

# FIAP Spring 2021 *Newsletter*

American Physical Society Forum on Industrial & Applied Physics

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## Editor in Chief

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Opinions expressed represent the views of the individual authors and not the American Physical Society or author's employers.

## Letter from the Editor

As the physics community, and the world at large, continues to deal with the coronavirus pandemic, the 2021 March Meeting will be virtual. While allowing for pre-recorded presentations as an option, APS is encouraging all presenters to give their talks live, using the Central Daylight Time (CDT) of the original Nashville location. Also, we are pleased that the total number of abstracts is comparable to those submitted for previous March Meetings, and we look forward to the same robust scientific program outlining all the latest in physics research as an in-person conference would provide.

In this Newsletter, we will outline the Forum on Industrial and Applied Physics sessions for the Meeting, especially encouraging members to participate in Industry Day, held as usual on Wednes-

day. Selection of FIAP Fellows has also continued apace, and we congratulate the newest members to receive this honor, and they are highlighted later in this Newsletter. We will also hear from the Director of Industrial Physics Engagement, Dr. Daniel Pisano, as he settles into this new position with APS.

Especially in these virtual times, we hope to connect with FIAP members through the Newsletter, keeping all abreast of Forum activities, and especially at APS Meetings. Any additional contributions are welcome, and we would like the newsletter to provide an outlet for discussions of interest to the FIAP membership. To submit articles, letters to the editor, or ideas for discussion, please contact me at [fiap\\_newsletter@aps.org](mailto:fiap_newsletter@aps.org).

*–Todd Brintlinger, Editor*

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## Viewing the Future with Physics at APS March Meeting 2021

The March Meeting of the APS is the largest meeting of the APS where a global community of physicists, scientists, and students will showcase their groundbreaking research from industry, academia, and major labs. This year, the March Meeting of the APS will be held virtually from March 15 to 19, 2021. <https://march.aps.org/>. With over 10,000 abstracts submitted and more than 850 sessions the March Meeting is the largest conference hosted by the APS. It is expected that more than 11,000 attendees will join in the virtual meeting.

FIAP has sponsored and co-sponsored a series of insightful invited Sessions with presentations by recognized leaders on a diverse range of topics that highlight evolving opportunities in the practice and application of physics such as the Physics of COVID-19, Imaging in Industry, and Seeing the Future of Energy. This series of FIAP invited sessions will begin on Monday afternoon at 2:30 PM (CDT) and continues through the end of Thursday sessions at 5:30 PM. Concurrently, there will also be contributed FIAP sessions beginning on Monday afternoon. Even though this year's

March Meeting will be held in a Virtual Environment, the FIAP sessions will be held in two “rooms.” The invited track will be in room 58 from C58 to V58, and the contributed sessions will be “next door” in room 59: C59 to S59.

One of the highlights of the March Meeting is Industry Day which is held on Wednesday March 17th. This year's theme is “Seeing the Future.” There are focused technical sessions throughout Wednesday. At the end of the day, one of the sessions of interest will feature recently appointed FIAP Fellows of the APS. After the conclusion of the day's technical sessions, all FIAP members are invited to our annual FIAP Business Meeting which will begin at 6:00 PM on Wednesday.

We look forward to seeing everyone at this year's March Meeting.

Please note all times will be in Central Daylight Time (CDT) in honor of Nashville, Tennessee the originally intended site for the meeting.



**INDUSTRY DAYS**  
Viewing the Future  
with Physics  
Explore the latest trends in industrial  
physics at the APS March Meeting.

[Learn More](#)

# Enhancing Industrial Physics Engagement, by Dr. Daniel Pisano

It has been 10 months since I was introduced as the Director of Industrial Engagement in the last FIAP Newsletter. A lot has happened in the Industrial Engagement area since then. The Industrial Mentoring Program (IMPact: <https://impact.aps.org/>) has been upgraded so it is easier to use and accept both APS mentors and mentees worldwide. We further opened the site to all students as well as graduate students and early-career physicists.



We reviewed the results of the APS Membership Acquisition and Retention Study and have taken steps to address your requests, i.e. more information of career advice, finding jobs, and professional



advancement. This past October we began a webinar series, Success in Industry, the focus of which is to give students and physicists insight into the soft skills and tools they need to be successful in a private sector job (Note: many of these same skills will help you in academia as well.)

The series has been well-received as measured by both its objective score in surveys and by testimonials:

*"Since I am a graduate student close to finishing [my] PhD program, I learned a lot of things from this webinar. It really helps to prepare [me] further"*

*"Excellent presentation with great material. I have been a physicist and manager in industry for 40+ years and found the material and advice spot on."*

The five broadcasts that have been done already can be viewed at <https://aps.org/webinars/index.cfm>. I urge you to sign up for the five that are coming at the link on the website.

APS has also begun a pilot of the APS Accelerator for Success in Industry. This initiative includes the webinars mentioned above as well as additional webinars, workshops, and videos geared towards careers in Industrial Physics. Initially they will be focused on students and early-career physicists, but we hope to expand the program to provide both career advice and professional development for mid-career physicists in industry. To continue to keep these offerings as no-cost or very low-cost for participants, we are enlisting the help of the corporations who benefit from having better trained employees and perspective employees.

The last initiative I would like to cover is one of messaging. Many FIAP members have mentioned that they are unaware of the benefits that APS offers and, in particular, the benefits of being a member while employed as an Industrial Physicist. In the future look for more frequent outreach to our industrial physicist members, keeping you informed what APS is doing on your behalf. You will see stories in APS News, on the APS.org website, and especially on the FIAP Engage website. We welcome feedback and ideas at [pisano@aps.org](mailto:pisano@aps.org) and/or [fiap\\_newsletter@aps.org](mailto:fiap_newsletter@aps.org).

There is plenty more to come that will benefit our Industrial Physicists. Stay tuned!

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## FIAP Elections

Every year, the Forum on Industrial and Applied Physics (FIAP) holds elections administered by APS to fill positions pursuant to FIAP by-laws, where the Executive Committee is responsible for the work of the Forum, including, but not limited to, the science program for the March Meeting, Fellowships, and various other events and committees. The following candidates were nominated, and the new committee members will begin their terms during the March Meeting.

### Vice Chair candidates

*Todd Brintlinger*

U.S. Naval Research Laboratory, Washington, DC

*Nathan Orloff*

National Institute of Standards and Technology, Boulder, CO

### Executive Committee Members-at-Large candidates

*Anne Matsuura*

Intel Lab, Hillsboro, OR

*Ali Gokirmak*

University of Connecticut, Storrs CT

*John Rumble, Jr.*

R&R Data Services, Gaithersburg, MD

*John Ballato*

Clemson University, Clemson, SC

## FIAP Partners for COVID-19 Session

FIAP is proud to be partnering with Topical Group on Medical Physics (GMED) as well as the newly formed Covid Research and Resources Group (CRRG) to co-sponsor sessions focusing on covid-related research being done by APS members, and with a physics-based perspective on the coronavirus and its spread. This invited session, “C58: Physics of COVID-19” takes place on

Monday afternoon, and will feature a diverse group of researchers, spanning mitigation to proper social network modelling to understand the spread of the virus.

We encourage everyone to attend, and look forward to the unique connections that such interdisciplinary sessions can engender.

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## FIAP Fellowships, Lectureships, Awards and Prizes

FIAP is proud to announce our newest APS Fellows, as well as the FIAP Distinguished Lecturer and Pake Prize awardee, highlighted below. With a virtual meeting, we regret not being able to offer congratulations, certificates, and Fellows pins in-person, but we welcome members to participate in the virtual FIAP business meeting on Wednesday evening, March 17th, where Fellows, Award and Prize recipients will be acknowledged.

As always, nominations for Fellowships of esteemed colleagues are a way for FIAP to recognize its members, and FIAP members are urged to consider assembling packages early, before the June 2, 2021 deadline. Details can be found at the APS Fellowship website, <https://www.aps.org/programs/honors/fellowships/nominations.cfm>

### FIAP Fellows (2020):

*John Ballato*

Clemson University

Citation: “For pioneering contributions to optical fibers, most notably to novel fiber optic materials and their fabrication.”

*Sean J. Hearne*

Oak Ridge National Laboratory

Citation: “For outstanding contributions to the science and technology of thin-film materials, and for visionary leadership of research institutions and professional societies.”

*Michel Houssa*

University of Leuven

Citation: “For contributions to the understanding and reliability of ultra-thin gate dielectrics and interfaces for nanoscale devices.”

*Daniel S Hussey*

National Institute of Standards and Technology

Citation: “For novel developments in neutron radiography and tomography leading to significant advances in lithium-ion batteries, hydrogen fuel cells, concretes, and additive manufacturing; and for the invention of simultaneous neutron/x-ray imaging for analysis of complex natural and engineered materials.”

*Andrey B. Matsko*

Jet Propulsion Laboratory, California Institute of Technology

Citation: “For significant contributions in the area of optical physics, specifically the development of spectrally pure radio frequency photonic oscillators and narrow line lasers.”

*Heike Riel*

IBM Research

Citation: “For scientific and technical accomplishments in materials and device research for nanoscale electronics in the fields of semiconducting nanowires and organic light-emitting devices for display applications.”

*Kenneth P. Rodbell*

IBM T.J. Watson Research Center

Citation: “For contributions to the understanding of high-energy particles interaction with electronic circuits, as well as the physics of transport in metallic interconnects.”

*Dirk Smit*

Shell

Citation: “For seismic imaging methods based on novel mathematical techniques to image in lensing media, and for novel methods in gravity and electromagnetic data imaging now used routinely in industrial applications.”

### Distinguished Lectureship Award on the Applications of Physics (2020):

*Thirumalai Venkatesan*

National University of Singapore

Citation: “For invention and commercialization of the pulsed laser deposition process and for sustained leadership in academic entrepreneurship.”

### George E. Pake Prize (2020):

*James W. Bray*

General Electric Research

Citation: “For outstanding contributions in applying superconductivity to MRI magnets and industrial scale generators/motors, and for the management of these and other projects that have led to world-class products and leading-edge technology innovations.”



## FIAP Chair's Thoughts

As the (virtual) 2021 March Meeting approaches, it's time to reflect on the past year and think about how Covid has changed our lives in so many ways. I enjoy attending the March Meeting in-person, from seeing friends and colleagues to going to new restaurants and walking around the area surrounding the convention centers and exploring parts of cities that I either hadn't been in before or hadn't earlier had the time to walk around. It used to be both fun and maddening to decide on which sessions to attend as there seemed to always be multiple talks that I wanted to hear going on simultaneously, part of the rich array of excellent talks in the March Meeting scientific program. I finally decided a couple of years ago to just stay in one session as it took too long to walk between sessions, and in many cases the rooms were overflowing and it was impossible to either enter the room or get a seat if I wasn't in that session from the beginning. It always seemed to me that food choices at the convention centers were kind of sparse, and I had to daily block out a period of time to leave the meeting to find a suitable location for lunch.

During this past year, we've all become accustomed to attending or hosting meetings remotely, probably using Webex, Zoom, Google Meet, Microsoft Teams, or some other conferencing app. Think about how many times you hear or tell someone to "mute" themselves in one call or over the course of a day. Things we hadn't particularly worried about before, like wifi bandwidth, or the background that other participants see weren't an issue with

conference calls or in person meeting at work. I find it amusing when I hear a child or see one in the background in 'at home' conference calls.

And what about the crazy weather? As I am writing this note, CNN is reporting on the snow, ice and record low temperatures in Texas and the South and the ensuing water problems in Texas. In the Northeast we have had record snows. Who would have thought a year ago about having to wear a face mask while operating a snowblower? It seems like every time I use mine to clear the sidewalk and driveway, I need to stop every few minutes to clear my glasses as they continue to fog in the cold.

Hopefully we are nearing the end of the Pandemic. I am incredibly impressed at the speed with which targeted vaccines have been developed, tested, approved by the FDA for emergency use authorization and are now being administered to our citizens, and I am proud that physicists have been part of the discussion on how best to defeat the coronavirus. Personally, I can't wait to get back to more normal activities that we had taken for granted such as: going out for dinner, seeing friends and family (closer than six feet), travelling, and attending meetings in person. See you next year in Chicago.

*Stay safe,  
Michael Gordon, Chair FIAP*