 5
Graduate Students: 40
Female physicists: 20

Contact in Nuclear Physics:

Prof. Axel Schmidt
axelschmidt@gwu.edu

Research Details

The Department deliberately focuses on only 3 formal research areas: Nuclear Physics, Astrophysics and Physics of Living Systems, and each area focuses on subfields, in turn, to generate excellence and a vibrant environment of critical mass in each. In Nuclear Physics, we host one of the world's largest and leading groups in low- and medium-energy Physics of hadronic and few-nucleon systems. Concentration ensures that our research groups have a healthy mix of projects with both national and international collaborators, and of projects with in-house expertise, like developing experimental proposal hand in hand with our theorists, who in turn interpret data taken by our experimentalists. Concurrently, we share many interests, techniques and approaches with our Astrophysics and Physics of Living Systems colleagues, with fruitful collaborations in Machine Learning/Artificial Intelligence, Nuclear Astrophysics, Data Analysis and Statistics, high-performance computing, and many other fields.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

At present, 29,149US\$, with about 5% increase per year anticipated

What are the opportunities for students to be employed in your department during their first summer on campus?

All students who expressed interest have been placed on GRA or stipend positions for at least 2 months, usually 3 months, in their first summer. Our expectation is that students are engaged in paid research positions each Summer. We also offer incoming students paid opportunities to embed in a research group in their "Zeroth Summer", i.e. before classes officially start.

What is the health insurance premium for graduate students in your department?

No information provided

Does your department provide a tuition waiver for first-year students?

First-year students are on GTA positions or fellowships, both with full tuition waivers.

Are graduate students unionized at your school?

Yes, just unionized. Discussions about the contract are expected to start this Summer 2025 and result in significant additional increases of the annual GRA/GTA salary. Independently, our Physics graduate students elect their own Graduate Spokespeople.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://bulletin.gwu.edu/university-regulations/#graduatetext>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes: 30 credits automatically transferable for students with a completed MS degree. Which degree-specific MS courses fulfill specific Physics graduate curriculum requirements is decided on a case-by-case basis between the Director of Graduate Studies, the respective GW course lecturer, and the student, based on course syllabi and further information.

How is your department creating an inclusive and welcoming environment (e.g. department committees, student-led groups, climate visits/site surveys)?

GW Physics aims to foster the most inclusive environment for all its members. With only 3 other universities, we were in a 5-year APS study of undergraduate retention and PIER, published in Autumn 2024. It found that our students feel well-supported in a welcoming and inclusive community. A huge advantage is that we are small (19 faculty, about 40 graduate and undergraduate students, resp.). We feel like a family and care about every student. Our undergraduate majors are minority-male (US Physics: 75%) and come from all walks of life. With 34% non-male graduate students, we exceed the US Physics average of 21%. We encourage and financially support all students of all backgrounds to attend the APS conferences like oSTEM and career workshops. The Frances E. Walker Fund for Women in Physics provides research and travel fellowships, and invites role models to present in the annual Walker Colloquium. Our student group, PUGs (Physicists of Underrepresented Genders), just received an APS Women in Physics Group Grant for lab tours at NIST, NASA Goddard, and Jefferson Lab. Our Physics JEDI committee of faculty, staff, graduate, undergraduate and former students holds panels at GW's Diversity Summit, special colloquia and events to build community and support students (book-swaps, destressing before exams). Our Physics graduate students elect two Graduate Spokespeople each year. They are important conduits to distribute and gather information to see department climate, processes and procedures improved, also in regular student-only townhalls. They are consulted and solicit feedback before the faculty makes decisions that impact graduate students. We take their input very seriously. Each student is paired with a faculty mentor, and with a senior graduate "buddy", both of matching personalities and backgrounds but different research interests to not provoke conflicts of interest. These turn into strong bonds, grow both students' sense of belonging, purpose and responsibility. We complement that with an extensive "Onboarding" program which includes curricular matters, PhD regulations, and, in particular, Physics TA training. We also offer a "Start Quiz" of about 30 short and concrete problems from Mathematics and Physics. It is entirely voluntary, but its return rate is near-100%. No later than June, we reply with individualised pointers and encouragement for self-study, which often turn into conversations about their concerns about coursework, TAing, life in DC, and many other issues.



Hampton University

Department of Physics

Hampton, VA

Department Website:

<http://www.hamptonu.edu/science/physics>

Graduate Program Website:

<https://www.hamptonu.edu/science/physics>

Admission Website:

<https://www.hamptonu.edu/gradcoll/admission-requirements/>

Application Deadline:

Provided in above link

General GRE required?

Provided in above link

Physics GRE required?

Provided in above link

Median time to PhD:

6 years

Contact for graduate admission:

Dr. Aswini Pradhan

Hampton University was founded in 1868 as the Hampton Normal and Agricultural Institute shortly after the end of the American Civil War. In 1930 it became the Hampton Institute and turned into Hampton University in 1984. It is one of the leading Historically Black Colleges and Universities (HBCU) with the motto "The Standard of Excellence, An Education for Life". Hampton University is practicing the family idea, and due to its splendid location, it is often called a "Home- by-the-sea", only a few miles from major research centers Jefferson Lab and NASA Langley. The picturesque university campus is well known for its natural beauty and numerous historical buildings. Extensive indoor and outdoor athletic facilities are available for general use by the university community. Hampton University is hosting HUPCI, a state-of-the-art proton therapy facility. Through its 8 schools, it offers 97 academic programs leading to undergraduate and graduate degrees. The on-campus enrollment at Hampton University for the 2025 Spring semester was approximately 4,240, including 500 graduate students.

Nuclear Physics Research Areas:

Nuclear and High Energy Physics

List of complementary Physics Research Areas:

Optical and Materials Physics

Plasma Physics

of faculty in specific research groups:

9.5

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 1

Postdocs: 3

Graduate Students: 10

Female physicists: 4

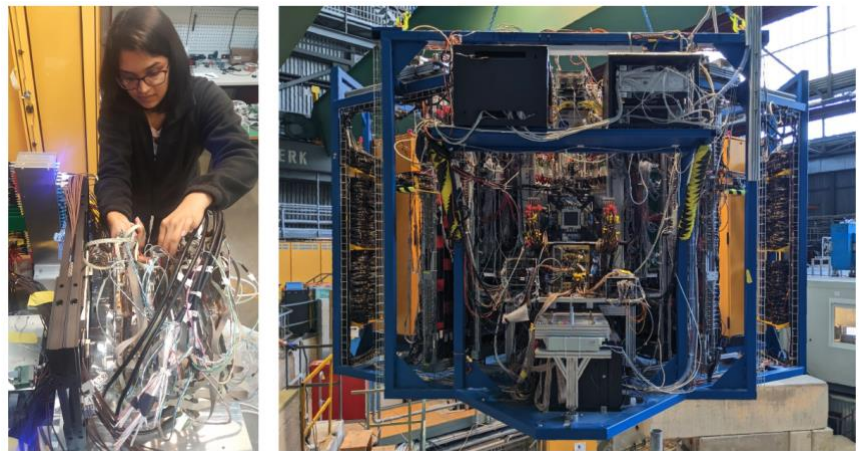
Contact in Nuclear Physics:

Dr. Michael Kohl

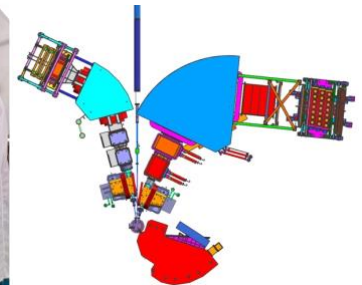
michael.kohl@hampton.edu

Nucleon Structure and Physics Beyond the Standard Model

Dr. Kohl's research group is exploring the electromagnetic structure of nucleons (protons and neutrons) using electron beams at high momentum transfer with the SBS program at Jefferson Lab, while using electron and muon beams at low momentum transfer with the MUSE project at Paul-Scherrer Institute (PSI) in Switzerland to address the proton radius puzzle. The group is also involved in the DarkLight project at TRIUMF in Canada searching for dark photons as mediators for dark matter interactions and other MeV-scale light neutral bosons to explain anomalies in particle physics. For these experiments, Dr. Kohl's group has been developing state-of-the-art Gas Electron Multiplier (GEM) high-resolution radiation detectors, which are radiation-hard and high-rate capable.

**Hypernuclear Structure**

Dr. Tang's research group is exploring the nature of strong interaction by embedding hyperons into the nucleus and measuring spectroscopic properties of hypernuclei. The hypernuclei are electro-produced at Jefferson Lab with the CEBAF electron beam. High-resolution nuclear spectroscopy is achieved with two high-resolution magnetic spectrometers. Insights into hypernuclear properties have impacts in nuclear astrophysics, on properties of neutron stars and element synthesis.



Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

Only RA, Tier 1: \$1500, Tier 2: \$1750, Tier 3: \$2000

What are the opportunities for students to be employed in your department during their first summer on campus?

RA

What is the health-insurance premium for graduate students in your department?

Variable

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

No

Please provide a link to your university's policy as regards family or medical leave for graduate students.

<https://www.hamptonu.edu/gradcoll/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

<https://www.hamptonu.edu/academics/academic-catalog/>

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

A welcoming environment is fostered through strong, supportive interactions between graduate students, postdocs and faculty, as well as between graduate and undergraduate students. These relationships encourage mentorship, collaboration, and a sense of community that values diverse perspectives and shared learning.

Department Website:

<https://physics.indiana.edu/>,
<https://ceem.indiana.edu/>

Graduate Program Website:

[https://physics.indiana.edu/
student-portal/graduate
/doctoral-degrees/index.html](https://physics.indiana.edu/student-portal/graduate/doctoral-degrees/index.html)

Admission Website:

[https://iugraduate2025.cas.
myliaison.com/applicant-
ux/](https://iugraduate2025.cas.myliaison.com/applicant-ux/)

[https://physics.indiana.edu/
graduate/how-to-
apply/index.html](https://physics.indiana.edu/graduate/how-to-apply/index.html)

Application Deadline:

January 1

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Nelson Batalon,
gradphys@iu.edu

Indiana University/Bloomington (IUB) is the flagship campus of the Indiana University system. Founded in 1820, it is located in the rolling hills of southwestern Indiana in the college town of Bloomington, city population 80,000. IUB is widely acknowledged to possess one of the most beautiful college campuses in the US, with many of the buildings constructed of limestone from the local quarries. 48,000 students were enrolled at the Bloomington campus in fall 2024. IUB's undergraduates come from all 50 US states and from 110 other nations. Of the ~10,000 graduate students, 30% come from outside the US. Bloomington is connected by interstate I-69 to the state capital of Indianapolis, and the Indianapolis airport is about one hour away. It is a member of the Big 10 college athletic conference. Its internationally-renowned music program is one of IUB's several distinguished schools and departments.

The IUB Physics Department is located in the recently-renovated Swain Hall West on the edge of the old campus overseeing a small woodland area. The nuclear physics group also makes heavy use of the space and infrastructure of the Multidisciplinary Engineering and Science Hall (MESH), which in turn hosts the IU Center for the Exploration of Energy and Matter (CEEM). CEEM is a national resource for the design and construction of large-scale equipment for use in nuclear, particle, accelerator, and condensed matter physics experiments. Large-scale apparatus and instrumentation has been developed at CEEM over the last several years for several experiments in nuclear/particle/condensed matter physics and materials science conducted at Brookhaven, Jefferson Lab, Oak Ridge, NIST, Los Alamos, Fermilab, Argonne, Michigan State NSCL, TAMU, Florida State, JPARC, CSNS, etc. CEEM has two main floors with lab and construction space on the lower level for machine and instrument making, electronic construction, vacuum technology, detector manufacture, cryogenic technology, a student shop, and a sample preparation area with fume hoods, ovens, and inert atmosphere gloveboxes. Office space and conference rooms are available on the upper floor for academic personnel, administration, and the engineering staff. The presence of researchers in nuclear theory and experiment, accelerator physics, condensed matter physics, and radiation effect studies makes CEEM a rich source of scientific expertise. CEEM possesses a staff of highly skilled professionals and technicians who work on various projects at the lab. Besides 13 faculty, 3 research scientists, 6 post-docs and 25 graduate students, CEEM has about 4 permanent staff members, including personnel with mechanical and electrical engineering expertise. CEEM accommodates several summer students and visitors, including students in the NSF REU program.

Nuclear Physics Research Areas:

Fundamental Symmetries and Neutrinos, Nucleon Structure, Hadron Spectroscopy, Heavy Ions, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

High Energy Physics, Neutrino Physics, Quantum Information Science, AMO Physics

Nuclear People:

Experimental Faculty: 8

Theoretical Faculty: 5

Staff/Research Scientists: 9

Postdoc: 6

Graduate Students: 25

Female physicists: 10

Contact in Nuclear Physics:

Mike Snow, wsnow@iu.edu

Experimental nuclear physics researchers at IU are active in the following experimental collaborations and experiments:

Majorana and LEGEND (neutrinoless double beta decay)

Project 8 (electron neutrino mass)

MOLLER (electron-electron parity violation)

P2 (electron-proton parity violation)

COIN (nucleon structure using electron scattering)

COHERENT (coherent neutrino scattering)

DUNE (neutrino oscillations)

UCNtau (neutron lifetime)

BL3 (neutron lifetime)

STAR (proton spin structure)

Belle II (fragmentation studies)

BES II (hadron spectroscopy)

Jlab Hall D (hadron spectroscopy)

NSR (neutron spin rotation)

NOPTREX (neutron optics parity and time reversal violation)

LHCb (QCD dynamics/hadron spectroscopy)

FRIB (intermediate heavy ion collisions)

Quantum sensing with neutrons

Quantum sensing with neutrinos

Theoretical nuclear physics researchers are active in hadron spectroscopy, heavy ion collisions, and effective field theories for flavor physics. Activities are located at the IU Nuclear Theory Center and the Joint Physics Analysis Center at JLAB

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$24,000 minimum for 10 months in 25-26 academic year (\$28,800 for full year)

Senior RA's typically enjoy a 5-10% bonus, all TA's are paid the same minimum salary

Minimum (10-month) salary has increased \$1,000/year for the last few years.

What are the opportunities for students to be employed in your department during their first summer on campus?

The student is expected to discuss summer research work with specific research groups in the department. Most groups can support students in research work over the summer as an hourly.

What is the health insurance premium for graduate students in your department?

\$4,625/year is 25-26 academic year

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

No (Union formed but not recognized as of 2025)

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://college.indiana.edu/student-portal/graduate-students/leaves-of-absence/index.html>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Discussed on a case-by-case basis in consultation with the graduate program advisor.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We have a diversity and belonging committee that has faculty, staff, and grad students on it, and some student-led groups like GEMWIP (Gender and Minorities and Women in Physics)

Iowa State University

Department of Physics and Astronomy

Ames, Iowa

Department Website:

<https://www.physastro.iastate.edu>

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

None Provided

Contact for graduate admission:

Valerie Arnold-

varnold@iastate.edu

Nuclear Physics Research Areas:

Heavy Ions, Theoretical Nuclear Physics, Nuclear Structure and Nuclear Reactions

List of complementary Physics Research Areas:

Many-Body theory, Quantum Chromodynamics

of faculty in specific research groups:

Nuclear Physics: 5

High Energy Physics: 7

Condensed Matter Physics: 13

Astronomy and Astrophysics: 3

Nuclear People:

Experimental Faculty: 1
Theoretical Faculty: 4
Staff/Research Scientists: 1
Postdoc: 3
Graduate Students: 7
Female physicists: 2

Contact in Nuclear Physics:

Marzia Rosati-
mrosati@iastate.edu for
experimental

Kirill Tuchin-
tuchin@iastate.edu for
theoretical

Nuclear Physics: Our research objective is to explore and understand the physics of Quantum Chromodynamics (QCD). QCD describes the interaction between quarks and gluons, one of nature's fundamental interactions. The study of strong interaction physics is flourishing owing to its fundamental significance, major advances in theoretical and experimental methods, and its pivotal role in understanding the early universe. The rich physics of QCD ranges from investigating the bulk properties of the deconfined Quark-Gluon Plasma (QGP), to accurately determining the spin structure of the nucleon and the saturated fields of gluonic matter, to developing a first-principles understanding of the structure of nuclei. The exploration of this exciting QCD physics requires continuing developments in both experiment and theory.

Our experimental program is focused on the investigation of the bulk properties of QCD and the spin structure of the nucleon using the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory. RHIC is a unique facility dedicated to the study of such phenomena. In the last two decades we have used photons, electrons, muons and hadrons produced in head-on collisions of relativistic heavy ions as probes of the QGP. Our program is aimed at the future Electron-Ion Collider (EIC) under construction.

Our Nuclear Theory program has major efforts investigating properties of nuclear matter at high energies and temperatures, dense QCD and lattice field theory, ab initio bound state phenomena in QCD, and fundamental nuclear structure and nuclear reactions by developing/using first-principles approaches. The close working relationships between theorists and experimentalists in the study of fundamental QCD represents a notable strength of the ISU Nuclear Physics Program



Kent State University

Department of Physics

Kent, Ohio

Department Website:

<https://www.kent.edu/physics>

Graduate Program

Website:

<https://www.kent.edu/physics/graduate-study-phd-physics-program>

Admission Website:

<https://www.kent.edu/physics/prospective-physics-graduate-students>

Application Deadline:

February 1

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5 years

Contact for graduate admission:

Hamza Balci

hbalci@kent.edu

(Graduate Coordinator)

Located in Kent, Ohio (population 30,000), the Kent Campus is ideally situated in northeastern Ohio, amid rolling terrain dotted by spring-fed lakes. Yet big city enthusiasts are only a short drive from four major urban centers, with airports offering access to the nation and the world. The beautifully landscaped Kent Campus is composed of 866 acres. There are 119 buildings on the Kent Campus, with a 291-acre airport and an 18-hole golf course nearby. The university's land holdings include thousands of acres of a nearby wildlife refuge, as well as marsh and bog areas preserved by the university as learning laboratories and resources for the future. The focal point of the campus is the University Center with its spacious Risman Plaza. On one side is the 12-story, open-stack library which houses more than 2.6 million volumes, a complete learning resource center and the university executive offices. On the other side is the sprawling Kent Student Center which houses dining facilities, meeting and conference rooms, recreation areas, a ballroom and bookstore.

The graduate physics programs at Kent State University offer solidly based fundamental course work and the opportunity to do experimental or theoretical research with first-class scientists in Biological Physics, Nuclear and High Energy Physics, Soft Matter Physics, and Quantum Materials. Our research groups enjoy international recognition in front-line areas of physics, we have excellent experimental and computational facilities, and we interact extensively with other strong research centers such as National Labs. Our program offers excellent flexibility to choose among research topics spanning the full range from fundamental theoretical work to highly application-oriented experimental physics.

As a mid-size department, our program offers an excellent balance of a diverse choice of research options with a high degree of personal attention and individual mentoring in research. We strive to maintain a rigorous, yet supportive environment to ensure our students thrive in coursework, research, and within our community. We have an excellent track record of employment in both academic research and industry employment after graduation. Our PhD students receive competitive stipends and full tuition waivers which allows them to enjoy a good lifestyle in Northeast Ohio for which the cost of living is very reasonable. Our departmental culture is one of openness and camaraderie. We get together (outside of collaborating in our own research) with events such as an annual Fall picnic, end of semester winter party, weekly colloquium, regular Nuclear Physics seminars and journal clubs, and monthly luncheons with faculty and graduate students. Graduate students participate in an active Physics Graduate Student Association club, intramural athletic leagues and sporting activities at the KSU Wellness Center. Science outreach opportunities include judging in local science fairs as well as serving as scientific mentors to high school and middle school participants.

Nuclear Physics Research Areas:

Heavy Ions, High Energy Nuclear Physics, Low Energy Nuclear Physics, Nuclear Astrophysics, High Energy Astrophysics, Theoretical Nuclear Physics, Lattice QCD

of faculty in specific research groups:

Heavy Ions and High Energy Nuclear Physics: 3

Low Energy Nuclear Physics: 2

Nuclear Astrophysics and High Energy Astrophysics: 1

Theoretical Nuclear Physics and Lattice QCD: 1

**Nuclear People:**

Experimental Faculty: 5

Theoretical Faculty: 2

Staff/Research Scientists:

Postdoc: 5

Graduate Students: 10

Female physicists: 8

Contact in Nuclear Physics:

hbalci@kent.edu

The Kent State University Center for Nuclear Research (CNR) was established in 1988 by the state of Ohio to support, enhance, and promote nuclear physics in the KSU Physics Department. CNR faculty includes theorists and experimentalists doing research in the areas of low and high-energy nuclear physics and astrophysics.

Today, research at CNR includes theory and experiment within topics that cover high and low energy nuclear physics, as well as nuclear astrophysics. Two of our experimentalists work on physics of Quark-Gluon Plasma (QGP) in heavy-ion collisions at the Brookhaven National Laboratory as members of the STAR collaboration. They recently joined the LHCb Collaboration at CERN's Large Hadron Collider (LHC) in Europe, while also contributing to the preparations of EPIC, the new detector for the future Electron-Ion Collider (EIC) to study the gluon interactions and structure inside nucleons and nuclei. Two of our experimentalists work at Jefferson Lab on studies of the elastic form factors of light nuclei, and on the inelastic structure functions of the proton and the neutron. From the theory side, CNR faculty works on QCD, trying to understand how quarks and gluons are confined inside hadrons. This includes solving QCD numerically on a lattice and translating the observations of neutron stars and their mergers into knowledge related to dense matter and exotic states of matter. Theory collaborations include HEFTY, MUSES, NP3M, and FRIB Theory Alliance.

Veronica Dexheimer

<https://www.kent.edu/physics/profile/veronica-dexheimer>

Andrew Hanlon

<https://www.kent.edu/physics/profile/andrew-hanlon>

Mina Katramatou

<https://www.kent.edu/physics/profile/mina-katramatou>

Declan Keane

<https://www.kent.edu/physics/profile/declan-keane>

Makis Petratos

<https://www.kent.edu/physics/profile/gerassimos-makis-petratos>

Joseph Vanfossen

<https://www.kent.edu/tusc/joseph-vanfossen-jr>

Zhangbu Xu

<https://www.kent.edu/profile/zhangbu-xu>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.
9-month = \$20,587.50 / No difference between TA and RA.

What are the opportunities for students to be employed in your department during their first summer on campus?
Research and Teaching Assistant

What is the health insurance premium for graduate students in your department?
Varies between new and returning students, but the department covers 70% of the total premium.

Does your department provide a tuition waiver for first-year students?
Yes

Are graduate students unionized at your school?
No

Please provide a link to your university's policy regarding family or medical leave for graduate students.
<https://www.kent.edu/physics/information-and-policy-guide-graduate-students-physics>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?
Yes

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?
We have weekly coffee socials, monthly luncheon and events to celebrate holidays (Halloween, Thanksgiving, December holiday, summer picnic) and other activities organized by our Physics Graduate Student Association.

Louisiana Tech University

Physics Department

Ruston, Louisiana

Department Website:

<https://coes.latech.edu/undergraduate-programs/physics/>

Graduate Program Website:

<https://coes.latech.edu/graduate-programs/engineering-phd/> listed under Engineering Physics

Admission Website:

<https://coes.latech.edu/graduate-programs/>
<https://www.latech.edu/study-with-us/graduate/admission-apply/>

Application Deadline:

<https://www.latech.edu/study-with-us/graduate/admission-apply/>

General GRE required?

Yes, but can be waived case by case

Physics GRE required?

No

Median time to PhD:

5 years

Contact for graduate admission:

Dr. Rakitha Beminiwattha
<rakithab@latech.edu>

Louisiana Tech University is a public research university located in Ruston, Louisiana and part of the University of Louisiana System (ULS). Currently the university is classified under R2: Doctoral Universities – High research activity. There are 11,427 students including 10,401 undergraduate and 1,026 graduate students at Louisiana Tech University for the academic year 2023-2024.

The physics program at Louisiana Tech provides students with fundamental knowledge of the laws of nature, from the sub-nanoscopic world of nuclear and quantum physics to the universe as a whole. Undergraduate students can pursue a double degree in physics and electrical engineering. Students have an excellent opportunity to gain research experience by working with physics faculty with focus on particle and nuclear physics, modeling, or biophysics. There are several ongoing research projects, each a collaborative effort involving top research laboratories at the national and international levels. The program also offers medical physics emphasis for students with interest in the health field.

There are three nuclear physics faculty at Louisiana Tech and they are currently having NSF funded research programs at Jefferson Lab and MAMI accelerator facility.

Nuclear Physics Research Areas:

Electroweak Fundamental Symmetries, Nuclear Structure (EMC effect, strange form factor, nuclear modification effects)

List of complementary Physics Research Areas:

Medical Physics and Astrophysics

of faculty in specific research groups:

Single research group

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 0

Staff/Research Scientists: 1

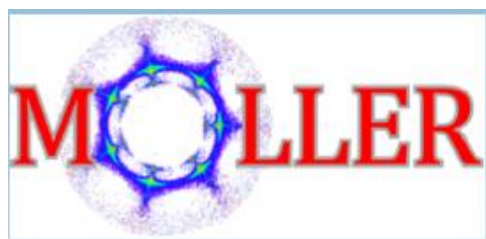
Postdoc: 0

Graduate Students: 4

Female physicists: 2

Contact in Nuclear Physics:

Dr. Rakitha Beminiwattha

rakithab@latech.edu

MOLLER experiment logo



SoLID experiment logo



Jefferson Lab logo

The Nuclear physics group at Louisiana Tech University is currently funded by National Science Foundation. We are actively involved in three experiments at Jefferson lab and one experiment at MESA facility at Mainz, Germany. The Jefferson Lab experiments are MOLLER, SoLID, and Strange Form Fator measurements at high Q². We are currently conducting research activities in following areas.

1. Design, optimize, build, and commission scintillator- and calorimeter-based detector systems for parity-violating electron scattering experiments,
2. Addressing theoretical uncertainties in flavor dependence of the EMC effect in parity-violating deep inelastic electron-quark scattering in Calcium-48, and
3. The theoretical interpretation of the experimental results and publications for parity violating and parity conserving asymmetries in electron scattering from nuclear targets.

Here is list of ongoing research projects:

1. Design and build several prototype scintillators, and assemble a hadron calorimeter,
2. Testing novel microchannel plate PMT as a fast-timing (sub-ns) scintillator-based trigger for multiple Jefferson Lab experiments,
3. Commission several detector systems at Jefferson Lab and test using electron beam,
4. Design and optimize Cerenkov-light-based pion detector using simulations,
5. Design detector system for an electron polarimeter,
6. Estimate next-to-leading order (NLO) effects on parity violating deep inelastic scattering, and
7. Data analysis and publication of the parity-conserving transverse asymmetry extraction in the $N \rightarrow \Delta$ transition utilizing auxiliary data sets of previously completed experiments.

NSF public links to our proposals:

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2012518&HistoricalAwards=false

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2012518&HistoricalAwards=false

https://www.nsf.gov/awardsearch/showAward?AWD_ID=2111066&HistoricalAwards=false

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

For students in PhD programs TAs are paid \$1750/month for 9-months. TA salary increase to \$2000 a month for one year once they pass oral and written qualifier. For students in MS TAs are paid \$500/monthly for 10 hours a week and \$1000 monthly for 20 hours a week. RAs are paid for the \$1750/month for 12 months but research grant funded RAs can receive higher salary.

What are the opportunities for students to be employed in your department during their first summer on campus?

There are limited A positions available in the summer. Student are allowed to work in various administrative jobs in College of Engineering and Science

What is the health insurance premium for graduate students in your department?

\$304.55 quarterly.

Does your department provide a tuition waiver for first-year students?

Yes tuition waiver is applied only for research assistantships. TAs are given out of state tuition waiver

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Currently, the university is in the process of updating graduate student policies. We will provide accurate information later.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No explicit reduction, but courses are determined by discussing with the academic advisor

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We have many student lead groups in support of minority groups.



Louisiana State University

Physics & Astronomy Department

Baton Rouge, Louisiana

Department Website:

www.lsu.edu/physics

Graduate Program Website:

<https://lsu.edu/physics/graduate-programs/physics-astronomy/guide.php>

Admission Website:

<https://www.lsu.edu/graduate-school/admissions/apply.php>

Application Deadline:

January 1 Fall admission
October 15 Spring admission

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

~6 years

Contact for graduate admission:

pagradadmit@lsu.edu

Louisiana State University is located in Baton Rouge, the state capital of Louisiana. Founded in 1860, LSU is the flagship institution of the state of Louisiana and is one of only 30 universities nationwide holding land, sea, and space-grant status.

LSU has a diverse student body consisting of more than 30,000 students including over 1,700 international students and 6,000 graduate students. With over 1,500 faculty members and a staff of more than 5,000, LSU is one of the most competitive research institutions in the southern United States.

The Department of Physics and Astronomy at LSU has over 50 faculty members with a variety of research interests and collaborations including LIGO and the Mary Bird Perkins Cancer Center.

Nuclear physics research areas

Nuclear structure, nuclear astrophysics, neutrino physics, nuclear theory, computation physics, particle physics

Other departmental research areas

Observational astronomy, condensed matter, material physics, AMO and quantum physics, gravitational physics, medical physics, theoretical general relativity

Nuclear Physics Research Areas:

Nuclear Astrophysics, Nuclear Structure, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

Medical Physics, Particle Physics, Astrophysics, Quantum Information

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 3

Postdoc: ~2

Graduate Students:

~15

Female physicists: ~8

Contact in Nuclear Physics:

deibel@lsu.edu

There are research opportunities in both experimental and theoretical nuclear physics at LSU. The experimental group consists of three faculty members: Jeffrey Blackmon, Catherine Deibel, and Scott Marley. There are two main focuses to their work: (1) reaction studies of interest to nuclear astrophysics and nuclear structure and (2) decay spectroscopy studies of interest to nuclear astrophysics and other applications. The experimental program is centered around measurements at Argonne National Laboratory, Florida State University, and the Facility for Rare Isotope Beams, with additional experimental work completed at other laboratories around the US and abroad. In addition to the experimental data gathered at outside accelerator facilities, the experimental group has long-standing program of detector development that supports this experimental work. On the nuclear astrophysics side, there is a focus on studying reactions of interest to hydrogen- and helium-rich nucleosynthesis, which occurs in stellar explosions such as classical novae, X-ray bursts, and supernovae, using both indirect techniques and measuring direct reaction cross sections when radioactive ion beams of sufficient intensities are available. In addition to reaction studies, there is a robust program of decay spectroscopy of neutron-rich isotopes of interest to the r-process with a wide variety of spectrometers. Such decay studies are also pursued to understand the basic nuclear structure of these neutron-rich isotopes and contribute to applied areas such as nuclear energy. Finally, there is a collaboration between the experimental and theoretical groups focused on studying light nuclei ($A < 10$) via transfer reactions to better understand basic nuclear structure and the models describing such nuclei.

The nuclear theory group at LSU includes three faculty members. Profs. Kristina Launey and Alexis Mercenne are actively advancing microscopic approaches to nuclear reactions, grounded in the fundamental physics of quantum chromodynamics. Using some of the world's most powerful supercomputers and leveraging near-exact symmetries observed across the nuclear chart, the group performs large-scale simulations of the quantum many-body problem in atomic nuclei. Research applications range from the study of exotic nuclei to nuclear reactions relevant to astrophysics. In addition to these efforts, the group is exploring the use of physics-informed neural networks in nuclear physics and developing quantum algorithms to tackle frontier problems with the aid of emerging quantum computing technologies.

Additionally, Dr. Jerry Draayer during his long career in advancing and promoting nuclear physics has successfully mentored 23 PhD students while establishing a multinational collaboration around the globe. His vast network spanning three continents includes scientists and industry professionals who enjoy various prestigious positions in academia and the private sector. Notable mentions are, the Lawrence Livermore National Laboratory (LLNL), Institute for Non-perturbative Physics in China, the HUN-REN Institute for Nuclear Physics (ATOMKI) in Hungary, and the Jefferson National Laboratory (JLab). The latter was managed under Southern University Research Association, which Dr. Draayer directed as the president and CEO for nearly 20 years. Recently, Dr. Draayer and his former PhD student, Dr. David Kekejian, have founded Quantum CodeX (QCX) (quantum-codex.com), a start-up comprised of dedicated worldwide scientists, including his current graduate student, Phong Dang. The flagship mission is to build a 21st century Next-Gen Symmetry Adapted Model (SAM) Code for probing the structure of atomic nuclei, one that promises to revolutionize our understanding of the subatomic world and inform future energy applications. SAM is being constructed as an interactive framework for carrying out extensive nuclear structure calculations, exceeding the limits of its predecessor, the Symmetry Adapted No-Core Shell Model, which was also developed under Dr. Draayer's leadership in the last two decades. By combining recent advances in group-theoretical methods and modern computational tools – high-performance algebraic libraries, AI-driven algorithm and supercomputing – SAM leverages nuclear symmetries to their fullest potential. Furthermore, SAM is user-friendly with direct access to advanced calculations, data storage, visualization and maintenance. Our mission is to eliminate code-management barriers, so that subscribers can devote their valuable time and resources to answering fundamental questions about the universe.

Further information regarding his research could be found here: <https://www.lsu.edu/physics/people/faculty/draayer.php>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

TA offers are currently \$32,000/year; RA stipends can vary by research group, but are typically at the TA level or higher and have the lower limit of \$30,667 set by the University.

What are the opportunities for students to be employed in your department during their first summer on campus?

All students receive funding for their first summer (i.e. the summer after the first academic year). There are also opportunities to begin research the summer before starting courses.

What is the health insurance premium for graduate students in your department?

Graduate students currently pay \$720.75 annually for the LSU health-insurance program. Domestic students can request a waiver to opt-out with proof of other acceptable insurance.

Does your department provide a tuition waiver for first-year students?

All students of any year that are on assistantships receive tuition waivers and assistantships are provided to all admitted students.

Are graduate students unionized at your school?

No, but our department graduate students have their own Graduate Student Organization (<https://physgradorg.wixsite.com/mysite>).

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Unfortunately, the university only grants parental leave to "leave-earning employees", which graduate students are not. However, we work with all of our students on work/life balance including adjusting to any major life events.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Credit transfer is allowed and considered on a case-by-case basis. If MS degree courses are equivalent to coursework in the PhD program, up to 50% of required course work credits can be transfer credits.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

There is a standing departmental committee on Innovation and Engagement, which includes graduate student representation, with the following mission: "The P&A Innovation and Engagement Committee is charged with (i) monitoring the climate in the P&A department, (ii) leading initiatives to improve it, and (iii) keeping up-to-date related resources." There is an annual climate survey and the department has an APS IDEA Team.

Massachusetts Institute of Technology

Department of Physics
Cambridge, Massachusetts



Department Website:

<https://web.mit.edu/lns>
<https://web.mit.edu/physics>

Graduate Program Website:

None Provided

Admission Website:

<https://gradapply.mit.edu/physics>

Application Deadline:

December 15

Contact for graduate admission:

physics-grad@mit.edu

The Boston metropolitan area hosts 45 colleges and universities with over 234,000 students, providing an extraordinarily rich intellectual and cultural environment.

List of complementary Physics Research Areas:

Astronomy and Astrophysics, Atomic Physics, Biophysics, Condensed Matter Physics, Plasma Physics



Nuclear People:

Experimental Faculty: 16

Theoretical Faculty: 16

Staff/Research Scientists:

Postdoc:

Graduate Students: 100

Female physicists: 6

At MIT's Laboratory for Nuclear Science, we work to understand the structures and interactions of the fundamental constituents of matter. MIT Physics Ph.D. students form the backbone of current LNS research activities worldwide. They carry out research in nuclear and particle physics, subfields that are seamlessly integrated within LNS. Their work is done with large experimental equipment located both at and away from MIT, sophisticated theoretical calculations, and state-of-the-art computers. All of this work is done under the guidance of LNS faculty and highly skilled engineering and technical staff.

LNS students are working to determine the mass of the electron neutrino and to carefully measure neutrino properties, as well as participating in an experiment to determine whether a neutrino is its own antiparticle. Neutrino efforts also include the development of novel high-intensity accelerators to produce neutrinos, and using neutrinos to find violations of the Standard Model.

Using the CMS detector, LNS students explore the phases of systems of quarks and gluons by creating droplets of the hottest matter anywhere in the universe (since it was a few microseconds old) in ultra-relativistic heavy ion collisions at the Large Hadron Collider at CERN in Geneva. Other students use the CMS detector to study proton-proton collisions to measure the properties of the Higgs boson and search for dark matter. Also at the LHC, students use the LHCb detector to study particles containing charm and beauty quarks.

LNS students are working to understand how the light-quark meson spectrum, and basic properties of the proton (e.g. mass and spin), arise from quarks and gluons. This research involves high-energy scattering experiments at the Thomas Jefferson National Accelerator Facility and at other accelerators, theoretical calculations, and large scale computation using the technique of lattice QCD. Experiments at Jefferson Lab and elsewhere also study short-range correlations between the neutrons and protons in nuclei. A new research effort is underway to study the structure and properties of nuclei using atomic and molecular physics techniques. LNS students are developing new theoretical approaches, built upon techniques developed in string theory, to understanding the quark-gluon plasma. They share offices with students applying string theory to questions in quantum gravity and cosmology, with students analyzing jets in proton-proton or heavy ion collisions, with students seeking to predict what Nature will serve at the LHC in addition to the Higgs, and with students devising algorithms for future quantum computers.

Some LNS students are developing ingenious detectors to look for direct evidence of the dark matter that makes up 85% of the mass of the universe; others are analyzing data from the Alpha Magnetic Spectrometer that has been operating on the International Space Station since 2011. In particular, they are looking for evidence of dark matter particles annihilating in distant space.



Michigan State University- FRIB

Department of Physics and Astronomy

East Lansing, Michigan

Department Website:

<https://pa.msu.edu> &
<https://frib.msu.edu>

Graduate Program Website:

<https://pa.msu.edu/graduate-program/index.aspx>

Admission Website:

<https://pa.msu.edu/graduate-program/prospective-grad-students/index.aspx>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5.5 years

Contact for graduate admission:

zegers@frib.msu.edu
pa.gradchair@msu.edu

The Facility for Rare Isotope Beams (FRIB), conveniently located next to the physics and chemistry departments, is in the heart of the Michigan State University (MSU) campus. Graduate students can easily navigate between course work and their research work in a world-unique nuclear physics research facility. FRIB is operated by MSU as a user facility for the U.S. Department of Energy Office of Science (DOE-SC), with financial support from and furthering the mission of the DOE-SC Office of Nuclear Physics.

MSU has more than 50,000 students, of which about 20% pursue graduate and professional degrees. The physics graduate program has over 200 graduate students, more than half of whom pursue research at FRIB, where they pursue research together with graduate students in chemistry and engineering. Graduate students come from all parts of the U.S. and beyond. Faculty-led research groups include graduate students, postdoctoral researchers and undergraduate students pursuing research. Graduate students have a chance to gain hands-on experience in the many different facets of forefront research. They play important roles in scientific discovery and developing new scientific techniques. They also benefit from the expertise of staff and the facilities available at FRIB to further their research and careers. We encourage students to develop a broad set of skills that are beneficial for a wide range of careers after graduation. Graduate students at FRIB participate in several Campus, Department, and FRIB student organizations and clubs, and participate in public engagement events. When not participating in groundbreaking research at FRIB, students can find plenty of opportunities for fun and friendship at Michigan State University and in the surrounding community. FRIB graduate students also enjoy activities, like physics choir, or exploring the arts and culture in the Lansing region. They can find plenty of opportunities to spend time with fellow scientists and graduate students, building friendships that will last a lifetime.

The Lansing region (<https://www.lansing.org/>) is a nice place to live with a relatively low cost of living. Home to MSU and the state capital, the region offers many cultural, sporting, and outdoor activities. Beyond Lansing, you're always only a short drive away from a Great Lake and other recreational, dining, and cultural opportunities Michigan offers. Larger metropolitan areas can be reached by car, bus, or train: Grand Rapids and Detroit are each approximately an hour drive, Chicago is approximately a four-hour drive or train ride, and Toronto is approximately a five-hour drive.

Nuclear Physics Research Areas:

Accelerator Physics and Engineering, Experimental Nuclear Astrophysics, Experimental Nuclear Physics, Theoretical Astrophysics and Nuclear Astrophysics, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

Experimental Atomic Physics, Nuclear Chemistry, Radiochemistry

Nuclear People:

Experimental Faculty: 32

Theoretical Faculty: 15

Accelerator Physics: 7

Staff/Research Scientists: Not Reported

Postdoc: 26

Graduate Students: 137

Female physicists: 54

Contact in Nuclear Physics:GradSchool@frib.msu.edu

Graduate student researchers at the Facility for Rare Isotope Beams (FRIB) receive personalized instruction and support from expert faculty to conduct unique research. They work alongside fellow scientists using cutting-edge technology to further scientific research that benefits society.

The Facility for Rare Isotope Beams (FRIB) is a world-class U.S. Department of Energy Office of Science (DOE-SC) user facility located in a university setting, affording students unique training opportunities. FRIB at Michigan State University (MSU) is the only accelerator-based UDOE-SC user facility on a university campus for students studying accelerator science, cryogenic engineering, and radiochemistry. Training of the next generation of scientists at a world-unique campus-based DOE-SC user facility is a top priority at FRIB. As an MSU graduate student at FRIB, you'll receive an individualized curriculum and conduct unique, hands-on research in nuclear physics, nuclear astrophysics, nuclear chemistry, accelerator physics, or engineering. You will make impactful contributions to scientific discovery and work alongside world-renowned faculty mentors conducting hands-on research using the world's most powerful heavy-ion accelerator as well as state-of-the-art computers and specially designed equipment to make novel discoveries with applications in medicine, national security, and more. Present your findings at national and international conferences to build your network and expand your career options.

In nuclear physics and astrophysics (theory and experimental) students conduct leading-edge research to map the nuclear landscape, to understand the forces that bind nucleons into nuclei, to answer questions about the astrophysical origins of nuclear matter, and to address societal needs related to nuclear science and technology.

In accelerator physics and engineering students work with world-class instruments, systems, and experts at FRIB—a world-unique opportunity on a university campus—to pursue an in-demand career. Benefit from short- and long-term training and collaboration opportunities at partner U.S. Department of Energy national laboratories.

In nuclear chemistry and radiochemistry students probe how nuclear matter assembles itself in systems from nuclei to neutron stars, understand neutron reactions important for homeland security and astrophysics, and provide applications for society, including in medicine and industry.

At FRIB, students and faculty share a common interest—to contribute to society through scientific discovery. To increase participation in solving science problems, FRIB engages and supports students, faculty, and researchers from a wide range of backgrounds from all over the world to study and work in a respectful, collaborative, and welcoming environment.

FRIB websites for prospective graduate students:

<https://frib.msu.edu/for-students>

Faculty profiles: <https://frib.msu.edu/for-students/faculty>

MSU Department of Physics and Astronomy website for prospective graduate students: <https://pa.msu.edu/graduate-program/prospective-grad-students/index.aspx>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

We do not have a nine-month stipend. Bi-weekly stipends in all semesters (including summer) are the same. 2024/2025 biweekly stipend for junior students is \$1279 (\$33254 annually) and students who have reached candidacy it is \$1459 (\$37934 annually)

What are the opportunities for students to be employed in your department during their first summer on campus?

Students are offered to join FRIB and be supported for doing research during the summer prior to starting in the program. All students are employed as assistants (teaching or research) and/or have fellowships during the summer at the end of the first year.

What is the health insurance premium for graduate students in your department?

Health insurance is covered as part of the assistantship. It is \$3316 per year

Does your department provide a tuition waiver for first-year students?

Yes, also true for more senior students

Are graduate students unionized at your school?

The Teaching Assistants are. Research assistants are not.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Long-Term Medical Leave: <https://ossa.msu.edu/medical-leave>

Article 18 of <https://hr.msu.edu/contracts/documents/geu-2024-2028.pdf> for Teaching Assistants

Students can also take up to two semesters of general leave and return to the program without having to reapply.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No, but our physics Ph.D. program has no course requirements (except for research credits), only subject exam requirements, so students can in principle take these exams without taking the corresponding courses, although they rarely do. Students receive individualized mentoring for selecting courses, so previous coursework can be considered as part of that process.

For the MS degree, which most students obtain on their way to a PhD, there is a credit requirement, and up to 9 credits that have not been used towards obtaining a degree previously can be transferred.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

FRIB's success as a world-leading rare isotope laboratory relies on having the brightest minds doing their best work in a welcoming environment. Our unique, powerful heavy-ion accelerator promises groundbreaking discoveries, but it's the people behind the science who make the difference. To achieve this, FRIB is committed to fostering a respectful, safe space where everyone is valued. Together, scientific users, students, and employees contribute to society through discovery in an environment that encourages excellence and participation.

Departmental and FRIB advisory committees focused on issues related to workforce development and supporting a welcoming environment

Academic support through summer tutorials and helpdesk for graduate students

Wellness support, including training sessions and individualized support by licensed therapists

Departmental and FRIB Graduate student organizations receive support from FRIB and the Department

Regular reviews/surveys at the Department and FRIB, including external

Participation in various national programs, e.g. APS IDEA, APS Bridge Program



Mississippi State University

Department of Physics and Astronomy
Starkville, Mississippi

Department Website:

www.physics.msstate.edu

Graduate Program Website:

<https://www.physics.msstate.edu/graduate/required-courses>

Application Deadline:

An interested international student should try to complete the application by February 1 for Fall admission. The deadline for domestic students is July 1.

General GRE required?

No (Recommended)

Physics GRE required?

No (Recommended)

Median time to PhD:

5 years

Contact for graduate admission:

Dr. Henk Arnoldus-
hfa1@msstate.edu

Mississippi State University (MSU) is a major land-grant research institution located in the heart of Starkville, Mississippi, a vibrant and welcoming college town that was named 2025 Best Small Town in the South by USA Today. The MSU campus blends historic charm with state-of-the-art facilities, offering a dynamic academic environment surrounded by the rich culture and natural beauty of the Deep South. Hilbun Hall, home to the Department of Physics and Astronomy, is centrally located on campus and provides easy access to modern classrooms, laboratories, observatories, and collaborative learning spaces.

The university community is global in scope, with students of all genders and backgrounds coming from across the United States and around the world. Whether you are drawn to the energy of SEC athletics, the warmth of Southern hospitality, or opportunities to explore local history and nature, MSU offers a supportive and engaging environment to pursue graduate studies.

The Department of Physics and Astronomy is home to 19 research faculty and 6 teaching faculty, providing a breadth of research and teaching opportunities for graduate students. Research spans a wide range of fields including astronomy, atomic, molecular, optical, and plasma physics (AMO/Plasma), computational physics, condensed matter physics, and nuclear physics. The nuclear physics program is home to multiple faculty engaged in both theoretical and experimental research on nuclear structure, fundamental symmetries, nucleon structure, and nuclear astrophysics.

Graduate students play an integral role in the department's mission, with many supported through research and teaching assistantships. Students interested in gaining teaching experience are encouraged to take advantage of instructional opportunities in undergraduate labs and recitations. The department also houses the High-Performance Computing Collaboratory (HPC²) and the Howell Observatory, giving students access to powerful tools and facilities to support their research. With approximately 50 graduate students from a dozen countries and states, the department fosters a diverse, collaborative, and mentorship-driven community aimed at producing the next generation of scientists and educators.

Nuclear Physics Research Areas:

Low-Energy Nuclear Physics, Experimental Medium and High Energy Nuclear Physics, and Nuclear Theory

List of complementary Physics Research Area:

Astrophysics

of faculty in specific research groups:

2

Nuclear People:

Experimental Faculty: 7

Theoretical Faculty: 2
Staff/Research
Scientists: 0

Postdoc: 5

Graduate Students: 26

Female physicists: 5

**Contact in Nuclear
Physics:**

Dr. Ben Crider-
bpc135@msstate.edu

Nuclear Physics-specific information:

<https://www.physics.msstate.edu/research/nuclear-physics>

Research Collaborations: BNL, Fermilab, FRIB, Jefferson Lab, LANL, LLNL, ORNL, UKAL, FSU, HIGS/TUNL.

Research Facilities: High Performance Computational Collaboratory, Detector, DAQ and Target Lab.

Proximity to / relationship with national laboratories: MSState has close ties with several national laboratories across the country. Active research programs are currently maintained with BNL, Fermilab, JLab, FRIB, LANL, LLNL, and ORNL. In many of these collaborative efforts, students are stationed at the laboratory upon finishing their coursework at MSState to carry out their research project towards their Ph.D. degree. This hands-on experience, coupled with the mentorship provided by MSState faculty, enable a hands-on experience on exciting nuclear physics projects happening all across the US. The MSState nuclear theory group collaborates with nuclear theorists across the world, including many of nuclear theory groups based in the US.

Faculty profiles / websites:

<https://www.physics.msstate.edu/directory?keys=&division=14&class=All&discipline=All>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

TA's receive a stipend of \$15,500.00 for nine months

RA's receive a stipend normally above the TA stipend, depending on the funding source.

What are the opportunities for students to be employed in your department during their first summer on campus?

We have a Physics Summer Camp for Students with ASD where we can pay the graduate students who are selected to be counselors (typically ~4 per year) a stipend to help for a week that is far above the average pay

What is the health insurance premium for graduate students in your department?

The students help teach lab sections for summer courses.

The total health insurance subsidy is \$400 per academic year; \$200 for the fall semester and \$200 for the spring/summer semester.

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Graduate assistants are not eligible for vacation, sick leave or unemployment compensation. Graduate Assistants are entitled to the same university holidays as faculty and staff unless other arrangements are agreed upon in the department.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No information provided

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We have several student-led groups, such as the PGSA (Physics Graduate Student Association), SPS (Society of Physics Students) and the MSU Astronomy Club.



New Mexico State University

Department of Physics

Las Cruces, NM

Department Website:

phys.nmsu.edu

Graduate Program Website:

phys.nmsu.edu/grad_phys.html

Admission Website:

gradschool.nmsu.edu

Application Deadline:

Feb. 15 for fall admission, Nov. 1 (Sep. 1 international) for spring admission

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

physics-gradinfo@nmsu.edu

New Mexico State University is ranked near the top in the country for federal research-and-development funding in science and engineering among minority-serving institutions. The Physics Department has an active and expanding, federally funded, research program, on-campus and at several national labs: Los Alamos, Fermilab, Brookhaven, Sandia, and Jefferson Lab. We collaborate with hundreds of researchers from many universities and research institutions in the US and around the world. Five new faculty members were added within the last five years, with arrangements that allow expanded research time and opportunities; they are initiating exciting new directions in particle and nuclear physics, and in condensed matter physics. The relatively small size of the NMSU graduate physics program creates an intimate atmosphere where students can receive personal attention by the entire faculty.

Las Cruces is a small, quiet, and very affordable city in the southern part of the state. Many students who choose not to live on campus find housing within easy walking distance from the department, which is located at the edge of the campus. Various amenities and shopping areas are close by. A big city, El Paso, is also only 45 miles away on Interstate 10, providing additional cultural and entertainment options.

NMSU is ranked as a Carnegie R1 Doctoral University – Very high research activity. The Department of Physics currently has 12 permanent faculty members and 40 graduate students. It has work force development programs that link students with open positions at nearby DOE and DOD laboratories.

Nuclear Physics Research Areas:

Fundamental properties of nucleons and nuclear structure. Hot and cold QCD.

Complementary Physics Research Area:

Physics Education

of faculty in specific research groups:

3 experiment, 3 theory

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 3

Staff/Research Scientists: 0

Postdocs: 4

Graduate Students: 21

Female physicists: 6

Contact in Nuclear Physics:

Michael Engelhardt

engel@nmsu.edu

The experimental nuclear physics research at NMSU is focused on studying the fundamental properties and structure of nucleons and light nuclei, including how the nucleon's properties are modified in nuclear matter. Our research utilizes major national and international accelerator facilities such as the Thomas Jefferson National Accelerator Facility in Virginia or the Paul Scherrer Institute in Switzerland, as well as in-state laboratories such as the Los Alamos National Laboratory.

Dr. Duran's group is interested in studying non-trivial aspects of nuclear structure such as the EMC effect and short-range nuclear behavior along with nucleon spin structure via electromagnetic probes.

Dr. Paolone's group explores the polarizability of nucleons along with gluon distributions and gravitational form factors of Helium-4 nuclei, and leads R&D and production efforts for the next generation of Cherenkov particle detectors.

Dr. Ruth's group studies spin structure of the nucleon and deuterium nucleus and is a key contributor to developing new detectors for the EIC, utilizing machine learning and AI techniques.

The theoretical nuclear physics research at NMSU explores the dynamics of quarks and gluons and how they produce the emergent properties of the hadrons we measure. The group works with national laboratories, including Brookhaven National Lab and Los Alamos National Lab, as well as national and international collaborations such as the EXCLAIM collaboration and the EIC users' group.

Dr. Engelhardt's research employs lattice QCD techniques to study the internal composition of the nucleon, as well as providing hadronic matrix elements relevant for the analysis of fundamental interactions and searches for physics beyond the Standard Model, with a particular focus on quark and gluon transverse dynamics that also play an important role in resolving the proton spin puzzle.

Dr. Sievert's research in hot QCD examines jet quenching and transverse drift as probes of the quark-gluon plasma, while their research in cold QCD studies the internal structure of hadrons and nuclei to explore novel correlations related to gluon saturation and spin-orbit coupling.

Dr. Sufian's research uses first-principles lattice quantum chromodynamics (lattice QCD) calculations and analytic nonperturbative methods, such as light-front holographic QCD, to study the origins of spin and mass, as well as exploring AI and quantum computing techniques to advance our understanding of nuclear physics.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

As of spring 2025, \$23,607. Students owe tuition at the in-state rate, \$3,123 per semester at the standard 9-credit enrollment, but 2/3 of this amount is covered by the university for TAs. RAships may cover a higher proportion.

What are the opportunities for students to be employed in your department during their first summer on campus?

There are only very few TAships available during summer. Opportunities for summer employment are most likely to result by joining a research project; this depends on availability of funding.

What is the health insurance premium for graduate students in your department?

The question of health insurance coverage for graduate students depends on a variety of factors. A starting point for answers is <https://benefits.nmsu.edu/insurance/grad-health.html>

Does your department provide a tuition waiver for first-year students?

Students owe tuition at the in-state rate, \$3,123 per semester at the standard 9-credit enrollment, but 2/3 of this amount is covered by the university for TAs. RAships may cover a higher proportion.

Are graduate students unionized at your school?

Yes.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Graduate assistants are eligible to apply for FMLA, but they do not usually accrue enough hours to receive FMLA benefits. Leaves of absence from the graduate school are discussed at https://catalogs.nmsu.edu/nmsu/regulations-policies/regulations-policies_withdrawalstext.pdf

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No. Transfer credits are evaluated on a case-by-case basis.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The Physics Graduate Student Organization (PGSO) is an important part of department life, offering mutual support, a vibrant community, and opportunities to participate and take responsibility to graduate students in the department. A PGSO representative takes part in departmental faculty meetings, and the PGSO makes valued contributions to the department's mission in outreach and other departmental activities.

The department furthermore has federal research grants to broaden participation in graduate physics education.



North Carolina Agricultural and Technical University

Physics Department
Greensboro, NC

Department Website:

<https://www.ncat.edu/cost/departments/physics/>

Graduate Program Website:

MS Program -

<https://www.ncat.edu/academics/graduate-programs/cost/physics.php>

PhD Program –

<https://www.ncat.edu/academics/graduate-programs/cost/applied-science-and-technology.php>

Admission Website:

<https://www.ncat.edu/academics/graduate-programs/index.php>

Application Deadline:

MS Program – Rolling

PhD Program – December

General GRE required?

MS Program – No

PhD Program – Yes

Physics GRE required?

No

Median time to PhD:

4.5 years

Contact for graduate admission:

Chih Kuan Tung, ctung@ncat.edu
(MS program)

Jenora Waterman,
jdwaterrm@ncat.edu (PhD program)

North Carolina Agricultural and Technical State University (N.C.A&T) sits on a beautiful 188-acre campus in Greensboro, North Carolina. Greensboro is North Carolina's third largest city and is centrally located in the state's Piedmont Triad region. The city's mix of schools and industries contribute to its economic and cultural diversity, attracting major sporting, arts, and cultural events. N.C.A&T is the largest historically black university as well as a national leader in STEM education.

The Physics Department offers two graduate degree options; a stand-alone Physics MS degree and a PhD through the Applied Science and Technology program with a concentration in Applied Physics. There are separate applications for each degree option.

Nuclear Physics Research Areas:

Nuclear Structure

Nuclear Astrophysics

Fundamental Symmetries

List of complementary Physics Research Area:

Astrophysics

of faculty in specific research groups:

Astrophysics and Cosmology – 2, Atmospheric Science – 4,
Biological – 1, Condensed Matter and Materials Research – 2, Optics – 1,

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 0

Staff/Research Scientists:
0

Postdoc: 1

Graduate Students: 22

Female physicists: 4

**Contact in Nuclear
Physics:**Shelly Leshar,
srlesher@ncat.edu

There are two experimental nuclear researchers at N.C.A&T Dr Ashot Gasparian and Dr Shelly R Leshar who are active in collaborations large and small.

Nuclear Physics-Specific Information:

<https://www.ncat.edu/cost/departments/physics/research/nuclear-physics.php>

Research Facilities / Collaborations: Argonne National Laboratory, Jefferson Laboratory, Oak Ridge National Laboratory, Univ of Notre Dame Institute for Structure and Nuclear Astrophysics

Collaborations:

PRad-II collaboration at Jefferson Laboratory

PrimEx collaboration at Jefferson Laboratory

X17 collaboration at Jefferson Laboratory

fIREBall collaboration at Univ of Notre Dame

Nuclear Researchers:

Prof Ashot Gasparian – Research interests are the areas of intermediate energy nuclear and particle physics, precision measurements, Monte Carlo simulations, development of nuclear and particle physics instrumentation, and detection systems.

Prof Shelly R Leshar – Research interests are in low-energy nuclear physics primarily in the rare earth region focusing on the structure of low-lying states. Also interested in nuclear astrophysics, science communication, and mentor training.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

First year students are offered a TA stipend, \$18,000 for MS students and \$20,000 for PhD students. MS students are supported by TA for one year, PhD students for 2 years and then transition to RA support.

What are the opportunities for students to be employed in your department during their first summer on campus?

There are opportunities via RA.

What is the health insurance premium for graduate students in your department?

This is paid via the TA or RA funder.

Does your department provide a tuition waiver for first-year students?

This is paid via the TA or RA funder.

Are graduate students unionized at your school?

No.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

None provided

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

Our department creates a welcoming environment via a common student lounge, department colloquium, and a variety of social events throughout the year.

Department Website:

<https://physics.sciences.ncsu.edu/>

Graduate Program Website:

<https://physics.sciences.ncsu.edu/graduate/>

Admission Website:

<https://physics.sciences.ncsu.edu/graduate/apply/>

Application Deadline:

January 5

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Matthew Green

matthew_green@ncsu.edu

Situated in North Carolina's renowned Research Triangle, NC State University is a hub of innovation and academic excellence, offering students a dynamic and engaging environment. With a diverse student body of over 38,000, NC State prides itself on fostering a community that is as multifaceted as its location. The campus itself is a picturesque blend of tradition and modernity, enhancing historical landmarks with state-of-the-art facilities. Its proximity to other world renowned universities and research facilities offers students unique opportunities for collaboration and innovation, steeped in an area rich with history and technological advancement. The NC State physics department, composed of roughly 55 faculty members, places a significant focus on nuclear physics, with 14 professors specializing in this area. Committed to exploring the fundamentals of nature, our faculty works alongside an enthusiastic student body seeking to broaden their understanding of physics. The nuclear physics group, widely acknowledged for its sturdy research initiatives, encourages students to explore the theoretical and applied aspects of the field thoroughly. Complemented by the advantage of smaller class sizes and individual mentorship, the student learning experience is both deep and rewarding.

Nuclear Physics Research Areas:

Nuclear Astrophysics , Fundamental Symmetries and Neutrinos, Medium Energy, Theoretical Nuclear Physics , Nuclear Data

List of complementary Physics Research Areas:

Astrophysics , Cosmology and Dark Matter

of faculty in specific research groups:

7 faculty in astrophysics group

Nuclear People:

Experimental Faculty: 6

Theoretical Faculty: 8

Staff/Research Scientists: 3

Postdoc: 3

Graduate Students: 31

Female physicists: 7

Contact in Nuclear Physics:

Matthew Green

matthew_green@ncsu.edu

The nuclear physics faculty join the astrophysics faculty under the broad “Physics of the Universe” program. The faculty driving this research program are spanning a broad range of cutting-edge techniques, use state-of-the-art facilities, and investigate timely topics in understanding how the universe works. For example, we have expertise in the areas of the origin of chemical elements, the modelling of supernovae and kilonovae, the measurements of astrophysical reactions, of the nature of neutrinos, and of fundamental properties of the neutron. A key strength of our research program is the in-house interdisciplinary expertise across scales from neutrinos, fundamental particles and nuclei, to stars and galaxies, as well as across techniques including theoretical, computational, observational and experimental. This allows us to address the timeliest questions, as identified in the Astro Decadal Survey and the Nuclear Physics Long Range Plan, in a collaborative and comprehensive way. Joint funding, publications, and supervision of students and early career researchers is common practice. In the last decade, we have graduated 39 students since 2015. The experimental nuclear physics program consists of research in nuclear astrophysics, nuclear structure and reactions, fundamental symmetries (focused on particle physics properties of neutrons and neutrinos), as well as nuclear data evaluation. Particular strengths include precision measurements of neutron decays, searches for neutrinoless double-beta decay and neutron electric dipole moments, and measurements of nuclear interactions relevant to stellar nucleosynthesis. These activities are also strongly represented at the Triangle Universities Nuclear Laboratory (TUNL), a consortium of four universities: North Carolina State University, Duke University, the University of North Carolina and North Carolina Central University. TUNL is a DOE Center of Excellence and provides research infrastructure for many of the ongoing projects at NC State. The theoretical nuclear physics program consists of research in quantum chromodynamics, confinement, large-N theories and volume dependence, topological excitations, the quark structure of mesons and baryons, hadronic interactions, hadronic matter under extreme conditions, photonuclear reactions, heavy ion collisions, cold atomic systems, superfluidity, viscous hydrodynamics, electroweak symmetry breaking, neutrino mixing, neutrino interactions with nucleons and nuclei, stellar evolution, supernovae, nucleosynthesis, the early universe, tests of the standard model, light-front quantization, effective field theory, quantum resonances, and computational methods for nuclear structure and reactions. These efforts benefit from strong ties to national facilities such as the Facility for Rare Isotope Beams (FRIB), the Brookhaven National Laboratory (BNL), the Thomas Jefferson National Accelerator Facility (TJNAF), and from associations with the FRIB Theory Alliance, Jefferson Lab Angular Momentum (JAM) Collaboration, Quark Gluon Tomography (QGT) Topical Collaboration and the Electron-Ion Collider (EIC) Users Working Group.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The 9-month TA Stipend is \$22,125 for the current 2025-2026 school year. Summer appointments (to either a TA or RA), bring the annual stipend to at least \$29,500.

RA stipends vary between research groups. In the nuclear physics groups it currently ranges from \$29,500 to \$35,000/yr.

What are the opportunities for students to be employed in your department during their first summer on campus?

First summer research support depends on research fund availability. Students finishing their first year are supported through TAs if research support is not available.

What is the health insurance premium for graduate students in your department?

\$3,347.40 per year (paid by department for RA/TA-supported students)

Does your department provide a tuition waiver for first-year students?

No, however tuition is paid for RA/TA-supported students

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Family leave: <https://policies.ncsu.edu/regulation/reg-02-15-08/>

Leave of absence: <https://catalog.ncsu.edu/graduate/graduate-handbook/minimum-enrollment-requirements/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Students can test out of the core courses covered under the qualifying exams, which is handled on a case-by-case basis. Up to 18 credits of MS coursework may be applied to the 72 total credit PhD requirement.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department has formulated a code of professional conduct with the intent of establishing a welcoming and collegial environment for all within the department. We also maintain a "Recruitment, Retention, and Wellbeing Committee" that advises on departmental matters including recruitment, hiring, and conduct best practices. More information can be found here:

<https://physics.sciences.ncsu.edu/internal-resources/recruitment-retention-and-wellbeing-committee/>



THE OHIO STATE UNIVERSITY

Ohio State University

Physics Department

Columbus, Ohio

Department Website:

<https://physics.osu.edu>

Graduate Program Website:

<https://gpadmissions.osu.edu/programs/program.aspx?prog=0162>

Admission Website:

<https://physics.osu.edu/graduate/prospective-students>

Application Deadline:

December 15

(TBC later in the year)

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5-6 years

Contact for graduate admission:

Jay Gupta

gupta.208@osu.edu

The university's main campus is one of America's largest and most comprehensive. Ohio's best and a top-20 public university, Ohio State is further recognized by a top-rated academic medical center and a premier cancer hospital and research center. Founded as a land-grant university, OSU has campuses and research centers located around Ohio. The campus is located in Columbus, Ohio.

About Columbus, Ohio: Ohio's capital is a friendly city of sleek, modern high-rises and century-old buildings along the banks of the Scioto River. In addition to being home to one of the finest universities in the nation, its attractions range from a rich visual and performing arts scene to a renowned zoo, exciting sports, fine restaurants, and enough specialty shops, outlets, and malls to satisfy even the most avid of browsers and buyers. Find out more about places and things to do in [Columbus](#).

Department information can be found here: <https://physics.osu.edu/about-us>

Nuclear Physics Research Areas:

Heavy Ions, Theoretical Nuclear Physics, Nuclear Structure and Reactions, Cold QCD

List of complementary Physics Research Areas:

Astronomy/stellar physics (Mike Lisa)

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 4

Staff/Research Scientists: 0

Postdoc: 4

Graduate Students: 13

Female physicists: 3

Contact in Nuclear Physics:

Yuri Kovchegov

kovchegov.1@osu.edu**Nuclear theory website:** <https://physics.osu.edu/research/nuclear-physics/ntg>**Nuclear experiment website:** <https://physics.osu.edu/research/nuclear-physics/nuclear-physics-experiment>

Nuclear physicists at OSU study a broad range of problems involving the strong interaction. This research includes the direct study of quantum chromodynamics (QCD), the relativistic field theory of quarks and gluons, the connection of QCD to effective theories at low energies, and the manifestation of QCD in the highly compressed and excited nuclear matter created in relativistic heavy-ion collisions.

Effective field theory (EFT) and renormalization group (RG) methods are used by group members to quantitatively explain how low-energy nuclear phenomenology emerges from QCD. These methods enable systematic and model-independent calculations with error estimates, using control over the degrees of freedom to optimize convergence.

At very high densities and temperatures, QCD predicts that strongly interacting matter turns into a quark-gluon plasma (QGP). This QGP can be created in relativistic heavy-ion collisions, and group members are among the leaders in experimental efforts at RHIC and the LHC and in developing theoretical descriptions for the creation, thermalization, and collective dynamical evolution of the QGP.

In high-energy proton or nuclear collisions, the density of gluons is very high and is predicted to reach an interesting new regime called parton saturation. The OSU group is highly active in plans for an Electron-Ion Collider (EIC) to discover this phenomenon, and to explore how the proton spin is distributed among its quarks and gluons.

Nuclear Faculty at OSU:

Prof. Daniel Brandenburg — Ultra-relativistic heavy-ion collisions produce the strongest electromagnetic fields in the universe. My work focuses on utilizing these ultra-strong electromagnetic fields to 'image' the gluons inside large nuclei, helping to reveal their dynamics. My group uses ultra-high energy photons to search for physics beyond the Standard Model, and to investigate quantum entanglement in high energy collisions.

Prof. Richard Furnstahl — Effective field theory and renormalization group methods for nuclear systems; FRIB science; QCD and nuclear phenomena; microscopic nuclear density functional theory; computational many-body methods; Bayesian uncertainty quantification.

Prof. Tyler Gorda — Thermodynamics and transport properties of cold and dense QCD; probing the phases of matter in the cores of neutron stars; studies of extreme nuclear matter produced in binary neutron star mergers.

Prof. Thomas Humanic — Relativistic Heavy-Ion Collisions; CERN LHC ALICE experiment; boson interferometry; tetraquarks; collision model calculations.

Prof. Sabine Jeschonnek — Investigating matter with electromagnetic probes: electron scattering from few-body systems, in particular from the deuteron; short-range structures in few body systems; quark-hadron duality.

Prof. Yuri Kovchegov — QCD at high energy and high parton density; spin and 3D structure of the proton; TMDs at small x ; heavy-ion collisions and deep-inelastic scattering, Electron-Ion Collider (EIC).

Prof. Michael Lisa — Experimental study of relativistic heavy-ion collisions at STAR/RHIC and LHCb/LHC; two-particle intensity interferometry, a.k.a. femtoscopy; collective response at ultrahigh energy densities and pressure; hyperon polarization and vorticity; phenomenology; exploration of the phase diagram of QCD.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The stipend is \$2,681 per month, so the 9-months stipend is \$24,129. There is no difference between the TA and RA stipends and between the junior and senior students. Please note that the cost of living in Columbus is relatively low.

What are the opportunities for students to be employed in your department during their first summer on campus?

First-year students are usually supported as TAs during their first summer. They are encouraged to join a research group as fast as possible.

What is the health insurance premium for graduate students in your department?

The fringe benefit rate for grad students is currently charged as 8.2% of their stipend.

Does your department provide a tuition waiver for first-year students?

Yes, in the sense that tuition for the 1st and 2nd year student is covered by the Department, with the students often TA'ing.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://ehe.osu.edu/financial-aid/graduate-associateships/absences>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No, but the students can test out of the core graduate classes.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visit/site surveys)?

<https://physics.osu.edu/climate-and-diversity-committee>



Ohio University

Department of Physics and Astronomy

Athens, Ohio

Department Website:

<https://www.ohio.edu/cas/physics-astronomy>

Graduate Program Website:

<https://www.ohio.edu/cas/physics-astronomy/graduate>

Admission Website:

<https://www.ohio.edu/cas/physics-astronomy/graduate/admissions>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5-7 years

Contact for graduate admission:

physicsgradapps@ohio.edu

Dr. Alexander Neiman
(740) 593-1701

Ohio University was founded in 1804, making it the first university established in Ohio, and the ninth oldest public university in the United States. Today, the enrollment on the Athens campus is approximately 24,000 students, of which about 4,500 are graduate students. Ohio University is made up of 11 colleges. Nuclear Physics studies take place within the Department of Physics and Astronomy, in the College of Arts and Sciences. The main campus is located in Athens, Ohio, along the scenic Hocking River in the southeastern part of the state.

Nuclear Physics Research Areas:

Nuclear Structure and Nuclear Astrophysics, Medium Energy, Relativistic Heavy Ions, Parity-Violating Electron Scattering, Internal Structure of the Nucleon, Applications of Nuclear Physics, Theoretical Nuclear Physics, Few and Many-Body Systems, Effective Field Theory, Halo and Exotic Nuclei, Neutron Star Physics, Equation of state of Neutron-rich Matter, Bayesian Methods in Nuclear Physics

List of complementary Physics Research Areas:

Astrophysics, Condensed Matter, Applied Nuclear Physics in Condensed Matter, Biophysics

of faculty in specific research groups:

Relativistic Heavy Ions and Medium Energy: 4

Nuclear Astrophysics and Neutron Stars: 6

Astrophysics: 3

Nuclear People:

Experimental Faculty: 7

Theoretical Faculty: 4

Staff/Research Scientists: 6

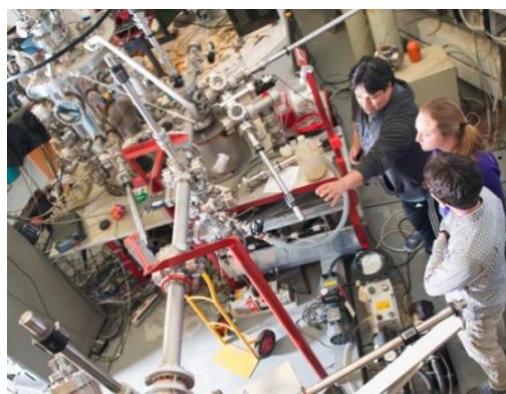
Postdoc: 2

Graduate Students: 18

Female physicists: 9

Contact in Nuclear Physics:

frantz@ohio.edu

**Institute of Nuclear and Particle Physics**

(<https://inpp.ohio.edu>): The Institute of Nuclear and Particle Physics was established at Ohio University in 1991 to bring coherence to the several successful but diverse nuclear and particle physics activities taking place within the Department of Physics and Astronomy, and to coordinate the activities of both theoretical and experimental subatomic physics.

Experimental Nuclear Physics Research: This area covers low-energy experiments on nuclear astrophysics, nuclear structure and reactions, applied nuclear physics; medium-energy experiments to study the structure of the nucleon and quark dynamics; and experiments with relativistic heavy ions to study nuclear matter under extreme conditions. These experiments are carried out at facilities around the world.

Theoretical Nuclear Physics Research: Theoretical research explores the manifestations of strong-interaction dynamics in terrestrial experiments and astrophysical phenomena. Some examples are: (a) the chiral structure of the nucleon, electron scattering, and three-body scattering, (b) reactions involving nuclei near the neutron- and proton-drip lines, (c) neutron star structure, and (d) equation of state of neutron-rich matter.

Edwards Accelerator Laboratory: Faculty and students perform some of their experiments at the Edwards Accelerator Laboratory on the Athens campus. It includes a 4.5-MV Van de Graaff accelerator with multiple ion sources, beamlines, and experimental areas for research in nuclear astrophysics, nuclear structure, and applications. For a complete description of facility equipment and capabilities, visit:

<https://www.ohio.edu/cas/edwards-accelerator-laboratory>



Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$27,000

What are the opportunities for students to be employed in your department during their first summer on campus?

TA

What is the health insurance premium for graduate students in your department?

\$1158

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://www.ohio.edu/graduate/current-students/parental-paid-leave-absence-policy>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Maximum time to completion is reduced from 7 to 5 years for previous Masters' degree from US or equivalent university. Oral examinations to confirm credit for required course credits completed outside of Ohio University

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We have multiple student interest groups that help create an inclusive and welcoming environment and are valued members of our shared-governance structure, namely the Graduate Students Association, PANDA, a local chapter of SPS, and the Women in Physics and Astronomy club. We also have a department committee dedicated to promoting departmental cohesion activities.



Department Website:

<https://www.odu.edu/physics>

Graduate Program

Website:

<https://www.odu.edu/physics/academics/graduate>

Admission Website:

<https://www.odu.edu/admission/graduate>

Application Deadline:

January 15

General GRE required?

No

Physics GRE required?

No (recommended)

Median time to PhD:

7 years

Contact for graduate admission:

Dr. Lawrence Weinstein
(lweinste@odu.edu)

Old Dominion University is state-supported and classified as Research-1 by the Carnegie Foundation, with more than 17,000 undergraduate and 6000 graduate students (<https://www.odu.edu/about/facts-and-figures>). Norfolk, Virginia is a culturally rich, historic city and a major international maritime center in a metropolitan area of over 1.7 million people. One of seven cities that form the Hampton Roads region, Norfolk is located near the mouth of the Chesapeake Bay in coastal Virginia. Nearby attractions include Virginia Beach, the historical “triangle” of Williamsburg, Yorktown and Jamestown, and many cultural organizations and entertainment venues.

The ODU Physics Department has strong research groups in experimental and theoretical nuclear and particle physics, experimental and theoretical atomic and few-body physics, accelerator science, condensed matter physics, and materials science, and offers B.S., M.S. and Ph.D. degrees. The department has 24 tenured or tenure-track faculty, 3 joint appointments, and 8 special appointment Jefferson Lab Professors and is supported by substantial external, peer-reviewed research grants as well as state funds. Fifteen faculty members are APS Fellows. The vibrant program includes about 50 graduate students and more than 80 undergraduate majors. 14 faculty members are fellows of the APS (including 8 in Nuclear Physics).

Nuclear physics research areas:

Experimental research to study the quark-structure of nucleons and the structure of nuclei, both at the nearby Thomas Jefferson National Accelerator Facility (Jefferson Lab, about a half hour drive from ODU) and at other international user facilities:

<https://ww2.odu.edu/~skuhn/NucWebsite/ODUExperimentalNuclearPhysicsGroup.html>

Theoretical research in high-energy QCD, Lattice QCD, nucleon structure, light nuclei and relativistic dynamics in hadrons and nuclei:

<https://sites.google.com/view/odu-nuc-th/odu-nuclear>

Our students doing their dissertation research at Jefferson Lab have all the advantages of working at a leading-edge laboratory with international collaborations while being stationed at their home institution, only a 30-minute drive away.

List of complementary Physics Research Areas:

Research in Astrophysics and Accelerator Science:

<https://www.odu.edu/center-for-accelerator-science>

of faculty in specific research groups:

6 regular faculty, 1 Research Assistant Professor and 3 Jefferson Lab Professors in experimental Nuclear Physics, 5 faculty in theoretical Nuclear/Particle Physics (3 in QCD, 1 in Lattice QCD/spectroscopy, 1 in electroweak nuclear physics). 4 regular faculty and 5 Jefferson Lab Professors in Accelerator Science. 1 regular faculty member in Astrophysics.

Nuclear People:

Experimental Faculty: 6

Theoretical Faculty: 5

Staff/Research Scientists: 2

Postdoc: 2

Graduate Students: 16

Female physicists: 3

Contact in Nuclear Physics:

Dr. Lawrence Weinstein

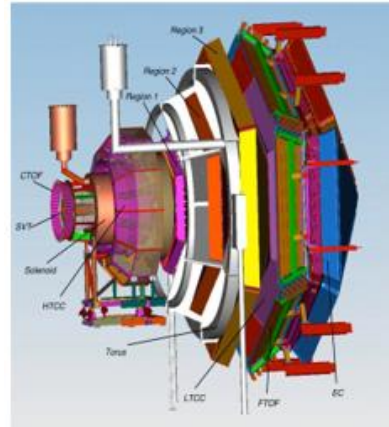
(lweinste@odu.edu)

Theoretical Research

The ODU theory group performs research across a broad range of topics in hadronic and nuclear physics, including the electroweak properties of light nuclei, hadron spectroscopy, the properties of nucleons at large energy scales and quantum chromodynamics. This work is relevant for experiments across the globe, with particular emphasis on experiments performed at the nearby Jefferson Lab and the future Electron-Ion Collider (EIC). Some faculty in the ODU Theory Group are also staff scientists with the Jefferson Lab Theory Group. Graduate students in the group have access to facilities and resources of the Jefferson Lab Theory Center.

**Experimental Research at Jefferson Lab**

As one of the largest University groups working at Jefferson Lab, the ODU experimental nuclear physics group leads experiments on the form factors and quark-gluon structure of the nucleon, on studies of hadron spectroscopy and decays, on the role of short-range correlations in nuclear structure and on searches for new physics. We helped formulate the Jefferson Lab research program for its recent upgrade to 12GeV beam energy, have built and continue to build major detectors and other equipment for this program, and are actively working on the next generation facility, the EIC. The group typically receives over \$1M funding per year from various sources, mainly from the US Department of Energy.

**Facilities at Old Dominion University**

The experimental nuclear physics group has 5000 square feet of laboratory space, including a high-bay area in the Physical Sciences Building II, which also contains offices for faculty, postdocs and students. The group maintains a LINUX farm for physics analysis and simulation. Standard laboratory equipment and infrastructure, and a full-time technician, allow construction of large detectors for research (e.g., the Region 2 Drift Chambers for the CLAS12 spectrometer at Jefferson Lab, see image to the right).



Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The minimum stipend for an incoming Teaching Assistant is \$10,000 each semester and \$6,500 in the summer. Research assistants are paid anywhere from \$30,000 to \$38,000 per year.

What are the opportunities for students to be employed in your department during their first summer on campus?

100% for Ph.D. Students

What is the health insurance premium for graduate students in your department?

\$2,800 per year, minus a \$1,100 subsidy

Does your department provide a tuition waiver for first-year students?

Yes, for all Ph.D. Students

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

No formal policy specifically for graduate students. The University adheres to the Family and Medical Leave Act.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes, individual study plans can be agreed upon

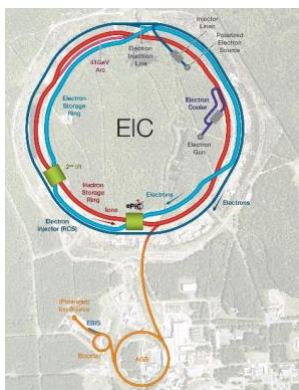
How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

Our graduate students are organized in the Physics Graduate Student Association which conducts its own activities (funded in part from the University). We have many departmental get-togethers and celebrations every year (Fall cookout, Winter holiday, pizza lunches...), weekly colloquia, and frequent meetings with faculty and staff (Graduate Program Director, Graduate Program Committee, Advisors).



Purdue University

Department of Physics and Astronomy
West Lafayette, Indiana



Department Website:

<https://www.physics.purdue.edu/>

Graduate Program Website:

<https://www.physics.purdue.edu/academic-programs/graduate/index.html>

Admission Website:

None Provided

Application Deadline:

None Provided

Physics GRE required?

No

Median time to PhD:

4-5 years

Contact for graduate admission:

Kenneth Ritchie:
kpritchi@purdue.edu

Purdue University was founded in 1869. Today, the West Lafayette campus has an enrollment of approximately 57,000 students, of which about 13,000 are graduate students. The University is comprised of 10 colleges and schools. Purdue's president is Mung Chiang since January 2023.

Purdue University is located in West Lafayette, Indiana, two hours from Chicago, and one hour from Indianapolis. The combined population of West Lafayette and Lafayette is about 100,000. The community offers a unique combination of small-town affordability and big city sophistication. Numerous local and nearby state parks provide ample opportunities for outdoor excitement.

The Department of Physics and Astronomy consists of 58 faculty members, including 3 experimental nuclear physicists. The department's student body comprises approximately 220 graduate students (64% international) and 320 undergraduate students (24% international).

Nuclear Physics Research Areas:

High Energy Nuclear Physics, Relativistic Heavy Ion Collisions, Quantum Chromodynamics (QCD)

List of complementary Physics Research Areas:

Elementary Particle Physics, Geophysics, Accelerator Mass Spectrometry, Applied Physics, Astrophysics, Atomic, Molecular, and Optical Physics, Biological Physics, Condensed Matter Physics, Quantum Information Science

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 0

Staff/Research Scientists: 0

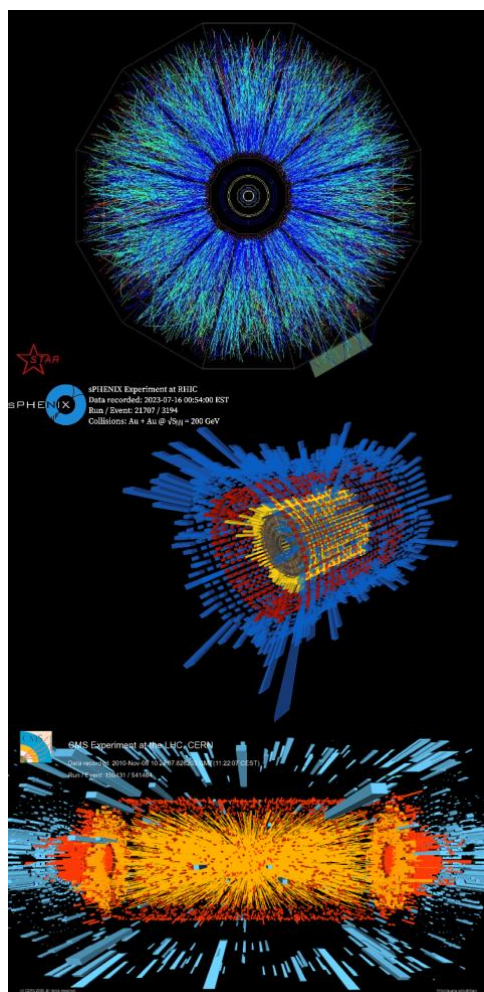
Postdoc: 2

Graduate Students: 6

Female physicists: 2

Contact in Nuclear Physics:

Fuqiang Wang and Wei Xie



Creating and studying the quark-gluon plasma (QGP) will provide fundamental information about Nature. The [Purdue High Energy Nuclear Physics \(HENP\) group](#) is in the forefront of this exciting area of research. We create and study the QGP in experiments conducted at the Relativistic Heavy Ion Collider ([RHIC](#)) at the Brookhaven National Laboratory (BNL) and the Large Hadron Collider ([LHC](#)) at CERN. Heavy-ion beams are accelerated to nearly ($> 99.99\%$ of) the speed of light. A collision of these beams produces thousands of particles. We measure those particles with the [STAR](#) and [sPHENIX](#) experiment at RHIC, and [CMS](#) experiments at the LHC. From the measurements we investigate the state of matter formed in the collisions between the high energy heavy ion beams.

In contrast to earlier beliefs, the QGP created in relativistic heavy ion collisions is strongly interacting. It behaves like a nearly perfect liquid where its shear viscosity to entropy density ratio is close to the conjectured quantum lower limit of $1/4\pi$. The created QGP can be described by macroscopic thermodynamic quantities and hydrodynamics. The QGP is sufficiently opaque to energetic gluons and light and heavy quarks due to their strong interactions with the QGP, so that high momentum quarks and gluons are strongly attenuated. We are a world leading group in the measurements of collective hydrodynamic flow and jet correlations arising from energetic gluons and light and heavy quarks.

We are also a member of the future collider facility, the Electron-Ion Collider ([EIC](#)) at BNL to use electron beam to probe the gluon distributions in the proton and nuclei.



RICE

Rice University

Department of Physics & Astronomy

Houston, Texas 77005

Department Website:

<https://physics.rice.edu>

Graduate Program

Website:

<https://physics.rice.edu/graduate-program-overview>

Admission Website:

<https://graduate.rice.edu>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5-6 years

Contact for graduate admission:

Deidre Richards

physgrad@rice.edu

Rice is a leading American research university—small, private, highly selective—distinguished by a collaborative, interdisciplinary culture and global perspective. Just a few miles from downtown Houston, it occupies a distinctive 285-acre campus shaded by nearly 4,000 trees. State-of-the-art facilities and internationally renowned centers support an ideal learning environment. US News ranked Rice University number 26 globally in physics and number 15 in the United States. The university attracts a diverse group of highly talented students and faculty with outstanding graduate and professional programs in various fields. With only 3,018 graduate students and 3,942 undergraduates, it offers the chance to forge close relationships with faculty and tailor graduate programs to specific interests.

The first Ph.D. in physics from Rice was awarded in 1920, and the program has grown to about 112 students, with 20 new arrivals each year. Recent graduates work in academic institutions, national laboratories, and entrepreneurial enterprises. With 62 primary and joint faculty, the department engages in research across the discipline's spectrum, from fundamental particles to collective properties and extreme conditions. We believe scientific education thrives in an inclusive community and are committed to fostering fairness and respect for all. We seek to enrich our workplace and learning environments with diversity from Rice, Houston, the US, and beyond.

Number of applicants for 2024: 706.

Number of applicants accepted in 2024: 87

Nuclear Physics Research Areas:

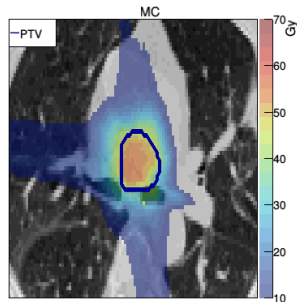
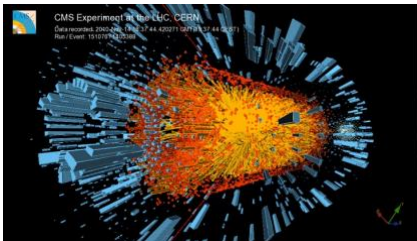
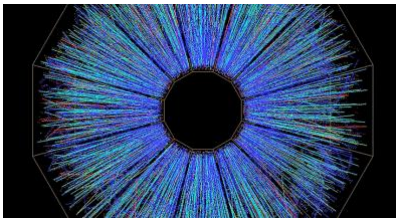
Heavy Ion Nuclear Physics, Fundamental Symmetries (Neutrinos)

List of complementary Physics Research Areas:

Medical Physics

Nuclear People:
 Experimental Faculty: 5
 Theoretical Faculty: 0
 Staff/Research Scientists: 3
 Postdoc: 3
 Graduate Students: 5
 Female physicists: 5

Contact in Nuclear Physics:
 Frank Geurts (geurts@rice.edu)



Our **high-energy nuclear physics program** is actively involved in ultrarelativistic heavy-ion programs at the STAR (Solenoidal Tracker At RHIC) experiment at Brookhaven National Lab (BNL) and the CMS (Compact Muon Solenoid) detector at the Large Hadron Collider, CERN. By colliding heavy ions at high energies, we study strongly interacting nuclear matter under extreme conditions, testing Quantum Chromodynamics. At STAR, our group runs a dilepton program across various energies and collision systems, while at CMS we examine the QGP at different scales using novel probes. Our group plays leading roles in trigger and DAQ operations and is involved in LGAD-based MTD upgrades at CMS and TOF detectors for the ePIC detector at the Electron-Ion Collider (EIC) at BNL.

We are engaged in the **Deep Underground Neutrino Experiment (DUNE)**, a flagship international project hosted by Fermilab, with its far detectors at the Sanford Underground Research Facility (SURF) in South Dakota. Our work focuses on developing machine learning algorithms to classify neutrino interactions in DUNE's far detectors. We are active members of DUNE's Core Software and Computing Consortium, contributing to the computational infrastructure necessary for managing and processing the vast data generated by the experiment. We have launched a pilot program called DUNE-TECH to train the next generation of scientists.

Our research in **proton therapy**, an advanced cancer treatment, requires understanding its biological effects compared to photon therapy. We study patient outcomes and dose calculation using Monte Carlo techniques and develop models that predict biological responses to proton therapy, ultimately optimizing treatment strategies and improving patient care. FLASH therapy delivers ultra-high dose rates to enhance tumor control while reducing damage to healthy tissue. Its reproducibility is inconsistent, and optimal beam parameters are unclear. Precise beam timing is crucial and LGADs offer ultra-fast and fine spatial resolution, making them suitable for real-time FLASH monitoring. Our research will optimize LGADs for pulse-resolved dosimetry to better control the FLASH effect.

F. Geurts: heavyions.rice.edu

A. Higuera: profiles.rice.edu/faculty/aaron-higuera-pichardo

W. Li: lilab.rice.edu

C. Tunnell: profiles.rice.edu/faculty/christopher-tunnell

P. Yepes: profiles.rice.edu/faculty/pablo-p-yepes

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$38,750 (12-month stipend). No differences between TA/RA, or junior/senior students.

What are the opportunities for students to be employed in your department during their first summer on campus?

This can be done in discussion with individual PIs.

What is the health-insurance premium for graduate students in your department?

\$620 (after subsidy for student-only annual coverage)

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students. If such a policy does not exist, please say that.

<https://graduate.rice.edu/academics/policy/leaves>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Graduate-level courses taken elsewhere may be substituted for required courses for the masters and/or PhD degree. The suitability of previous work will be evaluated.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

PAGSA (Physics and Astronomy Graduate Student Association) is an active, student-led organization that strives to provide an inclusive community and support to students. It organizes a wide range of events, including holiday parties, journal clubs, professional development panels, and more. The department recently completed an APS/CUWiP climate visit.



Rutgers University

Physics and Astronomy Department

Piscataway, New Jersey

Department Website:

<https://physics.rutgers.edu/>

Graduate Program Website:

<https://physics.rutgers.edu/academics/graduate-program/about-the-graduate-program>

Admission Website:

<https://grad.rutgers.edu/admissions>

Application Deadline:

January 1 for September
Ph.D. admissions

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

slightly over 6 years

Contact for graduate admission:

graduate@physics.rutgers.edu

Rutgers Physics and Astronomy is located on Busch Campus in Piscataway, NJ, in a suburban environment. Campus bus service provides access to New Brunswick College Ave Campus and a more urban environment. NB has train service to major east coast cities, with NYC less than an hour away.

The graduate program has about 120 students, roughly half international and 20% women. The largest physics sub-field is condensed matter (including quantum science), followed by high-energy and astronomy. The nuclear and biophysics groups are smaller.

Nuclear Physics Research Areas:

QCD, both relativistic heavy ions and medium energy

List of complementary Physics Research Areas:

Rutgers has a medical school with physics adjacent areas, and the department has an astrophysics / astronomy group

of faculty in specific research groups:

3 high-energy phenomenologists, 1 lattice, 8 astrophysics, 5 CMS (high energy) and 1 neutrino person

Nuclear People:

Experimental Faculty: 4

Theoretical Faculty: 0

Staff/Research Scientists: 0

Postdoc: 1

Graduate Students: 7

Female physicists: 4

Contact in Nuclear Physics:

Ron Gilman

(rgilman@physics.rutgers.edu)

Sevil Salur

(salur@physics.rutgers.edu)

Prof. Sevil Salur and her students are active in relativistic heavy-ion physics, studying the quark-gluon plasma at Brookhaven and the CERN LHC, within the CMS collaboration. They are also deeply involved in efforts leading to the proposed Brookhaven Electron-Ion Collider.

Profs. Ron Gilman and Ron Ransome have been involved in medium-energy physics at Jefferson Lab, Fermilab, and the Paul Scherrer Institute. Current efforts focus on the PSI MUSE experiment measuring lepton universality, two-photon exchange and the proton radius. Other recent efforts include the Jefferson Lab MARATHON ($^3\text{He} / ^3\text{H}$), Fermilab MINERvA (neutrino) and Fermilab Seaquest (Drell-Yan) experiments.

Prof. Jolie Cizewski is involved in nuclear astrophysics, studying key elements and techniques in determining details of the rapid neutron capture process that produces heavy elements in the universe.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

AY 2025-2026 stipend is \$40,000 for 10 months for TA / GA appointments (most appointments). Fellowship minimum is \$30,833 for 10 months.

What are the opportunities for students to be employed in your department during their first summer on campus?

Most students are paid by grants for summer research at about the same monthly rate as during the AY. There are a limited number of summer teaching assignments available at about \$3,000 / section.

What is the health insurance premium for graduate students in your department?

Students with TA/GA/Fellow appointments have health insurance covered, except that TAs and GAs are considered state employees and have a few percent withheld from their paychecks to cover part of the cost of their health insurance.

Does your department provide a tuition waiver for first-year students?

All TA/GA/Fellow appointments include tuition remission.

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Students with TA/GA appointments are considered state employees and can go through standard FMLA processes. <https://uhr.rutgers.edu/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No. But students who have previously taken core course can satisfy the core course requirements through "challenge" exams.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We hope so. See <https://www.physics.rutgers.edu/rumipa/>.



San Diego State University

Physics Department
San Diego, California

Department Website:
<https://physics.sdsu.edu>

Graduate Program Website:
<https://physics.sdsu.edu>

Admission Website:
<https://admissions.sdsu.edu/graduate>

Application Deadline:
February 1

General GRE required?
No

Physics GRE required?
No

Median time to PhD:
2.5 years for MS, 6 for PhD in computational science

Contact for graduate admission:
Calvin Johnson
cjohnson @ sdsu.edu

San Diego State University is the only R1 institution of the California State University system. A Hispanic Serving Institution (HSI), it has over 30,000 students and is one of the most affordable universities in the US.

The SDSU Department of Physics has ten faculty and offers MS degrees in physics and in medical physics; the latter is CAMPEP accredited and includes internships. We also participate in a unique interdisciplinary Computational Science Ph.D program, joint with UC Irvine. Many of our students come from California, but we accept students from across the US and internationally; most receive tuition waivers.

Nuclear Physics Research Areas:

Nuclear astrophysics (compact objects and reactions) theory, nuclear structure theory, fundamental symmetries and neutrinos

List of complementary Physics Research Areas:

Medical physics

of faculty in specific research groups:

Nuclear theory: 3

Condensed matter expt: 2

Condensed matter theory: 1

Optics expt: 2

Medical physics: 2

Polymer physics: 1

Nuclear People:

Experimental Faculty: 0

Theoretical Faculty: 3

Staff/Research Scientists: 0

Postdoc: 1

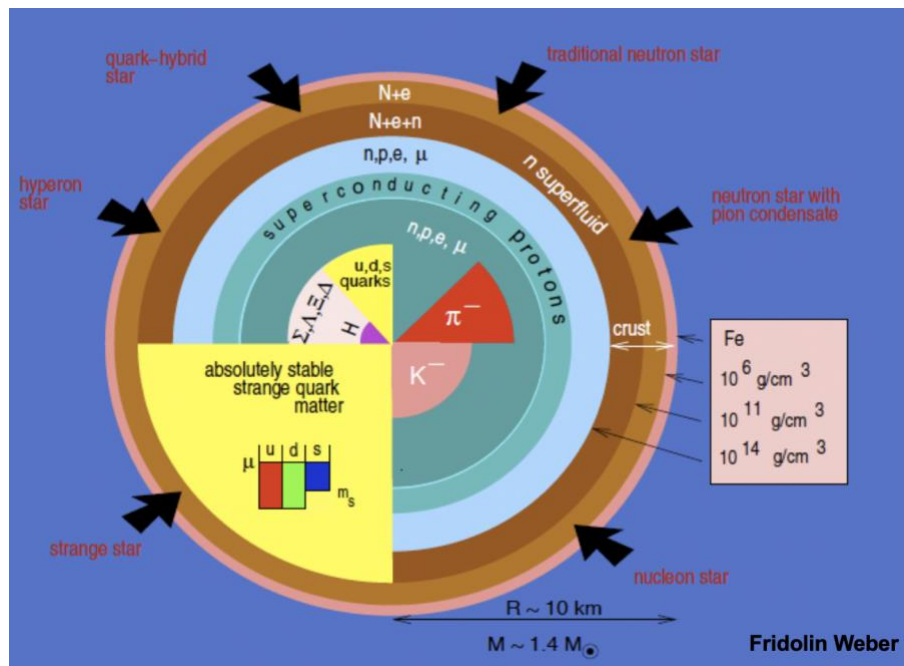
Graduate Students: 8

Female physicists: 0

Contact in Nuclear Physics:

cjohnson@sdsu.edu

The nuclear theory group (<https://physics.sdsu.edu>) spans nuclear structure, reactions, and astrophysics. The nuclear theory group consists of three faculty with an excellent record of funding from NSF and DOE for the support of students. Though the Computational Science program we have developed an expertise in high performance computing and run calculations on some of the largest supercomputers in the world. Many of our students receive internships and jobs at national labs such as Lawrence Livermore, Lawrence Berkeley, and Los Alamos, and in local industry such as Qualcomm, as well as postdocs and positions in academia.



Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

TA: About \$15,000 (for MS). RA: between \$15,000-\$30,000

What are the opportunities for students to be employed in your department during their first summer on campus?

n/a

What is the health insurance premium for graduate students in your department?

\$3,400 <https://grad.sdsu.edu/current-students/insurance>

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://hr.sdsu.edu/benefits/fml>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

n/a

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We are carrying out strategic planning, beginning with listening sessions with students and other stakeholders, and data gathering.



Stony Brook University

Physics and Astronomy Department
Stony Brook, New York

Department Website:

<https://www.stonybrook.edu/commcms/physics/>

Graduate Program**Website:**

<https://www.stonybrook.edu/commcms/grad-physics-astronomy/>

Admission Website:

<https://www.stonybrook.edu/commcms/grad-admissions/apply-graduate-programs.php>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Derek Teaney,
derek.teaney@stonybrook.edu

Stony Brook is the Flagship Campus of the State of New York and educates 18,000 undergraduates and 8,500 graduate and professional students. The campus is suburban and is accessible by a commuter train from New York City. West Meadow beach on the Long Island Sound is a short bike ride away from the Stony Brook Campus.

The Department of Physics and Astronomy offers a diverse program and consistently ranks amongst the best and largest in the country. The department has over 70 tenured and tenure track faculty members, over 200 graduate students, and about 400 undergraduate majors. The department shares faculty with the CN Yang Institute for Theoretical Physics, a leading center for high energy physics, formal/string theory, cosmology, quantum information science, and statistical mechanics; the Simons Center for Geometry and Physics, a research center devoted to furthering fundamental knowledge in geometry and theoretical physics, especially knowledge at the interface of these two disciplines; and the Laufer Center for Physical and Quantitative Biology, with an aim to advance biology and medicine through discoveries in physics, mathematics and computational science. The department also collaborates closely with the Brookhaven National Lab, the Flatiron Institute and the Institute for Advanced Computational Science. The Department is host to the Center for Frontiers in Nuclear Science (CFNS) and the Center for Accelerator Science and Education (CASE).

Because of its size, the program supports a broad graduate curriculum and offers students wide exposure to diverse areas of physics. A large cohort of graduate students also provides the flexibility to change research directions upon arrival — for example (as has actually occurred), transitioning from formal string theory to nuclear theory. Other examples include entering accelerator physics through initial exposure to nuclear physics. Training in accelerator science is possible through the close connection between Brookhaven National Laboratory and Stony Brook.

Nuclear Physics Research Areas:

Theoretical Nuclear Physics includes Heavy Ions, Proton Structure, Perturbative QCD, Lattice QCD and non-perturbative methods, Small-x and EIC physics, Quantum computing and machine learning for nuclear physics.

Experimental Nuclear Physics includes investigations of proton and nuclear structure at the parton level, covering spin physics, gluon saturation, the Color Glass Condensate (CGC), and Generalized Parton Distributions (GPDs). It also includes precision tests of the Standard Model and searches for Beyond Standard Model (BSM) physics. In addition, our groups explore the Quark-Gluon Plasma (QGP) created in heavy-ion collisions and study ultra-High Energy Cosmic Neutrinos.

List of complementary Physics Research Areas:

Two faculty members of the computational astro physics group have points of contact with the nuclear physics group.

of faculty in specific research groups:

There are seven theorists working on a wide range of topics, four experimentalists working on heavy Ions, five experimentalists working on parton structure and precision QCD/EW physics with of the proton and nuclei, and one in high energy neutrino physics

Nuclear People:

Experimental Faculty: 7

Theoretical Faculty: 7

Staff/Research Scientists: 4

Postdoc: 10

Graduate Students: 16

Female physicists: 6

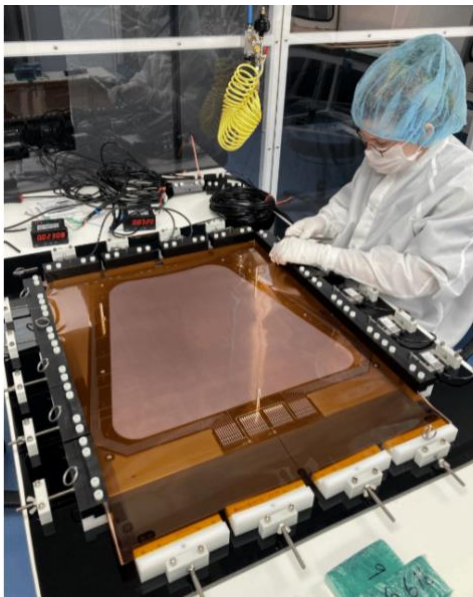
Contact in Nuclear Physics:

Derek Teaney,

derek.teaney@stonybrook.edu

Abhay Deshpande

abhay.deshpande@stonybrook.edu



Stony Brook student assessing the GEM Tracker for the Moller Experiment at Jefferson Laboratory.

Stony Brook maintains a close partnership with Brookhaven National Laboratory (BNL), a premier U.S. Department of Energy facility located just 20 minutes away. This collaboration provides Stony Brook nuclear physics students with exceptional access to leading experimental and theoretical researchers at BNL, many of whom are only loosely affiliated with the university. For instance, Stony Brook theory students have worked under the supervision of the Lattice QCD group at BNL and with other members of the Nuclear Theory Group at Brookhaven. Experimental students are currently involved with faculty at BNL in the design of the EPIC detector for the upcoming Electron-Ion Collider (EIC). In particular prototypes for the Proximity-focused Ring Imaging Cerenkov Counter (pRHIC) are being developed at Stony Brook, and plans for other detectors and detector R&D are in place for future.

Several incoming Ph.D. students with an initial interest in nuclear physics have discovered the interesting science in accelerator physics and chosen to pursue advanced research in that field, leveraging the combined expertise of faculty at both Stony Brook and BNL.

Stony Brook is home to the Center for Frontiers in Nuclear Science (CFNS), whose mission is to promote and facilitate the realization of the U.S.-based Electron-Ion Collider (EIC) by enhancing the scientific case and fostering collaboration among scientists around the world interested in the EIC. In support of this role, CFNS hires postdocs locally at Stony Brook as well as with remote institutions who visit Stony Brook regularly. In addition, CFNS hosts small workshops, bringing nuclear physics researchers from around the world to Stony Brook. This creates significant opportunities for Stony Brook students in nuclear physics, who benefit from exposure to a wide range of topics beyond their immediate research. The CFNS hosts an annual summer school on the Physics of the Electron Ion Collider.

To summarize, the combination of academic breadth, research flexibility, and close collaboration with a national laboratory makes Stony Brook an excellent place to pursue graduate studies in nuclear physics.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The nine-month TA Stipend is currently \$28,000. The RA salary in nuclear physics is roughly between 1K and 3K more per year than the department's suggested starting twelve-month RA salary of \$35,000. This increases by 1K per year up to \$39,000.

What are the opportunities for students to be employed in your department during their first summer on campus?

Through the Lourie fellowship program and a few TA lines, the department guarantees support for 9 PhD students during the summer. Beyond this, students have the opportunity to seek summer support from research groups, and many, but not all, are successful at receiving this additional funding. Most summer researchers in experimental nuclear physics are supported in the summer through research grants.

What is the health insurance premium for graduate students in your department?

The individual bi-weekly premium is \$33.59, while the family bi-weekly premium is \$207.84.

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://www.stonybrook.edu/commcms/grad/documents/tuition-funding/parental-leave-policy.pdf>

Medical leave of absence has the following stipulations:

<https://catalog.stonybrook.edu/content.php?catoid=4&navoid=195&hl=%22absence%22&returnto=search>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes, courses are waived for PhD students who have completed core courses in Physics through an MS degree. This is subject to the

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department has an active and student-run Quality of Life committee. Through the Quality-of-Life committee, students have set up surveys and brought up difficulty issues (such research pay) with the faculty.

The program provides several social and community-building mechanisms to support students throughout their time at Stony Brook. One key resource is the student-run mentoring program described above, which pairs first-year students with more advanced peers. Additionally, the physics department offers a variety of events designed to build a sense of community. For example, the Physics and Astronomy Graduate Student Association (PGSA) hosts a "tea time" every Monday and Thursday in the graduate student lounge for first- and second-year students, providing an informal place for conversation. Finally, the department has a long-standing tradition of weekly summer socials hosted by various research groups, offering students an opportunity to socialize and form relationships within their research community. These initiatives collectively promote a welcoming atmosphere by strengthening bonds between students and faculty.

Temple University

Department of Physics
Philadelphia, Pennsylvania

Department Website:

<https://cst.temple.edu/department-physics>

Graduate Program Website:

<https://cst.temple.edu/department-physics/graduate-program>

Admission Website:

<https://cst.temple.edu/admissions/graduate-admissions>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Martha Constantinou
marthac@TEMPLE.EDU

Temple University is located in Philadelphia, PA. Temple University's 17 schools and colleges, nine campuses, hundreds of degree programs and more than 37,000 students combine to create one of the most comprehensive and diverse learning environments in the USA. The Physics Department was recently relocated to a new \$150-million facility, the Science Education and Research Center (SERC) building. Besides Nuclear and Particle Physics, other broad research areas in the department involve condensed matter physics, and atomic, molecular and optical physics.

Nuclear Physics Research Areas:

Nucleon Structure, Nuclear Few-body Systems, Hadron Spectroscopy and Structure, Electroweak Interactions, Fundamental Symmetries, High-energy Collider Physics of Strong Interactions, Lattice Gauge Theories, Physics Beyond the Standard Model

List of complementary Physics Research Areas:

Medical Physics, Astrophysics

of faculty in specific research groups:

Phenomenology, Astrophysics

Nuclear People:

Experimental Faculty: 3
Theoretical Faculty: 3
Staff/Research Scientists: 2
Postdoc: 2
Graduate Students: 10
Female physicists: 15

Contact in Nuclear Physics:

Bernd Surrow (surrow@temple.edu)

Experimental Nuclear Physics Research:

Fundamental symmetries, neutrino interactions, and elementary particles. Current research projects include the measurement of neutrino oscillations at the Daya Bay Nuclear Power Plant, a search for sterile neutrinos at the High Flux Isotope Reactor at Oak Ridge National Laboratory, and precision electroweak scattering experiments.

Study of the nucleon structure and of the few-body nuclear systems at the Thomas Jefferson National Accelerator Facility (Jefferson Lab), at the MAMI Microtron in Germany, and at PSI in Switzerland. Current research projects focus on the spin structure of the nucleon, on the nucleon mass budget, on the nucleon properties in the nuclear medium, on the Generalized Polarizabilities of the proton, the study of the excitation mechanism of the nucleon, and the proton radius puzzle.

Temple University is leading a program at the Brookhaven National Laboratory on gluon polarization measurements and a program studying the production of W bosons to deepen our understanding of the QCD sea.

The EIC will be a particle accelerator that collides electrons with protons and nuclei to produce snapshots of those particles' internal structure—like a CT scanner for atoms. The electron beam will reveal the arrangement of the quarks and gluons that make up the protons and neutrons of nuclei. The EIC will allow us to study this strong nuclear force and the role of gluons in the matter within and all around us.

Theoretical Nuclear Physics Research:

We address conceptual and phenomenological questions in the field of hadron structure. Topics include the spin structure of the nucleon, the universality and factorization of parton densities, and 3-D imaging of hadrons. The work is closely related to current and future experiments at high-energy particle accelerators.

Large scale simulations of Lattice QCD to study the strong interactions that bind quarks and gluons together to form the nucleons, the fundamental constituents of the visible matter. Open questions related to hadron structure are being addressed with numerical simulations performed on the biggest supercomputers.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$34,666.50 (12 month)

What are the opportunities for students to be employed in your department during their first summer on campus?

Research Group Support (RA)

What is the health insurance premium for graduate students in your department?

Fringe benefit rate (2024): 19.40%

Does your department provide a tuition waiver for first-year students?

Yes

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://grad.temple.edu>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

This is handled on a case-by-case basis!

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

See: <https://grad.temple.edu/about/diversity>



The City University of New York

Physics
New York, NY

Department Website:

<https://www.gc.cuny.edu/>

Graduate Program Website:

<https://www.gc.cuny.edu/physics>

Admission Website:

<https://www.gc.cuny.edu/physics/admissions-and-aid>

Application Deadline:

January 10

General GRE required?

No.

Physics GRE required?

No, but strongly recommended.

Median time to PhD:

5.5 years.

Contact for graduate admission:

physics@gc.cuny.edu

A public graduate school in the center of NYC

Innovative research, rigorous scholarship, and collaborative and interdisciplinary learning define graduate education at the CUNY Graduate Center and prepare students with creative, problem-solving expertise to thrive in a changing world.

Nuclear Physics Research Areas:

High-energy hadronic collisions and deeply inelastic scattering, strongly interacting matter under extreme conditions of gluon density or temperature.

List of complementary Physics Research Area:

The CUNY Graduate Center Physics Program's research areas include Astrophysics & Astronomy, Atomic, Molecular & Optical Physics, Biophysics, Computational & Statistical Physics, Elementary Particles & High-Energy Physics, Materials Science & Condensed Matter Physics, Mathematical Physics, and Soft Condensed Matter Physics, along with several related fields like Fluid Dynamics, Photonics, and Quantum Optics.

of faculty in specific research groups: 3

Nuclear People:

Experimental Faculty: 1

Theoretical Faculty: 2

Staff/Research Scientists: 0

Postdoc: 2

Graduate Students: 3

Female physicists: 2

Contact in Nuclear Physics:

Stefan Bathe,

stefan.bathe@baruch.cuny.edu

The nuclear physics group at Baruch College consists of Prof. Stefan Bathe, who is a member of the sPHENIX collaboration at the Relativistic Heavy-Ion Collider (RHIC) and the ePIC collaboration at the future Electron Ion Collider (EIC) at Brookhaven National Laboratory. The sPHENIX experiment measures the properties of the Quark-Gluon Plasma, an emergent phenomenon of the strong interaction, in ultra-relativistic collisions of heavy nuclei at RHIC with a state-of-the-art collider detector with electromagnetic and hadronic calorimetry, precision tracking, and microvertexing. The ePIC experiment explores the structure of matter in electron-proton and electron-ion collisions. Prof. Bathe's group currently has two graduate students and one postdoc.

Profs. Jamal Jalilian-Marian and Adrian Dumitru are active in research focusing on the theory and phenomenology of the strong interactions, i.e. Quantum Chromodynamics. Their theoretical ideas and predictions on the dynamics of particle production are probed and tested in nuclear and particle collision at high energy, or at extreme temperatures in excess of 10^{12}K which occur in experiments performed at RHIC and the Large Hadron Collider (LHC) as well the soon to be built Electron Ion Collider (EIC).

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

Graduate students are fully guaranteed a stipend of 35K per year for 5 years and their tuition is fully covered for 5 years.

What are the opportunities for students to be employed in your department during their first summer on campus?

CUNY physics graduate students may find employment in their department during their first summer through research assistantships, departmental work-study positions, or external internships.

What is the health insurance premium for graduate students in your department?

Graduate students get health benefits for 5 years, individual: \$28, family:189.

Does your department provide a tuition waiver for first-year students?

Yes. Tuition is fully covered for 5 years.

Are graduate students unionized at your school?

Yes.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://www.gc.cuny.edu/human-resources/policies-and-procedures/family-medical-leave-act-fmla>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

This can be negotiated with the Program manager who can waive course requirements.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The CUNY Physics PhD program at the Graduate Center is actively working to be inclusive and welcoming, with features like a competitive financial support package, a fellowship honoring a pioneering female physicist (Myriam Sarachik), and hosting the American Physical Society's Conference for Undergraduate Women in Physics to encourage women and gender minorities in physics.



University of California- Los Angeles

Physics and Astronomy Department
Los Angeles, California

Department Website:

<https://www.pa.ucla.edu/>

Graduate Program Website:

<https://www.pa.ucla.edu/graduate-students.html>

Admission Website:

<https://www.pa.ucla.edu/graduate-students.html>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Brenda Buenrostro
(brenda@physics.ucla.edu)

The University of California, Los Angeles (UCLA) is a world-renowned public research university located in the vibrant, multicultural city of Los Angeles, California. The campus is nestled in the scenic Westwood neighborhood, just a short distance from the Pacific Ocean and surrounded by iconic landmarks such as the Getty Center, Griffith Observatory, and Hollywood Hills. As part of a global city known for its innovation and cultural diversity, UCLA offers students unparalleled access to a wide array of academic, cultural, and professional opportunities. With over 45,000 students from diverse backgrounds, UCLA fosters a dynamic learning environment that encourages interdisciplinary collaboration and intellectual growth. The university's strong commitment to research, education, and public service makes it a leading institution in higher education worldwide.

The UCLA Department of Physics and Astronomy is one of the largest and most active physics departments in the country, with over 60 faculty members, numerous research groups, and a student community consisting of hundreds of graduate and undergraduate students. The department supports a broad range of research areas across theoretical, experimental, and observational physics, with active collaborations at major national and international facilities. The nuclear physics group, in particular, is highly engaged in both experimental and theoretical research, with ongoing partnerships at Relativistic Heavy Ion Collider (RHIC) and the future Electron-Ion Collider (EIC) at Brookhaven National Laboratory. The department provides a supportive and stimulating environment for research and learning, offering state-of-the-art computational resources, modern laboratory facilities, and abundant opportunities for students to engage in collaborative projects with national and international institutions. Through these resources and the department's unwavering commitment to excellence, UCLA continues to attract top-tier students and researchers from around the world.

Nuclear Physics Research Areas:

Heavy Ion Collision Physics, Theoretical Nuclear Physics

List of complementary Physics Research Areas: N/A

of faculty in specific research groups: N/A

Nuclear People:

Experimental Faculty: 1
Theoretical Faculty: 1
Staff/Research Scientists: 2
Postdoc: 1
Graduate Students: 8
Female physicists: 1

Contacts in Nuclear Physics:

Huan Zhong Huang
(huang@physics.ucla.edu)
Zhongbo Kang
(zkang@physics.ucla.edu)

The UCLA Nuclear Physics Group (<https://nuclear.physics.ucla.edu/>) is engaged in a broad and dynamic research program at the interface of Quantum ChromoDynamics (QCD) and hadron physics, with a mission to uncover the fundamental principles governing nuclear matter and hadron structure. The experimental program also includes neutrinoless double beta decay physics. Our experimental and theoretical research programs address some of the most profound questions in modern physics. From exploring the microscopic world of quarks and gluons in the Quark-Gluon Plasma (QGP) or hadrons to probing the properties of elusive neutrinos, our group is dedicated to advancing the understanding of the strong force and the fundamental symmetries of the Universe. Our QCD research program centers on the internal structure of protons, neutrons, and nuclei, as well as the (QGP) — a primordial state of matter that existed microseconds after the Big Bang. On the theoretical front, our work advances the understanding of QCD through quantum imaging of nucleons and nuclei to probe their spin and structure, studies of jets, jet substructure, and heavy flavor production in high-energy collisions, and explorations of gluon saturation in heavy ion collisions. Employing frameworks like QCD factorization theorems, perturbative QCD, modern effective field theories such as Soft Collinear Effective Theory, and the Color Glass Condensate, we unravel the dynamics of quarks and gluons, shedding light on the properties of strongly interacting matter under extreme conditions, such as those in the early universe.

Our group actively participates in major national and international collaborations, including STAR and sPHENIX at RHIC and the ePIC at EIC at Brookhaven National Laboratory. We maintain strong partnerships with other national laboratories such as Brookhaven National Laboratory, Lawrence Berkeley National Laboratory, and Los Alamos National Laboratory, contributing both theoretical frameworks and experimental expertise to advance the field. In neutrino physics, we are members of the CUORE and CUPID experiments at the Gran Sasso National Laboratory (LNGS) in Italy. Our research also integrates modern computational techniques, such as quantum simulations and machine learning, to address complex QCD phenomena. Through these collaborative efforts and access to world-class research facilities, UCLA provides students with hands-on training in state-of-the-art nuclear physics research, preparing them to lead the next generation of discoveries in the field.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

Physics and Astronomy graduate students are eligible for two academic apprentice personnel titles: Teaching Assistant (TA) and Graduate Student Researcher (GSR). A TA will be placed pursuant to the new progression model of TA 1 (No previous UCLA teaching experience required), TA 2 (3 quarters of UCLA teaching experience), and TA 3 (6 quarters of UCLA teaching experience). The TA salary scales can be found here <https://www.ucop.edu/academic-personnel-programs/files/2024-25/oct-2024-scales/t18.pdf>.

A GSR is appointed at salary point 2 (1st Year), salary point 3 (2nd year through pre-ATC) and salary point 5 (post ATC). Salary scales for GSRs can be found here <https://www.ucop.edu/academic-personnel-programs/files/2024-25/oct-2024-scales/t22.pdf>.

The maximum appointment effort for the academic year for all academic apprentice personnel titles is part-time or 50%.

What are the opportunities for students to be employed in your department during their first summer on campus?

All 1st year graduate students have priority for summer TA positions.

What is the health insurance premium for graduate students in your department?

We encourage students to review the ASHE Center website <https://www.studenthealth.ucla.edu/insurance> for all insurance questions.

Does your department provide a tuition waiver for first-year students?

The Physics and Astronomy Department will cover Nonresident Supplemental Tuition during the 1st year. Standard tuition and fees will be covered if a student holds a TA/GSR appointment with at least 25% FTE effort.

Are graduate students unionized at your school?

Yes.

Please provide a link to your university's policy regarding family or medical leave for graduate students.
<https://grad.ucla.edu/academics/graduate-study/leave-of-absence-request/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Not really.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We strive to attract excellent students and build a broad research community at UCLA. There are also quite a few active student-led groups (<https://www.pa.ucla.edu/clubs.html>).

University of California- San Diego

Physics Department
San Diego, California

Department Website:

<https://fullerlab.ucsd.edu/>

Contact for graduate admission:

Department of Physics, UCSD

Nuclear Physics Research Areas:

Theoretical Nuclear and Elementary Particle Physics
and Astrophysics and Gravitation/Cosmology

List of complementary Physics Research Areas:

Particle; Astro

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 8

Staff/Research Scientists: 2

Postdoc: 2

Graduate Students: 3

Female physicists: See website

Contact in Nuclear Physics:

George Fuller



University of Houston

Physics Department
Houston, Texas

Department Website:

<https://www.uh.edu/nsm/physics/>

Graduate Program Website:

<https://uh.edu/nsm/physics/graduate/>

Admission Website:

<https://www.uh.edu/graduate-school/admissions/how-to-apply/>

Application Deadline:

January 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

4-5.5 years

Contacts for graduate admission:

Graduate Chair: Dr. Oomman Varghese

(okvarghe@central.uh.edu)

Graduate Academic Advisor:

Aleksandra Novikova

(abnoviko@central.uh.edu)

The University of Houston main campus is located in the heart of Houston, TX, not far from downtown. As of Fall 2024, there were approximately 48,000 students enrolled from various backgrounds and ethnicities.

Almost 11% are international students.

There are 106 graduate physics students enrolled in Fall 2025 (4 MS and 102 PhD).

23 female students; 70 international students; 36

domestic—18 students ethnically identified as Hispanic, Asian or Black.

Nuclear Physics Research Areas:

Heavy Ions, Electron Ion Collider, Lattice QCD, Phenomenology of QCD, Neutron Stars

List of complementary Physics Research Areas:

High Energy Physics, Condensed Matter Physics, Statistical Mechanics, Biological Physics, Quantum Computing, Planetary Physics, Material Science Particle and Nuclear, Condensed Matter, Statistical and Nonlinear, Materials Science, Network Science, Nanoscience, Biological and Medical, Optics and Imaging, Quantum Materials, Quantum Computing, Space and Planetary, Seismic Physics.

of faculty in specific research groups:

HEP:3, CM:6, SM:3, BP: 2, QC: 2, PP:1, MS:3

Nuclear People:

Experimental Faculty: 4

Theoretical Faculty: 2

Staff/Research Scientists:

Postdoc: 8

Graduate Students: 21

Female physicists: 5

Contact in Nuclear Physics:

Dr. Rene Bellwied-

bellwied@uh.edu

Research Collaborations: major involvement in STAR at RHIC at BNL, ALICE at LHC at CERN, and ePIC at EIC at BNL. The theorists are members of the MUSES and NP3M collaborations

Research Facilities: BNL and CERN

Proximity to / relationship with national laboratories: BNL and CERN

In STAR: studies of momentum fluctuations, speed of sound and exotica formation (glueball) as a function of beam energy in heavy ion collisions

In ALICE: strangeness and charm particle production as a function of system size, evidence for quantum entanglement in proton-proton collisions, neutron skin and hadron clustering measurements in heavy ions, flow fluctuations, baryonic resonances and parity partners, energy-energy correlators and jet substructure

In ePIC: gluon imaging and gluon saturation, Silicon detector development, calorimeter development for luminosity measurements

In theory: lattice QCD simulations of thermodynamics. Equation of state at high density. Study of critical point properties. Phenomenology of heavy-ion collisions

Experimental Nuclear Physics Group:

Rene Bellwied profile:

<https://www.uh.edu/nsm/physics/people/profiles/rene-bellwied/>

Claudia Ratti's group:

http://nsmn1.uh.edu/cratti/Nuclear_Theory_Group/

Volodymyr Vovchenko webpage:

<https://vovchenko.net/>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$27,912 for twelve months. Generally, there is no differential between TA and RA. RAs can vary between research groups.

What are the opportunities for students to be employed in your department during their first summer on campus?

All PhD students who meet the University and program requirements for employment are appointed as TAs or RAs in their first summer. While some students work as RAs, most students are hired as Teaching Assistants over the first summer.

What is the health insurance premium for graduate students in your department?

The department does not provide a health insurance premium. For the 2024-2025 academic year, the fall premium for new students is \$1181.78 and for returning students, it is \$941.90. Spring/Summer premium is \$ 1, 647.91.

Does your department provide a tuition waiver for first-year students?

Yes. The tuition of all students with an employment (RA/TA) is waived.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Such a policy does not exist.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No, however, they have an option to take a qualifying exam for a basic core course (6 courses) before the start of the semester if they feel that they possess an adequate knowledge of that course. If they pass, they do not have to take that course.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We have a graduate student representative on the Graduate Studies Committee. We have several student organizations (APS Chapter, Women in Physics, SACNAS, Astronomy Society) that contribute to creating a welcoming and inclusive environment.



University of Illinois- Chicago

Department of Physics

Chicago, Illinois

Department Website:

<https://phys.uic.edu/>

Graduate Program Website:

<https://phys.uic.edu/academics/graduate-studies/>

Admission Website:

<https://phys.uic.edu/academics/graduate-studies/graduate/>

Application Deadline:

February 15 (international)
March 15 (Domestic)

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

physics@uic.edu

The University of Illinois Chicago is the city's largest and only public Carnegie Research 1 institution. Its 16 academic colleges serve over 33,500 undergraduate, graduate, and professional students. UIC is recognized as one of the best public universities and one of the nation's most ethnically rich and culturally diverse campuses. Located in the heart of Chicago, it is an integral part of one of the world's greatest cities' educational, technological, and cultural fabric. As one of the country's most ethnically and culturally diverse universities, UIC's welcoming environment allows everyone to study, work, and grow while broadening their perspectives and worldview. The UIC's mission is to provide the broadest access to the highest levels of intellectual excellence, creating transformative knowledge and providing a wide range of students with the educational opportunity only a leading research university can offer.

The Department of Physics was founded in 1965 when the University of Illinois Chicago Circle opened. By 1968, the Illinois Board of Higher Education had approved several doctoral programs, and our first two physics PhD students graduated only six years later in 1973.

The Department of Physics is home to tenure-track faculty members, clinical faculty, research faculty, lecturers, and visiting faculty who perform research and teach a wide variety of physics classes to students across the whole campus, as well as mentor around 80 undergraduate physics majors and over 100 graduate students. We offer exciting and challenging programs of study at both the undergraduate and graduate levels, as well as active research facilities and relationships with leading research labs in Illinois and around the world. The Department of Physics conducts world-class forefront research in seven main fields of study: applied laser, biological and soft matter, condensed matter, materials physics, nuclear physics, particle physics, and renewable energy.

Nuclear Physics Research Areas:

High Energy Nuclear Physics, Relativistic Heavy Ion Collisions, Matter Under Extreme Conditions, Quark-Gluon Plasma, Strong Interactions

List of complementary Physics Research Areas:

High Energy Particle Physics, New Particle Searches, Strong Interaction and Standard Model, Super Symmetric Quantum Mechanics, CP Violation, Algebraic and Topological Aspects of Quantum Field Theory, Biological and Soft Matter Physics, Condensed Matter Physics

Nuclear People:

Experimental Faculty: 3

Theoretical Faculty: 2

Staff/Research Scientists: 1

Postdoc: 4

Graduate Students: 16

Female physicists: 2

Contact in Nuclear Physics:evdolga@uic.edu**Brookhaven National Lab**

Located on Long Island, just 20 miles from New York City, BNL is one of the most powerful multidisciplinary research laboratories in the United States. The UIC is a long-standing member of the



STAR Collaboration at the Relativistic Heavy Ion Collider located at BNL and has contributed significantly to this facility's experimental and theoretical programs. Our primary physics interest is to study the formation and characteristics of the quark-gluon plasma, a state of matter believed to exist at the beginning of the universe.

CERN - Geneva, Switzerland

If you have dreamt of visiting a historic European city, you can take a quick tram into Geneva, Switzerland, after a day (or night) of experimental shift. The high-energy frontier of nuclear physics, the Large Hadron Collider at



CERN, operates on the Swiss-French border to take our view of nuclear matter to a new paradigm. UIC is one of the DOE-funded university groups approved to work on experimental heavy ion research at the Compact Muon Solenoid (CMS) detector.

Fermilab

Fermilab, the premiere high-energy physics laboratory, hosts the center for CMS research in the U.S. The lab is



located only 30 miles from the UIC campus and is the home of the largest CMS Tier-1 Computing Center. Despite being 4400 miles from CERN, Fermilab's remote operations center (shown left) provides real-time access and control to the CMS detector.

Premier Silicon Detector laboratory at FNAL aids in advancing the new generation of experimental apparatuses.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The nine-month graduate student stipend in the UIC Physics Department in 2025 is \$24,200. There is no difference between RA and TA stipends or between stipends for students of different years.

What are the opportunities for students to be employed in your department during their first summer on campus?

Most of our graduate students are employed on campus during the summers as Research or Teaching assistants.

What is the health insurance premium for graduate students in your department?

\$697 per semester

Does your department provide a tuition waiver for first-year students?

Tuition waivers are guaranteed for at least the first three years to all admitted PhD students.

Are graduate students unionized at your school?

Teaching Assistants are part of the union, while Research Assistants are not unionized.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://grad.uic.edu/academic-support/registration-information/leave-of-absence/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Graduate students with completed MS degrees are admitted with advanced standing and receive a reduction of required hours.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

At UIC, The Graduate Student Council (GSC) is the governing Graduate Student Body comprising representatives from all degree-granting programs in the Graduate College. Addressing the specific needs of graduate students, GSC organizes academic seminars and workshops, supports students with travel and project awards, unites them with meaningful social and cultural events, and represents the UIC graduate student body in many different organizations and events.



University of Kentucky

Physics and Astronomy Department

Lexington, Kentucky

Department Website:

<https://pa.as.uky.edu/>

Graduate Program Website:

<https://pa.as.uky.edu/graduate-program>

Admission Website:

<https://pa.as.uky.edu/application-information>

Application Deadline:

January 1

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Director of Graduate Studies as listed here:

<https://pa.as.uky.edu/about>

The University of Kentucky's Department of Physics and Astronomy offers an exceptional graduate program in physics, situated in the vibrant city of Lexington. Our historic Bluegrass region combines southern charm with modern amenities, providing an ideal environment for focused research and study. Lexington's moderate cost of living and rich cultural heritage, including renowned horse farms, and bourbon distilleries, make it an attractive destination for graduate students. For outdoor enthusiasts, the world-famous Red River Gorge is just an hour away, offering some of the best rock climbing in the eastern United States and providing a perfect weekend escape for students.

Our department, home to over 30 faculty members, includes a dedicated nuclear physics group that maintains strong collaborations with major national laboratories. Graduate students in nuclear physics benefit from our department's extensive research facilities and our close proximity to the Thomas Jefferson National Accelerator Facility. As part of our diverse student body of approximately 100 graduate students, nuclear physics researchers enjoy a collaborative atmosphere while working on cutting-edge experiments in nuclear structure, hadronic physics, and nuclear astrophysics.

Nuclear Physics Research Areas:

Our faculty are active in the areas of experimental and theoretical nuclear physics, with specific areas of expertise including hadronic structure, nuclear structure, nuclear astrophysics, fundamental symmetries and neutrino physics.

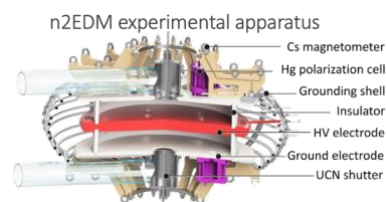
List of complementary Physics Research Areas and # of faculty members:

Astronomy-4, Astrophysics and Cosmology-1, Condensed Matter and Materials research-7, Theoretical Particle Physics and Quantum Information Science-7

Experimental Faculty: 8
Theoretical Faculty: 5
Staff/Research Scientists: 0
Postdoc: 8
Graduate Students: 24
Female physicists: 10

Contact in Nuclear Physics:
Renee Fatemi

Fundamental Interactions: Several UK faculty members are part of collaborations that search for time reversal violation in nature, both through the precision measurement of the neutron and the Radium-225 atom electric-dipole moment (EDM). A significant EDM could shed light on the origin of the matter/anti-matter asymmetry of the universe and provide the first terrestrial signal of new particles and forces. The PIONEER experiment also aims to look for new physics by using the pion beams at PSI to make a precision measurement of the ratio of charged pion decay to muons and electrons. Kentucky is also involved in nEXO, a next generation neutrinoless double beta decay experiment that will provide insights into the nature and mass of neutrinos.



Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The baseline stipend is currently 23k annually; TAs and RAs have the same amount of support, as well as junior and senior students. The stipend is adjusted annually for inflation. First year students are typically awarded a fellowship in the amount of up to 3k. Additionally, first year students are awarded another 3k fellowship to support summer research.

What are the opportunities for students to be employed in your department during their first summer on campus?

The department strongly encourages students to engage in research during their first summer on campus. The department provides a fellowship to support that.

What is the health insurance premium for graduate students in your department?

Student health insurance is normally covered by the TA/RA assistantship. More information can be found here

<https://hr.uky.edu/insurance-and-retirement/health-insurance-and-benefits/options-for-receiving-health-care/student-health-plan>

Does your department provide a tuition waiver for first-year students?

Tuition is covered by either RA or TA support, which is provided to all incoming students.

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Leave of Absence information can be found here: <https://gradschool.uky.edu/registration-holds-important-dates-leave-absence#:~:text=Requesting%20Leave%20of%20Absence,will%20modify%20your%20record%20accordingly>

Also here: https://gradschool.uky.edu/sites/default/files/2025-01/dgsmanual_2024-25-final.pdf

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

We do not have an explicit reduction, but we allow to count previously taken courses after a student takes a "bypass" exam.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department is committed to creating an inclusive and welcoming environment for graduate students through specific initiatives including regular meetings of student leadership with the department head. Student organizations like the Society of Physics Students and Physics Graduate Student Council provide community support and helpful feedback, helping promote diversity and inclusion. Regular external reviews assess all aspects of the department, including climate surveys and demographic data, to ensure continuous improvement of our inclusive environment.

University of Maryland

Department of Physics
College Park, Maryland

Department Website:

<https://umdp.physics.umd.edu/>

Application Deadline:

December 15

Contact for graduate admission:

Tom Cohen-

cohen@physics.umd.edu

Nuclear Physics Research Areas:

Theoretical nuclear physics, Dark matter (astro)

List of complementary Physics Research Areas:

Many including, particle physics (theory and experiment), particle astrophysics, quantum information

Nuclear People:

Experimental Faculty: 1

Theoretical Faculty: 4

Staff/Research Scientists:

Postdoc: 3

Graduate Students: 8

Female physicists: 4

Contact in Nuclear Physics:

Tom Cohen-

cohen@physics.umd.edu

University of Massachusetts- Amherst

Department of Physics
Amherst, Massachusetts

Department Website:

<https://umass.edu/physics/>

Graduate Program Website:

<https://umass.edu/physics/graduate>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6.4 years

Contact for graduate admission:

Scott Hertel
shertel@umass.edu

A college town of 35,000 people, Amherst is located in the Pioneer Valley of Western Massachusetts. With a definite New England character and immersed in rural surroundings, it has a strong academic and cultural identity. Founded in 1863 as an agricultural college, UMass Amherst is a public research university and the flagship campus of the University of Massachusetts system. Enrollment tops 21,000 undergraduate and 6,000 graduate students. The physics department currently has 29 tenure-track faculty, 7 lecturers, and about 102 graduate students, with 19 women and 83 men. It hosts the Amherst Center for Fundamental Interactions (ACFI) that addresses physics questions at the interface of the intensity, cosmic and energy frontiers. UMass Amherst is a member of the Five College Consortium which also includes Amherst, Hampshire, Mount Holyoke, and Smith Colleges.

Nuclear Physics Research Areas:

Medium Energy, Fundamental Symmetries and Neutrinos, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

High Energy Physics at ATLAS, Particle Phenomenology, Dark Matter Experiment, Cosmology

of faculty in specific research groups:

Medium Energy: 1
Fundamental Symmetries and Neutrinos: 4
Theoretical Nuclear Physics: 1
High Energy Physics at ATLAS: 5
Particle Phenomenology: 3
Dark Matter Experiment: 2
Cosmology: 1

Nuclear People:

Experimental Faculty: 4

Theoretical Faculty: 1

Staff/Research Scientists: 0

Postdoc: 6

Graduate Students: 18

Female physicists: 1

Contact in Nuclear Physics:

Rory Miskimen

miskimen@umass.edu

Nuclear physics experiment – search for new physics via precision measurement of muon ($g-2$); precision parity-violating electron scattering; searches for electric dipole moments and CP-violation in leptons and nuclei; solar neutrinos; neutrino-less 2β decay; searches for sterile neutrinos; weakly interacting dark matter; tests of low-energy QCD, chiral anomaly and hadron electromagnetic polarizabilities. Faculty work in collaborative experiments running at laboratories in North America and Europe:

Argonne (Lemont, IL) – CeNTREX, search for P- and T-violating nuclear forces in a TIF molecular beam

Fermilab (Batavia, IL) – Measurements of the anomalous magnetic moment of the muon with sensitivity to new physics (Muon $g-2$ E989); Search for neutrinoless conversion of a muon to electron in the field of a nucleus (Mu2e).

Gran Sasso National Lab (Assergi, Italy) - The low muon flux surviving at this deep underground site is ideal to detect solar neutrinos (Borexino), and search for weakly interacting massive dark matter particles (WIMPs, DarkSide).

Jefferson Lab (Newport News, VA) - High precision parity violating electron scattering experiments for measurements and tests of (i) neutron skin thickness in nuclei (PREX), and (ii) fundamental symmetries and the weak charge of the electron (MOLLER). Experiments at GlueX with linearly polarized, GeV scale photons for low-energy tests of QCD (NPP/CPP, PrimEx)

Sanford Underground Research Facility (Lead, SD) - Even deeper than Gran Sasso, the Homestake mine will host the LZ experiment to search for WIMP dark matter (a previous generation experiment, LUX, holds one of the best sensitivities to date).

SNOLAB (Sudbury, Ontario, Canada) - A search for neutrino- less 2β decay of Xe-136 will be carried out by nEXO (the now- decommissioned EXO-200 experiment holds one of the best sensitivities for these searches).

Nuclear physics theory - CP-violation, electric dipole moments, origin of matter; effective field theories of QCD; non- equilibrium QFT; EW symmetry-breaking; physics beyond the Standard Model; origin of neutrino mass, lepton flavor and lepton number non-conservation; EW baryogenesis, dark matter, and the LHC; tests of fundamental symmetries.

Allied departmental research areas – high energy physics at ATLAS; dark matter experiment; cosmology; theoretical gravity.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$28,113.20(using current rate-subject to change). There is no differential.

What are the opportunities for students to be employed in your department during their first summer on campus?

Full-time summer RA appointments are available from research groups, and we try to accommodate all students with at least some support during their first summer.

What is the health insurance premium for graduate students in your department?

Costs vary depending on the student's selected coverage. Further information can be obtained from the Department Graduate Program secretary, Katie Bryant, kjbryant@umass.edu

Does your department provide a tuition waiver for first-year students?

All students are considered full-time when they enroll and working as a TA or RA, and qualify for a tuition waiver

Are graduate students unionized at your school?

Yes, they are unionized under GEO.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

[GEO 2024 - 2027 Contract - Website.pdf](#) This is the GEO contract- on page 57 they are given "Additional Time Off"

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

While we do not have an explicit reduction in course requirements for students entering with an MS, we do have a process for advancing them in the program. Typically, if a student has an MS that covers much of our same core material, they get a full course waiver without having to apply individually for each course. If it isn't clear, or if they have only some of the core curriculum, they can apply for a waiver, in which they provide information about the course they took (book, syllabus, exams, or whatever is available). The Graduate Program Director collects this info and sends it out to the course instructors for their input, the GPD making the final call on any waivers.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

In response to student surveys and in an effort to increase the diversity and decrease the time-to-degree, the department implemented a number of new initiatives in the last 7 years. These include: (i) eliminating high-stakes qualifying exams for advancement to candidacy; (ii) developing and documenting a standardized curriculum for our core graduate courses, which also allows students to take advanced research courses in Y2; (iii) providing an extended orientation and 4-week "on-ramp" program for about 1/3 of our incoming students; (iv) adopting a holistic approach to admissions; (v) improving and encouraging student participation in departmental and university activities; (vi) adding a peer-mentoring element to student advising; and (vii) improving communication with students through all-hands meetings and improved web pages. We also added professional development components to our program, making use of workshops offered by the Graduate School's Office of Professional Development and including two Physics seminar courses (one required). In turn, our students are more involved in the department and in their own education, organizing weekly students-only seminars in different subfields (soft matter/bio, QM/QI, particle/nuclear). A highlight is the Physics Community Organization (PCO), a student-run group that organizes game nights and other social events for graduate students and postdocs.



University of Michigan

Physics Department
Ann Arbor, Michigan



Department Website:

<https://lsa.umich.edu/physics>

Graduate Program Website:

<https://lsa.umich.edu/physics/graduate-students.html>

Admission Website:

<https://lsa.umich.edu/physics/graduate-students/application.html>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

None Provided

Contact for graduate admission:

physics.sso@umich.edu

The University of Michigan, founded in 1817, is a leader in undergraduate and graduate education.

The university is one of the world's premier research universities encompassing world-renowned faculty, rigorous academic programs and diverse cultural and social opportunities in a stimulating intellectual environment. Annual research spending at the University of Michigan is above \$2 billion, which highlights the university's role as an economic resource that benefits the entire state. The University of Michigan consistently ranks among the nation's top five research universities, based on R&D expenditure statistics compiled by the National Science Foundation.

The Department of Physics includes more than 50 faculty and approximately 150 PhD students.

Nuclear physics research areas:

Hadronic Structure of Nucleons

Spin-Momentum Correlations in QCD

Tests of Fundamental Symmetries

Neutrinos as a Probe of the Nucleus

Other broad research areas in department:

Astrophysics / Cosmology

Atomic, Molecular & Optical

Biophysics

Condensed Matter Physics

Elementary Particle Physics

Nuclear Physics Research Areas:

Medium Energy, Fundamental Symmetries & Neutrinos

List of complementary Physics Research Areas:

Direct dark matter detection

Nuclear People:

Experimental Faculty: 5

Theoretical Faculty: 0

Staff/Research Scientists: 0

Postdoc: 6

Graduate Students: 12

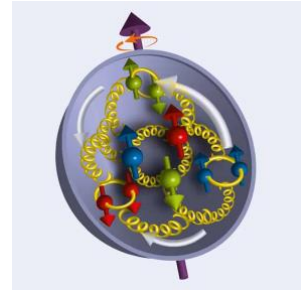
Female physicists:

Contacts in Nuclear Physics:

Individual faculty

Hadronic Structure and Dynamics of Partons

Professor Christine Aidala's and Wolfgang Lorenzon's research focuses on relating the quarks and gluons of QCD to the hadrons we measure and work with in the laboratory. Professor Aidala studies the process of hadronization as part of the LHCb experiment at CERN, as well as spin-momentum correlations in the nucleon as part of the sPHENIX experiment at the Relativistic Heavy Ion Collider and the future ePIC experiment at the Electron-Ion Collider. Professor Lorenzon's research focusing on the quark-gluon structure of the nucleons is carried out at Fermilab as part of the SpinQuest experiment to determine the sign and magnitude of the anti-u quark and anti-d quark Sivers functions, and at the Paul Scherrer Institute in Switzerland as part of the MUSE experiment to reassess the proton charge radius and the discrepancies that remain.

**Tests of Fundamental Symmetries**

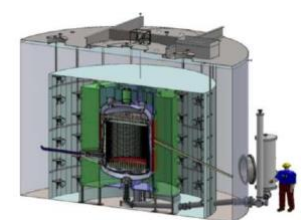
Professor Tim Chupp's group pursues development of precision measurement, optical pumping, and nuclear polarization techniques for application to a variety of fundamental and applied problems. Professor Chupp is leading collaborations searching for the CP-violating electric dipole moments of the neutron and heavy atoms (XenonEDM Experiment), as well as the muon magnetic moment $g-2$ experiment at Fermilab. The group is advancing optically pumped quantum sensors for magnetometry for these experiments, fundamental and exotic physics searches, and broader magnetometry applications.

**Neutrinos as a Probe of the Nucleus**

Professor Josh Spitz's group studies the neutrino and its role in the evolution of the Universe. The key to this research, centered around neutrino mass and mixing, is developing a detailed understanding of how the neutrino interacts with the nucleonic structure of the nucleus. To this end, the Spitz group collaborates on the MicroBooNE and SBND experiments at Fermilab and the JSNS2 experiment at JPARC in Japan.

**Dark Matter Detection**

Professors Wolfgang Lorenzon and Scott Haselschwardt are involved in the LUX-ZEPLIN (LZ) experiment, which utilizes a liquid-xenon target to search for dark matter at the SURF laboratory in South Dakota. LZ is well suited to detect dark matter through a variety of possible interactions with atomic nuclei. They also work on the next generation experiments XLZD and TESSERACT which extend the science reach for WIMP dark matter masses above and below 1 GeV, respectively. Direct detection of dark matter would have a profound impact not only on nuclear physics, but also on cosmology, astronomy, and particle physics.





University of New Mexico

Department of Physics and Astronomy
Albuquerque, NM

Department Website:

<https://physics.unm.edu/>

Graduate Program Website:

<https://physics.unm.edu/graduate/>

Admission Website:

<https://physics.unm.edu/graduate/admission.html>

Application Deadline:

19 December and 1 August

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Steven Bishop, bishop68@unm.edu

The University of New Mexico (UNM) is a public, flagship research university located in Albuquerque, founded in 1889, offering a wide range of undergraduate and graduate programs. Renowned for its Health Sciences Center, UNM provides extensive medical and nursing education and serves as the largest academic health complex in the state. As a globally recognized institution and a Research I university with high research expenditures, UNM is committed to innovation, community engagement, and educating a diverse student body from nearly 100 countries and every U.S. state. The campus features a distinctive Pueblo Revival architectural style and is situated in the vibrant, culturally rich setting of Albuquerque. UNM is classified as a Hispanic-Serving Institution (HIS) by the US Department of Education. For the 2023-2024 academic year UNM had 6,188 graduate students enrolled across all colleges, with 2,014 students identifying as Hispanic, 2,317 as White. 790 students were US Nonresidents. 2,700 were Male and 3,485 were Female.

The Department of Physics and Astronomy has a distinguished group of over 30 regular faculty and lecturers (including 3 in nuclear physics), approximately 10 research faculty members, and several adjunct faculty. The Department is also actively associated with scientists at many nearby scientific laboratories, including national research facilities, with which many of the adjunct faculty are affiliated.

As of summer 2025, Physics and Astronomy has 92 actively enrolled students, with 75 Males and 17 Females, and 10 students identifying as Hispanic. 23 students are US Nonresidents.

Nuclear Physics Research Areas:

Physics of neutrinos and extreme astrophysical environments such as neutron star mergers and core collapse supernovae

List of complementary Physics Research Area:

Experimental Particle Physics, Cosmology, Theoretical Particle Physics, Astroparticle Physics

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 1

Staff/Research Scientists: 0

Postdoc: 1

Graduate Students: 4

Female physicists: 1

Contact in Nuclear Physics:

Huaiyu Duan



Our Experimental group is involved in the LEGEND collaboration (neutrinoless double beta-decay) and collaborates closely with the LEGEND group at Los Alamos National Laboratory (LANL). Our lab is currently focused on improving the liquid argon veto efficiency using our 320-liter liquid argon cryostat, as well as a physics focus on the possible beyond the Standard Model (BSM) physics to be explored at LEGEND.

Our theory group focuses on neutrino physics, especially the impact of neutrino oscillations on the evolution of compact objects such as core-collapse supernovae and binary neutron star mergers. We also collaborate with LANL colleagues in the research of the many-body quantum aspects of neutrino oscillations in these environments.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The current TA stipends are \$2237.56/mo. or \$11187.80/semester, for full TAs (.50FTE). RA stipends differ by research groups and are typically higher than the TA stipends.

What are the opportunities for students to be employed in your department during their first summer on campus?

Graduate students can be supported as RA if they find suitable research groups to join.

What is the health insurance premium for graduate students in your department?

UNM Grad insurance will be \$1859 for the fall 2025 semester, and \$2602 for spring/summer 2026 semesters (combined). These are paid for any grad student on at least a .25FTE TA/RA assistantship.

Does your department provide a tuition waiver for first-year students?

TA/RA support pays for the tuition.

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy regarding family or medical leave for graduate students.

[https:// <https://hr.unm.edu/benefits/fmla>](https://hr.unm.edu/benefits/fmla)

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No, but students can file petitions to transfer the credits.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department encourages graduate student participation in the P&A Graduate Student Association (<https://unmpandagsa.wixsite.com/home>). GSA representatives meet with the dept. chair monthly to discuss issues facing graduate students. The GSA itself meets biweekly. They organize events among students multiple times a year, including table tennis tournaments, BBQs, and holiday gatherings.

Students in the department have also organized the Women in Physics, Astronomy, and Optics group (WiPAO - <https://wipaoalbuquerque.wixsite.com/wipao>), which holds events of their own throughout the academic year.

These are in addition to the UNM-wide Graduate and Professional Student Association (GPSA - <https://gpsa.unm.edu/>), which further encourages community among the graduate students at the university.

University of North Carolina- Chapel Hill

Department of Physics and Astronomy
Chapel Hill, North Carolina

Department Website:

<https://physics.unc.edu>

Graduate Program Website:

<https://physics.unc.edu/grad/>

Admission Website:

<https://physics.unc.edu/grad/#appProc>

Application Deadline:

~13 December (varies by year)

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6.5 years

Contact for graduate admission:

Maggie Jensen

mejensen@email.unc.edu



UNC was established in 1789 as the nation's first public university. It ranked **6th amongst public universities** in U.S. News and World Reports 2018 rankings of national universities. UNC has approximately 20,700 undergraduate students and 11,500 professional or graduate students. U.S. News also ranks the Triangle region (Chapel Hill, Raleigh and Durham) as **#7 in their top 100 places to live** in the U.S. There is a lively arts and music scene and there are many opportunities for outdoor activities. In addition, the mountains are about a 3-hour drive and the shore is about 2.5 hours away.

Nuclear Physics Research Areas:

Nuclear Structure and Nuclear Astrophysics, Fundamental Symmetries & Neutrinos, Theoretical Nuclear Physics, including Lattice QCD

List of complementary Physics Research Areas:

Astronomy, High-energy theory

of faculty in specific research groups:

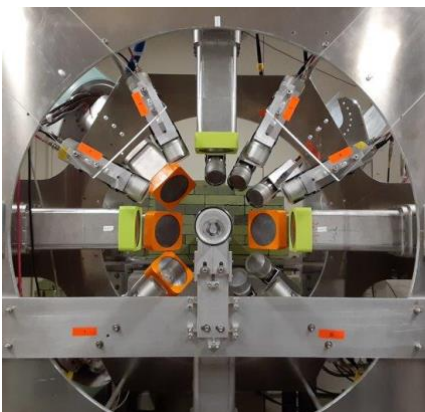
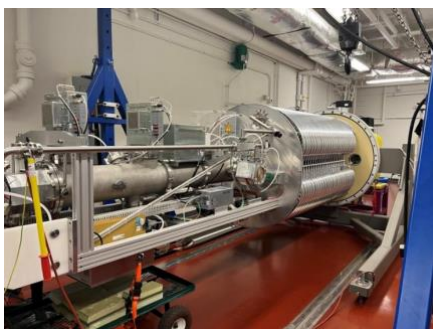
32 tenure-track faculty in astronomy, biophysics, condensed matter (theory and experiment), gravity (theory), cosmology (theory), string theory, and high-energy theory.

Nuclear People:

Experimental Faculty: 6
Theoretical Faculty: 4
Staff/Research Scientists: 1
Postdoc: 3
Graduate Students: 20
(experiment), 9 (theory)
Female physicists: 11

Contact in Nuclear Physics:

Reyco Henning
rhenning@unc.edu



Experimental Nuclear and Astroparticle Physics

J. GRUSZKO | R. HENNING | J. WILKERSON

The UNC group plays a leading role in the worldwide effort to search for neutrinoless double beta decay in ^{76}Ge . We are involved with the next generation of experiments at the Gran Sasso National Laboratory in Italy as part of the LEGEND Collaboration. Our students are involved with data analysis, simulations, building test-stand, and on-site construction and commissioning. We are also involved in the KATRIN tritium beta-decay experiment, a direct measurement of neutrino mass.

Nuclear Astrophysics, D. AYANGEAKAA | A. CHAMPAGNE | C. ILIADIS | R. JANSSENS

UNC is a world-class center for experimental and theoretical research on nuclear reactions and their importance in the evolution of stars and the origin of the elements. Current research topics include abundance anomalies in globular clusters and the evolution of the early galaxy, the production of the elements heavier than iron, the evolution of stars more massive than the sun and radioactive aluminum in the galaxy and in the early solar system.

Nuclear Structure, D. AYANGEAKAA | A. CHAMPAGNE | C. ILIADIS | R. JANSSENS

Our focus is on the low-excitation structure of medium-mass and heavy nuclei, specifically on how nuclear shapes and shell structure evolve on the proton- and neutron-rich sides of stability. This work directly impacts our understanding of the nucleosynthesis of heavy nuclei as well as the matrix elements that describe neutrinoless double beta decay.

Nuclear Theory, G. BASAR | J. DRUT | J. ENGEL | A. NICHOLSON

The UNC nuclear theory group focuses on nuclear structure, fundamental symmetries, hadronic physics using lattice QCD, nuclear astrophysics and general many-body physics, in particular lattice Monte-Carlo methods. Recently, the group has (for example) calculated the nuclear matrix elements governing neutrinoless double beta decay, studied viscosity in strongly interacting gases of cold atoms, modeled nucleosynthesis in stars and supernovae, and developed new theoretical tools to study the physics of strong interactions

Triangle Universities Nuclear Laboratory (TUNL)

TUNL is one of four Department of Energy Nuclear Physics Centers of Excellence, with affiliated experimental and theoretical faculty from Duke, NCCU, NC State, and UNC-Chapel Hill. Located on Duke's campus, TUNL draws collaborators worldwide, with opportunities in both accelerator and non-accelerator-based research. Nuclear structure studies are performed at the High Intensity Gamma Source (HIGS), which provides 1 to 120 MeV γ -ray beams with fluxes of $10^8/\text{s}$, and at the 10-MV tandem van de Graaff accelerator laboratory. The tandem injector system has been upgraded with the installation of two new injectors. Nuclear astrophysics experiments are conducted at HIGS, the tandem and also at the Laboratory for Experimental Nuclear Astrophysics (LENA). LENA has completed a 3-year long upgrade with the installation of the 2.0 MV Singletron accelerator. LENA holds the world record for average ion beam intensity on target among dedicated low-energy nuclear astrophysics laboratories. More than 8% of U.S. nuclear physics PhDs graduate annually from TUNL-related programs. Other programs at TUNL include research in fundamental symmetries and manifestations of quantum chromodynamics at low energies.

Graduate Student Life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

First year TA stipend is \$22,272. Nuclear experimental RA stipend in 2025 is \$35,000.

What are the opportunities for students to be employed in your department during their first summer on campus?

Students have options to work as TAs or RAs depending on their preferences and the funding of research groups. Nuclear experimental students are typically offered RA positions their first summer if funds are available. Theory students typically TA or apply for external scholarships for NSF or DOE.

What is the health-insurance premium for graduate students in your department?

\$4,905 paid by the Department

Does your department provide a tuition waiver for first-year students?

Tuition is covered by RA or TA support for all first-year students.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students. If such a policy does not exist, please say that.

<https://gradschool.unc.edu/studentlife/policies/parental-leave/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

There is no explicit policy. Credit for previous coursework is handled on a case-by-case basis in consultation with the Director of Graduate Studies.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

Please visit this website for our current efforts: <https://physics.unc.edu/community/>



University of Notre Dame

Department of Physics and Astronomy

Notre Dame, IN 46556



Department Website:

<https://physics.nd.edu>

Graduate Program Website:

<https://physics.nd.edu/graduate/>

Admission Website:

<https://physics.nd.edu/graduate/apply>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6.4 years

Contact for graduate admission:

Lori Fuson : LoriFuson@nd.edu

Notre Dame is a private research university founded in 1842 and is consistently ranked among the nation's top 20 institutions of higher education. It has ~1500 faculty members, ~8900 undergraduate students, and ~4200 graduate or professional students. The university is adjacent to South Bend, Indiana, near the southeast corner of Lake Michigan, and is approximately 90 miles from Chicago.

The Department of Physics and Astronomy is home to over 130 Ph.D. students, working closely with 47 faculty members in a broad spectrum of research areas. Typically, 30-40 of these students are in experimental and theoretical nuclear physics.

Nuclear Physics Research Areas:

Nuclear Structure and Nuclear Astrophysics,
Fundamental Symmetries, Theoretical Nuclear Physics,
Applied Nuclear Physics

List of complementary Physics Research Areas:

Astrophysics

of faculty in specific research groups:

Astrophysics/Astronomy: 8

Condensed matter/complex systems/biophysics: 14

High energy physics: 11

Nuclear physics: 12

Nuclear People:

Experimental Faculty: 9

Theoretical Faculty: 4

Staff/Research Scientists: 8

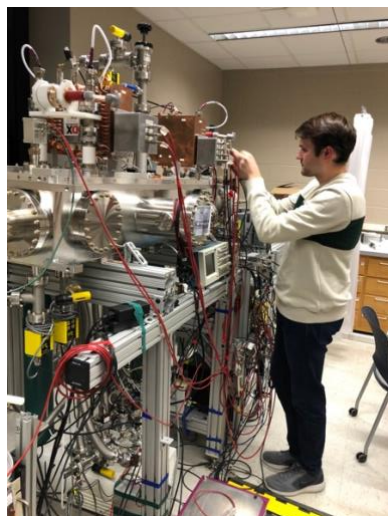
Postdoc: 5

Graduate Students: 36

Female physicists: 16

Contact in Nuclear Physics:

Maxime Brodeur :

mbrodeur@nd.edu

The Nuclear Science Laboratory at Notre Dame is one of the longest continuously operating accelerator laboratories at any U.S. university, and its nuclear physics program is ranked among the strongest in the nation. Our research is built around a broad program in experimental and theoretical low-energy nuclear physics, including nuclear astrophysics, nuclear structure, nuclear reactions with radioactive ion beams, accelerator mass spectroscopy, fundamental symmetries, and applied nuclear physics. Complementing our three on-campus accelerators, we also operate a fourth accelerator for research focused on high-sensitivity astrophysics studies one mile underground at the Sanford Underground Research Facility in South Dakota. We also conduct experiments at other U.S. universities, at national laboratories and at facilities worldwide. For more information about the experimental nuclear physics group visit: <https://isnap.nd.edu/>

Nuclear theory research at Notre Dame addresses the origin of the elements and the strongly correlated motion of nucleons within the nucleus, through investigations in theoretical nuclear astrophysics and nuclear structure physics. In nuclear astrophysics, we probe the properties of nuclei and nuclear matter under extremes of temperature and density, to constrain nuclear physics and astrophysical environments. In nuclear structure, we seek to understand the emergence of simple patterns, such as quantal rotational and vibrational modes, through ab initio and collective approaches, in nuclei from the very lightest to the heaviest and to the limits of stability. We also perform ab initio nuclear structure calculations aimed at constraining physics beyond the standard model. For more information about the nuclear theory group visit: <https://nuclear-theory.nd.edu/>

Student participation in every aspect is an essential component of a successful research program. We offer graduate students a comprehensive research experience that includes hands-on work with experimental equipment, operating accelerators, designing instruments, analyzing data, developing and carrying out calculations for the nuclear quantum many-body problem on high-performance computers, performing calculations of nuclear reaction networks in astrophysical environments, and publishing scientific articles.

Graduate Student Life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The 9-month salary in AY 25/26 is \$29,700. With three months of summer salary from research funds, this leads to \$39,600/yr.

What are the opportunities for students to be employed in your department during their first summer on campus?

In the summer prior to the first year of studies, students have an opportunity to join a summer program – Review of Physics – a bootcamp reviewing upper-level undergraduate courses in preparation for the graduate coursework.

After the first year and beyond, the students work with a research group receive a three-months RA stipend.

What is the health-insurance premium for graduate students in your department?

Full-time graduate students have their health insurance fully subsidized. The medical insurance covers the student and their dependents.

Does your department provide a tuition waiver for first-year students?

Yes. Full-time grad students receive a tuition scholarship that covers the cost of tuition for up to 8 years while students remain in good standing.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students. If such a policy does not exist, please say that.

The university offers a parental accommodation to graduate students who became parents: https://graduateschool.nd.edu/assets/40607/family_accommodation_policy.pdf

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Credits for coursework equivalent to the ND program requirements can be transferred with the approval of the Director of Graduate Studies. Up to 24 credits may be transferred from a completed MS degree.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

Our department is committed to building and sustaining a welcoming culture of respectful collaboration and scientific excellence. There is graduate student representation in many faculty committees. The department has an Ombudsperson with whom grad students can safely discuss issues.



UNIVERSITY OF
South Carolina

University of South Carolina

Department of Physics and Astronomy

Columbia, South Carolina

Department Website:

https://sc.edu/study/colleges_schools/artsandsciences/physics_and_astronomy/

Graduate Program Website:

https://sc.edu/study/colleges_schools/artsandsciences/physics_and_astronomy/study/graduate/

Admission Website:

https://sc.edu/study/colleges_schools/artsandsciences/physics_and_astronomy/apply/apply-graduate/

Application Website:

<https://www.applyweb.com/uscgrad/>

Application Deadline:

Fall: January 15

Spring: September 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

7 years

Contact for graduate admission:

Physapp@mailbox.sc.edu

The University of South Carolina is home to more than 200 years of history and tradition, rising from a single building in 1805 on what would become the heart of the campus, the Horseshoe. South Carolina's premier research university is centrally located in Columbia, the state's capital, which consistently ranks among the most livable and affordable mid-sized cities. Today's enrollment on the Columbia campus is approximately 38,000, with more than 6,000 graduate students (please see the [USC dashboard](#) for detailed demographic information).

Students in the Department of Physics and Astronomy collaborate with internationally recognized faculty engaged in world-class research. Partnerships with national and international laboratories, physics-related industries, and interdisciplinary programs give students access to unique research experiences across multiple areas of contemporary physics. Our hands-on training and classroom instruction prepare graduates for success. Most of our alumni go on to rewarding careers in research, academia, and industry worldwide. The department includes 26 tenured and tenure-track faculty and about 40–45 graduate students.

Nuclear physics is a major research field at USC, with four faculty engaged in experimental nuclear physics and two in nuclear theory. Assistantships and stipends allow postdoctoral researchers, graduate, and undergraduate students to contribute directly to this research while receiving an outstanding education.

Nuclear Physics Research Areas:

Medium Energy, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

Astronomy, Particle-Astrophysics, High-Energy Physics

of faculty in specific research groups:

Astronomy/Astrophysics (5), Condensed-Matter Physics (10), Nuclear/High-Energy Physics (11)

Nuclear People:

Experimental Faculty: 4

Theoretical Faculty: 2

Staff/Research Scientists: –

Postdoc: 2

Graduate Students: 5 – 7

Female physicists: 3

Contact in Nuclear Physics:

Matthias Schindler

(MSCHINDL@mailbox.sc.edu)

Steffen Strauch

(STRAUCH@mailbox.sc.edu)

The research carried out by the Experimental Nuclear Physics group at USC aims to improve our understanding of Quantum Chromodynamics in the confinement regime and of nuclei in terms of quarks and gluons. The group's activities are concentrated on the partonic structure of hadrons and nuclei, hadron spectroscopy and dressed quark structure, baryon interactions, the proton-radius puzzle through the MUSE experiment, and in-medium modifications of hadronic properties, as well as on large detector construction. The research program of the group is carried out at the Continuous Electron Beam Accelerator Facility (CEBAF) located at the Thomas Jefferson National Accelerator Laboratory (JLab), the Paul Scherrer Institute (PSI) in Switzerland, and the future Electron-Ion Collider (EIC) at Brookhaven National Lab (BNL).

The focus of the Nuclear Theory faculty is on the study of fundamental symmetries in nuclear systems, such as parity and time reversal violation effects. This work relates to the search for possible extensions of the standard model and supports experimental efforts at facilities such as the Spallation Neutron Source at Oak Ridge National Laboratory and the Japanese Spallation Neutron Source at J-PARC in Japan.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The nine-month stipend for TAs is \$21,000. RA stipends are set by the advisor but are at least at the level of the TA stipend.

What are the opportunities for students to be employed in your department during their first summer on campus?

Each admitted PhD student receives a \$3,000 fellowship to perform research in their first summer; TA and RA positions are possible based on availability.

What is the health insurance premium for graduate students in your department?

Health insurance is fully subsidized for all graduate assistants (TA and RA); the corresponding value is \$3,205 per year.

Does your department provide a tuition waiver for first-year students?

Yes, all TAs and RAs receive a tuition waiver.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://academicbulletins.sc.edu/graduate/policies-regulations/graduate-academic-regulations/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes, a total of only 30 credit hours is required instead of 60 credit hours for those entering with only an undergraduate degree.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department is committed to creating and maintaining an environment in which all members of our Physics & Astronomy community feel welcome and can participate productively. The department maintains a committee on culture and excellence, and students participate in student groups.



University of South Dakota

Department of Physics
Vermillion, South Dakota

Department Website:

<https://www.usd.edu/Academics/Colleges-and-Schools/college-of-arts-sciences/physics>

Graduate Program Website:

<https://www.usd.edu/Academics/Graduate-Programs/Physics>

Admission Website:

<https://www.usd.edu/grad/how-to-apply>

Application Deadline:

Fall admission:

Priority deadline: February 1

Final deadline: July 15

Spring admission:

Final deadline: December 5

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5.5 years

Contact for graduate admission:

Joel Sander

Joel.Sander@usd.edu

USD has a total enrollment of about 10,000 with a graduate enrollment of about 2,000. Study body demographics are posted on USD's [At-a-Glance webpage](#).

USD's main campus is located in Vermillion, SD. USD is home to both contemporary buildings as buildings noted for their historic beauty. The "USD historic core district" was added in 2025 to the National Register of Historic Places. Vermillion is located in a rural area but is located an easy hour's drive from the highest-population city in South Dakota, Sioux Falls, Vermillion has a population of around 12,000, is home to the [National Music Museum](#) and [W. H. Over Museum](#) and resides on the bluffs of the Missouri river valley in southeastern South Dakota.

The physics department consists of six faculty, an instructor, several postdocs, about twenty graduate students, ten undergraduates and a program assistant. Students can apply for either the Master's or PhD program.

Degree candidates may pursue specialized research foci based on the research expertise of faculty members. The department has specialized research in the experimental and theoretical aspects in nuclear and particle physics, and astrophysics. USD physics is involved in international collaborations such as COHERENT, DUNE, LEGEND, LUX, MINER, and SuperCDMS, all of which are germane to the needs and special resources of the Sanford Underground Research Facility (SURF). USD also houses cutting-edge germanium crystal growth and fabrication facilities, serving as a research incubator for advancing germanium-based devices in medical imaging, quantum qubits, and materials innovation, with a strong focus on AI integration. USD physics uses analytical and computational tools such as Effective Field Theory and machine learning to address some of the deepest questions in fundamental physics. This includes building and testing new phenomenological models of dark matter through high energy colliders, neutrino experiments and astrophysical phenomenon such as cosmic and gravitational waves. Another important area of research is probing the microscopic structure of hot and cold baryonic matter at nuclear colliders.

Students interested in specializing in analytics for large data sets can take coursework in statistics, analytics, and computing, covering topics such as data mining, machine learning, applied statistics, analytics programming, and medical imaging.

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 1

Staff/Research Scientists:

Postdoc: 2

Graduate Students: 4

Female physicists:

Contact in Nuclear Physics:

Dongming Mei

Dongming.Mei@usd.edu

Nuclear Physics Research Areas:

Collaborating with LANL, ORNL, and the University of North Carolina at Chapel Hill to produce ultra-pure, large-size Ge crystals with optimized ring-contact designs for neutrinoless double-beta decay detection in the LEGEND-1000 experiment.

Crafting inorganic scintillating crystals that operate at cryogenic temperatures, significantly boosting their light yield – a crucial factor for capturing faint signals from elusive particles and the COHERENT experiment at Oak Ridge National Laboratory. This experiment leverages a novel technique called Coherent Elastic Neutrino-Nucleus Scattering (CEvNS) to probe for non-standard neutrino interactions or properties

Applying the tools of effective field theory to various topics in Nuclear

List of complementary Physics Research Areas:

In partnership with PNNL, developing advanced Ge detectors capable of sub-eV energy threshold using internal avalanche gain mechanisms, targeting rare low-energy events such as low-mass dark matter and coherent neutrino scattering.

Leveraging isotopically enriched Ge to create quantum sensors and hole-spin qubits with applications in phonon-mediated quantum sensing, neutrino detection, and light dark matter searches.

Integrating crystal growth, zone refining, contact engineering, and device fabrication to support both classical and quantum Ge detector technologies for rare-event physics and medical imaging.

Particle-astrophysics including direct detection of low-mass dark matter within the context of the SuperCDMS experiment at SNOLAB as well as CEvNS-based neutrino physics at Oak Ridge.

of faculty in specific research groups:

Below is a list of our faculty research interests...not sure DNP's standard for splitting those into research groups.

Dr. Doojin Kim: dark matter/collider phenomenology, astroparticle physics, cosmology, and new physics model building

Dr. Jing Liu: crafting inorganic scintillating crystals that operate at cryogenic temperatures, significantly boosting their light yield – a crucial factor for capturing faint signals from elusive particles and the COHERENT experiment at Oak Ridge National Laboratory. This experiment leverages a novel technique called Coherent Elastic Neutrino-Nucleus Scattering (CEvNS) to probe for non-standard neutrino interactions or properties

Dr. Dongming Mei: particle and nuclear physics as well as medical physics and quantum sensors, utilizing germanium (Ge) detectors

Dr. Joel Sander: Particle-astrophysics including direct detection of low-mass dark matter within the context of the SuperCDMS experiment at SNOLAB as well as CEvNS-based neutrino physics at Oak Ridge.

Dr. Varun Vaidya: applying the tools of effective field theory to various topics in Nuclear and particle physics.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The initial nine-month stipend is 19,800 (\$26,400/yr). Upon completion of the comprehensive exam, the stipend is increased to \$32.400/yr.

What are the opportunities for students to be employed in your department during their first summer on campus?

While first-year summer support is not guaranteed, thus far all graduate receiving nine-month stipends also received first-year summer support at the same level.

What is the health insurance premium for graduate students in your department?

For the 2023-2024 AY, the basic health insurance plan cost \$708/yr for the student and \$1188/yr for each additional person (spouse or child).

Does your department provide a tuition waiver for first-year students?

Departmental coverage of about 60% of tuition and fees is included with GA positions.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Graduate students typically do not meet the criteria to be included in the South Dakota Board of Regent's policy on medical leaves of absence.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Transfer credits are accepted pending review of the transcripts and course syllabi from prior institutions.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)? A comprehensive support plan exists, starting with admitted students meeting by zoom with the graduate coordinator to understand their offer, get questions answered, and be given an opportunity to be put in contact with current graduate students. While at USD, students have the opportunity to engage in student groups including the physics club and Telescopers. Graduating students are asked to fill out an exit survey to provide exit feedback.

University of Tennessee- Knoxville

Department of Physics and Astronomy

Knoxville, TN

Department Website:

<https://physics.utk.edu>

Graduate Program Website:

<https://physics.utk.edu/graduate/join-our-program/>

Admission Website:

<https://gradschool.utk.edu/future-students/office-of-graduate-admissions/applying-to-graduate-school/>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5 years

Contact for graduate admission:

Prof. Steven Johnston, Director of Graduate Studies (sjohn145@utk.edu)

Founded in 1794 as Blount College, the University of Tennessee, Knoxville, became a land grant university in 1869. We offer more than 300 degree programs for our students, who enjoy a first-class research library and a technology-rich infrastructure. The university is a co-manager with Battelle of the nearby Oak Ridge National Laboratory (ORNL), where faculty and students experience unparalleled research and learning opportunities at the Department of Energy's largest science and energy lab. For FY 2023 UT garnered \$428 million in sponsored research awards. We serve more than 30,000 undergraduates and 8,000 graduate students. Our campus and its signature "Hill" lure students with green space, nearby lakes, and vistas of the Great Smoky Mountains National Park.

Nuclear Physics Research Areas:

Heavy Ions, Medium Energy, Nuclear Structure and Nuclear Astrophysics, Fundamental Symmetries & Neutrinos, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

Astrophysics

of faculty in specific research groups:

Astrophysics: 5

Nuclear People:

Experimental Faculty: 7

Theoretical Faculty: 3

Staff/Research Scientists: 2

Postdoc: 7

Graduate Students: 28

Female physicists: 12

Contact in Nuclear Physics:<https://physics.utk.edu/>

Nuclear physics is a strong and active research group at UT Knoxville, taking advantage of close connections with ORNL and access to leading computational facilities. We are also involved in research in world-leading accelerator facilities investigating the most challenging aspects of nuclear physics. The nuclear theory group at UT performs world-class research in ab initio methods for nuclear structure, chiral effective theory, few-body systems, and nuclear astrophysics. This group has recently received funding from NSF for a multidisciplinary research hub called Nuclear Physics, from Multi-Messenger Mergers (NP3M), and is involved in Topical Collaboration on *Nuclear Theory for New Physics* (NTNP).

Experimentalists measure properties of nuclei and nucleonic matter with accelerated stable and radioactive ion beams at accelerator facilities worldwide. The group has developed and operates neutron detectors used at accelerator facilities, which are supported by DOE, NSF, and NNSA, to explore the properties of the most neutron-rich isotope that can currently be synthesized. Multiple experimental efforts in nuclear astrophysics give insight into the nuclear reactions in stars and neutron star mergers, essential for understanding the conditions whereby nuclear processes synthesize chemical elements. The experimental group was involved in discovering the new element, Tennessine ($Z=117$), and is currently involved in the searches for new superheavy elements.

The Relativistic Heavy Ion Physics group is part of ALICE at CERN and the sPHENIX collaboration at Brookhaven National Laboratory, where heavy nuclei collide at extremely high energies to yield matter that is not only the hottest and densest ever explored but is also the world's most perfect liquid. The Spallation Neutron Source hosts a vibrant nuclear physics program with recent results on studies of hadronic parity violation, and low energy neutrino nuclear interactions. Currently, it is focused on a program of neutron beta decay, with a suite of proposed experiments to follow. UT's leadership in the experimental program at the Thomas Jefferson National Accelerator Facility has grown significantly in the last few years. The group uses the 12 GeV electron beam to study the origin of nucleon spin, in-medium modifications of quark distributions, dense and energetic components of nuclei and new topics are being developed for future proposals. The nuclear physics group has also developed new technologies to study the decay of radioactive nuclei relevant to nuclear energy and astrophysical nucleosynthesis in a strong partnership with scientists from the Physics Division at ORNL. This collaboration has resulted in the development of a unique experimental setup called FDSi at the US's premier nuclear physics facility, the Facility for Radioactive Nuclear Beams (FRIB). The Joint Institute for Nuclear Physics and Applications (JINPA) exemplifies the university's connection with ORNL to foster close collaborations between academic and national laboratory scientists.

University of Texas- Austin

Physics Department

Austin, Texas

**Department Website:**

<https://physics.utexas.edu/>

Graduate Program Website:

<https://physics.utexas.edu/academics/program-overview>

Admission Website:

<https://physics.utexas.edu/academics/admissions>

Application Deadline:

December 1

General GRE required?

Yes or No

Physics GRE required?

Yes or No

Median time to PhD:

6.00 years

Contact for graduate admission:

graduate@physics.utexas.edu

The University of Texas at Austin (UT Austin, UT, or Texas) is a public research university in Austin, Texas, United States. Founded in 1883, it is the flagship institution of the University of Texas System. With 53,082 students as of fall 2023, it is also the largest institution in the system. The UT Austin campus is set in a uniquely friendly and accepting urban center. Residents of the City of Austin enjoy a wealth of cultural and leisure activities including the legendary live music scene. The surrounding area and favorable climate afford opportunities for year-round outdoor recreation from hiking and rock climbing to sailing and cycling.

The Physics Department has about 200 graduate students and 400 undergraduate students. It has 55 core faculty, 20% of whom have been hired in the last 5 years.

We have 2 faculty in experimental high energy nuclear physics Christina Markert and Deepa Thomas.

Nuclear Physics Research Areas:

Relativistic Heavy Ion Physics, Neutrino Physics

List of complementary Physics Research Areas:

High Energy Particle Physics, Cosmology and Astroparticle Physics, Gravitational Physics, Particle Theory

of faculty in specific research groups:

2 Faculty in Relativistic Heavy Ion Physics, 2 Faculty in Neutrino Physics, 2 Faculty in High Energy Particle Physics, 3 Faculty in Cosmology and Astroparticle Physics, 5 Faculty in Gravitational Physics, 7 Faculty in Particle Theory

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 0

Staff/Research Scientists: 0

Postdoc: 1

Graduate Students: 4

Female physicists: 4

Contact in Nuclear Physics:karcha@utexas.edu

Heavy-ion physics focuses on the behavior of matter under extreme conditions, such as those found in the early universe just after the Big Bang. It primarily studies the properties of quark-gluon plasma (QGP), a state of matter where quarks and gluons, which are normally confined inside hadrons, can move freely. This state is believed to have existed microseconds after the Big Bang. Two prominent experiments involved in heavy-ion physics are ALICE at CERN's Large Hadron Collider (LHC) and STAR and sPHENIX at Brookhaven National Laboratory's Relativistic Heavy Ion Collider (RHIC). These experiments aim to explore various aspects of heavy-ion collisions, including hadronic resonances, strangeness, and heavy flavor production.

- **Hadronic Resonances:** These are crucial for understanding the thermodynamic properties of the QGP, with resonance suppression providing insight into the QGP's lifetime and properties.
- **Strangeness Production:** Enhanced strangeness production is a key feature of the QGP and is sensitive to its thermal properties, serving as a probe of the QGP's creation and evolution.
- **Heavy Flavor Production:** Heavy quarks are powerful probes for studying the properties of the QGP, with quarkonium suppression being one of the most prominent signals of QGP formation.

The combination of experiments at both ALICE and STAR/sPHENIX provides a comprehensive view of heavy-ion collisions across a range of energies, offering deep insights into the creation and behavior of quark-gluon plasma and the fundamental forces of nature.

The UT Austin group joined the ePIC (electron-Proton/Ion Collider) Collaboration which is dedicated to designing, building, and operating the primary detector for the forthcoming Electron-Ion Collider (EIC) at Brookhaven National Laboratory (BNL). The EIC will be a state-of-the-art facility that collides electrons with protons or heavy ions to investigate the internal structure of matter, focusing on quarks and gluons -the fundamental constituents of protons, neutrons, and atomic nuclei.

Faculty:

Christina Markert website:

<https://web2.ph.utexas.edu/~cmarkert/home/Home.html>

Deepa Thomas website:

<https://physics.utexas.edu/directory/deepa-thomas>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

26,000/9 month (or 34,611/12 month). We pay everybody the same (TA and RA, junior and senior)

What are the opportunities for students to be employed in your department during their first summer on campus?

TA, RA, AI (=assistant instructor, TA with extra responsibility)

What is the health insurance premium for graduate students in your department?

Health insurance is paid by the University.

Does your department provide a tuition waiver for first-year students?

We waive out-of-state tuition as long as the student has a job with us.

Are graduate students unionized at your school?

Students are not unionized.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://cns.utexas.edu/info-graduate-students-postdocs/college-policies>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No reduction, but students can test out of courses if they have mastery of the material

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

We have a climate committee that regularly organizes community events, such as a monthly social hour. We have several student-led groups helping to improve the climate in the Department. That includes an active committee of grad reps (organizing bi-annual townhalls) as well as several issue-specific student groups, for example a group working on issues affecting gender minorities in physics, and one organizing a directed reading program for undergraduates. The college and the university regularly run climate surveys.

University of Texas- El Paso

Physics Department

El Paso, Texas

Department Website:

<https://www.utep.edu/science/physics/>

Graduate Program Website:

<https://www.utep.edu/science/physics/academic-programs/graduate/graduate-program-in-physics.html>

Admission Website:

<https://www.utep.edu/graduate/apply-now/apply-now.html>

Application Deadline:

July 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

PhD program just started last semester.

Contact for graduate admission:

Tunna Baruha,
tbaruah@utep.edu

There are about 25 k students. 85% are Hispanic.

There are about 15 MS and PhD students in AY 24-25.

UTEP is located in El Paso near downtown about two miles to the border with Mexico.

The Department has about 19 faculty and the PhD program started in Fall 2024.

Most physics graduate students are from India, China, Mexico and the USA.

Nuclear Physics Research Areas:

Heavy ions, nuclear reactions, neutron stars

List of complementary Physics Research Areas:

Underground radon studies, medical physics simulations

of faculty in specific research groups:

1

Nuclear People:

Experimental Faculty: 0

Theoretical Faculty: 1

Staff/Research Scientists:

Postdoc:

Graduate Students: 1

Female physicists:

Contact in Nuclear Physics:

Tunna Baruha,
tbaruah@utep.edu

There is an experimental lab with geiger detectors, underground radon detection equipment, cosmic ray detector.

There are collaborations with Oak Ridge Nat Lab to study HiFer using software SACE, and med phys simulations using GEANT4 and other packages.

In AY 2024-2025 there were two BS, two MS and 1 PhD students in nuclear projects.

In summer 2024 two MS students spend the summer at ORNL.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

\$16,000

What are the opportunities for students to be employed in your department during their first summer on campus?

TAs and Ras

What is the health insurance premium for graduate students in your department?

None

Does your department provide a tuition waiver for first-year students?

Only for physics PhD students

Are graduate students unionized at your school?

I wish, but no.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

I do not think it exists.

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

Students participate in Departmental committees, there are weekly luncheons after seminar, end-of-semester parties, a string SPS, etc.



University of Virginia

Department of Physics
Charlottesville, Virginia

Department Website:

<https://phys.virginia.edu/>

Graduate Program Website:

<https://www.phys.virginia.edu/GraduateBrochure/>

Admission Website:

<https://graduate.as.virginia.edu/>

Application Deadline:

Dec 15, 2025

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Dmytro Pesin

phys-grad-info@virginia.edu

The graduate program in Physics at the University of Virginia is intended primarily to prepare Ph.D. graduates for careers in research and teaching in Physics. Students admitted to the Ph.D. program are supported financially either by teaching and research assistantships or fellowships. During their first year of study, students will be given opportunities to become acquainted with faculty members outside of their formal course work so that they can make informed decisions regarding their fields of interest. Independent research is the emphasis in our graduate program. All students devote the summer between their first and second years of study to do research in one of our laboratories or with one of our faculty members. Summer research frequently serves as a very useful trial period or as a time to start on one's thesis research. Beyond that first summer, a student may engage in additional preliminary research periods before embarking upon their dissertation research. The research progress of all graduate students are reviewed annually by the Department in order to guarantee the success of the student's graduate career. Our Ph.D. graduates move on to a variety of positions in academia, national laboratories, and industry, and several of them continue scientific or professional collaborations with their former thesis advisors. Last but not least, the Physics Department is committed to full participation of students from all backgrounds in research and education in Physics.

Nuclear Physics Research Areas:

Electron scattering (including polarized and parity violating electron scattering), Dimuon processes, Spin Physics, Fundamental Symmetries and BSM physics searches, theory

List of complementary Physics Research Areas:

High energy particle physics; Atomic, molecular, and optical physics. Quantum information and quantum computing; Condensed matter physics, including soft condensed matter and biophysics; Gravitation, general relativity and cosmology; Medical physics

of faculty in specific research groups: 9

Nuclear People:

Experimental Faculty: 8
Theoretical Faculty: 1
Staff/Research Scientists: 1
Postdocs: 9
Graduate Students: 32
Female physicists: 8

Contact in Nuclear Physics:

Stefan Baeßler
Gordon Cates
Dustin Keller
Simonetta Liuti
Nilanga Liyanage
Huong Nguyen
Kent Paschke
Dinko Počanić
Xiaochao Zheng

For contact info see

<https://www.phys.virginia.edu/People>

Jefferson Lab Program (Cates, Keller, Liyanage, Nguyen, Paschke, Zheng) Our research includes a wide range of experiments at Jefferson Lab from studying the structure of the nucleon to parity violation electron scattering, the latter includes the upcoming MOLLER experiment and the Parity Violating Deep Inelastic Scattering (PVDIS) experiment utilizing the SoLID spectrometer. In addition to designing and executing the experiments, we are also leaders of Gas Electron Multiplier (GEM) detector development and construction for experiments at JLab and beyond. Our research extends naturally to the future Electron Ion Collider (EIC).

Fermilab Program (Keller). We specialize in isolating nuclear quantum states in solids to explore partonic degrees of freedom. One example is our use of polarized solid-state targets at Fermilab's SpinQuest experiment. UVA leads the polarized-target subsystem and core spin-physics program at Fermilab, where dynamically polarized targets are operated with high-luminosity proton beams. The UVA Spin Physics Group integrates instrumentation with run optimization using artificial intelligence, both for experimental operations and for phenomenological extraction used to make predictions.

Precision tests of Standard Model parameters (Baeßler, Počanić)

We have built a long-term program of experimental tests of Standard Model (SM) parameters and dynamics, such as lepton flavor universality (LFU) and CKM quark mixing matrix unitarity. The current focus is on correlations in free neutron beta decay at Oak Ridge National Lab. Properties of the hadronic content of the vacuum, a sensitive probe of physics beyond the SM, are tested in the experiments: Muon g-2 (Fermilab) and MUonE (CERN). We also have a longstanding program of searches for novel short-range interactions using quantum states of cold and ultracold neutrons.

Nuclear Theory Program (Liuti) We study the theory of Quantum Chromodynamics (QCD), the fundamental theory of the strong force that binds quarks and gluons into nucleons, and nuclei. Our goal is to develop frameworks that bridge experimental data from worldwide high energy experimental facilities – including the future Electron Ion Collider (EIC) – with the underlying partonic structure of matter. Our studies help reveal the 3D structure of both the proton and light nuclei, and how these systems' mass, spin, and internal dynamics emerge from QCD. In recent years, we have been developing tools in ML and AI, to merge information from both lattice QCD and complex datasets in a flexible way, while also providing rigorous uncertainty quantification.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

For AY25-26, the 9-month stipend is \$28,800. However, every incoming PhD student is guaranteed 12-month of support for a total stipend of \$36,000. The graduate student stipend is evaluated every year; the current 12-month stipend represents a 12.5% increase from just 2 years ago. All students supported as RAs and TAs have equal stipends regardless of rank.

What are the opportunities for students to be employed in your department during their first summer on campus?

Every graduate student participates in summer research after they complete their first academic year under the guidance of a faculty member.

What is the health insurance premium for graduate students in your department?

Information on student health insurance at UVA can be found at:

<https://www.studenthealth.virginia.edu/about/insurance>

Does your department provide a tuition waiver for first-year students?

Yes, all our graduate students are admitted with full financial aid, which includes tuition and fee waivers, fellowships, teaching assistantships, and research assistantships.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Please see: <https://graduate.as.virginia.edu/leaves-withdrawals-and-reinstatement>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

It is possible for students entering the PhD program with an MS degree to transfer academic credit to count towards the PhD. These transfer credit requests are considered on a case-by-case basis.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The Physics Community and Outreach Committee of the Department of Physics at UVA works on promoting science education and outreach to the University, public schools, and on strengthening the Physics community at UVA.



University of Washington

Physics Department
Seattle, WA

Department**Website:**

<https://phys.washington.edu/>

Graduate Program**Website:**

<https://phys.washington.edu/phd-program>

Admission Website:

<https://phys.washington.edu/phd-program#admissions>

Application**Deadline:**

December 15

**General GRE
required?**

No

**Physics GRE
required?**

No

Median time to PhD:
6 years**Contact for graduate
admission:**

<https://phys.washington.edu/phd-program>



The University of Washington is a major research university situated on a beautiful campus in Seattle in the Pacific Northwest. The UW – “UDub” – receives the second largest amount of federal research funding of all US universities. Eight UW scientists have won Nobel Prizes, including our Hans Dehmelt, 1989 Nobel Laureate in Physics, now retired.

Nuclear Physics Research Areas:

Fundamental Symmetries & Neutrinos, Theoretical Nuclear Physics

List of complementary Physics Research Areas:

Quantum Computing for Nuclear Physics, Astrophysics

Nuclear People:

Experimental Faculty: 10
Theoretical Faculty: 6
Staff/Research Scientists: 30
Postdoc: 12
Graduate Students: 30
Female physicists: 10

Contacts in Nuclear Physics:

Jason Detwiler (experiment):
jasondet@uw.edu
Vincenzo Cirigliano (theory):
cirigv@uw.edu

**Nuclear Physics at UW:**

The UW is a vibrant center for nuclear physics. It is home to the national Institute for Nuclear Theory (INT), and to the Center for Experimental Nuclear Physics and Astrophysics (CENPA), one of DOE's Centers of Excellence. In addition, a leading nuclear theory group exists within the Department of Physics. The Department of Physics, INT, and the Astronomy Department share a spacious building, which encourages collaboration. CENPA has its own laboratories including an FN tandem accelerator in the North Physics Laboratory across campus.

Nuclear theorists in the Department are addressing a wide range of problems, such as the use of fundamental QCD lattice-gauge theory to calculate the properties of real nuclei, and nuclear effects that must be understood to determine if the famous CKM matrix is unitary, or if there is physics beyond the standard model. CENPA experimental efforts include the "high-precision frontier" of physics, where measurements of fundamental quantities can be compared to precise Standard Model predictions. The Center also carries out experiments that push the "sensitivity frontier" forward to discover, or limit, the rate of ultra-rare processes or to measure known but tiny quantities such as the neutrino mass. On the high-precision side, CENPA groups lead three world-leading efforts: the measurement of the muon anomalous magnetic moment with the g-2 experiment, the measurement of the charged pion decay branching ratio to test lepton flavor universality with the development of the PIONEER experiment, and the accurate measurement of beta decay spectral shapes of He-6 and Ne-19 to search for tiny distortions induced by new physics. In the sensitivity frontier, CENPA is spearheading the direct measurement of the neutrino mass with KATRIN and Project 8 experiments. Finally, CENPA is also leading the charge with KamLAND-Zen, LEGEND, and Selena experiments to search for neutrino-less double beta decay, a rare nuclear process that would confirm the Majorana nature of neutrinos and provide new ways to probe physics beyond the Standard Model. Each of CENPA's efforts have the potential to revolutionize humanity's understanding of physics and of the evolution of the cosmos.

The Institute for Nuclear Theory hosts programs and workshops to advance the frontiers of nuclear science and its intersections with astrophysics, cosmology, condensed matter/ atomic physics and particle physics. These programs attract about 500 theorists from around the world each year. In addition, the INT faculty performs research on a similarly broad range of topics including strongly interacting many-particle systems such as nuclei, the quark gluon plasma and dense matter found inside neutron stars, nuclear and neutrino astrophysics, neutrino physics, and physics beyond the standard model.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The current stipend is \$3169/month, so \$28,521 for the first nine months.

What are the opportunities for students to be employed in your department during their first summer on campus?

All first-year students are employed as RAs or TAs during their first summer on campus.

What is the health insurance premium for graduate students in your department?

The UW pays for health insurance (including medical, vision, and dental care) for graduate students through the Graduate Appointee Insurance Program. Details are available at <https://hr.uw.edu/benefits/insurance/health/graduate-appointees/gaip-eligibility-coverage-overview>

Does your department provide a tuition waiver for first-year students?

Graduate student tuition is funded by research grants for RAs, and by the department for TAs.

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://hr.uw.edu/ops/leaves/fmla>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No, but students can “pass out” of a required course they have already taken by petitioning the course instructor and the Graduate Advisor. For courses whose final exams feed into our Master’s Review, it is expected that such students will still take those exams.



University of Wisconsin-Madison

Department of Physics
Madison, Wisconsin

Department Website:

<https://www.physics.wisc.edu/>

Graduate Program Website:

<https://www.physics.wisc.edu/graduate/>

Admission Website:

<https://grad.wisc.edu/apply/>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5-6 years

Contact for graduate admission:

physgrad@physics.wisc.edu

Sharon Kahn, Graduate Program
Manager

The UW–Madison Physics Department awarded its first PhD in 1899. Since then our students have earned degrees in virtually [every area of physics](#), and our [faculty](#) have played key roles in myriad important research efforts. We are training over 200 PhD students as the next generation of physics researchers who are already earning recognition and making significant accomplishments in their field. Each year, our instructional teams teach introductory physics to over 5,000 undergrads from majors across campus. And we're proud to have the longest-running hands-on science museum in North America (the [Ingersoll Physics Museum](#)), one of the longest-running science demonstration shows ([The Wonders of Physics](#)), and the first [MS in Physics–Quantum Computing](#) program in the country.

Nuclear Physics Research Areas:

Nuclear astrophysics, nuclear structure and reactions

Nuclear People:

Experimental Faculty: 0

Theoretical Faculty: 1

Staff/Research Scientists: 0

Postdoc: 0

Graduate Students: 3

Female physicists: 1

Contact in Nuclear Physics:

Prof. A. Baha Balantekin

baha(at)nucth.physics.wisc.edu

Theoretical Physics at the interface of nuclear physics, particle physics, and astrophysics; neutrino physics; mathematical physics

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

The first year, a 9-month stipend for RAs and TAs is \$29,157.

What are the opportunities for students to be employed in your department during their first summer on campus?

The majority of our PhD students are employed as RAs during the summer between their first and 2nd year in the program.

What is the health insurance premium for graduate students in your department?

Graduate student single coverage health insurance premiums are \$60/month.

Does your department provide a tuition waiver for first-year students?

All students who have TA or RA positions have tuition remission.

Are graduate students unionized at your school?

No.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://grad.wisc.edu/documents/family-leave/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The Physics Department strives to establish, maintain, and improve an open-minded and supportive community in which to work, teach and learn. In accordance with these goals, the Physics Department affirms that all community members are to be treated with dignity and respect and that discrimination and harassment will not be tolerated. Moreover, the department is dedicated to partnering with other campus organizations, including those listed below, to develop policies and practices to promote these goals. We further commit ourselves to making the department a supportive, inclusive, and safe environment for all students, faculty, staff, and visitors, regardless of race, religion, national origin, sexual orientation, gender identity, disability, age, parental status, or any other aspect of identity. Learn more about the Department's Climate and Diversity efforts here:

<https://www.physics.wisc.edu/department/climate-diversity/>



Virginia Tech

Department of Physics

Blacksburg, VA

Department Website:

<https://www.phys.vt.edu/>

Graduate Program Website:

<https://www.phys.vt.edu/Graduate/ProspectiveGraduateStudents.html>

Admission Website:

<https://applyto.graduateschool.vt.edu/apply/>

Application Deadline:

January 5

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6 years

Contact for graduate admission:

Betty Wilkins

gradphys@vt.edu

Virginia Tech is a leading public research university recognized for combining academic excellence, hands-on learning, and a strong sense of community. Located in the beautiful Blue Ridge Mountains of Blacksburg, Virginia, the university offers about 280 undergraduate and graduate degree programs to more than 38,000 undergraduate, graduate, and professional students across the commonwealth and manages a research portfolio of more than \$556 million. Students are supported by world-class faculty, state-of-the-art facilities, and a commitment to solving real-world challenges through research and discovery. Guided by the motto *Ut Prosim* ("That I May Serve"), Virginia Tech fosters personal growth, leadership, and global engagement, preparing students not only for successful careers but also for meaningful lives of impact. Virginia Tech has a 2,600-acre main campus in Blacksburg, Virginia in the New River Valley 38 miles southwest of Roanoke; a significant presence across the commonwealth, including the Institute for Advanced Computing in Northern Virginia, the Health Sciences and Technology Campus in Roanoke, and sites in Newport News and Richmond.

The Virginia Tech Physics Department conducts research in theoretical and experimental condensed matter physics, particle/nuclear physics, and astrophysics, with sponsored research expenditures of ~ \$8M per year supporting this effort. The department consists of 37 faculty, ~ 100 graduate students, and ~ 30 postdoctoral fellows. Two centers are housed in Physics – the Center for Neutrino Physics and the Center for Soft Matter and Biological Physics, with the Physics Department playing a major role in a third center – the Virginia Tech Center for Quantum Information Science and Engineering.

Nuclear Physics Research Areas:

Hadronic structure and standard model tests using electron scattering, neutrinoless double beta decay, direct dark matter detection.

List of complementary Physics Research Area:

Experimental and theoretical high energy physics, neutrino physics, string theory, quantum information science

Nuclear People:

Experimental Faculty: 4

Theoretical Faculty: 0

Staff/Research Scientists: 0

Postdoc: 4

Graduate Students: 6

Female physicists: 1

Contact in Nuclear Physics:

Thomas O'Donnell,

tdonnell@vt.edu

Experimental nuclear physics researchers at Virginia Tech are active in the following experimental collaborations and experiments:

- Nuclear spectral function measurements – Prof. Camillo Mariani – nuclear spectral function measurements on nuclei critical for neutrino detectors using the (e,e'p) reaction at Jefferson Lab
- CUORE experiment – Prof. Tommy O'Donnell – search for neutrinoless double beta decay with ^{130}Te bolometric detectors at the LNGS laboratory in Italy
- CUPID experiment – Prof. Tommy O'Donnell – an upgraded version of the CUORE experiment with particle identification at the LNGS laboratory in Italy
- MOLLER experiment – Prof. Mark Pitt – parity violating electron-electron scattering at Jefferson Lab as a test of the Standard Model
- DarkSide experiment – Profs. Bruce Vogelaar and Camillo Mariani – liquid argon time projection chamber at the LNGS laboratory for direct dark matter detection of weakly interacting massive particles

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

First-year students are typically on GTAs with a stipend of \$25,758 for nine months in AY 25 – 26. At a given seniority, GRA stipends are ~ 3% higher than GTA stipends. Stipends increase with seniority, being ~ 3% higher in the 3rd and 4th years, and again ~ 3% higher in the 5th and 6th years. Annual stipend increases of ~ 3% across the board have been common in recent years.

What are the opportunities for students to be employed in your department during their first summer on campus?

In their first summer on campus, students are typically employed as a GRA with whomever they have identified as a potential advisor. If no GRA is available, then the student is typically given a GTA over the summer.

What is the health insurance premium for graduate students in your department?

The cost of the Virginia Tech Student Medical Insurance Plan is subsidized at 88% (based off the annual premium). The student portion of the premium (for AY 25 – 26) is \$458.16.

Does your department provide a tuition waiver for first-year students?

Yes.

Are graduate students unionized at your school?

No.

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://graduateschool.vt.edu/funding/work-life-grants.html>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes, there is a reduction in course requirements for students who enter with a completed MS degree in Physics, but the university's Graduate School has a university-wide policy that at least 50% of the graded coursework for a new degree must be completed at Virginia Tech.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

The department has an active [Graduate Physics Student Society](#), that is student-led and runs a variety of events for physics graduate students. Two graduate students are appointed to be members of our department's Graduate Committee. We ran an extensive Graduate Climate Survey in 2023 with significant student leadership and input. One of the results was a student-led Graduate Climate Working Group in AY 24-25, that led to several recommendations for improving the climate for our graduate students.

Washington University- St Louis

Physics Department

St. Louis, Missouri

Department Website:

<http://web.physics.wustl.edu/>

Graduate Program Website:

<https://physics.wustl.edu/graduate>

Admission Website:

<https://gradstudies.artsci.wustl.edu/apply>

Application Deadline:

December 1

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

5.2 years

Contact for graduate admission:

gradinfo@physics.wustl.edu

WashU's Danforth Campus is a testament to Collegiate Gothic architecture. Designed by Cope & Stewardson in 1899, its red granite and limestone buildings boast pointed arches, intricate stonework, and soaring towers, evoking the grandeur of medieval universities. The 169-acre campus is bordered by Forest Park and the cities of St. Louis, Clayton, and University City. WashU empowers you to thrive in a dynamic city that offers a thriving job market, rich cultural experiences, and a welcoming community.

Physics is at the forefront of many technological advancements, and our department is leading the way in a diverse range of fields including astrophysics, biophysics, theoretical nuclear and particle physics, quantum information, materials, sensing, and extraterrestrial materials.

The Department of Physics plays a leading role in the recently founded [Center for Quantum Leaps](#) - an Arts & Sciences initiative in collaboration with the School of Medicine and the School of Engineering with immense potential to revolutionize quantum computing and the development of new materials and medical treatments to solve major scientific and societal challenges.

The Department of Physics is also affiliated with two others [research centers](#). It plays a key role in the [McDonnell Center for the Space Sciences](#), with leadership in studies of cosmic rays, high-energy astrophysics, cosmology, and astromaterials analysis, including the design of experiments to search for dark matter. The [Institute of Materials Science & Engineering](#) is a hub for Washington University materials research, focused on the development and application of new materials with desirable properties and microstructures. Additionally, our biophysicists are leading a transdisciplinary campus-wide initiative in [Artificial Intelligence and Neuroscience](#) focused on the convergence of machine learning, artificial intelligence, and brain sciences.

Our [physics alumni](#) are influential leaders in academia and industry, utilizing their expertise to advance innovation across various fields. The problem solving attitude and analytic skills you will develop pursuing a degree in physics are highly exportable and will make you versatile and adaptable for [careers in physics and beyond](#). A physics education also serves as excellent preparation for several schools, including medical school. Physicists are highly interactive and versatile professionals who supply essential expertise in research and development efforts in both academia and industry.

Our PhD program offers generous support for the first two years and a welcoming community to help you achieve your research aspirations. Learn more about our [graduate program](#) or contact gradinfo@physics.wustl.edu.

At Washington University, we strive to foster a supportive, inclusive and equitable learning environment where everybody can thrive and succeed. We offer plenty of opportunities for research experiences and a welcoming community of students, faculty and staff. Join us and be part of the physics revolution that is shaping our world today!

Nuclear Physics Research Areas:

Nuclear Astrophysics, Fundamental Symmetries & Neutrinos, Nuclear many-body physics, Nuclear Structure & Reactions, ML

List of complementary Physics Research Areas:

Astrophysics, Medical Physics, Theoretical Particle Physics

of faculty in specific research groups:

High-Energy Experimental Astrophysics: 6

Astro-Particle Theory: 2

Nuclear People:

Experimental Faculty: 2

Theoretical Faculty: 4

Staff/Research Scientists: 2

Postdoc: 1

Graduate Students: 7

Female physicists: 3

Contact in Nuclear Physics:

gradinfo@physics.wustl.edu

Research details

DOE SciDac NUCLEI, DOE Topical Collaboration NTNP.

JLab, FRIB, TAMU, DUNE, ANL, LANL, FermiLab.

2 members affiliated with ANL.

S. Pastore: <https://physics.wustl.edu/people/saori-pastore>

M. Piarulli: <https://physics.wustl.edu/people/maria-piarulli>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

First and second years receive an annual (12 month) stipend. For the AY 25-26 = \$37,853. There are no such differentials.

What are the opportunities for students to be employed in your department during their first summer on campus?

As noted above, the student stipend is for 12 months.

What is the health insurance premium for graduate students in your department?

90% subsidy

Does your department provide a tuition waiver for first-year students?

Yes, tuition is waived for students in the Ph.D. program.

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

<https://gradstudies.artsci.wustl.edu/policies-and-procedures#anchor-group-15570>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

A student may transfer graduate-level course credits amounting to a maximum of up to 35% of the course work requirement in the Washington University PhD program and a maximum of up to 10% of the course work requirement in the Washington University master's degree program.

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

GSs and PDs representatives participate in the faculty meetings, and are members of the departmental committees (including, Graduate Studies committee, Colloquium committee, DEI committee, Outreach committee). This ensures communication and gives GSs and PDs space to discuss their needs and provide their inputs

The department organizes social events to foster an inclusive environment, these include events to recognize students' achievements, pizza parties, dedicated lunches on special occasions (e.g., women international day)

The faculty has in place a mentoring system for GSs

A self-organized student-led mentoring systems is also in place

GSs students have weekly student seminars. This slot is used once per semester to host the state of the department presentation by the DGS and/or Chair to discuss with GSs items of relevance for their best enjoyment of their scholar experience

The department has dedicated funds to support travel expenses for GSs and PDs attending specialized conferences including the APS WiP, the NSBP

The department has dedicated funds to support summer research salaries for students from underserved communities



Wayne State University

Physics and Astronomy Department

Detroit, Michigan

Department Website:

<https://clas.wayne.edu/physics>

Graduate Program Website:

<https://clas.wayne.edu/physics/programs/grad>

Admission Website:

<https://gradschool.wayne.edu/admissions>

Application Deadline:

February or each year for Fall admission

General GRE required?

Waived

Physics GRE required?

No

Median time to PhD:

5 years

Contact for graduate admission:

Professor Sean Gavin,
Department Chairperson

WAYNE STATE UNIVERSITY is one of the three constitutionally autonomous state universities in Michigan and holds the Carnegie Research RU/VH (very high research activity) University status. The university offers a comprehensive and broad range of baccalaureate and graduate programs in sciences, liberal arts, engineering, medical sciences, as well as many other disciplines. The Wayne State main campus, located in the center of a completely rejuvenated Detroit, is recognized for its beauty and the uniqueness of its architecture. It is nationally recognized as a safe and secure environment. Multiple services are offered to students, including food courts and on-campus restaurants, a state-of-the-art fitness center, a student center, and a student welcoming center hosting the full gamut of student services. All students are provided free access to academic counseling, healthcare services, including mental health services. Wayne State students are from very diverse demographics that include several ethnic groups, religious and non-religious groups, and all genders. A large fraction of our students originates from Europe and South-Asia, as well as the northern united states.

The Physics and Astronomy department is home to 25 full-time faculty, 100+ undergraduate students, 70+ graduate students, 20+ postdoctoral fellow and research associates, as well as several academic and administrative staff.

The department offers undergraduate program in applied physics, astronomy, biophysics, and physics, as well as vibrant graduate physics program with researchers in astrophysics, biophysics, condensed matter physics, nuclear, and particle physics. Our faculty and their students are members of several international experimental collaborations, including LHC/ALICE, LHC/CMS, RHIC/STAR, RHIC/sPHENIX, EIC/ePIC, as well as theoretical collaborations including the BEST, JETSCAPE, and XSCAPE collaborations.

Nuclear Physics Research Areas:

Theoretical and Experimental High Energy Nuclear Physics and Heavy Ion Physics

List of complementary Physics Research Areas:

Particle Physics, Nuclear Astrophysics

of faculty in specific research groups:

Experimental heavy ion physics: 4

Theoretical nuclear and particle physics: 4

Observational nuclear astrophysics: 1

Nuclear People:

Experimental Faculty: 6

Theoretical Faculty: 4

Staff/Research Scientists: 0

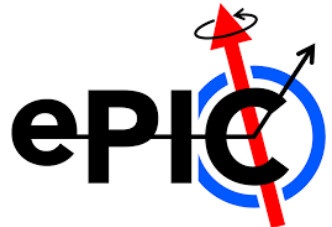
Postdoc: 8

Graduate Students: 12

Female physicists: 4

Contact in Nuclear Physics:

Professor Claude Pruneau,

aa7526@wayne.edu

Experimental Relativistic Heavy Ion Group (W. Llope, C. Pruneau, J. Putschke, S. Voloshin): These faculty, with their graduate and postdoctoral students, have continuing involvement in relativistic heavy ion experiments at Brookhaven National Laboratory RHIC and EIC facilities and at the CERN/LHC. These include the RHIC/STAR and LHC/ALICE experiments with broad programs in relativistic heavy ion physics, particularly, the study of Quark Gluon Plasma, a perfect fluid formed in relativistic heavy ion collisions and a form matter that permeated the universe right after the Big Bang. The group activities also include the RHIC/sPHENIX experiment dedicated to the study of jets in high-density nuclear matter, as well as the future EIC/ePIC experiment targeting the study of the origins of nuclear mass and spin.

Theoretical Relativistic Heavy Ion Group (S. Gavin, A. Majumder, C. Shen): These faculty, in concert with their graduate students and postdocs, have active interests in emergent phenomena in many-body nuclear systems governed by Quantum Chromodynamics (QCD), interdisciplinary research with Bayesian Inference to quantitatively characterize the properties of Quark-Gluon Plasma, a novel state of matter created in relativistic heavy-ion collisions. They are contributing members of the JETSCAPE and BEST international theory collaborations. Within this context, they are continuously developing sophisticated and comprehensive models of heavy ion collisions for the interpretation of RHIC and LHC data, as well as building preparedness for the study electron-nucleus collisions at the EIC.

C. Shen: <https://clasprofiles.wayne.edu/profile/gf8206>S. Gavin: <https://clasprofiles.wayne.edu/profile/af7523>W. Llope: <https://clasprofiles.wayne.edu/profile/fr4526>A. Majumder: <https://clasprofiles.wayne.edu/profile/eg0409>J. Putschke: <https://clasprofiles.wayne.edu/profile/du8478>C. Pruneau: <https://clasprofiles.wayne.edu/profile/aa7526>S. Voloshin: <https://clasprofiles.wayne.edu/profile/ag6533>

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

All graduate students are supported via TA or RA. Stipends: 26000\$

What are the opportunities for students to be employed in your department during their first summer on campus?

All faculty are seeking and willing to hire new graduate students in their research program.

What is the health insurance premium for graduate students in your department?

Fully covered by the department for all TA/RA graduate students

Does your department provide a tuition waiver for first-year students?

No

Are graduate students unionized at your school?

No

Please provide a link to your university's policy regarding family or medical leave for graduate students.

Wayne State University is committed to a policy of non-discrimination and equal opportunity in all of its operations, employment opportunities, and educational programs.

Policies: <https://bulletins.wayne.edu/graduate/general-information/academic-regulations/>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

No

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

Our faculty and students are from diverse ethnic backgrounds, religious background, and from several countries worldwide. The Department has a student association that fosters collegiality, diversity, equity, and inclusion of all of ethnic groups, religious groups, gender orientation, and political views.

Yale University

Department of Physics

New Haven, CT

Department Website:

<https://physics.yale.edu>

<https://wlab.yale.edu>

Graduate Program Website:

<https://physics.yale.edu/academics/graduate-studies>

Admission Website:

<https://gsas.yale.edu/admissions>

Application Deadline:

December 15

General GRE required?

No

Physics GRE required?

No

Median time to PhD:

6.3 years

Contact for graduate admission:

david.c.moore@yale.edu

Yale University, a university with honored traditions, was founded in 1701, and is not only a major research university but also one of the world's great universities. Some 11,000 students

come from all the 50 states and from 108 countries. The 3,200-member faculty is a richly diverse group of people who are leaders in their respective fields. The central campus now covers 310 acres. Yale is located in New Haven Connecticut. Its buildings, towers, lawns, courtyards, walkways, gates, and arches comprise what one architecture critic has called "the most beautiful urban campus in America." The University also maintains over 600 acres of athletic fields and natural preserves just a short walk or bus ride from the center of town. Led by a distinguished faculty, Yale carries out its education and research on the graduate level in eleven graduate and professional schools. As a center for business and a Mecca for the arts, New Haven is recognized as a city of innovation and culture. Approximately 20 square miles with nearly 130,000 residents, New Haven is conveniently located between Boston and New York.

Yale Physics enables exploration of the physical Universe we live in, prepares future scientists through academic and professional training, and fosters a community of collaboration at Yale and in the world. At Yale, theorists and experimentalists explore and test the physical laws of nature, searching for new phenomena that will provide evidence for more comprehensive and unified theories. Yale's Department of Physics is recognized for its experimental and theoretical work on nuclear, atomic, solid state, and high-energy particle physics. We also work very closely with other departments to bridge the gaps between sciences. Our PhD program helps students acquire a general foundational knowledge of physics and learn to communicate and educate others on that knowledge. Our students are involved in a wide range of research, expanding the world's understanding of the laws of physics.

Nuclear Physics Research Areas:

Fundamental Symmetries & Neutrinos, Weak Interaction, Relativistic Heavy Ions, Medium Energy, Theoretical Nuclear Physics, Nuclear Structure

List of complementary Physics Research Areas:

Applied Physics, Astronomy and astrophysics, Atomic, molecular and optical physics, Biophysics, Condensed matter physics, Elementary particle physics, Quantum science and sensing, Instrumentation.

of faculty:

119 in total

Nuclear People:

Experimental Faculty: 5

Theoretical Faculty: 2

Staff/Research Scientists: 6

Postdoc: 6

Graduate Students: 15

Female physicists: 15

Contact in Nuclear Physics:helen.caines@yale.edu

Yale Wright Laboratory is advancing the frontiers of fundamental physics through a broad research program in nuclear, particle, and astrophysics. Scientists initiate and collaborate in experiments to further understanding of the Universe and hold many leadership positions in their respective experiments across the world. In addition, they facilitate frequent cross-disciplinary efforts between fields and drive instrumentation development using the lab's on-site state-of-the-art research facilities and technical infrastructure.

Researchers aim to probe the nature of neutrinos through neutrinoless double beta-decay (CUORE, CUPID, nEXO), study neutrino oscillations (Daya Bay, PROSPECT), measure the neutrino mass (Project 8), and search for new physics in weak nuclear decays (BeEST, QuIPS). Others seek to identify the nature of dark matter through direct detection experiments (DM-Ice, COSINE-100), astrophysical observations (IceCube), and axion searches (HAYSTAC, ALPHA, RAY). The neutrino and dark matter experiments are located worldwide (e.g., LNGS, Daya Bay, ORNL, South Pole, and Wright Lab).

The nuclear structure group studies the structural evolution of the atomic nucleus with proton and neutron number, the interplay of single particle motions and interactions with collective modes, symmetries of the many-body system, quantum phase transitions in nuclear shapes, critical point descriptions, the proton-neutron interaction, and heavy nuclei.

The Relativistic Heavy Ion Group (RHIG) is actively involved in experimental research on the STAR experiment at the RHIC at BNL on Long Island, New York, and on the ALICE experiment at the LHC located at the CERN in Geneva, Switzerland. Both experiments seek to form and investigate the nature of the hot, dense QCD matter that is created in these high energy collisions. The so-called Quark-Gluon Plasma has quarks and gluon degrees of freedom and is predicted by the Standard Model of particle physics to have existed ten millionths of a second after the Big Bang. RHIG researchers are engaged in simulations, R&D, and prototyping for the ePIC detector which will soon be installed at the Electron-Ion Collider at BNL. The goal of the EIC is to enhance our knowledge of gluons which "glue" quarks into hadrons. These gluons, which are massless, could account for more than 90 percent of the mass of visible matter in the universe. The question is: how?

Many of our groups mentioned above are exploring the applications of quantum science and sensing to tests of fundamental physics. We are also engaged in a diverse spread of AI, data science, and ML initiatives to enhance our research, teaching, and general productivity.

Graduate student life

What is the first-year stipend (nine-month) in your department? If there is a differential between TA and RA stipends, or between stipends for junior and senior students, please provide that information.

Yale provides a 12-month stipend (minimum of \$49,538 for 2024-2025)

What are the opportunities for students to be employed in your department during their first summer on campus?

Our first-year stipend covers 12 months; students are expected to work in a research group over the summer once the Spring semester is completed.

What is the health-insurance premium for graduate students in your department?

Basic health insurance provided by the university is 100%

Does your department provide a tuition waiver for first-year students?

Tuition is provided by the university 100% (UF)

Are graduate students unionized at your school?

Yes

Please provide a link to your university's policy as regards family or medical leave for graduate students. If such a policy does not exist, please say that.

<https://gsas.yale.edu/resources/leaves-absence>

Does your department have an explicit reduction in course requirements for students who enter with a completed MS degree in Physics?

Yes

How is your department creating an inclusive and welcoming environment (e.g., department committees, student-led groups, climate visits/site surveys)?

Our department is committed to fostering an environment of belonging for every member of our department's community as we strive for excellence in research, teaching, and mentoring. Yale Physics community members are frequently recognized for their belonging advocacy and efforts. We have a commitment to shared leadership in the department and have many opportunities for student organizations and outreach. More details about how we work to accomplish these goals can be found here: <https://physics.yale.edu/belonging>