

STRUCTURAL GEOLOGY AND TECTONICS DIVISION Newsletter

Volume 37, Number 1

August, 2017

CHAIR'S MESSAGE

Dear fellow Structural Geology and Tectonics colleagues,

End of summer greetings to all. As fall semester approaches, I hope class preparations go smoothly, and for our colleagues at federal agencies, I wish you the best as you chart your paths in these uncertain waters. Many thanks to each of you for all of your work on behalf of the geoscience community, and for your interest and/or membership in the Structural Geology and Tectonics Division of GSA. We of course also extend our concerns to our colleagues and friends in the path of Hurricane Harvey, which will probably make for months and years of recovery.

Thanks to Margi Rusmore (1st vice chair), Paul Umhoefer (2nd vice chair), Rebecca Flowers (Secretary/Treasurer), and Jean Crespi (past chair) for all of their efforts in managing the SGT division, especially these past several months as I was working on several other issues. Many thanks to Howell Bosbyshell, Kurt Burmiester, and Kevin Smart for their efforts at getting the newsletter out, and keeping our social media presence and website active and informative. Please note that the ballots for the SGT division are arriving in your in box this week, and many thanks to our colleagues who have agreed to run for division offices.

If you plan to attend the national meeting of GSA in Seattle, we look forward to seeing you there. Please keep in mind the national meeting early registration deadline is September 18 (<http://community.geosociety.org/gsa2017/home>). The division is sponsoring a large number of technical sessions that span a remarkable range of topics, and the quality of the submissions is impressive. While you are registering for the meeting, please remember to renew your GSA membership AND your membership in the SGT division.

The division activities for the year continue to support students and the activities of the members of the division. We support students in their travels to GSA to present their research results. These travel grants are awarded to the students who submitted the top-rated SGT-oriented student grants, and we provide funds for students to experience field trips and short courses at GSA. Please join us at the SGT business meeting and reception on Tuesday, October 24 for the SGT Division, where we will recognize this year's Career Contribution Award and Outstanding Paper Award recipients.

As we move forward in our work, I encourage SGT members to consider serving the division. It is a rewarding way to serve colleagues and students, with opportunities to shape the education and

research opportunities for students. In addition to the glories of serving on the SGT Board, we have opportunities to serve as members on committees that choose the Career Contribution Award, the Joint Technical Program Committee, the Laubach Research Award (co-administered with the Sedimentary Geology Division), the SGT Nominating committee, the Outstanding Paper Award, and other opportunities. I will be ‘working the crowd’ at the annual meeting with summaries of these service opportunities and the service schedule for committees.

I strongly encourage you to maintain your membership, or rejoin, the SGT division. Your divisional dues fund all the student awards; the convivial, insightful, and stimulating reception interactions with our colleagues; and the communication network fostered by SGT. Please navigate your way to the division dues to make sure we have resources in 2018 to continue with these efforts.

There are several new developments within GSA that we should be aware of. In June the GSA Board approved a new Interdisciplinary Interest Group in Continental Scientific Drilling (<https://www.geosociety.org/documents/GSA/about/ContDrill-IIG-WelcomeLetter.pdf>). This group will promote collaborative research using continental scientific drilling and coring across communities, presentations on scientific drilling projects to the wider scientific community, and opportunities for students and early career scientists in continental scientific drilling projects. Jim Russell of Brown University is the new chair and boasts over 200 members so far.

While on sabbatical at the University of Wisconsin, Madison, in 2008, I discovered the desks that had been used by Charles Van Hise and Thomas Chamberlain in the Geology Library. These two great intellectuals of our discipline, the field of geology, public education, service in America, and the development of great public universities shaped the intellectual development in the U. S. in the 20th century. Chamberlain is perhaps best known for his development of the multiple working hypotheses approach to scientific investigations. A hallmark of scientific philosophy, Chamberlain’s work has been deeply studied, and shapes our approach today. An important aspect of this approach is that we embrace a range of ideas to explain the biological, chemical, and physical processes that shape our Earth.

One of the ways to maintain a modern multiple hypotheses approach is to encourage a wide range of well-educated scientists to contribute to our work. People with diverse backgrounds create a robust intellectual environment. The Geological Society of America works hard to create and improve the inclusivity and respect for all of its members and participants at its meetings, short courses, and field trips. Since 2013, GSA has supported more than 430 students from diverse and underrepresented backgrounds to attend national meetings. The On To the Future program (<http://community.geosociety.org/gsa2017/science-careers/otf>) provides opportunities for members to serve as meeting mentors, guiding young people about how to navigate a large meeting, how to find and approach potential advisors, how to best learn about and present research results, and how to advance their careers. I have participated in this program several times and it is a very rewarding experience, and I encourage you to consider doing this.

As we increase the range of people who are members of our community, GSA also has developed the RISE effort.

(<http://www.geosociety.org/GSA/Events/EventConductCode/GSA/Events/Conduct-intro.aspx>)

RISE – Respect Inclusive Scientific Events – is a program to embrace a guiding principle that we are all committed to ensuring a safe and welcoming environment for all participants. All GSA meeting participants are expected to abide by the GSA Events Code of Conduct Policy in all venues at our meetings, including ancillary events, field trips, and official and unofficial social gatherings. I am

confident that we in the SGT community always will support consideration and respect of others, refrain from demeaning, discriminatory, or harassing behavior and speech, and be mindful of our surroundings and of our fellow participants. Our meetings do occur in cities that pose risks, and sadly, there are on occasion participants at GSA who might not adhere to these expectations. In these cases it is incumbent on all of us to step in and help. If you notice that someone else is being harassed, appears to be in a difficult situation, or have any other concerns, please locate a GSA Staff Member or GSA Leader with a GSA RISE button at the meeting. These folks are able to help in any situation. Feel free to ask for help, even if you think an incident might not be consequential.

If you have any concerns regarding these issues, please contact:

gsaeventscodes@gmail.com

Vicki McConnell, GSA Executive Director [vmcconnell@geosociety.org]

Isabel Montanez, GSA President [president@geosociety.org]

Claudia Mora, GSA Past President [cmora@lanl.gov]

Robbie Gries, GSA President-Elect [rrgries@gmail.com]

The years to come will continue to be an exciting time for the Structural Geology and Tectonics Division and community. While some of us may face a range of challenges in advancing knowledge in the short term, we can take heart that we work on interesting scientific questions and continue to shape the future with rigorous teaching and research. I, and the rest of the SGT board, look forward to seeing you all at the GSA Annual Meeting, sharing your research, connecting with colleagues, and supporting students and fellow colleagues that are both SGT members and in the broader geoscience community.

Jim Evans

August, 2017



The Rio Grande River Gorge as seen on the 2016 SGT Division sponsored field trip to the aluminum silicate triple-point metamorphic rocks of northern New Mexico.

**Highlights from the Structural Geology & Tectonics Division Business Meeting
and Awards Reception at the 2016 Annual Meeting in Denver, Co.**



***GEOLOGICAL SOCIETY OF AMERICA
STRUCTURAL GEOLOGY AND TECTONICS DIVISION***

2016 CAREER CONTRIBUTION AWARD

David Pollard



The 2016 Career Contribution Award was presented to **David Pollard** by **Steve Martel** and SGT Division Chair **Jean Crespi**. Please visit the Division website to read Steve's award citation and David's response. <http://rock.geosociety.org/sgt/2016-CCA-Citation-Response.pdf>

2016 OUTSTANDING PUBLICATION AWARD

Christie D. Rowe, McGill University and W. Ashley Griffith, University of Texas at Arlington

Do faults preserve a record of seismic slip: A second opinion

Rowe, C.D. and Griffith, W.A., 2015, Do faults preserve a record of seismic slip: A second opinion: Journal of Structural Geology, v. 78, p. 1-26.



Outstanding Publication Award winners **W. Ashley Griffith** (left) and **Christie Rowe** with presenter **Michele Cooke** and SGT Division Chair **Jean Crespi** (right). Please visit [the Division website](#) to read Michele's award citation and Christie and Ashley's responses.

Nominations for the **OPA** and **CCA** are due March 1 each year.

2016 STEPHEN E. LAUBACH STRUCTURAL DIAGENESIS RESEARCH AWARD



Sebastian Cardona, Colorado School of Mines, Assessing the seal capacity of mass-transport deposits; an outcrop-based study to investigate the spatial variations in microstructure and microfabric and implications for seal capacity.

2016 STUDENT RESEARCH GRANT AWARDEES

Each year the SG&T Division recognizes graduate students for excellent research proposals in the annual GSA solicitation. These students receive funds to help with travel to the annual meeting in which they present the results of the funded research. In 2016 the following students were recognized as having submitted outstanding research proposals in Structural Geology and Tectonics.

Zoe Braden, Queen's University, In situ laser ablation $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of polydeformed low-grade volcanoclastic rocks from the Variscan orogen

Zachariah Fleming, University of Texas at El Paso, The geology of the Ibex Hills: A key to reconstruction of extensional tectonics in the Death Valley region, eastern California

Yiduo Liu, University of Houston, Geometry and kinematics of the oblique border faults in the Tusas Mountain segment, Rio Grande rift, northern New Mexico

Camille Mayberry, Central Washington University, Geologic mapping of dextrally offset tuff-filled paleovalleys in the central Walker Lane, Nevada

Danielle Shulaker, Stanford University, Coupling geochronology and thermochronology to constrain upper crustal fault movement and exhumation



Graduate Student Research Grant Awardees at the Reception, Award, and Business Meeting at the Annual Meeting in Denver, Colorado. From left to right: 2016 recipients **Danielle Shulaker** and **Zachariah Fleming**; 2015 awardees who presented their research in Denver—**Calvin Mako** and **Brittany Huerta**.

Structural Geology and Tectonics Division Field Trip and Short Course Grant Recipients for the 2016 GSA Annual Meeting in Denver, Co.

In 2016, 11 students received grants from the SGT Division to support their participation in field trips and short courses held in conjunction with the 2016 GSA Annual Meeting in Denver, Co.

Field trip and short course grant recipients:

Snir Attia	University of Southern California
Andrea Carro	Ludwig Maximilian University, Munich
Andy Clark	Simon Fraser University
Tyler Grambling	University of New Mexico
Robert Holder	University of California, Santa Barbara
Eui-jo Marquez	San Diego State University
Justin Milliard	University of Nevada, Reno
Amelia Nachbor	University of South Florida
Roland Neofitu	Ludwig Maximilian University, Munich
Vladimir Shipilin	Ludwig Maximilian University, Munich
Stephanie Sparks	University of Kentucky



Field trip and short course grant recipients present included (from left) **Roland Neofitu**, **Andrea Mazon Carro**, **Vladimir Shipilin**, and **Andy Clark**. For more information on the SGT Division Field Trip and Short Course Student Grant Program, go to <http://rock.geosociety.org/sgt/StudentTravelAward.htm>.

THE SG&T DIVISION STUDENT FUND

Students represent the future of our division, and the board considers the support of students who are interested in structural geology and tectonics to be among our highest priorities. The Student Fund, established within the GSA Foundation, will allow us to more effectively meet this priority. The SGT Division Travel Grant Program for the Student Research Grant Awardees and the SGT Division Field Trip and Short Course Student Grant Program are made possible through donations to the SGT Division Student Fund. If you would like to make a donation to support the SGT Division Student Fund, go to <http://rock.geosociety.org/sgt/SGT-Student-Fund.htm>. Refer to the 2016 SG&T Division Management Board Meeting minutes, below, for more details about division finances.

MINUTES

GSA Structural Geology and Tectonics Division Management Board Meeting

Monday, 26 September 2016, 11:30 AM–1:30 PM

Earls Kitchen + Bar, 1600 Glenarm Place, Denver, CO

Prepared by the SGT Division Management Board for Becky Flowers, Secretary–Treasurer of the GSA SGT Division¹

Attending:

Hal Bosbyshell, Kurt Burmeister, Elizabeth Catlos, Jean Crespi, Juliet Crider, Jim Evans, Mary Hubbard, Ben Johnson, Sarah Roeske, Margi Rusmore, Paul Umhoefer.

1. Welcome and Introductions. Jean Crespi

Management Board: Sarah Roeske—outgoing Past Chair, Jean Crespi—incoming Past Chair, Jim Evans—incoming Chair, Margi Rusmore—incoming First Vice-Chair, Paul Umhoefer—incoming Second Vice-Chair, Ben Johnson—Student Representative.

Committees: Andrew Meigs—incoming CCA Committee Chair, John Wakabayashi—incoming OPA Committee Chair, Mark Evans—outgoing Laubach Award Committee Chair, Mary Hubbard—JTPC Representative for 2016 GSA Annual Meeting, Juliet Crider—JTPC Representative for 2017 GSA Annual Meeting.

Communications: Hal Bosbyshell—Newsletter Editor, Kurt Burmeister—Facebook Manager, Kevin Smart—Webmaster.

Division Liaison to GSA Council: Elizabeth Catlos.

2. Financial Status of the Division. Jean Crespi for Becky Flowers

2a. Operating Account

As of June 30, 2016, the Operating Account had total assets of \$16,867.54. For comparison, the Operating Account had total assets of \$18,022.67 as of June 30, 2015; \$18,428.22 as of June 30, 2014; \$19,940.72 as of

¹ Becky Flowers could not attend the GSA Annual Meeting because she was on sabbatical in Germany.

June 30, 2013; and \$14,974.91 as of June 30, 2012. Note the Division transferred \$5,000 from the Operating Account to the Student Fund in FY12.

2b. Student Fund

As of June 30, 2016, the Student Fund had a value of \$77,135. The amount varies with the market, and exceeded \$80,000 this past year prior to the annual transfer of funds to the Operating Account to pay for student awards. Currently, ~\$3,000/year can be withdrawn.

2c. Annual Budget (see attachment)

The need for an annual budget for the Division was discussed. This would allow the Board to make decisions in advance on how much the Division can spend on field trips and short courses, which is where our greatest increase in expenses has been in the last several years. There is consensus that an annual budget will be developed each year in January by the Secretary–Treasurer in consultation with the Chair.

2d. Transfer to Student Research Grants Program

Every year, \$3,600 is automatically transferred from the Operating Account to the Student Research Grants Program. Only two other divisions do this. The Geophysics Division transfers \$1,300, and the Sedimentary Geology Division transfers \$1,000. It is unclear if the \$3,600 goes to Structure – Tectonics grant requests specifically or into the general Student Research fund. Discussion ensued on whether to eliminate or cut in half this contribution. Pros: if we eliminate it, we could instead use these funds for students through direct SGTG awards and regain control on how these funds are spent. Cons: these relatively small grants can be critical for graduate students' careers. There is agreement that answers are needed on how this money is spent and the extent to which it benefits SGTG student members.

3. Student Support. Jim Evans and Margi Rusmore

3a. Student Research Grant Awards

Five students were selected to receive Student Research Grant Awards. Each awardee receives a \$500 travel grant to support the presentation of his/her research at either the 2016 or 2017 GSA Annual Meeting. One student will use his travel grant for the 2016 GSA Annual Meeting, and the other four plan to use their travel grants for the 2017 GSA Annual Meeting. Two students who were selected to receive Student Research Grant Awards last year will use their travel grants for the 2016 GSA Annual Meeting.

3b. Student Field Trip and Short Course Grants

This year, the amount requested for Student Field Trip and Short Course Grants far exceeded the amount available to spend on the program. The increase probably resulted from publicity on the GSA Annual Meeting funding web page. Support was allocated as follows. (1) To receive support, student membership in the Division was required. (2) The registration fee was supported in full for field trips and short courses sponsored/cosponsored by the Division. (3) A \$200 cap was applied to the registration fee for field trips and short courses not sponsored/cosponsored by the Division. There is agreement that these requirements should be kept and be listed on the Division web page that describes these grants.

4. Stephen E. Laubach Structural Diagenesis Research Award Committee. Jean Crespi for Mark Evans
SGTD committee members are Mark Evans (outgoing Chair) and Tim Byrne. This committee will be chaired by the Sedimentary Geology Division next year. A new committee member from the SGTD is needed. Chair (Jim Evans) will recruit a new committee member.

4a. Overview

The award began in 2010 and is now in a review period. There is currently no text in the Division's Bylaws and Rules and Regulations about the committee, and so the committee operates as an ad hoc committee.

4b. Issues

(a) The term length for SGTD committee members of three years is unwieldy because the award alternates yearly between the SGTD and the SGD. As a result, an SGTD member must continue to serve on the committee after chairing the committee. (b) Typically, only a handful of proposals are received. This should be addressed through more aggressive advertising. (c) Applications from students and professionals are considered for the award. This is the wish of the donor. (d) The deadline varies from year to year. There is agreement that the term length should be two years, that the deadline should be April 1 to be in line with other Division award deadlines, and that the text of the By-laws and Rules and Regulations should be revised. The deadline needs to be agreed upon by the Sedimentary Geology Division because they chair the committee on alternate years.

5. Career Contribution Award (CCA) Committee. Jean Crespi for Andrew Meigs
Committee members are Terry Pavlis (outgoing Chair), Andrew Meigs (incoming Chair), and Delores Robinson. Suzanne Baldwin (term for the 2017–2019 awards) and Tekla Harms (term for the 2018–2020 awards) are incoming committee members.

The following motion was proposed to bring the Division's Rules and Regulations in line with current practices and/or minutes from previous Management Board meetings.

Motion: Add the following text to the end of the second paragraph in section 4.e.1. of the Division's Rules and Regulations.

Nominations are active for three years, including the original year, and updates to the original nomination package are accepted. A new nomination for the same candidate may be submitted after the previous nomination has expired.

Motion passed unanimously. The text of the Rules and Regulations will be updated.

6. Outstanding Publication Award (OPA) Committee. Juliet Crider for John Wakabayashi
Committee members are Juliet Crider (outgoing Chair), John Wakabayashi (incoming Chair), and Seth Kruckenberg. A significant number of publications were nominated in 2016. A new committee member is needed. Chair (Jim Evans) will recruit a new committee member.

The following motion was proposed to bring the Division's Rules and Regulations in line with current practices and/or minutes from previous Management Board meetings.

Motion: Add the following text to the end of the second paragraph in section 5.e.1. of the Division's Rules and Regulations.

Nominations are active for three years, including the original year, and updates to the original nomination package are accepted. A new nomination for the same publication may be submitted after the previous nomination has expired.

Motion passed unanimously. The text of the Rules and Regulations will be updated.

7. Joint Technical Program Committee. Mary Hubbard and Juliet Crider

Mary Hubbard is the lead JTPC representative for the 2016 Denver meeting, and Juliet Crider is the lead JTPC representative for the 2017 Seattle meeting. A lead JTPC representative is needed for the Indianapolis meeting (2018). First Vice-Chair (Margi Rusmore) will recruit a lead JTPC representative for the 2018 GSA Annual Meeting.

For the Denver meeting, the Division is sponsor or cosponsor of 1 Pardee Symposium, 29 Topical Sessions (initially 31 Topical Sessions, but 2 Topical Sessions did not receive enough submissions), 1 Field Trip, and 1 Short Course (initially 2 Short Courses, but 1 Short Course proposal was "lost").

Mary Hubbard indicated that GSA needs to communicate a better sense of the role for JTPC members representing divisions in setting up the Annual Meeting program. JTPC members' access to sessions was limited during the last two years, and division sessions were cut or combined without input from them. Thus, those who were qualified to make decisions on how to best fill sessions that might be near complete, or how to best combine sessions, were not consulted. This same problem was noted in Baltimore. Liz Catlos (Council representative for SGT-D) will be alerted to this continuing problem and asked to raise this issue with Council (Liz had to leave the business meeting early).

7a. Sponsorship of Field Trips and Short Courses

This past year, there was little time between the annual meeting and the due date for proposals for field trips and short courses. Better communication is needed to increase the number of field trips and short courses sponsored by the Division.

7b. GSA SGT-EGU TS Cosponsored Sessions

Sessions cosponsored by the SGT-D and the European Geosciences Union Tectonics and Structural Geology Division took place at the 2014 and 2015 EGU General Assemblies and GSA Annual Meetings. Planning was not done far enough in advance to meet the deadlines for the 2016 EGU General Assembly and GSA Annual Meeting. A cosponsored session titled "Geological, geochemical, and geophysical perspectives on subduction initiation" has been proposed for the 2017 EGU General Assembly, and a similarly titled cosponsored session is planned for the 2017 GSA Annual Meeting. Sarah Roeske and Nancy Riggs are working on this and are in communication with Susanne Buiter, President of the EGU TS Division.

7c. Keynote Lecture

An official keynote lecture was forgone for this year's annual meeting because the Division hosted the Donath

Medalist's presentation. The Division does not have a consistent policy for determining the keynote speaker. Past examples were discussed, including a) invite a speaker, find a session that looks appropriate, and contact that session's conveners to see if they would offer this person an invited speaker slot; b) wait until the list of speakers for sessions is determined and select one as the keynote speaker. No consensus was reached on how to select a keynote speaker in the future.

Former Keynote Speakers

2016 GSA Annual Meeting—Donath Medalist's presentation in SGTD-sponsored Topical Session (Whitney Behr)

2015 GSA Annual Meeting—35th Symposium

2014 GSA Annual Meeting—None

2013 GSA Annual Meeting—Christie Rowe, "Do faults preserve records of the seismic cycle? 14 years of advancements from field observations and laboratory experiments"

2012 GSA Annual Meeting—Peter Hennings, "Petroleum structure and geomechanics—What it is and how the industry/academic bond can be strengthened"

2011 GSA Annual Meeting—Louis Moresi, "Intuitive numerical modeling in structural geology and tectonics"

2010 GSA Annual Meeting—30th Symposium

8. Membership Communication. Hal Bosbyshell, Kurt Burmeister, Kevin Smart

8a. Facebook

Kurt Burmeister noted that the Division's Facebook page is popular but all of the posts come from other sources. He encouraged the Division to consider having a science communication coordinator/marketing person who would be "live" at meetings and post on Twitter, Instagram, Facebook, and popular apps for quick communication. He suggested a student who would be good at this. The Board was enthusiastic about this idea and recommended he ask this student if he/she were interested. The Board discussed options for rewarding a student in this role, including payment of registration, travel support, or some combination.

9. Spring GSA Division Chairs Business Meeting. Margi Rusmore

This topic was discussed simultaneously with the Fall division chairs meeting. Margi said she had raised questions at the spring meeting about the role of divisions within GSA given the wide range in size of and activity within divisions.

10. Fall GSA Division Chairs Business Meeting. Jean Crespi and Jim Evans

The divisions are being tasked with producing a self-assessment. The due date is March 1, 2017. The assessment is basically a strategic plan for the Division and should not be onerous to produce since the Division has most of the documents and data in hand to answer the six questions. Jim Evans and Jean Crespi will work on a draft and circulate it to the Board.

At the fall meeting, Steve Pollock shared numbers he has compiled on all divisions. Of the 18 divisions, 5 are large, including SGTD. In the neighborhood of one-third of GSA members do not belong to a division.

Discussions at the fall meeting included whether divisions are the best way to organize members. It is not clear how divisions are distinct from Interdisciplinary Interest Groups, other than the number of people needed to initiate one. Divisions require 200 people, IIG 50. The Board thinks GSA should do more to encourage people to join a division.

11. Annual Calendar of Board Responsibilities. Jean Crespi

The Annual Calendar of Board Responsibilities needs to be revised to be consistent with the current responsibilities of the Management Board members and to include more detail.

12. Membership Drive. Jean Crespi

The need for a membership drive was discussed. The number of Division members in the Member/Fellow category dropped significantly this past year. Almost all divisions have seen a decline in membership this year in the Member/Fellow category, which supplies most of the dues income for a division. It is not clear what the primary factors are, but they could include GSA raising dues last year and/or economic troubles in the oil and gas fields.

The following table summarizes the Division membership for the past ten years by key membership categories. The table does not include the Honorary Fellow, K-12 Teacher, and Affiliate categories.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Member/Fellow	872	1,017	884	867	877	816	779	713	725	579
Senior Mbr/Fellow	197	208	260	260	281	295	291	331	355	390
Recent Graduate	71	90	114	100	141	130	104	113	99	152
Total Student	529	480	400	417	504	418	353	878	862	759
Paid Student	-529	-480	-400	-417	-504	-418	-353	-205	-167	-145
Total	1669	1795	1658	1644	1803	1659	1527	2035	2041	1880

Current dues:

Member/Fellow—\$10

Recent Graduate—\$5

Senior Mbr/Fellow—\$10

Paid Student (second membership)—\$5

13. Student Representative Position. Ben Johnson

Ben Johnson will graduate in May 2017 and plans to attend the Seattle GSA meeting. He would be happy to continue being on the Board until then. A new Student Representative is needed to join the Board with the term starting at the end of Seattle GSA. Ideally, the new Student Representative would attend Seattle GSA to meet Ben and the Board. Recent recipients of the Division's GSA Research Grant Awards are an ideal pool to select from.

14. Adjournment.

The meeting was adjourned at 2:00 PM.



At the Annual Meeting in Seattle this year the Structural Geology and Tectonics Division is sponsoring or cosponsoring two Pardee Keynote Symposia and 31 Topical Sessions that review advances, examine paradigms, and celebrate the breadth, depth, and vigor of the many topics of interest to division members. The division is also cosponsoring one pre-meeting field trip.

PARDEE KEYNOTE SYMPOSIA

P4. Speed Dating!: Advice on Sampling and Applications Through the Lens of the Geochronologist (Posters). Conveners: Tammy Rittenour; Michelle Summa Nelson; Shannon A. Mahan. Description: Age control is an essential aspect of most geologic research. However; the first step toward obtaining accurate age estimates relies on the individual researcher to correctly select and collect suitable material for dating. For best results, researchers need to assess site and sample conditions through the lens of the dating specialist. This unique booth-style Pardee session will facilitate discussion and one-on-one interactions between geochronology specialists and users of the techniques, such as students, researchers; and other professionals in the field.

P5. Origin, Accretion, and Translation of Mesozoic-Cenozoic Terranes along the Pacific Margin of North America. Conveners: David T. Katopody; Mark T. Brandon; Bernard Housen. Description: The Mesozoic to Cenozoic evolution of the western margin of the North American Cordillera has been the center of a long-standing controversy about the mobility of crustal fragments along continental margins. This symposium will outline the major lines of evidence for accretion and coastwise transport during the late Mesozoic and into the Cenozoic and will serve as a forum to identify remaining problems and opportunities in Cordilleran tectonics.

TOPICAL SESSIONS

T36. Asthenosphere to Atmosphere: Tectonics, Topography, and Climate. Advocates: A. Alexander G. Webb, Peter D. Clift. Description: This session focuses on climate-tectonic interactions at large scale, from asthenosphere to atmosphere. Join us to share how your research addresses key chicken-and-egg questions, critical mechanisms, or boundary conditions throughout Earth's evolution.

T80. Geothermal Energy. Advocates: Corina Forson, Dave Norman. Description: This session highlights recent geothermal exploration and development projects. Share the innovative techniques that help us find and harness geothermal resources, generating energy when the wind doesn't blow and the sun doesn't shine.

T89. The Dynamics of Tectono-Sedimentary Systems During Basin Formation and Fill. Advocates: Eugene Szymanski, Jacob A. Covault, Daniel F. Stockli. Description: This session will

investigate the nature of sediment delivery systems that connect orogenic terranes to their associated depositional basins—over various spatiotemporal scales and tectonic settings—by exploring fundamental driving processes and multiple scaling factors.

T92. Tectonics and Sedimentation, Avulsion, and Experimental Stratigraphy, and History of Western North America: A Celebration of Paul Heller's Career. Advocates: Brady Z. Foreman, Majie Fan, Elizabeth Hajek. Description: In recognition of the late Dr. Paul Heller's influence on studies of tectonics and sedimentation, fluvial stratigraphy, and evolution of the western North America, we seek submissions spanning these fields.

T98. Windows into the Crust: Paleo-Earthquake Records from Lacustrine Sediments. Advocates: Elana L. Leithold, Karl W. Wegmann, Darren Larsen. Description: Lakes can record past earthquakes through the accumulation and preservation of distinct sedimentary deposits. We encourage research highlighting the latest techniques, common challenges, and success stories as applied to lacustrine paleo-seismology and related hazards.

T119. International Field Experiences in the Digital Age, from Introductory Field Trips to Capstone Courses. Advocates: Steven J. Whitmeyer, Ivan G. Carabajal, Martin Feely, Anita M. Marshall, Eric J. Pyle. Description: International field experiences provide an enhanced educational experience by coupling unfamiliar geology with cultural diversity. This session will feature international field experiences that incorporate modern curricula, digital technologies, and approaches that enhance diversity and inclusion.

T148. System-Scale Zonation of Ore Systems: Insights into 3D Architecture from Lateral and Deep Exposures Due to Mining and Structural Deformation. Advocates: Carson A. Richardson, Simone E. Runyon, Eric Seedorff. Description: This session focuses on recent advances in the understanding of the genesis and evolution of magmatic-hydrothermal systems and ore deposits from three-dimensional exposures due to deformation (e.g., normal faulting and tilting), drilling, and mining.

T157. Origin and Evolution of the Continental Crust: A Celebration of the Career of Paul Mueller. Advocates: David W. Mogk, David A. Foster, Robert Stern. Description: Contributions are encouraged to celebrate the impacts made by Paul Mueller toward understanding the genesis and evolution of continental crust and tectonic assembly of Laurentia using the tools of geochronology, isotopic geochemistry, and whole-rock geochemistry.

T162. The Dance of Arcs: Causes of Arc Migrations, Flare-Ups, and Magmatic Focusing. Advocates: Scott R. Paterson, Vali Memeti, Joshua Schwartz, Katie E. Ardill, Anita Grunder. Description: This session explores the dynamic behaviors of magmatic arcs through time. We seek contributions on the spatial, temporal, and geochemical evolution of arcs and modeling investigating the causes of arc migrations, flare-ups, and internal magma focusing.

T163. Petrochronology: Advances and Applications to Petrogenesis and Tectonics. Advocates: Matthew J. Kohn, Pierre Lanari, Martin Engi. Description: This session welcomes advances in understanding petrogenesis, orogenesis, and/or crustal growth made using combined petrologic and geochronologic analysis of accessory and major minerals. Contributions could include analytical methods and studies ranging from (sub)grains to orogens.

T164. The Role of Sediments in Continental Magmatic Arcs: Rheologic, Petrologic and Geochemical Evidence from the Upper Mantle to Erupted Lavas. Advocates: Kirsten B. Sauer, Barbara C. Ratschbacher. Description: This broad session welcomes abstracts from arc systems worldwide on topics including mechanisms and time scales of sediment incorporation, rheologic consequences of sediments at all crustal levels, and magma-generating processes from surface to the subducting slab.

T166. Great Maps in the History of Geology. Advocates: Dorothy Sack, Renee M. Clary. Description: Maps are conceptual and visual communication tools fundamental to geology. This session examines the role that maps have played in the history of geology by exploring the notion of what makes a map great.

T175. Earthquakes, Faults, and Fault Systems in the Pacific Northwest. Advocates: Timothy J. Walsh, Corina Forson. Description: New insights into active faults of the Pacific Northwest are fostered by mapping tools such as LiDAR, InSAR, temporary seismometer deployments, geologic mapping, potential field studies, and paleoseismic trenches.

T180. Recent Advances in Seismic Hazard Characterization in the Pacific Northwest. Advocates: Thomas M. Brocher, Brian L. Sherrod. Description: This session showcases recent advances in seismic hazard characterization in Cascadia. Abstracts will summarize studies characterizing earthquake recurrence rates, deformation rates, fault geometries, and earthquake shaking intensities or ground motions.

T182. Through the Lens of the Dating Specialist: Advice on Applications, Sampling Methods, Data Interpretations and Information on Recent Innovations (Posters). Advocates: Tammy Rittenour, Shannon A. Mahan, Michelle Summa Nelson. Description: This poster session provides a venue for geochronology specialists to answer questions and discuss sampling methods, technique principles, and new and innovative applications of dating techniques with interested researchers and potential users.

T186. Heterogeneity in Landscape Evolution: Geomorphic Response to Spatially and Temporally Variable Forcings. Advocates: Sarah A. Schanz, Charles M. Shobe. Description: Landscapes adjust to spatial and temporal heterogeneity in rock and sediment properties as well as climatic and tectonic variability. We welcome field, modeling, and experimental studies that explore transient landscape response to heterogeneous drivers.

T195. Undergraduate Research Talks: The Next Step in Student Research Projects. Advocates: Jacqueline A. Smith, Bradley G. Johnson, Edward C. Hansen. Description: This oral session provides a venue for undergraduate students and recent graduates to present talks on completed research projects. Students may submit abstracts for research in any sub-discipline of geology, earth science, or environmental science.

T205. Impact Cratering: From Fire to Ice—Cratering across the Solar System. Advocates: Christian Koeberl, Jeffrey B. Plescia. Description: This session focuses on impact cratering processes and effects across the solar system. We solicit contributions regarding target effects, shock processes, geology, melt, airbursts, and current cratering-rates. Comparisons among different size and composition bodies are encouraged.

T209. Challenges in Tectonics 1: Fault Zone Behavior through Time, from Earth's Surface to the Upper Mantle. Advocates: Randolph T. Williams, Alexis K. Ault, James F. Dolan. Description: We solicit submissions from all disciplines that focus on the grand challenge of characterizing and understanding the behavior of faults and fault systems at different spatial-temporal scales from Earth's surface to upper mantle.

T210. Challenges in Tectonics 2: Beyond Steady State: New Developments in Understanding Strain Localization Processes and the Rheology of the Lithosphere. Advocates: Seth C. Kruckenberg, Jamie S. Levine, Elena A. Miranda. Description: We seek broad contributions from experimental rock deformation studies, numerical modeling, geophysical, geochronologic and field-based investigations, and structural and textural analyses that inform on processes of strain localization and the transient rheology of the lithosphere.

T211. Folds: Causes and Consequences (Posters). Advocates: Andreas Eckert, Amanda Hughes. Description: We seek contributions investigating folding from plate-scale to micro-scale, including field, analytical, and modeling studies investigating the causes and consequences of folding in the contexts of tectonics, crustal deformation, rheology, landscape evolution, or fluid migration.

T212. Geologic Mapping in the Pacific Northwest and Beyond: Recent Maps, Advances, and New Description: Insights: In Memory of Russell C. Evarts and his Extensive Contributions to Pacific Northwest Geologic Mapping. Advocates: Michael Polenz, Dave Norman. Description: Geologic mapping in the Pacific Northwest and beyond: recent maps, advances, and new insights. This session presents new geologic mapping, approaches to geologic mapping, and insights from geologic mapping, mainly in the Pacific Northwest. We seek both oral and poster abstracts submissions.

T213. Integrated Approaches to Deciphering Major Crustal Boundaries in Polyphase Orogenic Settings. Advocates: James V. Jones III, James J. Ryan, Jonathan S. Caine, Benjamin J. Drenth. Description: This session seeks contributions focused on understanding major crustal boundaries within polyphase orogens and deciphering tectonic events and processes that shaped them. Contributions investigating ties between crustal structure and regional metallogeny are encouraged.

T214. Late Paleozoic and Early Mesozoic Tectono-Stratigraphy and Biostratigraphy of the NW Pangea Margin. Advocates: Walter S. Snyder, Charles M. Henderson, Scott Ritter. Description: Controls and timing of tectonic events that affected the late Paleozoic/early Mesozoic NW Pangea margin are still debated. Resolution demands multidisciplinary approaches and therefore this session will integrate structural geology, tectonic modelling, geochronology, and paleontology.

T215. Scaled Physical Experiments Tell Tectonic Stories of the Earth and Beyond. Advocates: Mattathias D. Needle, Kathleen F. Warrell. Description: Scaled physical experiments are a robust and quantitative way to explore geologic processes through space and time. This session will highlight research using scaled physical experiments to explore geologic questions.

T216. Spatiotemporal Variations and the Role of Fluids in Fault-Zone Hydromechanical Processes. Advocates: Elizabeth S. Petrie, Randolph T. Williams, Keith R. Hodson. Description: This session explores the evolution of fault-fluid interactions, focusing on specific stages of fault development, long-term variability, and the effects of cumulative deformation and diagenesis. Similar studies characterizing non-fault structures are also encouraged.

T217. Challenges in Tectonics 5: Synergies between Meeting Societal Needs and Advancing Interdisciplinary Research in Tectonics and Structural Geology.

Advocates: Kim Blisniuk, Richard W. Briggs, Frederick M. Chester, Alison R. Duvall, Peter Eichhubl, Katharine Huntington.

Description: This session focuses on fundamental research in structural geology, tectonics, and related fields that addresses topics of societal relevance, from resources to hazards and that leverage field, laboratory, experimental, numerical, and theoretical approaches.

T218. Understanding the Interplay of Structural, Metamorphic, and Magmatic Processes in the Evolution of Convergent Margins: Lessons from the Proterozoic to Present-Day South American Andean Margin.

Advocates: Sean R. Mulcahy, Sarah M. Roeske, William C. McClelland.

Description: This session explores links and feedback mechanisms between faults, magmatism, metamorphism and changing crustal rheology in major orogenic belts, focusing on the Andean margin from the Proterozoic to present day. Contributions from other orogens are welcome.

T219. Challenges in Tectonics 3: Dynamic Interactions among Earth-Surface Processes, Landscape Evolution, and Tectonics.

Advocates: Roman A. DiBiase, Elizabeth J. Cassel, Majie Fan.

Description: This session seeks contributions that address connections between surface and deep-Earth processes, such as the use of sedimentary records to constrain tectonic processes and the feedbacks among tectonics, topography, climate, rock strength, and erosion.

T220. Challenges in Tectonics 4: Planetary Evolution in Four Dimensions—The New Global Tectonics.

Advocates: John A. Hole, Andrew Laskowski, Robert Moucha. Description: We seek contributions to understanding Earth's 4D evolution as a global tectonic system from transdisciplinary datasets and numerical models, with emphasis on frontier research areas (setting or process) and new or developing analytical techniques.

T221. Circum-Arctic Structural Events: Tectonic Evolution of the Arctic Margins and Trans-Arctic Links with Adjacent Orogens.

Advocates: Karsten Piepjohn, Justin V. Strauss, Shawn J.

Malone, William C. McClelland. Description: We seek contributions from a broad spectrum of disciplines to advance understanding of orogenic processes responsible for circum-Arctic tectonic events, structural-magmatic-stratigraphic-geophysical links with adjacent orogens and development of the Eurasian and Amerasian basins.

T222. Decadal to Millennial Strain Accumulation at Subduction Zones.

Advocates: Christine Regalla, Kristin Morell, Scott Bennett, Lucinda J. Leonard, Colin B. Amos, John P. Loveless.

Description: This session includes discussions of recent advances in understanding and quantifying the spatio-temporal evolution and mechanics of strain accumulation at subduction zones spanning decadal to geologic timescales.

T223. Intraplate Earthquake Sources, Processes, and Hazards in Central and Eastern North America.

Advocates: J. Wright Horton Jr., Christine A. Powell, Robert A. Williams. Description: This session presents insights into intraplate earthquake sources, processes, and hazards in central and eastern North America from the deep lithosphere to the earth's surface. We welcome contributions in all disciplines.

T224. Multi-Proxy Records for Large-Scale Translation and Vertical Strain along Active and Ancient Strike-Slip Fault Systems.

Advocates: Jeff Benowitz, Jeremy Hourigan, Paul J. Umhoefer.

Description: GPS data indicate rapid slip rates on many strike-slip fault systems, yet constraints on the

long-term offset history are often obscured. We welcome submissions that integrate multi-proxy datasets to document strike-slip fault evolution.

T225. New Perspectives on Cordilleran Tectonics, Paleogeography, and Metallogeny. Advocates: Luke P. Beranek, Justin V. Strauss, Stephen J. Piercey. Description: This session welcomes new ideas on Cordilleran evolution that use the Neoproterozoic-Cenozoic rock record from Alaska to Mexico. Contributions for multidisciplinary studies in stratigraphy, petrology, structural geology, geochemistry, and geochronology are particularly welcome.

T226. New Perspectives on Processes of Subduction Initiation and Termination. Advocates: Sarah Roeske, Nancy Riggs, Susanne Buitert, Douwe van Hinsenberg. Description: This session examines the formation and termination of subduction zones, whether due to passage of a triple junction, change in plate motion, or collision. Ancient and modern records and modeling studies of these processes are welcome.

T227. Ophiolite and Ocean Plate Stratigraphy Records in Modern and Ancient Accretionary and Collisional Orogenic Belts in the Circum Pacific Region. Advocates: Yildirim Dilek, Jingsui Yang. Description: We encourage original contributions on the origins and emplacement mechanisms of ophiolites and remnants of ocean plate stratigraphy in the accretionary and collisional orogenic belts in the Circum-Pacific region.

T228. Origin, Accretion, and Translation of Mesozoic-Cenozoic Terranes along the Pacific Margin of North America. Advocates: David T. Katopody, Mark T. Brandon, Bernard Housen. Description: The Pacific margin of North America is the center of a long-standing controversy about terrane mobility along continental margins. This session will serve as a forum to identify remaining problems and opportunities in Cordilleran tectonics.

T229. Paleocene-Eocene Tectonic and Magmatic Evolution of the Pacific Northwest. Advocates: Jeffrey H. Tepper, Eugene D. Humphreys, Robert B. Miller. Description: Paleogene magmatism, extension, basin subsidence, and faulting spanned the Pacific Northwest, perhaps related to ridge subduction, slab breakoff, and/or Siletzia accretion. We seek contributions on this "Challis episode" from structure, tectonics, petrology, sedimentation, and geophysics.

T230. Polygenetic Mélanges: A Glimpse on Tectono-Sedimentary Recycling in Convergent Margins. Advocates: Andrea Festa, Kei Ogata, Gian Andrea Pini. Description: This session addresses the definition of structures, fabric, and texture diagnostic of sedimentary mélanges overprinted by other processes and the estimation of their occurrence in fossil, exhumed, and present-day accretionary wedges and collisional chains.

T231. Subduction Top to Bottom 2 (ST2B-2), Cascadia and Beyond. Advocates: Gray E. Bebout, David W. Scholl, Robert Stern, Anne Trehu, Joan Gomberg, Thomas W. Sisson. Description: Subduction zone processes and their products, including the associated natural hazards, are important to science and influence society. This session assesses geological, geophysical, geochemical, and theoretical advancements and promising directions for future research, emphasizing Cascadia.

T232. Subduction Zone Response to Ridge and Plateau Collision: Perspectives from the Archean to the Cenozoic. Advocates: Michael P. Eddy, Paul J. Umhoefer. Description: Ridge-trench interaction and oceanic plateau accretion have profound effects on the geology of convergent margins. We

welcome submissions that document these effects throughout Earth's history using field, geophysical, and/or modeling data.

T233. Tectonics, Geohazards, and Morphodynamics from High-Resolution Topography and Imagery. Advocates: Amit Mushkin, Edwin Nissen. Description: We seek papers describing recent advances in tectonics, geohazards, morphodynamics, and associated fields that build on insights obtained from high-resolution topography and imagery, collected across the full spectrum of satellite, airborne, unmanned, and terrestrial platforms.

T234. What Are the Conditions That Lead to Detachment Faulting? Advocates: Thomas Hoisch, Michael L. Wells, John S. Singleton. Description: This session will focus on the conditions that lead to detachment faulting, including studies of the pre-detachment histories of metamorphic core complexes, theoretical and rock mechanics approaches, and tectonic considerations.

T235. Which Process Mainly Controls the Lithospheric Thinning in Extensional Terrains: Magmatic Processes or Extensional Deformation? Advocates: Zeynep Baran, Gokce Ustunisik, Yildirim Dilek. Description: This session focuses on the interplay between magmatic/metamorphic processes and extensional deformation and their significance to the lithospheric thinning processes.

T236. Characterizing Cascadia's Earthquakes—Reexamining Open Questions about Cascadia Seismic and Tsunami Hazards. Advocates: Robert C. Witter, Lydia Staisch, Joan Gomborg. Description: Uncertainty in available geological and geophysical data hampers forecasts of future Cascadia earthquakes. This session focuses on new approaches that harness multidisciplinary datasets to address open questions about Cascadia earthquake parameters, recurrence, and related hazards.

T241. Volcano-Tectonic Evolution of the East African Rift System. Advocates: Kevin L. Mickus, Cynthia J. Ebinger. Description: We seek contributions on the lithospheric evolution of the East African Rift system using geophysics, volcanology, petrology, geodynamics, sedimentology, and structural geology.

T252. Cratonic Assembly in the Precambrian: Forming the Core of Modern and Ancient Landmasses. Advocates: Anthony F. Pivarunas, Joseph G. Meert, Scott R. Miller. Description: Precambrian and younger supercontinents are comprised of continents and the individual cratonic nuclei that make up those landmasses. Documenting the progressive assembly of cratons to form Rodinia and Columbia is a requirement for accurate reconstructions.

Field trip

403. Incorporation of Sedimentary Rocks into the Deep Levels of Continental Magmatic Arcs: Links between the North Cascades Arc and Surrounding Sedimentary Terranes. Leaders: Stacia M. Gordon, University of Nevada, Reno; Robert B. Miller, Kirsten B. Sauer.

**THE 4TH BIENNIAL STRUCTURAL GEOLOGY AND TECTONICS FORUM
AT SONOMA STATE UNIVERSITY**

The fourth Structural Geology and Tectonics Forum was held at Sonoma State University in Rohnert Park, California from August 1st through 3rd, 2016. Approximately 100 structural geologists were in attendance. Most participants were from the U.S. and Canada, but a contingent from the National Autonomous University of Mexico was also present. Two days of field trips and workshops preceded the Forum and two additional days of field trips followed the “formal” sessions. The Forum provided an interactive venue for the discussion of important frontiers, new ideas, and current research in structural geology and tectonics. The effective teaching of structural geology and tectonics, including integrating research with teaching, was also an important topic of discussion at the Forum. The program and additional information about the 2016 Forum can be found at the SERC website: <https://serc.carleton.edu/NAGTWorkshops/structure/2016-Forum/index.html>.

Note: The Structural Geology and Tectonics Forum is a biennial event that usually takes place in the summer. For the comfort and well-being of field trip participants, the fifth Forum will be held at Arizona State University in **January 2018**. Additional information about the 2018 Forum is available at <https://sites.google.com/view/sgtf2018/home>.



The post-meeting Brewschist IV field trip to the Franciscan Complex led by John Wakabayashi.

IMPORTANT NSF ANNOUNCEMENTS - EARTH SCIENCES DIVISION

Some of the most important positions related to our work are open at the National Science Foundation. NSF released a Dear Colleague Letter - <https://www.nsf.gov/pubs/2017/ear17005/ear17005.jsp?org=NSF>, to fill multiple Program Director positions in the Division of Earth Sciences (EAR), Directorate of Geosciences (GEO). These Program Directors administer the NSF programs that fund much of the research conducted by members of our division. Program directors help shape the direction of research in the sciences, and provide an important line of communication between researchers and the higher level administrators at NSF. Please consider applying for these positions and pass the information regarding these positions along to colleagues committed to funding strong research in structural geology, tectonics, and tectonophysics.

Announcements regarding NSF programs.

Tectonics Program – New solicitation

https://nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=13673&ods_key=nsf17555

Geophysics Program – New solicitation

https://nsf.gov/funding/pgm_summ.jsp?pims_id=13682&org=EAR&from=home

Petrology and Geophysics Program – New solicitation

https://nsf.gov/funding/pgm_summ.jsp?pims_id=13683&org=EAR&from=home

Tectonics IPA Rotator position is available. See Dear Colleague Letter at

<https://nsf.gov/pubs/2017/ear17004/ear17004.jsp?org=EAR>

Other EAR employment opportunities can be found at <https://www.nsf.gov/geo/ear/updates/mar2017/ear-emp-opps-march2017.jsp>

Removal of Deadlines for Tectonics, Geophysics, Petrology and Geochemistry, and EarthScope programs

Dear Colleague Letter: https://www.nsf.gov/news/news_summ.jsp?cntn_id=191385&org=EAR

Graduate Research Fellowship Program

The Directorate of Geosciences would like to increase the number of Graduate Research Fellowships that are granted to students pursuing degrees in Geosciences. To accomplish this goal, we ask you to please consider encouraging undergraduate students in their last year and early career graduate students to apply for the program. Please note that students can only apply ONCE while in graduate school (either the first year or second year). The fellowship would support students pursuing Masters or PhDs. The deadline for applications will be October 23, 2017. More information can be found at

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201

Recent Awards from the NSF Tectonics Program

Workshop on coupling of tectonic and surface processes across spatio-temporal scales

Award #: 1746021 Luc Lavier (University of Texas at Austin)

Collaborative Research: RUI: Translation and Accretion of the Yakutat Microplate and Prince William Terrane, Alaska

Award #: 1727991 Cameron Davidson (Carleton College)

Award #: 1728013 John Garver (Union College)

Using Micromechanical Experiments to Investigate the Rheology of Geologic Materials

Award #: 1726165 Philip Skemer (Washington University)

Structural Geology and Tectonics Forum at Arizona State University, Tempe, AZ, January 4-9, 2018

Award #: 1743564 J Ramon Arrowsmith (Arizona State University)

Collaborative Research: Reconstructing the Plastic-to-Brittle Exhumation History of the Taiwan Metamorphic Core

Award #: 1650162 Timothy Byrne (University of Connecticut)

Award #: 1650157 Jonathan Lewis (Indiana University of Pennsylvania)

Deep Structure of Lithospheric Fault Zones

Award #: 1650173 John Platt (University of Southern California)

Collaborative Research: Evaluating the Rheological Structure of the North Anatolian Fault Zone, Turkey

Award #: 1629356 Laurent Montesi (University of Maryland College Park)

Award #: 1629840 Basil Tikoff (University of Wisconsin-Madison)

RAPID: Investigation of the Honey Lake and Warm Springs Faults using Seismic CHIRP Imagery

Award #: 1745803 Anna Kell (University of Nevada, Reno)

A Unified Crustal Motion Model for Continental East Asia

Award #: 1723284 Zheng-Kang Shen (University of California-Los Angeles)

Dynamic fragmentation and inelastic energy partitioning at the base of the seismogenic zone

Award #: 1727090 Scott Johnson (University of Maine)

Retrograde Metamorphism in the Greek Cycladic Islands as a Window into Exhumation Mechanisms of High Pressure Terranes

Award #: 1725110 Jaime Barnes (University of Texas at Austin)

Collaborative Research: Impact of crystal defects on helium diffusion in apatite crystals in (Uranium-Thorium)/Helium isotopic dating for the Earth sciences

Award #: 1726350 Peter Zeitler (Lehigh University)

Award #: 1727203 Annia Fayon (University of Minnesota-Twin Cities)

Collaborative Research: Evaluating controls on orogenic structural style by constraining the spatio-temporal evolution of a retroarc thrust belt

Award #: 1728563 David Pearson (Idaho State University)

Award #: 1728214 William Guenther (University of Illinois at Urbana-Champaign)

Award #: 1727504 Emily Finzel (University of Iowa)

Collaborative Research: Documenting the transition from contraction to extension in the Ruby-East Humboldt-Wood Hills Metamorphic Core Complex, Southwestern U.S. Cordillera

Award #: 1728274 Caroline Meisner (Great Basin College)

Award #: 1728155 Allen McGrew (University of Dayton)

Award #: 1728537 James Metcalf (University of Colorado at Boulder)

Rare Earth Elements Tracing Crustal Evolution Through Time: A Detrital Zircon Study

Award #: 1725002 Mihai Ducea (University of Arizona)

Ductile strain in the footwall of a metamorphic core complex: A field example to test models for dynamics, timescales, and controls of mid-crustal flow.

Award #: 1728227 James Vogl (University of Florida)

CAREER: Thermochronometric and textural signatures of fault damage zones and stimulating middle school student interest in earthquake science

Award #: 1654628 Alexis Ault (Utah State University)

Strain localization, shear zone connectivity, and magma-deformation interactions by depth within a 65 km thick transpressional continental arc

Award #: 1650183 Keith Klepeis (University of Vermont & State Agricultural College)

On the Cutting Edge: Early Career Geoscience Faculty Development Workshop: A partnership between NAGT and NSF

Award #: 1711022 Sarah Penniston-Dorland (University of Maryland College Park)

Conference: Petrochronology 2017

Award #: 1740555 Matthew Kohn (Boise State University)

Displacement history of the Pearya terrane, Ellesmere Island - evaluating a strike-slip origin for the Canadian Arctic margin

Award #: 1650152 Justin Strauss (Dartmouth College)

Collaborative Research: Paired paleoseismic and slip rate analysis of the central Garlock fault: Towards a true dated path of incremental slip on a major strike-slip fault

Award #: 1650377 James Dolan (University of Southern California)

Award #: 1650364 Sally McGill (University Enterprises Corporation at CSUSB)

Evolving work budget of fault initiation, linkage and growth within accretionary systems

Award #: 1650368 Michele Cooke (University of Massachusetts Amherst)

Formation of the metamorphic sole of the Semail ophiolite: High-precision U-Pb dating of the preserved remnants of a subducted slab

Award #: 1650407 Matthew Rioux (University of California-Santa Barbara)

Collaborative Research: Quantifying the Sensitivity of Rifting Processes to Erosion and Sedimentation

Award #: 1650244 Mark Behn (Woods Hole Oceanographic Institution)

Award #: 1650166 Jean-Arthur Olive (Columbia University)

Collaborative Research: Punctuated versus gradual topographic evolution of Cordilleran-style orogenic belts

Award #: 1650396 Michael Hren (University of Connecticut)

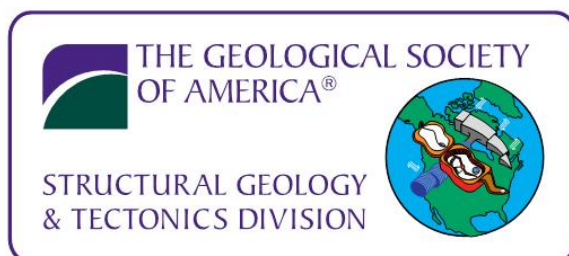
Award #: 1650313 Mark Brandon (Yale University)

EAGER: Evaluating the Accuracy of Digital Compass Measurements on Mobile Devices

Award #: 1714587 Steven Whitmeyer (James Madison University)

The Proterozoic Missing Link? Deposition, Volcanism, and Deformation between 1.6 and 1.45 Ga in the McDowell Mountains, south-central Arizona.

Award #: 1650411 Matthijs Van Soest (Arizona State University)



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