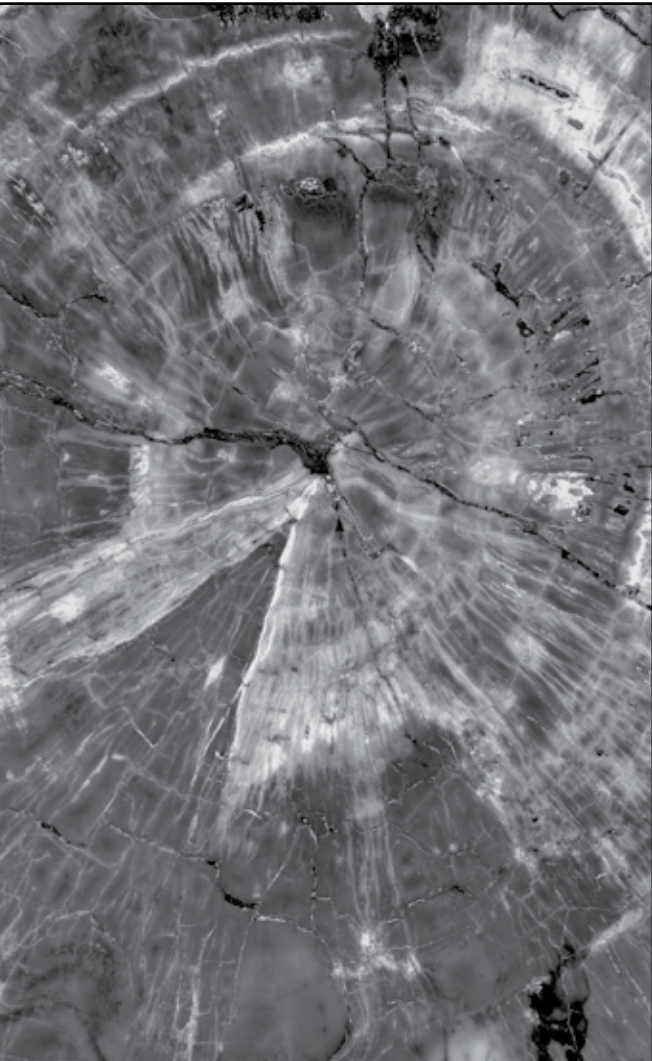


2019

Vol. 51,
No. 4

PROGRAM



Cordilleran Section Meeting

15–17 May
Portland, Oregon, USA

www.geosociety.org/cd-mtg



THE GEOLOGICAL SOCIETY
OF AMERICA®

**115th Annual Meeting of the Cordilleran Section
Geological Society of America
Portland, Oregon, USA
15–17 May 2019
Oregon Convention Center**



Local Program Committee

Meeting Co-chairs Martin Streck, Jim O'Connor
Technical Program Matt Brunengo, Erick Burns, Anita Grunder
Field Trips Jason McClaughry, Clark Niewendorp, Bob Houston
Workshops, Exhibits, and Student Volunteers Frank Granshaw
Sponsorship Scott Burns

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Sponsors

We are grateful to the following sponsors who have graciously contributed financial and logistical support.

Association of Women Geoscientists
The Paleontological Society
Portland State University

NOTICE

By registering for this meeting you have acknowledged that you have read and will comply with the GSA Code of Conduct for Events (full code of conduct found on inside back cover). If you have any concerns about behavior that may violate the Code, please contact:

GSA Executive Director, Vicki McConnell, vmconnell@geosociety.org
GSA Ethics and Compliance Officer, Nan Stout, gsaeventscode@gmail.com

You may also stop by the registration desk or the GSA Bookstore to have the named individuals directly contacted via phone.

General Information



Location

The 115th Annual Meeting of the Cordilleran Section of the Geological Society of America will be held at the Oregon Convention Center (OCC), Portland, Oregon, USA. Portland – *The City of Roses* – is in the heart of one of the most dynamic geologic environments in the West, having been affected by megathrust earthquakes, giant flood-basalt eruptions, catastrophic glacial floods, continuing fluvial and hillslope processes, and human influences on the landscape. Founded along the banks of the Columbia and Willamette rivers, Portland is nestled between the magnificent volcanic arc of the Cascade Range to the east and the Coast Range to the west. Building on the exceptional local and regional geological features of the Cordillera, we have devised a diverse program reflecting fundamental and applied aspects across earth-science disciplines.

The **Oregon Convention Center (OCC)** is in the central eastside of Portland, 777 NE Martin Luther King Jr. Boulevard, Portland, OR 97232. It is convenient to major freeways, downtown Portland, Portland International Airport (PDX), restaurants, hotels, and shopping. See their website (<https://www.oregoncc.org/>) for directions, parking information, and amenities.

Accommodations

The DoubleTree by Hilton, 1000 NE Multnomah St, Portland, OR 97232, is just a few blocks from OCC. Reservations can be made online (<https://doubletree3.hilton.com>) or by calling the hotel directly at +1-503-281-6111.

Travel

The OCC is easily accessed by car, bus, train, bike, and air. Attendees are encouraged to leave their cars at home and take advantage of easy access to the OCC by public transportation (and avoid the limited and expensive parking). The MAX Red Line runs directly from PDX to the OCC and the headquarters hotel (The DoubleTree by Hilton). OCC is also served by the MAX Green Line, Portland Streetcar (Central Loop), and TriMet Bus Line No. 6.

MAX light rail to the OCC and DoubleTree by Hilton Hotel Portland

The OCC is served by the Red, Blue, and Green Lines. The Red Line connects directly to PDX. East-bound trains for all lines can be embarked or disembarked at the Convention Center station, just outside the Holladay Lobby entrance to the OCC. For westbound trains, this station is temporarily closed and the nearest station is the Rose Quarter station,

about 250 feet west of the Holladay Lobby entrance. The DoubleTree by Hilton Hotel Portland is across the street from the Holladay Park MAX station, also served by the Red, Blue, and Green Lines.

Walking to/from the DoubleTree by Hilton to the OCC

The DoubleTree by Hilton is a twelve-minute walk east from the OCC along NE Holladay Street.

Registration

Registration is required for anyone attending technical sessions, short courses, or exhibits. On-site registration is at the OCC Pre-Function Lobby C.

Tuesday, 14 May 3–7 p.m.

Wednesday, 15 May 7 a.m.–4:30 p.m.

Thursday, 16 May 7 a.m.–4:30 p.m.

Friday, 17 May 7–11 a.m.

Registration Fees

On-site registration fees are presented below.

	Full Mtg.	One Day
Professional member	\$330	\$260
Professional member 70+	\$240	\$200
Professional nonmember.....	\$380	\$295
Early career professional member	\$240	\$180
Student member	\$150	\$115
Student nonmember	\$180	\$135
K–12 professional.....	\$130	\$115
Guest or spouse	\$130	n/a
Field Trip/Workshop Only.....	\$100	n/a

Tickets for special events may be purchased on-site if available. Guest registration is intended for non-geoscientists accompanying a registered professional, student or K–12 professional. Guest registration does not include attendance at workshops. All guests, volunteers, exhibitors, GSA staff, service providers and others in attendance are expected to abide by the GSA Events Code of Conduct, which outlines specific expectations for participants at GSA-supported events.

Cancellations, Changes, and Refunds

Requests for additions, changes, and cancellations must have been made in writing to GSA Headquarters, by 18 April. No refunds will be made on cancellation notices received after this date. GSA cannot provide refunds for on-site registration or event ticket sales. Refunds will be mailed



Public Transportation
 MAX Line
 MAX Stop **X**
 Streetcar
 Streetcar Stop **X**

Area Hotels and Motels

- | | |
|--|--|
| 1. Hyatt Regency Portland at the Oregon Convention Center
Holladay St. & MLK Jr. Blvd
Contact OCC for information | 6. DoubleTree by Hilton Hotel Portland
1000 NE Multnomah St.
800.547.8010 |
| 2. Inn at the Convention Center
420 NE Holladay St.
503.233.6331 | 7. Crowne Plaza Portland Downtown/Convention Center
1441 NE 2nd Ave.
800.227.6963 |
| 3. Quality Inn
431 NE Multnomah St.
503.233.7933 | 8. Courtyard by Marriott
435 NE Wasco St.
800.321.2211 |
| 4. Motel 6
518 NE Holladay St.
503.234.4391 | 9. Shilo Inn - Rose Garden
1506 NE 2nd Ave.
800.222.2344 |
| 5. Hotel Eastlund
1021 NE Grand Ave.
800.343.1822 | |



Oregon Convention Center Plaza

A 30,000-square-foot, fully landscaped, multi-use outdoor space directly across the street from the center's main MLK Lobby. Balancing tree-lined streets with an 11,000-square-foot paved area, the plaza is perfect for booth setups, open-air receptions, food trucks, product showcases, public markets, and concerts.

Convenient Garage Parking

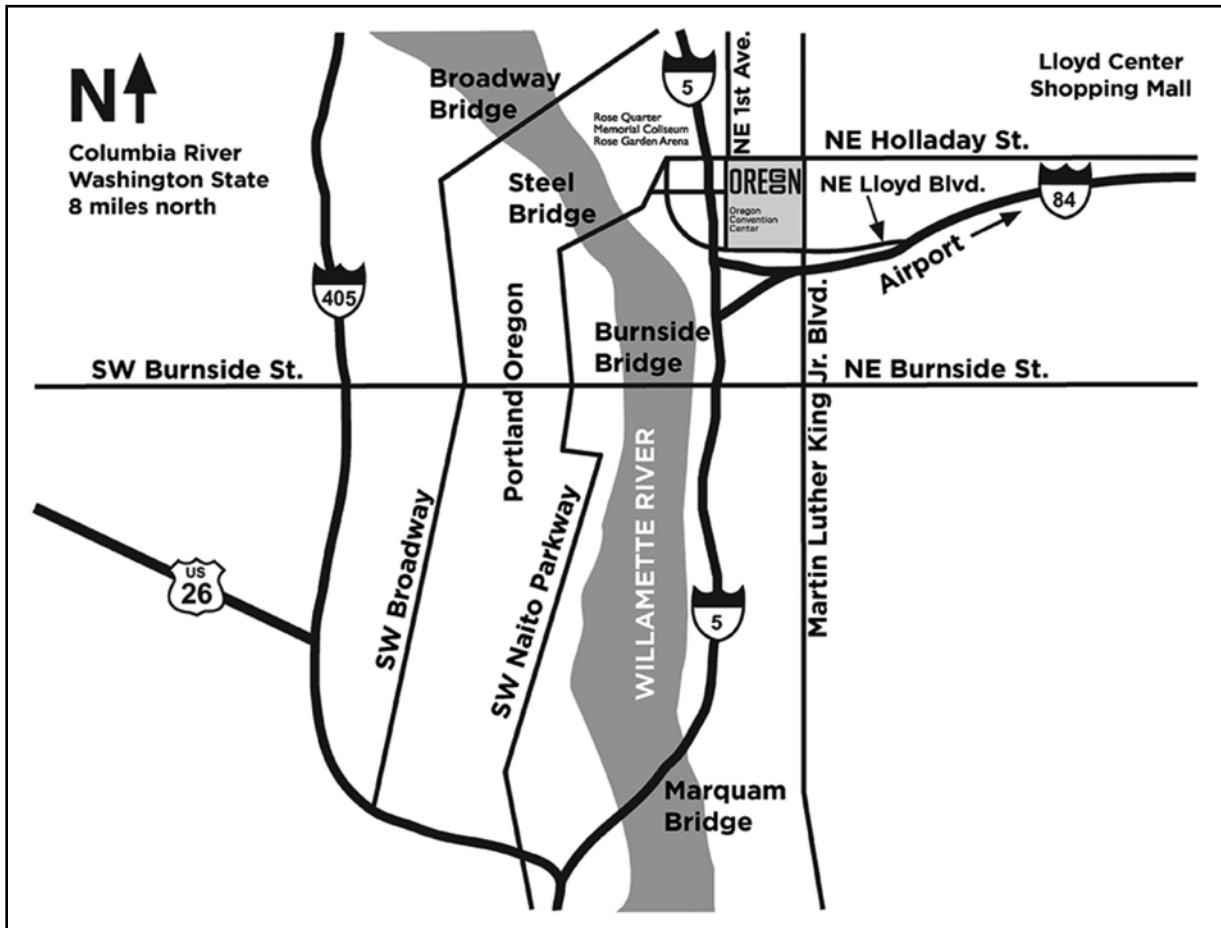
Our parking garage features 800 spaces on two covered levels. The garage entrances are on NE First Avenue and NE Lloyd Boulevard. Hourly parking rates are available. Additional exhibitor and vendor parking, including parking for oversized vehicles, can be provided in our outdoor satellite lots by request. There are also additional parking locations available a short distance from the center.



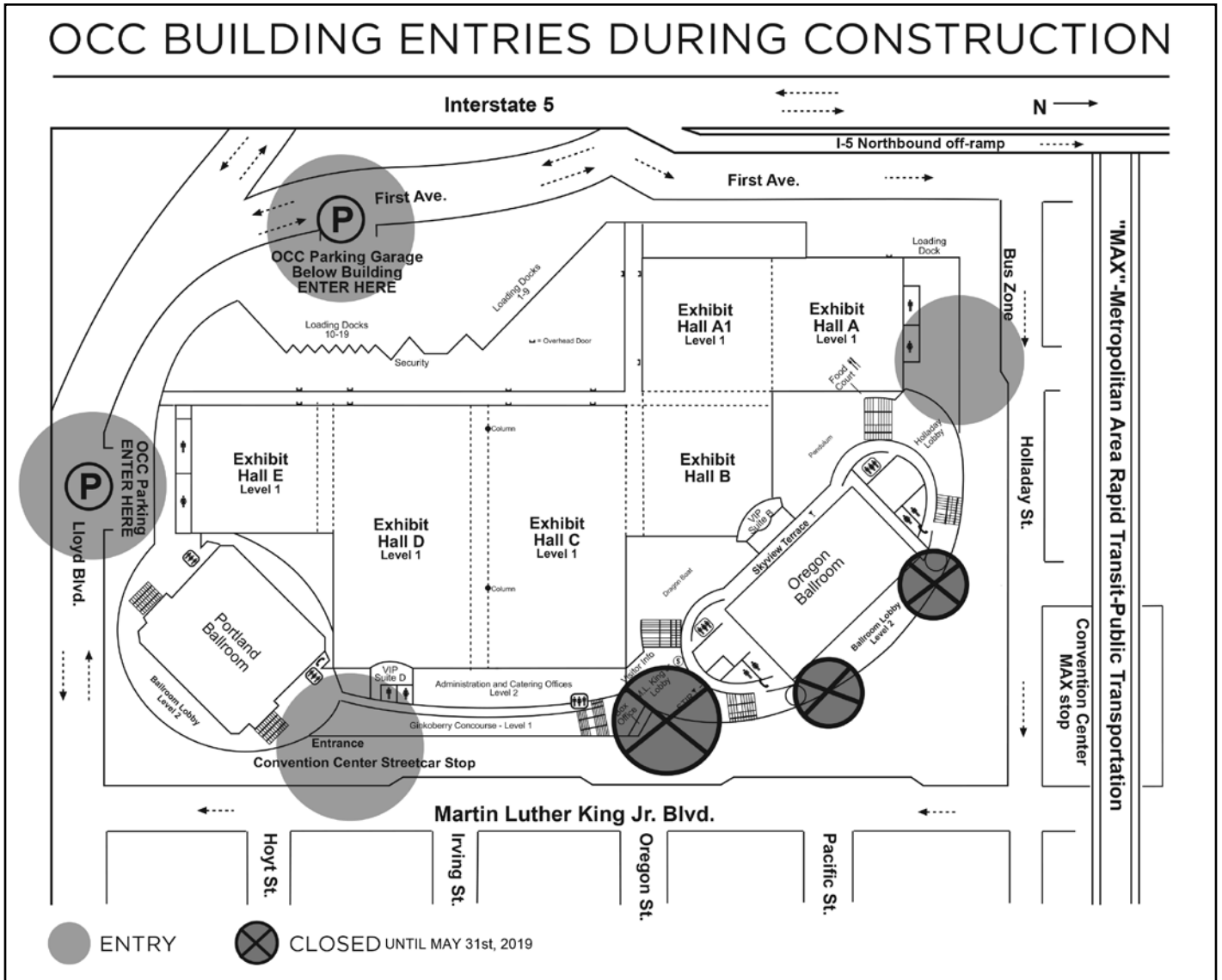
Oregon
 Convention
 Center

777 NE Martin Luther King, Jr. Blvd., Portland, Oregon 97232
 Tel: 503.235.7575 - Toll Free: 800.791.2250 - Fax: 503.731.7802
 Website: www.oregoncc.org - sales@oregoncc.org
 Printed on recycled paper.





OCC BUILDING ENTRIES DURING CONSTRUCTION



from GSA after the meeting; refunds for fees paid by credit card will be credited to the card identified on the registration form.

Meeting App with Abstracts

A web-based application is available for this meeting. This app allows you to view and search the meeting program and create your own schedule of events to attend. You can also view the full abstracts text from this app. Please download the app at <https://gsa.confex.com/gsa/2019CD/meetingapp.cgi>.

Accessibility

GSA is committed to ensuring full participation for all conference attendees. You may indicate special requirements on your registration form; please inform the local organizing committee of these requirements at least one month prior to the meeting. Accessible rooms at the hotel are available and can be reserved.

Continuing Education Credits

The Cordilleran Section Meeting offers an excellent opportunity to earn CEUs toward your continuing education requirements for your employer, K-12 school, or professional registration. Please check the meeting website after the meeting to download your CEU certificate.

Special Events & Activities

Tuesday, 14 May

Welcome Reception, 5-7 p.m., OCC Exhibit Hall B. Complimentary light snacks and beverages.

Wednesday, 15 May

Session Chair Orientation, 7-7:30 a.m., OCC C124.

GSA Cordilleran Section Management Board Meeting, 7-8 a.m., OCC B112.

Roy J. Shlemon Mentor Program in Applied Geoscience, noon-1:30 p.m., OCC B112.

Brewpub Bonanza, organized departures starting at 6 p.m., and organized by AEG student chapters and Portland State University geology club CORIBA. More information at registration desk.

Thursday, 16 May

Session Chair Orientation, 7–7:30 a.m., OCC C124.

GSA Campus Representative Appreciation Breakfast, 7–8 a.m., OCC B112.

John Mann Mentor Program in Applied Hydrogeology, noon–1:30 p.m., OCC B112. Students and early career professionals interested in applied hydrogeology or hydrology as a career will have the opportunity to network with professionals in these fields over a free lunch.

GSA Cordilleran Section Business Meeting, 5–6 p.m., OCC B112.

Brewpub Bonanza, Again! Organized departures starting at 6 p.m., and organized by AEG student chapters and Portland State University geology club CORIBA. More information at registration desk.

Recognition Banquet, 7–10 p.m., DoubleTree Hotel. Celebrate the careers of Rick Blakely, Marshall Gannett, Ken Lite, Elizabeth Miller, Ray Weldon, and Ray Wells. Dinner and beverages included. Fee: \$55, pre-registration required.

Friday, 17 May

Session Chair Orientation, 7–7:30 a.m., OCC C124.

Association for Women Geoscientists (AWG) Networking Breakfast, 7–8 a.m., OCC B112. This informal breakfast provides opportunities for students and professionals in academia, government, and industry to meet and learn about AWG. Fee: \$15 student/\$35 all others.

Geology Club Meet-Up, 12:15–1:15 p.m., OCC B112. Chat with other representatives about their activities, goals, and accomplishments. If you are a campus representative or are interested in becoming one please plan to attend this celebratory event.

Town Hall Session: GSA Strategic Planning Initiative, 12:15–1:15 p.m., OCC C124. Please join GSA Executive Director Vicki McConnell for an update on GSA's Strategic Planning. This is an opportunity to interact with leadership and ask questions about the future plans for GSA.

Book Signings, 2–3:30 p.m. OCC Exhibit Hall B. Author Melanie Holmes will be on hand with copies of a brand new book, *A Hero on Mount St. Helens - The Life and Legacy of David Johnston*. With permission from his family, the book tells the story of Johnston's journey from a nature-loving Boy Scout in Illinois to the Cascades where an eruption would take his life. Much has been written about his death in 1980. This book is about the thirty years that preceded that day in May. The publisher, University of Illinois Press, is set to release this book around 16 May.

Meet GSA member and field geologist Kevin Scott as he signs copies of his new book, *The Voice of This Stone: Learning from Volcanic Disasters Around the World*. More than ever, volcanologists and emergency responders around the world

have greater insight about how to prevent certain death for those who live near volcanoes, active or "sleeping." History has shown that when Mother Earth shrugs, people often die. Among those concerned volcanologists is author Kevin Scott, who is equipped with fifty years of global, boots-on-the-ground experiences and an extensive USGS publishing history. In this collection of volcanic disaster case histories, Scott shares the wisdom gained by scientific inquiry and observation of his own—and that of his renowned colleagues—that he hopes will save lives.

Opportunities for Students

Roy J. Shlemon Mentor Program in Applied Geoscience. Wednesday, 15 May, noon–1:30 p.m., OCC B112. Jennifer Nocerino, jnocerino@geosociety.org. The Shlemon Mentor Program is designed to extend the mentoring reach of individual professionals from applied geology to students and early career professionals attending GSA section meetings. Over free lunches, mentors and attendees discuss real-life issues including professional opportunities and challenges. Space is limited; first come, first served.

John Mann Mentor Program in Applied Hydrogeology. Thursday, 16 May, noon–1:30 p.m., OCC B112. Jennifer Nocerino, jnocerino@geosociety.org. The Mann Mentor Program presents mentoring opportunities for undergraduate and graduate students, as well as recent graduates, with a declared interest in applied hydrogeology as a career to interact and network with practicing hydrogeology professionals. This relaxed, small scale event features a free lunch for attendees and mentors. Space is limited; first come, first served.

GSA Career Workshops

Geoscience Career Program Workshop Part 1: Career Planning and Informational Interviewing. Wednesday, 15 May, 9–10 a.m., OCC B112. Your job hunting process should begin with career planning, not when you apply to jobs. This workshop will help you begin this process and will introduce you to informational interviewing. This section is highly recommended for freshmen, sophomores, and juniors. The earlier you start your career planning the better.

Geoscience Career Program Workshop Part 2: Geoscience Career Exploration. Wednesday, 15 May, 10–11 a.m., OCC B112. What do geologists in various sectors earn? What do they do? What are the pros and cons to working in academia, government, and industry? Workshop presenters and professionals in the field will address these issues.

Geoscience Career Program Workshop Part 3: Cover Letters, Résumés, and CVs. Thursday, 16 May, 9–10 a.m., OCC B112. How do you prepare a cover letter? Does your résumé need a good edit? Whether you are currently in the market for a job or not, learn how to prepare the best résumé possible. You will review numerous résumés helping you to learn important résumé dos and don'ts.

Student Volunteers

Students accepted as meeting volunteers must check in at the Student Volunteer Desk, located at the student registration booth in the Pre-Function Lobby C.

Exhibits

Exhibitors are located in Exhibit Hall B.
Hours for Exhibitors are:

Set up: Tuesday, 14 May, 10 a.m.–5 p.m.
Open: Tuesday, 14 May 5–7 p.m.
Open: Wednesday, 15 May, 9 a.m.–6 p.m.
Open: Thursday, 16 May, 9 a.m.–6 p.m.
Open: Friday, 17 May, 9 a.m.–3:30 p.m.
Tear down: Friday, 17 May, 3:30–10 p.m.

As of mid-March Exhibitors include:

2020 Cordilleran Section Meeting
American Institute of Professional Geologists
Carpe Diem Books
GSA Bookstore
GSA Foundation
Western Science Center
Washington Geological Survey

Technical Program

The Technical Program consists of Theme and Discipline Sessions arranged in oral and poster sessions as described below. The Technical Program begins at 8 a.m. and concludes at 6 p.m. on Wednesday and Thursday, 15 and 16 May, and begins at 8 a.m. and concludes at 3:30 p.m. on Friday, 17 May.

Oral Sessions

Oral presentations are 20 minutes, 17 minutes for the talk and 3 minutes for questions and discussion. Presentations must be prepared using PowerPoint or PDF formats, using a 16:9 screen ratio. One laptop with Windows 7 (no Macs available) with PowerPoint 2010, one LCD projector, and one screen is provided for all oral sessions. In addition, each room is equipped with a lectern, microphone, wireless computer mouse and PowerPoint advancer, and a speaker timer.

Poster Sessions

All poster sessions are in OCC Exhibit Hall B. Poster presenters have one 4x6 (1219mm x 1829mm) foot horizontal (landscape) poster display surface. Please check the Program for specific times and topics. Numbers on these display surfaces correspond to the poster booth numbers listed in the Program. The poster boards accept push pins, and some pins are furnished for each poster. Authors can put up their posters over the course of the morning. Posters must be taken down after the poster session in the afternoon.

Speaker Ready Room

All oral presenters must visit the Speaker Ready Room (OCC C128) before their scheduled presentation to ensure their PowerPoint or PDF file is properly configured and operating, and to load it on one of the laptops. Failure to do so may result in presentations being omitted from sessions.

Speaker Ready Room hours are as follows:

Tuesday, 14 May: 3–7 p.m.
Wednesday, 15 May: 7 a.m.–6 p.m.
Thursday, 16 May: 7 a.m.–6 p.m.
Friday, 17 May: 7 a.m.–11 a.m.

Each speaker must bring a PowerPoint or PDF presentation on a USB compatible flash drive (a.k.a. thumb drive or memory stick) or a CD-ROM disk to the Speaker Ready Room for checking and uploading to the correct session folder. For morning sessions, talks must be uploaded the prior day. For afternoon sessions, talks must be uploaded by 10 a.m.

Information for Session Chairs

Session chairs are required to attend a Session Chairs Orientation, to be held 7–7:30 a.m., in OCC C124 on Wednesday, 15 May, Thursday, 16 May, and Friday, 17 May. Session chairs are requested to adhere to the schedule and to encourage the strict time limits provided to speakers.

Technical Program Sessions

Theme Sessions

T1. Cordilleran Tectonics from the Basin and Range to Alaska and the Arctic: A Celebration of Elizabeth Miller's Career (2018 GSA Structure and Tectonics Division Career Contribution Award).

T2. Advances in Seismic Hazard Assessment through Paleoseismic and Tectonic Geomorphic Fault Studies: In Honor of Ray J. Weldon II for His Career and Contributions to the Field.

T3. A Simple Twist of Plate: In Honor of the Career Contributions of the Dynamic Duo—Rick Blakely and Ray Wells—to Understanding Plate Interactions and Deformation in Cascadia.

T4. Recent Advances in Cordilleran Tectonic Evolution—1: Paleozoic to Mesozoic.

T5. Recent Advances in Cordilleran Tectonic Evolution—2: Cenozoic.

T9. Tectonic Processes in Cordilleran Arcs.

T10. Crystal Windows into Igneous Processes.

T12. Field, Petrological, and Geochemical Constraints on Magmatic Systems in the Cordillera.

T13. The Yellowstone Hotspot Province: Prehistory, Timing, Extent, Volcanic Products, and Hydrothermal Consequences.

T15. Magmatism in the Cascades: Variations in Space and Time.

T16. Landscape Evolution and Tectonic Geomorphology in the Greater Pacific Northwest.

T17. Landscape Changes at Various Temporal and Spatial Scales.

T20. Glaciers of the North American West.

T24. Geologic Maps: Essential Framework Tools Used to Solve Practical Earth Science Problems (Posters).

T25. Geologic Hazards: Hazard Maps, Risk Analysis, and Risk Reduction

T30. Undergraduate Research (Posters).

T33. Geoscience Education Research and Practice.

Field Trips

Trips leave from either the Oregon Convention Center or the DoubleTree by Hilton. Please check itinerary for departure location. For additional information, please contact the Field Trip Chair, jason.mcclaughry@oregon.gov.

FT1. Flood Basalts, Rhyolites, and Pre- to Post-dating Volcanism of the Columbia River Province in Eastern Oregon. Sat.–Tue., 11–14 May. Martin J. Streck, Portland State Univ.; Mark L. Ferns, Eastern Oregon Univ.; Emily Cahoon, Portland State Univ.

This field trip explores volcanism of mid-Miocene silicic centers and nearby lavas of the Columbia River Basalt as well as volcanism pre- and post-dating the flood basalts. Recent work on abundant rhyolites of eastern Oregon and neighboring states led to the recognition that the Columbia River Basalt province is strongly bimodal in character, contrary to traditional views.

FT2. The Columbia River Basalt in the Western Columbia Basin and Columbia River Gorge. Mon–Tue., 13–14 May. Michael Sawlan, U.S. Geological Survey; Ray Wells, U.S. Geological Survey; Jon Hagstrum, U.S. Geological Survey; Seth Burgess, U.S. Geological Survey.

This field trip focuses primarily on the Grande Ronde Basalt (GRB) where it is spectacularly exposed in Butler Canyon and the Columbia River Gorge, emphasizing GRB stratigraphy (physical, chemical, and paleomagnetic) while also addressing lava emplacement, joint patterns and cooling, age, and coeval silicic volcanism.

FT3. Volcanism, Sedimentation, and Tectonics in the Hood River Graben: A Pliocene to Quaternary Intra-Arc Half Graben in the Northern Oregon Cascade Range. Mon.–Tue., 13–14 May. Jason D. McLaughry, Oregon DOGAMI; Joshua A. Hackett, Oregon Water Resources Dept.; Clark Niewendorp, Oregon DOGAMI; Richard M. Conrey, Hamilton College.

This field trip visits the Hood River graben, a late Pliocene-Quaternary intra-arc graben situated across the High Cascade Range of northern Oregon. Field sites focus on the stratigraphy and structure of the mid-Miocene Columbia River Basalt Group, stratigraphic-geochemical-structural details of late Miocene and younger Cascade volcanics, and their relationship with development of the graben.

FT4. Landslides in the Columbia River Gorge. Tue., 14 May. William J. Burns, Oregon DOGAMI; Nancy Calhoun, Oregon DOGAMI; Trevor Contreras, Washington Geological Survey; Kara Jacobacci, Washington Geological Survey; Kate Mickelson, Washington Geological Survey; Will Gallin, Washington Geological Survey.

Landslides are widespread in the Columbia River Gorge. This field trip visits recently burned areas, active debris flow fans, giant deep-seated landslides, and rock fall sites. New mapping in Washington and Oregon has expanded our understanding of the landslide hazard and risk to infrastructure along the Columbia River.

FT5. Columbia River Basalt Hydrology and Management Solutions in the Mosier Basin, Oregon. Sat., 18 May. Kenneth E. Lite, Jr., Oregon Water Resources Dept.; Robert B. Perkins, Portland State Univ.; Erik A. Thomasser, Oregon Water Resources Dept.; Jonathan L. LaMarche, Oregon Water Resources Dept.; Aurora C. Bouchier, Oregon Water Resources Dept.

Explore the structure, flood-basalt depositional environments, and landscape development that formed a ground-water flow system in the eastern Columbia River Gorge, where past well construction practices and overuse have severely depleted parts of the system. Learn about hydrogeologic and management techniques being used to address aquifer depletion.

FT6. Mount St. Helens—Its 1980 Eruption and 39 Years of Post-Eruption Recovery. Sat., 18 May. Jon Major, U.S. Geological Survey.

On this trip we will visit the Toutle River valley, which bore the brunt of Mount St. Helens' 1980 eruption. We will discuss the volcanic processes and impacts of the eruption, and the hydrologic, geomorphic, and ecological responses to those eruptive impacts.

FT7. Terroir of Wine: Relationship of Wine to Soils, Geology, and Climate. Sat., 18 May. Scott Burns, Portland State Univ.

This trip visits three wineries to taste the differences in terroir of the Willamette Valley. Terroir is the relationship between grapes, soil, geology, climate, soil biota, water-holding capacity, and elevation/slope orientation. We will talk about the impact of wine makers and vineyard managers on the terroir. The Willamette Valley has three major soil types that create different flavors in the pinot noir and Riesling wines of the valley: basalt soils (Jory Series), marine sediment soils (Willakenzie Series), and basalt soils with pisolites from the weathering of loess (Laurelwood Series). The Willamette Valley is the best place in the world to taste different flavors of terroir, all because of the three different parent materials.

FT8. Rice Museum of Rocks and Minerals. Sat., 18 May. Julian Gray, executive director; Garret Romaine, board secretary.

Visit a Smithsonian affiliate museum with its world-class collection of rocks, minerals, gems, fossils, meteorites, and lapidary arts in a historic building just 20 minutes from

downtown Portland. Meet and greet with the museum's director and curator.

FT9. Active Tectonics and Bedrock Geology of the North American Plate at the Latitude of the Columbia River: A Field Trip to Recognize the Contributions of Ray Wells and Rick Blakely—The Dynamic Duo of Pacific Northwest Geology and Geophysics. Sat.–Sun., 18–19 May. Andrew Meigs, Oregon State Univ.; Ray E. Wells, U.S. Geological Survey; Scott Bennett, U.S. Geological Survey.

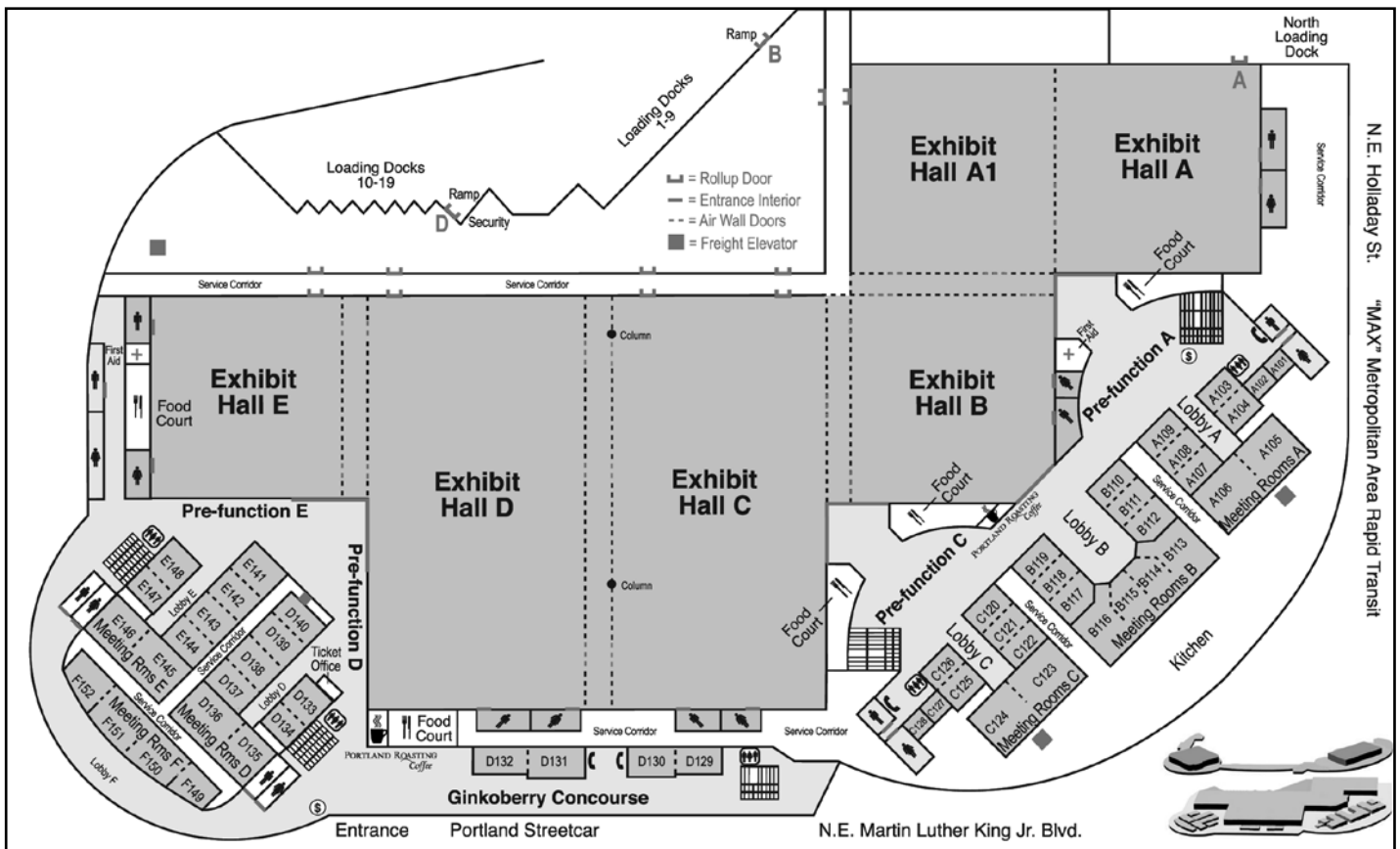
This field trip honors the careers of Ray Wells and Rick Blakely. To showcase the breadth and impact of their work, the field trip explores the crustal structure, bedrock geology, basins, and active faults along a transect from the Oregon coast to the east side of the Cascade arc.

Short Course

SC1. Assessing Contaminant Sources/Release Ages and Aquifer Continuity in Soil/Groundwater Systems Using Stable Radiogenic Isotopes of Strontium (Sr) and Lead (Pb). Sat., 18 May, 9 a.m.–4 p.m. Fee: Minimal cost for print-outs. Portland State University, Dept. of Geology, Cramer Hall S17. Richard Hurst, California Lutheran University.

This course is intended to serve the needs of (1) faculty with interests in environmental research and introducing their students to new approaches regarding investigating environmental issues; (2) environmental consultants, the private sector, and regulatory professionals who must resolve issues associated with site contamination, commingled plumes, potential sources/degradation of contaminants of concern, as well as site remediation on a regular basis; and (3) upper division undergraduate and graduate students in the earth/environmental or related sciences with an interest in hydrogeological/environmental careers.

Fundamental concepts of Sr/Pb isotopes and allied methodologies (e.g., light stable isotopes, gas chromatography, etc.) are covered, followed by specific case studies that exemplify their application to site-specific situations predominantly in the western U.S. Topics to be covered include: soil/groundwater contamination, estimating the age of fugitive releases when possible, tracing groundwater flow, and evaluating aquifer continuity. Despite the focus on the western U.S., the techniques employed have been applied throughout the U.S. and internationally.



Schedule of Events

EVENT	TIME	LOCATION
SATURDAY, 11 MAY		
FT1. Flood Basalts, Rhyolites, and Pre- to Post-dating Volcanism of the Columbia River Province in Eastern Oregon (Field Trip)	7:30 a.m.–11:55 p.m.	DoubleTree by Hilton, Main Lobby
MONDAY, 13 MAY		
FT2. The Columbia River Basalt in the Western Columbia Basin and Columbia River Gorge (Field Trip)	7:30 a.m.–11:55 p.m.	DoubleTree by Hilton, Main Lobby
FT3. Volcanism, Sedimentation, and Tectonics in the Hood River Graben: A Pliocene to Quaternary Intra-Arc Half Graben in the Northern Oregon Cascade Range (Field Trip)	7:30 a.m.–11:55 p.m.	DoubleTree by Hilton, Main Lobby
TUESDAY, 14 MAY		
FT4. Landslides in the Columbia River Gorge (Field Trip)	7:30 a.m.–5:30 p.m.	GSA Field Trip Check-In Desk (OCC)
Exhibits Set Up	10 a.m.–5 p.m.	Exhibit Hall B
Registration	3–7 p.m.	Pre-Function Lobby C
Speaker Ready Room	3–7 p.m.	Room C128
Exhibits Open	5–7 p.m.	Exhibit Hall B
Welcome Reception	5–7 p.m.	Exhibit Hall B
WEDNESDAY, 15 MAY		
Session Chair Orientation	7–7:30 a.m.	Room C124
GSA Cordilleran Section Management Board Meeting	7–8 a.m.	Room B112
Registration	7 a.m.–4:30 p.m.	Pre-Function Lobby C
Speaker Ready Room	7 a.m.–6 p.m.	Room C128
Morning Oral Technical Sessions		
D3. The Hydrology of Volcanic Terranes I: Celebrating the Scientific Curiosity of Ken Lite and Marshall Gannett	8 a.m.–noon	Room C125-126
T1. Cordilleran Tectonics from the Basin and Range to Alaska and the Arctic I: A Celebration of Elizabeth Miller's Career (2018 GSA Structure and Tectonics Division Career Contribution Award)	8 a.m.–noon	Room B117-119
T3. A Simple Twist of Plate: In Honor of the Career Contributions of the Dynamic Duo—Rick Blakely and Ray Wells—to Understanding Plate Interactions and Deformation in Cascadia	8 a.m.–12:20 p.m.	Room C124
T13. The Yellowstone Hotspot Province: Prehistory, Timing, Extent, Volcanic Products, and Hydrothermal Consequences	8 a.m.–noon	Room C123
Geoscience Career Program Workshop Part 1: Career Planning and Informational Interviewing	9–10 a.m.	Room B112
Exhibits Open	9 a.m.–6 p.m.	Exhibit Hall B

EVENT	TIME	LOCATION
Poster Sessions: <i>authors will be present 3:30 to 6 p.m.</i>		
D3. The Hydrology of Volcanic Terranes: Celebrating the Scientific Curiosity of Ken Lite and Marshall Gannett (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
D5. Sediments, Soils, and Stratigraphy (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T1. Cordilleran Tectonics from the Basin and Range to Alaska and the Arctic: A Celebration of Elizabeth Miller's Career (2018 GSA Structure and Tectonics Division Career Contribution Award) (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T3. A Simple Twist of Plate: In Honor of the Career Contributions of the Dynamic Duo—Rick Blakely and Ray Wells—to Understanding Plate Interactions and Deformation in Cascadia (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T13. The Yellowstone Hotspot Province: Prehistory, Timing, Extent, Volcanic Products, and Hydrothermal Consequences (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T17. Landscape Changes at Various Temporal and Spatial Scales (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T30. Undergraduate Research (Posters)	9 a.m.–6 p.m.	Exhibit Hall B

Geoscience Career Program Workshop Part 2: Geoscience Career Exploration	10–11 a.m.	Room B112
Roy J. Shlemon Mentor Program in Applied Geoscience	noon–1:30 p.m.	Room B112

Afternoon Oral Technical Sessions

D3. The Hydrology of Volcanic Terranes II: Celebrating the Scientific Curiosity of Ken Lite and Marshall Gannett	1:30–3:35 pm	Room C123
T1. Cordilleran Tectonics from the Basin and Range to Alaska and the Arctic II: A Celebration of Elizabeth Miller's Career (2018 GSA Structure and Tectonics Division Career Contribution Award)	1:30–3:30 p.m.	Room B117-119
T10. Crystal Windows into Igneous Processes I	1:30–3:30 p.m.	Room C124
T17. Landscape Changes at Various Temporal and Spatial Scales	1:30–4:10 p.m.	Room C125-126
Brewpub Bonanza	6–10 p.m.	Pre-Function Lobby C

THURSDAY, 16 MAY

Session Chair Orientation	7–7:30 a.m.	Room C124
GSA Campus Representative Appreciation Breakfast	7–8 a.m.	Room B112
Registration	7 a.m.–4:30 p.m.	Pre-Function Lobby C
Speaker Ready Room	7 a.m.–6 p.m.	Room C128

Morning Oral Technical Sessions

T2. Advances in Seismic Hazard Assessment through Paleoseismic and Tectonic Geomorphic Fault Studies I: In Honor of Ray J. Weldon II, for His Career and Contributions to the Field	8 a.m.–noon	Room B117-119
T5. Recent Advances in Cordilleran Tectonic Evolution—2: Cenozoic	8 a.m.–noon	Room C124
T9. Tectonic Processes in Cordilleran Arcs	8 a.m.–noon	Room C125-126
T16. Landscape Evolution and Tectonic Geomorphology in the Greater Pacific Northwest	8 a.m.–12:20 pm	Room C123

EVENT	TIME	LOCATION
Geoscience Career Program Workshop Part 3: Cover Letters, Résumés, and CVs	9–10 a.m.	Room B112
Exhibits Open	9 a.m.–6 p.m.	Exhibit Hall B

Poster Sessions: *authors will be present 3:30 to 6 p.m.*

T2. Advances in Seismic Hazard Assessment through Paleoseismic and Tectonic Geomorphic Fault Studies: In Honor of Ray J. Weldon II, for His Career and Contributions to the Field (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T4. Recent Advances in Cordilleran Tectonic Evolution—1: Paleozoic to Mesozoic (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T5. Recent Advances in Cordilleran Tectonic Evolution—2: Cenozoic (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T9. Tectonic Processes in Cordilleran Arcs (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T10. Crystal Windows into Igneous Processes (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T12. Field, Petrological, and Geochemical Constraints on Magmatic Systems in the Cordillera (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T16. Landscape Evolution and Tectonic Geomorphology in the Greater Pacific Northwest (Posters)	9 a.m.–6 p.m.	Exhibit Hall B
T20. Glaciers of the North American West (Posters)	9 a.m.–6 p.m.	Exhibit Hall B

John Mann Mentor Program in Applied Hydrogeology	noon–1:30 p.m.	Room B112
Town Hall Session: GSA Strategic Planning Initiative	12:15–12:45 p.m.	Room C124

Afternoon Oral Technical Sessions

T2. Advances in Seismic Hazard Assessment through Paleoseismic and Tectonic Geomorphic Fault Studies II: In Honor of Ray J. Weldon II, for His Career and Contributions to the Field	1:30–3:30 p.m.	Room B117-119
T4. Recent Advances in Cordilleran Tectonic Evolution—1: Paleozoic to Mesozoic	1:30–3:30 p.m.	Room C123
T10. Crystal Windows into Igneous Processes II	1:30–3:30 p.m.	Room C124
T20. Glaciers of the North American West	1:30–3:30 p.m.	Room C125-126

GSA Cordilleran Section Business Meeting	5–6 p.m.	Room B112
Brewpub Bonanza, Again!	6–10 p.m.	Pre-Function Lobby C
Recognition Banquet (Ticketed Event)	7–10 p.m.	DoubleTree by Hilton

FRIDAY, 17 MAY

Session Chair Orientation	7–7:30 a.m.	Room C124
Association for Women Geoscientists (AWG) Networking Breakfast (Ticketed Event)	7–8 a.m.	Room B112
Registration	7–11 a.m.	Pre-Function Lobby C
Speaker Ready Room	7–11 a.m.	Room C128

EVENT	TIME	LOCATION
Morning Oral Technical Sessions		
D6. Tectonics of the Coast Mountains and Insular Superterrane: Magmatism, Deformation, and Translation	8 a.m.–noon	Room B117-119
T15. Magmatism in the Cascades: Variations in Space and Time	8 a.m.–noon	Room C124
T25. Geologic Hazards: Hazard Maps, Risk Analysis and Reduction, and Long-term Landscape Evolution	8 a.m.–noon	Room C123
T33. Geoscience Education Research and Practice: Hands-On and Place-Based Learning to the Next Generation Standards	8 a.m.–noon	Room C125-126
Poster Sessions: authors will be present 1:30 to 3:30 p.m.		
D1. Economic Geology (Posters)	9 a.m.–3:30 pm	Exhibit Hall B
D2. Geohydrology and Geomorphology of the Coast (Posters)	9 a.m.–3:30 pm	Exhibit Hall B
D4. Paleontology (Posters)	9 a.m.–3:30 pm	Exhibit Hall B
T15. Magmatism in the Cascades: Variations in Space and Time (Posters)	9 a.m.–3:30 pm	Exhibit Hall B
T24. Geologic Maps: Essential Framework Tools Used to Solve Practical Earth Science Problems (Posters)	9 a.m.–3:30 pm	Exhibit Hall B
T25. Geologic Hazards: Hazard Maps, Risk Analysis and Reduction, and Long-term Landscape Evolution (Posters)	9 a.m.–3:30 pm	Exhibit Hall B
T33. Geoscience Education Research and Practice: Hands-On and Place-Based Learning to the Next Generation Standards (Posters)	9 a.m.–3:30 pm	Exhibit Hall B
Exhibits Open	9 a.m.–3:30 p.m.	Exhibit Hall B
Geology Club Meet-Up	12:15–1:15 p.m.	Room B112
Kevin Scott Book Signing	2–3:30 p.m.	Exhibit Hall B
Melanie Holmes Book Signing	2–3:30 p.m.	Exhibit Hall B
Exhibits Tear Down	3:30–10 p.m.	Exhibit Hall B
FT9. Active Tectonics and Bedrock Geology of the North American Plate at the Latitude of the Columbia River: A Field Trip to Recognize the Contributions of Ray Wells and Rick Blakely—The Dynamic Duo of Pacific Northwest Geology and Geophysics (Field Trip)	5–11:55 p.m.	GSA Field Trip Check-In Desk (OCC)

SATURDAY, 18 MAY

FT5. Columbia River Basalt Hydrology and Management Solutions in the Mosier Basin, Oregon (Field Trip)	7:30 a.m.–6 p.m.	GSA Field Trip Check-In Desk (OCC)
FT6. Mount St. Helens—Its 1980 Eruption and 39 Years of Post-Eruption Recovery (Field Trip)	7:30 a.m.–7 p.m.	GSA Field Trip Check-In Desk (OCC)
FT8. Rice Museum of Rocks and Minerals (Field Trip)	8:30 a.m.–2 p.m.	DoubleTree by Hilton, Main Lobby
SC1. Assessing Contaminant Sources/Release Ages and Aquifer Continuity in Soil/Groundwater Systems Using Stable Radiogenic Isotopes of Strontium (Sr) and Lead (Pb) (Short Course)	9 a.m.–4 p.m.	Portland State Univ., Dept of Geology, Cramer Hall S17
FT7. Terroir of Wine: Relationship of Wine to Soils, Geology, and Climate (Field Trip)	9:15 a.m.–5 p.m.	GSA Field Trip Check-In Desk (OCC)

Technical Sessions

Meeting policy prohibits the use of cameras or sound-recording equipment at technical sessions and poster sessions.



A no-smoking policy has been established by the Program Committee and will be followed in all meeting rooms for technical sessions.

NOTICE

In the interest of public information, the Geological Society of America provides a forum for the presentation of diverse opinions and positions. The opinions (views) expressed by speakers and exhibitors at these sessions are their own and do not necessarily represent the views or policies of the Geological Society of America.



NOTE INDEX SYSTEM

Numbers (3-4, 15-4) indicate session and order of presentation within that session.

*denotes speaker

WEDNESDAY, 15 MAY 2019

MORNING ORAL TECHNICAL SESSIONS

SESSION NO. 1

D3. The Hydrology of Volcanic Terranes I: Celebrating the Scientific Curiosity of Ken Lite and Marshall Gannett

8:00 AM, Oregon Convention Center, Room C125-126

Esther Pischel, Walter Burt, Steven E. Ingebritsen and Nicholas Corson-Dosch, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 1-1 8:05 AM Grondin, Gerald*: **HARNEY BASIN GROUNDWATER INVESTIGATION: CONTINUING THE OWRD-USGS COLLABORATION LEGACY OF KEN LITE AND MARSHALL GANNETT**
- 1-2 8:25 AM Gannett, Marshall W.*: **THE INFLUENCE OF PERMEABILITY ON GROUNDWATER FLOW PATHS IN CENTRAL OREGON**
- 1-3 8:45 AM Garcia, C. Amanda*; Gingerich, Stephen B.; Johnson, Henry M.: **ESTIMATING GROUNDWATER-DISCHARGE IN OREGON'S HARNEY BASIN**
- 1-4 9:05 AM Johnson, Henry M.*; Gingerich, Stephen B.; Corson-Dosch, Nicholas: **HYDROGEOLOGY OF SPRINGS IN THE NORTHERN GREAT BASIN IN OREGON**
- 1-5 9:25 AM Corson-Dosch, Nicholas*; Gingerich, Stephen B.; Johnson, Hank: **GEOCHEMICAL AND AGE TRACER DATA FROM NORTHERN GREAT BASIN SPRINGS: PRELIMINARY FINDINGS FROM HART MOUNTAIN AND SHELDON NATIONAL WILDLIFE REFUGES**
- 9:45 AM **BREAK**
- 1-6 10:00 AM Pischel, Esther*: **LESSONS LEARNED FROM TWO DECADES OF GROUNDWATER MONITORING IN THE UPPER KLAMATH BASIN**
- 1-7 10:20 AM Johnson, Henry M.*; Musgrove, MaryLynn; Jurgens, Bryant C.: **GROUNDWATER AGE IN BASALT AQUIFERS OF THE COLUMBIA PLATEAU, OREGON, WASHINGTON, AND IDAHO**

- 1-8 10:40 AM Pritchard, Chad J.*; Gaylord, David; Adams, Drew B.; Ernst, Shawna: **ROLE OF QUATERNARY GLACIAL OUTBURST MEGAFLOOD PALEOCHANNEL DEPOSITS IN A BASALT-DOMINATED AQUIFER SYSTEM, WEST PLAINS AREA OF EASTERN WASHINGTON**
- 1-9 11:00 AM Bouchier, Aurora C.*: **AN EXAMINATION OF SELECT WELLS NOT FOLLOWING THE DECLINING GROUNDWATER TREND SEEN IN COLUMBIA RIVER BASALT GROUP (CRBG) AQUIFERS NEAR MOSIER, OREGON**
- 1-10 11:20 AM Burns, Erick R.*; Cladouhos, Trenton T.; Williams, Colin F.; Bershaw, John: **EVALUATING THERMAL ENERGY STORAGE IN THE COLUMBIA RIVER BASALTS FOR THE PURPOSES OF SEASONALLY HEATING OR COOLING DOWNTOWN PORTLAND, OREGON, USA**
- 1-11 11:40 AM Lite, Kenneth E.*: **THE STATE OF COLUMBIA RIVER BASALT GROUP AQUIFERS IN THE PACIFIC NORTHWEST: CAN THIS DUMPSTER FIRE BE EXTINGUISHED?**

SESSION NO. 2

T1. Cordilleran Tectonics from the Basin and Range to Alaska and the Arctic I: A Celebration of Elizabeth Miller's Career (2018 GSA Structure and Tectonics Division Career Contribution Award)

8:00 AM, Oregon Convention Center, Room B117-119

Jeff Lee and Victoria Pease, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 2-1 8:20 AM Saleeby, Jason*: **STRUCTURAL AND KINEMATIC RELATIONSHIPS SUGGESTING A GENETIC LINKAGE BETWEEN THE MONTEREY PLATE AND THE TRANSVERSE RANGES UPPER MANTLE HIGH SEISMIC WAVE SPEED ANOMALY, SOUTHERN CALIFORNIA**
- 2-2 8:40 AM Henry, Christopher D.*: **CENOZOIC EXTENSION IN THE GREAT BASIN: MUCH STILL UNKNOWN AND/OR DISPUTED**
- 2-3 9:00 AM Konstantinou, Alexandros*: **SYN-EXTENSIONAL TOPOGRAPHY, BASIN EVOLUTION AND MAGMATISM: THREE OVERLOOKED ASPECTS OF METAMORPHIC CORE COMPLEXES**

WEDNESDAY, 15 MAY

- 2-4 9:20 AM McGrew, Allen J.*; Metcalf, James R.; Carte, Alexander J.; Jeruc, Joseph W.: **NEW INSIGHTS INTO THE TIME-TRANSGRESSIVE EXTENSIONAL EXHUMATION HISTORY OF THE RUBY MOUNTAINS-EAST HUMBOLDT RANGE METAMORPHIC CORE COMPLEX, NEVADA**
- 2-5 9:40 AM Thorman, Charles H.*; Sandberg, Charles A.; Henry, Christopher D.; Zuza, Andrew V.; Ressel, Michael W.: **REGIONAL TECTONICS AND CONODONT CAIS INDICATE NORMAL BURIAL DEPTHS, NOT MESOZOIC THICKENING, IN THE PEQUOP MOUNTAINS, NE NEVADA**
- 10:00 AM **BREAK**
- 2-6 10:15 AM Wells, Michael L.*; Hoisch, Thomas; Mulligan, Suzanne R.; Wright, Samuel; Craddock, Suzanne D.: **THE CASE FOR LATE CRETACEOUS EXTENSION IN THE FUNERAL MOUNTAINS METAMORPHIC CORE COMPLEX**
- 2-7 10:35 AM Lutz, Brandon*; Axen, Gary; Ketcham, Richard A.: **THERMO-KINEMATIC MODELING OF DETACHMENT FAULTING: FUNERAL MOUNTAINS, CALIFORNIA**
- 2-8 10:55 AM Colgan, Joseph P.*; Johnstone, Samuel; Shuster, David L.: **TWO-PHASE CENOZOIC EXTENSION IN THE STILLWATER RANGE AND DIXIE VALLEY, NEVADA**
- 2-9 11:15 AM Wyld, Sandra J.*; Wright, James E.: **CRETACEOUS BATHOLITHS OF THE PINE FOREST RANGE, NORTHWEST NEVADA: PETROLOGY, GEOCHRONOLOGY, AND REGIONAL RELATIONS**
- 2-10 11:35 AM Buddington, Andrew M.*; Wang, Da; Rogers, Chris: **AMPHIBOLITE INCLUSIONS WITHIN THE 2.65 GA PEND OREILLE GNEISS, PRIEST RIVER COMPLEX, NORTHERN IDAHO**

SESSION NO. 3

T3. A Simple Twist of Plate: In Honor of the Career Contributions of the Dynamic Duo—Rick Blakely and Ray Wells—to Understanding Plate Interactions and Deformation in Cascadia

8:00 AM, Oregon Convention Center, Room C124

Andrew Meigs, Scott E.K. Bennett and Peter J. Haeussler, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 3-1 8:05 AM Wells, Ray E.*; Blakely, Richard J.: **DEXTRAL SHEAR, CLOCKWISE ROTATION, AND FAULTING IN THE CASCADIA FOREARC**
- 3-2 8:25 AM Regalla, Christine*; Morell, Kristin; Graham, Audrey; Lynch, Emerson M.; Harrichhausen, Nicolas; Leonard, Lucinda J.; Bennett, Scott E.K.; Terry, Carina; Fisci, Johanna: **GEOMETRY AND MECHANICS OF INHERITED FOREARC FAULTS ON VANCOUVER ISLAND**
- 3-3 8:45 AM Maher, Christine M.*; Price, Nancy A.: **FAULT DEFORMATION AT THE BASE OF AND WITHIN THE CRESCENT FORMATION ALONG THE DOSEWALLIPS RIVER, OLYMPIC MOUNTAINS PENINSULA, WASHINGTON, USA**
- 3-4 9:05 AM Redwine, Joanna*; Klinger, Ralph E.; Wells, Ray E.; Sherrod, Brian L.; Mahan, Shannon A.; Piety, Lucille A.; Howe, Julia; Besana-Ostman, Glenda; Levinson, Ryan; Chupik, Colin; Cataldo, Kirstyn; Nicovich, Sylvia Rose; Angster, Stephen J.: **EVIDENCE FOR AN ACTIVE GALES CREEK FAULT - A DYNAMIC DUO ACTIVE DEFORMATION CONFIRMATION**
- 3-5 9:25 AM Bennett, Scott E.K.*; Wells, Ray E.; Streig, Ashley R.; Madin, Ian P.; Stelten, Mark E.: **OBLIQUE SLIP HISTORY OF ACTIVE FAULTS ALONG THE WESTERN MARGIN OF THE HOOD RIVER GRABEN, NORTH-CENTRAL OREGON**
- 3-6 9:45 AM Conrey, Richard M.*; Sherrod, David R.; McClaughry, Jason D.: **RECONNAISSANCE SUMMARY OF HIGH CASCADES GRABEN STRUCTURES IN CENTRAL AND NORTHERN OREGON**
- 10:05 AM **BREAK**
- 3-7 10:20 AM Blakely, Richard J.*; Wells, Ray E.; Staisch, Lydia M.; Bennett, Scott E.K.; Sherrod, Brian L.: **POTENTIAL-FIELD**

- 3-8 10:40 AM Sousa, Francis J.*; Biasi, Joseph A.; O'Sullivan, Paul: **LONG TERM EXHUMATION OF THE OREGON COAST RANGE USING DETRITAL THERMOCHRONOLOGY FROM THE EOCENE TYEE FORMATION, OREGON, USA**
- 3-9 11:00 AM Dorsey, Rebecca J.*; Brutzkus, Pamela; Mortimer-Lamb, Megan: **BASINAL AND PALEORIVER RESPONSE TO EOCENE ACCRETION OF SILETZIA IN SW OREGON: CONFLICTING DATA AND UNRESOLVED QUESTIONS**
- 3-10 11:20 AM Gordon, Richard G.*; Wang, Chengzu; Woodworth, Daniel T.; Gaastra, Kevin: **CRETACEOUS AND CENOZOIC PLATE INTERACTIONS ALONG THE CASCADIA MARGIN, PALEOLATITUDES, THE FIXED-HOTSPOT APPROXIMATION, AND TRUE POLAR WANDER**
- 3-11 11:40 AM McCrory, Patricia A.*; Wilson, Douglas S.: **A KINEMATIC MODEL FOR THE FORMATION OF THE SILETZ, CRESCENT, AND YAKUTAT TERRANES BY CAPTURE OF COHERENT FRAGMENTS OF THE FARALLON AND RESURRECTION OCEANIC PLATES**

SESSION NO. 4

T13. The Yellowstone Hotspot Province: Prehistory, Timing, Extent, Volcanic Products, and Hydrothermal Consequences

8:00 AM, Oregon Convention Center, Room C123

Arron R. Steiner, John A. Wolff, Martin J. Streck, Seth D. Burgess and Michael G. Sawlan, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 4-1 8:05 AM Cahoon, Emily B.*; Streck, Martin J.: **OLIGOCENE BASALTS OF EASTERN OREGON AS PROBES INTO A PRE-CRBG MANTLE IN EASTERN OREGON AND POSSIBLY CONNECTION TO A NEW "RE-EMERGING PLUME MODEL"**
- 4-2 8:25 AM Wolff, John A.*; Steiner, Arron; Ramos, Frank C.: **OVERVIEW OF COLUMBIA RIVER FLOOD BASALT GEOCHEMISTRY: WHAT IS STILL TO LEARN ABOUT MANTLE SOURCES?**
- 4-3 8:45 AM Camp, Victor*: **AN ALTERNATIVE MODEL FOR BIMODAL VOLCANISM IN THE SOUTHERN CASCADIA BACK-ARC REGION SINCE ~12 MA**
- 4-4 9:05 AM Steiner, Arron*; Streck, Martin J.: **THE GENERATION OF HOT-SPOT RELATED CALC-ALKALINE ANDESITES OF THE STRAWBERRY VOLCANICS, NORTHEAST OREGON**
- 4-5 9:25 AM Karlstrom, Leif*; Murray, Kendra E.; Reiners, Peter W.: **BAYESIAN MARKOV-CHAIN MONTE CARLO INVERSION OF LOW-TEMPERATURE THERMOCHRONOLOGY AROUND TWO 8-10 M WIDE COLUMBIA RIVER FLOOD BASALT DIKES**
- 4-6 9:45 AM Biasi, Joseph A.*; Karlstrom, Leif: **ERUPTION TIMESCALES OF THE COLUMBIA RIVER BASALTS**
- 10:05 AM **BREAK**
- 4-7 10:20 AM Sawlan, Michael G.*: **ESTABLISHING THE MAGMATIC CHEMICAL IDENTITIES OF GRANDE RONDE BASALT LAVAS, COLUMBIA RIVER FLOOD BASALT PROVINCE: RESOLVING COMPOSITIONAL VARIATIONS FROM MAGMATIC AND ALTERATION PROCESSES**
- 4-8 10:40 AM Streck, Martin J.*; Almeev, Renat; Holtz, Francois; Brown, Elizabeth A.: **GENERATION OF A-TYPE RHYOLITE FROM MELTING OF S-/I-TYPE SOURCES DURING HYBRIDIZATION PROCESSES WITH THOLEIITIC MAGMAS**
- 4-9 11:00 AM Boroughs, Scott*; Wolff, John A.; Bonnicksen, Bill: **PETROGENESIS OF THE MID-MIOCENE WESTERN SNAKE RIVER PLAIN RHYOLITES**
- 4-10 11:20 AM Myers, Madison*; Swallow, Elliot; Wallace, Paul J.; Wilson, Colin J.N.: **A PROLONGED AND EPISODIC UNOPENING TO A MAGMATICALLY COMPLEX SUPERERUPTION: HUCKLEBERRY RIDGE TUFF, YELLOWSTONE**

4-11 11:40 AM Larson, Peter B.*; Fairley, Jerry P.: **ASSESSING THERMAL DISCHARGE FROM YELLOWSTONE HOT SPRINGS AND IMPLICATIONS FOR BASALTIC MAGMA RECHARGE RATES**

POSTER TECHNICAL SESSIONS

SESSION NO. 5

D3. The Hydrology of Volcanic Terranes: Celebrating the Scientific Curiosity of Ken Lite and Marshall Gannett (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- | | Booth # | |
|------|---------|--|
| 5-1 | 1 | Andrews, Katherine R.*; Ibarra, Yadira; Rademacher, Laura K.; Meyers, Zachary P.; Frisbee, Marty D.: HISTORY OF GROUNDWATER FLOW IN THE SOUTHERN GREAT BASIN INFERRED FROM PALEOHYDROLOGIC DEPOSITS |
| 5-2 | 2 | Tchintcharauli-Harrison, Michael*; Santelmann, Mary; Haggerty, Roy: PRELIMINARY ISOTOPIC AND HYDROCHEMICAL FINDINGS OF SURFACE – GROUNDWATER DYNAMICS IN AN URBANIZED WATERSHED, PORTLAND, OR |
| 5-3 | 3 | Svadlenak, Ellen E.*; Perkins, Robert B.: GEOCHEMICAL RESPONSE TO THERMAL ENERGY STORAGE IN THE COLUMBIA RIVER BASALT AQUIFER SYSTEM BENEATH THE PORTLAND BASIN, OREGON |
| 5-4 | 4 | Koger, Curtis J.*; Mioduszewski, Luke D.; Nguyen, Lam S.; Dragovich, Joe D.; Saltonstall, Jennifer H.: HYDROGEOLOGY OF THE ORTING LAKE PLATEAU, PIERCE COUNTY, WASHINGTON |
| 5-5 | 5 | Nguyen, Lam S.*; Saltonstall, Jennifer H.; Koger, Curtis J.: EVALUATION OF THE RELATIONSHIP BETWEEN SATURATED HYDRAULIC CONDUCTIVITY AND GRAIN-SIZE DISTRIBUTION OF RECENT ALLUVIUM AND PLEISTOCENE GLACIAL OUTWASH SAND AND GRAVEL DEPOSITS, PUGET LOWLAND, WASHINGTON |
| 5-6 | 6 | Marcelli, Marina*; Burns, Erick; Meigs, Andrew; Sweetkind, Donald S.: IMPLICATIONS OF STRUCTURAL GEOLOGY AND VOLCANISM FOR THE REGIONAL HYDROLOGY IN THE PIT RIVER DRAINAGE BASIN, NORTHERN CALIFORNIA, USA |
| 5-7 | 7 | Stokes, Scott*; Rodriguez, Angelica; Robson, Amy; Teasdale, Rachel: OXYGEN ISOTOPE COMPOSITION OF SULPHUR WORKS AND BOILING SPRINGS LAKE, LASSEN VOLCANIC CENTER: CORRELATION BETWEEN METEORIC WATER INPUT AND $\delta^{18}\text{O}$ |
| 5-8 | 8 | Major, Jon J.*; Zheng, S.; Mosbrucker, A.R.; Thorne, C.R.; Spicer, K.R.; Christianson, T.: MULTIFACETED GEOMORPHIC EVOLUTION OF A VOLCANICALLY DISTURBED RIVER SYSTEM VIEWED THROUGH THE LENS OF AN ALLUVIAL PHASE-SPACE |
| 5-9 | 9 | Sweeney, Kristin E.*; Major, Jon J.; Grant, Gordon; Mosbrucker, A.R.: MULTI-DECADE HYDROGEOMORPHIC EVOLUTION OF THE SPIRIT LAKE BLOCKAGE, MOUNT ST. HELENS, WA |
| 5-10 | 10 | Cleveland, Aaron B.*; Orndorff, Richard L.: COMPACTIVE EFFORT AND UNCONFINED COMPRESSIVE STRENGTH OF MT. MAZAMA ASH AND LATAH CREEK FLOODPLAIN SOIL IN EASTERN WASHINGTON |

SESSION NO. 6

D5. Sediments, Soils, and Stratigraphy (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- | | Booth # | |
|-----|---------|---|
| 6-1 | 11 | Bader, Nicholas E.*; Coates, Molly; Elliott, McKenzie; McGann, Gabriella Elizabeth; Strozyk, Sarah; Burmester, Russell F.: WHAT CAN THE MAGNETIC SUSCEPTIBILITY OF THE PALOUSE |

LOESS TELL US ABOUT SEDIMENTARY AND PEDOLOGICAL PROCESSES?

- | | | |
|-----|----|---|
| 6-2 | 12 | Mazzoleni, Caitlin M.*; Persico, Lyman P.; Nicolaysen, Kirsten P.; Hatfield, Virginia; Loopesko, Lydia L.; Deacon, Emily M.; MacInnes, Breanyn: GRAIN SIZE DISTRIBUTIONS OF SOILS, TEPHRAS, AND CULTURALLY-MODIFIED SEDIMENTS RECORD PREHISTORIC HUMAN RESILIENCE TO GEOLOGIC PROCESSES IN THE ISLANDS OF FOUR MOUNTAINS, AK |
| 6-3 | 13 | McDonald, Scott F.*: OBLIQUE ALAMO BOLIDE IMPACT? EXCEPTIONAL ALAMO BRECCIA PRESERVATION AT DEVILS GATE LS TYPE SECTION, EAST CENTRAL NEVADA |
| 6-4 | 14 | Dupuis, Kylie E.*; Anfinson, Owen A.; Waters, Laura; Frey, Holli M.; Rico, Mayerline; Richardson, Kalia J.; Camarena, Graciela: THE PROVENANCE OF WINE: THE ROLE OF BEDROCK AND SOIL IN TRANSFERRING TRACE AND RARE EARTH ELEMENTS INTO WINE GRAPES, SONOMA COUNTY, CA |
| 6-5 | 15 | Miller, D.E.*; Molinero, Adrian; Gonzalez, Pilar; Moreno, Jesus Eduardo; Torres Andrade, Eneas: MIO-PLIOCENE PALEODRAINAGE CHANGES IN THE NE MOJAVE, CA INFERRED FROM PALEOCURRENT DATA AND COMPOSITION OF FLUVIAL CONGLOMERATES |
| 6-6 | 16 | Torres, Noe A.*; Miller, D.E.; Torres Andrade, Eneas; Montejó, Carlos; Mayence, C. Ellery: FIELD EVIDENCE FOR PALEOGEOGRAPHY AND PROVENANCE OF OLIGOCENE-EARLY MIOCENE POLYMICT NON-MARINE CONGLOMERATES, SAN EMIGDIO AND TEHACHAPI MTNS AND OFFSET EQUIVALENTS IN THE GABILAN RANGE, CA |

SESSION NO. 7

T1. Cordilleran Tectonics from the Basin and Range to Alaska and the Arctic: A Celebration of Elizabeth Miller's Career (2018 GSA Structure and Tectonics Division Career Contribution Award) (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- | | Booth # | |
|-----|---------|--|
| 7-1 | 17 | Chapman, Alan D.*; Rautela, Ojashvi; Shields, Jessie E.; Ducea, Mihai N.; Saleeby, Jason B.: FATE OF CONTINENTAL LOWER CRUST AND UPPER MANTLE DURING SHALLOW-ANGLE SUBDUCTION: THE LARAMIDE EXAMPLE |
| 7-2 | 18 | Wakabayashi, John*: FRANCISCAN COMPLEX AND BOUNDING FAULTS, MOUNT DIABLO, CALIFORNIA: IMBRICATED OCEAN PLATE STRATIGRAPHY WITH COAST RANGE FAULT FOLDED IN SOUTH-VERGENT OVERTURNED ANTICLINE |
| 7-3 | 19 | Van Buer, Nicholas J.*: DETACHMENT FAULTING IN THE NORTHERN BRISTOL MOUNTAINS, CALIFORNIA |
| 7-4 | 20 | Miller, Elizabeth L.*; Raftrey, Mark E.; Perez-Lopez, Sebastian A.; Harbaugh, Dwight W.: PRELIMINARY DETRITAL ZIRCON STUDY OF THE OLIGOCENE TITUS CANYON FORMATION, DEATH VALLEY, SUGGESTS CENTRAL NEVADA SOURCES |
| 7-5 | 21 | Lee, Jeff*; DeLano, Kevin M.; Roper, Rachele; Calvert, Andrew T.: DEXTRAL, NORMAL, AND SINISTRAL FAULTING, AND TRANSROTATION ACROSS THE EASTERN CALIFORNIA SHEAR ZONE-MINA DEFLECTION TRANSITION, CALIFORNIA-NEVADA |
| 7-6 | 22 | Raftrey, Mark E.*: CHARACTER OF DEFORMATION ALONG THE BOUNDARY CANYON FAULT SYSTEM (BCF), DEATH VALLEY |
| 7-7 | 23 | Murray, Bryan P.*; House, Brianna J.; Al-kaabi, Abdulla; Hames, Willis E.: NEW GEOCHRONOLOGY AND STRATIGRAPHIC INTERPRETATIONS OF THE MID-TERTIARY SOLEDAD ROJO FORMATION IN THE LOWER COLORADO RIVER EXTENSIONAL CORRIDOR, WESTERN PALO VERDE MOUNTAINS, SE CALIFORNIA |
| 7-8 | 24 | Lamb, Melissa A.; Pusztai, Zsuzsanna*: TIMING AND STYLE OF DEPOSITION AND DEFORMATION OF THE MIOCENE RED SANDSTONE UNIT OF THE WHITE BASIN, SOUTHERN NEVADA, AND IMPLICATIONS FOR TECTONIC MODELS OF CENTRAL BASIN AND RANGE EXTENSION |

- 7-9 25 Jeruc, Joseph W.*; Carte, Alexander J.; McGrew, Allen J.; Metcalf, J.: **A TWO-PULSE COOLING HISTORY OF LATE EOCENE TO MIOCENE EXTENSIONAL EXHUMATION FROM THE SOUTHERN EAST HUMBOLDT RANGE METAMORPHIC CORE COMPLEX, NEVADA**
- 7-10 26 Hoiland, Carl W.*; Miller, Elizabeth L.; Coble, Matthew A.; Hourigan, Jeremy; Grove, Marty: **POSSIBLE EVIDENCE FOR LARGE DEPARTURES FROM LITHOSTATIC PRESSURE DURING CRETACEOUS METAMORPHISM IN THE NORTHERN SNAKE RANGE METAMORPHIC CORE COMPLEX (MCC), NEVADA**
- 7-11 27 Gottlieb, Eric S.; Miller, Elizabeth L.*: **DEEP CRUST HISTORY OF EAST-CENTRAL NEVADA USING ZIRCON XENOCRYST PETROCHRONOLOGY**
- 7-12 28 Vogl, James J.*; Titus, Jason: **NEW VIEWS OF OLD ROCKS IN THE BROOKS RANGE (ALASKA): RESULTS OF MAPPING AND DETRITAL ZIRCON GEOCHRONOLOGY OF THE ERNIE LAKE AREA**
- 7-13 29 Axelsson, Emelie; Pease, Victoria*; Toro, Jaime; Miller, Elizabeth L.; Pearcey, Stephen: **A SYNTHESIS OF DETRITAL ZIRCON DATA ACROSS 250 KM OF THE CENTRAL AND SCHIST BELTS OF THE BROOKS RANGE, ALASKA: IMPLICATIONS FOR ARCTIC TECTONIC SUTURES**
- 7-14 30 Pearcey, Stephen R.*; Miller, Elizabeth L.; Lease, Richard O.: **EVOLUTION OF THE ARCTIC ALASKA-CHUKOTKA MICROPLATE FROM DETRITAL ZIRCON ANALYSIS OF CRETACEOUS SEDIMENTS OF THE NORTH SLOPE, ALASKA, AND JURA-CRETACEOUS PLUTONS AND SEDIMENTS OF CHUKOTKA, RUSSIA**
- 7-15 31 Soboleva, Anna*: **AGE CONSTRAINS ON THE LIFESPAN OF THE MANYUKUYAKHA BASIN, POLAR URALS**
- 7-16 32 Stubbs, Katie*; Hernández-Urbe, David; Mattinson, Christopher G.: **ZIRCON INCLUSIONS CONSTRAIN DEEP CRUSTAL P-T PATHS: AN EXAMPLE FROM ULTRAHIGH-PRESSURE ECLOGITES AND HIGH PRESSURE GRANULITES FROM THE NORTH Qaidam Terrane, Western China**

SESSION NO. 8

T3. A Simple Twist of Plate: In Honor of the Career Contributions of the Dynamic Duo—Rick Blakely and Ray Wells—to Understanding Plate Interactions and Deformation in Cascadia (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- Booth #
- 8-1 33 Staisch, Lydia M.*; Bennett, Scott E.K.; Blakely, Richard J.; Wetzel, Kelsey; Earney, Tait E.: **NEW GEOPHYSICAL OBSERVATIONS ALONG THE KLAMATH-BLUE MOUNTAINS LINEAMENT AND WALLULA FAULT ZONE, NE OREGON AND SE WASHINGTON**
- 8-2 34 Scanlon, Darby P.*; Bershaw, John; Wells, Ray E.: **TRACKING THE SPATIAL AND TEMPORAL EVOLUTION OF THE PORTLAND AND TUALATIN BASINS, NORTHWEST OREGON**
- 8-3 35 Graham-Davis, Jazzy M.*; Streig, Ashley R.; Peterson, Curt D.: **IMPLICATIONS OF A GHOST FOREST STRATIGRAPHICALLY ASSOCIATED WITH THE FOURTH PREHISTORIC-CASCADIA EARTHQUAKE IN NETARTS BAY, OREGON**
- 8-4 36 Waldien, Trevor S.*; Roeske, Sarah M.: **REVISITING THE PETROLOGY AND AGE OF ACCRETIONARY COMPLEX ROCKS AT BANDON, OREGON**
- 8-5 37 Horst, Alison*; Streig, Ashley R.; Wells, Ray E.; Guilderson, Tom: **SEISMIC SOURCE CHARACTERIZATION OF FAULTS IN THE PORTLAND AND TUALATIN BASINS AND A PALEOSEISMIC STUDY OF THE GALES CREEK FAULT, OR**
- 8-6 38 Woodring, Danielle N.*; Meigs, Andrew; Marcelli, Marina; O'Connor, Jim E.; Cannon, Charles M.; Mahan, Shannon A.; Wells, Ray E.: **KINEMATICS OF THE COLUMBIA HILLS ANTICLINE AND THE WARWICK STRIKE-SLIP FAULT, YAKIMA FOLD AND THRUST BELT, WASHINGTON, USA**

- 8-7 39 Easterbrook, Don J.*: **NEW UNEQUIVOCAL LIDAR AND SONAR EVIDENCE THAT THE FAULTS OF THE SAN JUAN ISLANDS THRUST SYSTEM ARE HIGH ANGLE, DIPSLIP FAULTS, NOT THRUST SHEETS**

SESSION NO. 9

T13. The Yellowstone Hotspot Province: Prehistory, Timing, Extent, Volcanic Products, and Hydrothermal Consequences (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- Booth #
- 9-1 40 Soderberg, Evan R.*; Wolff, John A.: **GEOCHEMISTRY ACROSS THE IMNAHA-GRANDE RONDE CONTACT WITHIN THE COLUMBIA RIVER FLOOD BASALT PROVINCE, SE WASHINGTON**
- 9-2 41 Bedoyan, Laura Ani*; Waters, Laura; Nicolaysen, Kirsten P.; Wilner, Madeleine; Humphreys, Eugene: **PRE-ERUPTIVE CONDITIONS AND MELTS MODELING OF MAGMATIC DENSITIES FOR IMNAHA AND POWDER RIVER OLIVINE BASALTS**
- 9-3 42 Burgess, Seth D.*; Blackburn, Terrence: **STRATIGRAPHICALLY COMPREHENSIVE U/PB TIMS ZIRCON GEOCHRONOLOGY OF THE CRB**
- 9-4 43 Cahoon, Emily B.*; Streck, Martin J.; Koppers, Anthony A.P.; Miggins, Daniel P.: **REVISING AGE AND DISTRIBUTION OF THE PICTURE GORGE BASALT AND THEIR IMPLICATION FOR EVOLUTION MODELS OF COLUMBIA RIVER BASALT VOLCANISM**
- 9-5 44 Biasi, Joseph A.*; Hagstrum, Jonathan: **ALTERATION OF THE COLUMBIA RIVER BASALTS: IMPLICATIONS FOR 40AR/39AR GEOCHRONOLOGY**
- 9-6 45 Steiner, Arron*; Boro, Joseph R.: **HIGH PRESSURE, AL RICH MEGACRYSTIC PYROXENES IN LAVAS OF NORTHEASTERN OR: EVIDENCE OF DEEP CRYSTAL MUSH?**
- 9-7 46 Branton, Evon R.*; Steiner, Arron R.: **EVIDENCE OF LATE STAGE PHREATOMAGMATIC ERUPTION OF THE STRAWBERRY VOLCANICS**
- 9-8 47 Wolff, John A.*; Steiner, Arron; Nersinger, Ramsey M.; Hart, Rachelle: **TRACE ELEMENT CHARACTERISTICS OF THE WANAPUM AND SADDLE MOUNTAINS BASALTS, COLUMBIA RIVER BASALT GROUP**
- 9-9 48 Wood, Spencer H.*: **MULTIPLE BASALT SILL INTRUSIONS INTO THE MIOCENE PAYETTE/DRIP SPRINGS AND LOWER CHALK HILLS FORMATION SEDIMENTS, 1.4-2.4 KM DEEP BENEATH ONTARIO, OREGON: IDENTIFICATION AND SIGNIFICANCE FOR WESTERN SNAKE RIVER PLAIN STRATIGRAPHY**
- 9-10 49 Carley, Melissa A.*; Streck, Martin J.: **MID-MIOCENE ICELANDITES OF EASTERN OREGON: MAGMATIC LINEAGE TO MAIN PHASE CRBG WITH CONSTRAINTS ON THEIR CRUSTAL STORAGE SITES**
- 9-11 50 Swenton, Vanessa M.*; Streck, Martin J.; McIntosh, William: **ASSESSING THE SPACE AND TIME CORRELATION BETWEEN CO-CRBG RHYOLITES AND RHYOLITES OF THE HIGH LAVA PLAINS TREND IN EASTERN OREGON**
- 9-12 51 Harrison, Lauren*; Keller, William E.; Hungerford, Jefferson: **A SNAPSHOT OF THE DYNAMIC NORRIS GEYSER BASIN HYDROTHERMAL SYSTEM IN 2018**
- 9-13 52 Sorensen, Anthony Phillip*; Larson, Peter B.; Fairley, Jerry P.; Aunan, Megan M.: **GEOCHEMICAL RECONNAISSANCE OF THE WEST ASTRINGENT CREEK THERMAL AREA YELLOWSTONE CALDERA WY**
- 9-14 53 Alhejji, Suhail S.S.*; Kent, Adam J.R.; Duncan, Robert; Al-Amri, Abdullah M.S.; Alshantoni, Saeed A.: **TIMING AND COMPOSITION OF VOLCANISM AT HARRAT ITHNAYN, WESTERN SAUDI ARABIA**

SESSION NO. 10**T17. Landscape Changes at Various Temporal and Spatial Scales (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- | | Booth # | |
|------|---------|---|
| 10-1 | 54 | Das-Toke, Shyam*; Kent, Adam J.R.: ANALYZING THE GEOMORPHIC EVOLUTION OF CINDER CONES IN CENTRAL OREGON |
| 10-2 | 55 | Kelly, Joshua T.*; Gontz, Allen; Mazzone, Sarina; Tibby, John; Barr, Cameron; Marshall, Jonathan; Moss, Patrick: MULTI-TEMPORAL GEOMORPHIC EVOLUTION AND THE INFLUENCE OF CLIMATE ON A PERCHED DUNE LAKE ON NORTH STRADBROKE ISLAND, QUEENSLAND, AUSTRALIA |
| 10-3 | 56 | Alfving, Cameron J.*; Reece, Joshua S.; Brady, Mara; Moshier, Shelby; Weinman, Beth: ASSESSING THE ENVIRONMENTAL IMPACTS OF A BEACH NOURISHMENT OPERATION, MORRO BAY, CA |
| 10-4 | 57 | Gilliland, Amy*; Huerta, Audrey: GEOMORPHOMETRIC ANALYSIS OF THE TRANSANTARCTIC MOUNTAINS |
| 10-5 | 58 | Manopkawe, Pichawut*; Kirby, Eric: EVALUATING THE DEPENDENCE OF SEDIMENT CALIBER ON EROSION RATE IN A COASTAL MOUNTAIN RANGE, CENTRAL CALIFORNIA |

SESSION NO. 11**T30. Undergraduate Research (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- | | Booth # | |
|-------|---------|---|
| 11-1 | 59 | Miller, Caleb N.*; Hamel, Jennifer E.; Marshall, Jeffrey S.; McKinney, Emmons; White, Christopher J.; Zohbe, Noah M.; Litchfield, Nicola J.; Clark, Kate J.: FIELD INVESTIGATION OF HOLOCENE EARTHQUAKE UPLIFTED PALEO-SHORELINES AT CLIFTON AND OCEAN BEACH, SOUTHERN HAWKES BAY, NORTH ISLAND, NEW ZEALAND |
| 11-2 | 60 | Hamel, Jennifer*; Miller, Caleb N.; Marshall, Jeffrey S.; McKinney, Emmons; White, Christopher J.; Zohbe, Noah M.; Litchfield, Nicola J.; Clark, Kate J.: FIELD INVESTIGATION OF HOLOCENE EARTHQUAKE UPLIFTED PALEO-SHORELINES AT WAIMARAMA AND ARAMOANA, SOUTHERN HAWKES BAY, NORTH ISLAND, NEW ZEALAND |
| 11-3 | 61 | Adams, Trent T.*; MacInnes, Breanyn; Ely, Lisa L; Dolcimascolo, Alex; Matos-Llavona, Pedro: TAPHONOMIC CHANGES IN TSUNAMI DEPOSITS PRESERVED FROM THE 1960 CHILE EARTHQUAKE IN DIFFERENT COASTAL ENVIRONMENTS |
| 11-4 | 62 | Nordin, Alexandra*; Mulcahy, Sean R.; McClelland, William; Roeske, Sarah; Meira, Vinicius; Johns, Wes; Tholt, Andrew; Webber, Patricia; Houlihan, Emily; Coble, Matthew A.: TIMING OF OBLIQUE MOTION OF THE LA PUNTILLA – LA FALDA SHEAR ZONE IN NORTHWEST ARGENTINA FROM MONAZITE U-PB GEOCHRONOLOGY |
| 11-5 | 63 | Johns, Wes*; Mulcahy, Sean R.; Roeske, Sarah M.; McClelland, William C.; Houlihan, Emily; Tholt, Andrew; Webber, Patricia; Coble, Matthew A.; Vervoort, Jeffrey D.: TIMING AND KINEMATICS OF INTRA-ARC DEFORMATION IN THE MIDDLE CRUST OF THE FAMATINA ARC |
| 11-6 | 64 | Grant, Belyn*; Garrow, Haley; Johnston, Scott M.: MULTI-PHASE DEFORMATION IN FRANCISCAN COMPLEX MÉLANGE, SAN SIMEON, CALIFORNIA |
| 11-7 | 65 | Flanagan, Jackson*; Fregoso, Eric; Hernandez, Joseph; Armstrong, Phillip A.: DIP OF THE SIERRA NEVADA FRONTAL FAULT SYSTEM ADJACENT TO THE HIGHEST ELEVATIONS OF THE SIERRA NEVADA MOUNTAINS NEAR LONE PINE CALIFORNIA |
| 11-8 | 66 | McKeighan, Caroline*; Surpless, Benjamin; Segarra, Curtis; Hankla, Charley; Woodley, Madison: ANALYZING DEFORMATION WITHIN A NORMAL FAULT TRANSFER ZONE USING SFM 3D MODELING |
| 11-9 | 67 | Hankla, Charley*; Judge, Shelley; Surpless, Benjamin; McKeighan, Caroline; Segarra, Curtis; Woodley, Madison: AN ANALYSIS OF FRACTURES AROUND THE SEVIER FAULT TRANSFER ZONE NEAR ORDERVILLE, UTAH |
| 11-10 | 68 | Segarra, Curtis*; Surpless, Benjamin; Hankla, Charley; McKeighan, Caroline; Woodley, Madison: GEOMECHANICAL ANALYSIS OF SEDIMENTARY LAYERING AS A STRUCTURAL CONTROL ON FAULT PROPAGATION |
| 11-11 | 69 | Warren, Sondra M.*; Ernst, Brianna M.; Lundblad, Steven P.: NEW BASELINE DATA FOR LONG-TERM MEASUREMENTS OF CRACK STATIONS FOLLOWING THE 2018 KILAUEA ERUPTION |
| 11-12 | 70 | Kelly, Kalie R.*; Murray, Bryan P.: GEOLOGY OF THE AMPHITHEATRE CANYON AREA OF THE CALICO MOUNTAINS, CENTRAL MOJAVE DESERT, CALIFORNIA |
| 11-13 | 71 | Puleri, Bryan T.*; Christensen, Dana J.; Davies, Joseph J.; Team, Taylor C.; Michalak, Melanie J.: NEW PETROLOGIC ANALYSIS AND THERMOCHRONOLOGIC CONSTRAINTS ON EXHUMATION RATE USING APATITE (U-TH)/HE COOLING AGES OF THE GRANITE PEAK PLUTON, KLAMATH MOUNTAIN PROVINCE, NW CALIFORNIA |
| 11-14 | 72 | Bean, Cordell R.*; Buddington, Andrew M.: A DEFORMED GRANITIC PLUTON IN THE SOUTHERN PRIEST RIVER COMPLEX, SPOKANE VALLEY, WASHINGTON |
| 11-15 | 73 | Shaw, Jeremy Jamie*; Pritchard, Chad J.: CONTACT METAMORPHISM, MINERALIZATION, AND DETRIAL ZIRCON INTERPRETATION FROM SILVER HILL SPOKANE WASHINGTON |
| 11-16 | 74 | Elliott, McKenzie*; Wilner, Madeleine; Bader, Nick E.; Persico, Lyman P.: DETERMINING THE ORIGIN OF A COLUMBIA RIVER BASALT INTERBED AND RESULTING IMPLICATIONS FOR LOCAL DEPOSITIONAL PROCESSES DURING THE MIOCENE |
| 11-17 | 75 | Vranizan, Lucinda*; Streck, Martin J.; McIntosh, William C.; Sales, Hillarie: COMPOSITION OF MAFIC FIAMME OF THE RHYOLITIC BUCHANAN TUFF, EASTERN OREGON: UNDERSTANDING MAGMAS THAT DRIVE SILICIC MAGMATISM |
| 11-18 | 76 | Nunez, Yasiri*; Theissen, Kevin M.; Thole, Jeff; Swanson, Reid; Hensley, Adam; Thompson, Tori: TEPHROCHRONOLOGY OF LAKE MYVATN, ICELAND |
| 11-19 | 77 | Lazuhrcatt, Jayce*; MacKenzie, Lindsay Ann: DETAILED SEDIMENTOLOGICAL ANALYSIS OF THE LATAH FORMATION FROM CORE 5, CHENEY, WA |
| 11-20 | 78 | Jewell, Lana K.*; Famoso, Nicholas A.: SPECIES DIVERSITY IN THE HYPERTRAGULID (MAMMALIA: ARTIODACTYLA) POPULATION OF THE JOHN DAY BASIN, OREGON |
| 11-21 | 79 | Lunstroth, Rachel*; MacKenzie, Lindsay Ann: MICROFACIES SEDIMENTOLOGY OF THE CHENGJIANG BIOTA FOSSIL-BEARING INTERVAL OF THE MAOTIANSHAN SHALE AT ERCAI, YUNNAN PROVINCE, CHINA |
| 11-22 | 80 | Zander, Peter M.*; Waters, Laura: MERCURY DEPOSITS OF NORTHERN CALIFORNIA |
| 11-23 | 81 | Rivas Meraz, Edwin*; Steinert, Tiffany; Weinman, Beth; Wakabayashi, John: FRACTIONATION OF RARE EARTH ELEMENTS DURING SOIL FORMATION ALONG FEATHER RIVER BASIN HILL SLOPES IN THE CALIFORNIA SIERRA NEVADA |
| 11-24 | 82 | Wilson, Phillip R.*; Buzard, Richard M.; Maio, Christopher V.: UAV-BASED LICHENOMETRY, BLACK RAPIDS, ALASKA |
| 11-25 | 83 | Chiasson, Keeley*; Winter, Spencer; Clark, Douglas H.: INVESTIGATING CONTINUED DEFORMATION IN THE HEADSCARPS OF TWO LONG-RUNOUT LANDSLIDES, NOOKSACK DRAINAGE, NORTHWEST WASHINGTON |
| 11-26 | 84 | Rees, James C.*; Pinter, Nicholas: THE EFFECTIVENESS OF MANAGED RETREAT AND COMMUNITY RELOCATION AS A FLOOD MITIGATION MEASURE IN SMALL MIDWEST COMMUNITIES |
| 11-28 | 86 | Hogue, Taylor*; Schultz, Jesse; Biondo, Patrick R.; Nezat, Carmen A.: DISTRIBUTION OF ZINC TOXICITY LEVELS IN SURFACE WATERS ACROSS WASHINGTON STATE |

- 11-29 87 Kelley, Alicia*; Snyder, Scott; Cathcart, Eric: **DISSOLVED URANIUM IN THE GROUNDWATERS OF THE WESTERN PENINSULAR RANGES BATHOLITH, SAN DIEGO COUNTY, CALIFORNIA**
- 11-30 88 Arteaga, María Emilia; Béjar, Gustavo*; Guanotuña, Diego; Piispa, Elisa J.: **ACCESSIBLE GEOPHYSICAL METHODS TO INFER SUBSURFACE FLUID SATURATION: AN EXAMPLE FROM NORTHERN ECUADOR**
- 11-31 89 Jaime, Ana C.*; Gutberlet, Elizabeth M.; Mosqueda, Laura N.; Metzger, Ellen P.; Sanquini, Anne M.; Waldrop, David C.: **PREPARING GUIDES TO THE GEOLOGY OF HENRY COE STATE PARK: A STUDENT RESEARCH EXPERIENCE**
- 11-32 90 Polcino, Christina*; Jory, Billyjack; Grenot Jones, Laura; Sabety, Jean: **EDUCATIONAL APPLICATIONS OF METALLURGY IN LABORATORY SETTINGS FOR EARLY CHEMISTRY, PHYSICS AND GEOSCIENCES CLASSROOMS**

- 13-3 2:10 PM Fredriksson, Charlotte; Pease, Victoria*: **IMPLICATIONS FOR LOWER JURASSIC ISLAND ARC MAGMATISM FROM IGNEOUS CLASTS IN THE LOWER CRETACEOUS CONGLOMERATE, NE YUKON-KOYUKUK BASIN, ALASKA**
- 13-4 2:30 PM Moore, Thomas E.*; O'Sullivan, Paul: **CLUES TO THE PRE-MISSISSIPPIAN ARCHITECTURAL FRAMEWORK OF NORTHERN ALASKA FROM DETRITAL ZIRCON U-PB DATING OF THE UPPER DEVONIAN AND LOWER MISSISSIPPIAN ENDICOTT GROUP**
- 13-5 2:50 PM Colpron, Maurice*; Crowley, James L.; Sack, Patrick J.: **LATE TRIASSIC – JURASSIC MAGMATISM, METALLOGENY AND TECTONICS IN THE INTERMONTANE TERRANES OF YUKON**
- 3:10 PM **DISCUSSION**

AFTERNOON ORAL TECHNICAL SESSIONS

SESSION NO. 12

D3. The Hydrology of Volcanic Terranes II: Celebrating the Scientific Curiosity of Ken Lite and Marshall Gannett

1:30 PM, Oregon Convention Center, Room C123

Esther Pischel, Walter Burt, Steven E. Ingebritsen and Nicholas Corson-Dosch, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 12-1 1:35 PM Bershaw, John*; Hansen, Dougal: **VARIABILITY OF DEUTERIUM EXCESS (D-EXCESS) AND 17O-EXCESS (D17O) IN METEORIC WATER THROUGHOUT THE PACIFIC NORTHWEST**
- 12-2 1:55 PM Crabtree, Stephen; Kistner, Jared*; Sweidan, Bill: **AN ANALYSIS OF PUMICE-BEARING SOILS AND DEPOSITS NEAR PROSPECT, OREGON: IMPLICATIONS FOR POTENTIAL LOCAL VS. TRANSPORTED ORIGINS**
- 12-3 2:15 PM Lautze, Nicole*; Tachera, Diamond K.; Booth, Honour; Ferguson, Colin; Thomas, Donald: **WHAT IS KNOWN AND UNKNOWN ABOUT HAWAII'S OCEAN ISLAND HYDROLOGY**
- 12-4 2:35 PM Hsieh, Paul A.; Ingebritsen, Steven E.*: **GROUNDWATER INFLOW TOWARD A PREHEATED VOLCANIC CONDUIT: APPLICATION TO THE 2018 ERUPTION AT KĪLAUEA VOLCANO, HAWAII**
- 12-5 2:55 PM Florea, Lee J.*; Todd, Claire E.: **ISOTOPIC CHARACTERIZATION OF NATURAL WATERS AT MT. RAINIER**
- 12-6 3:15 PM Chen, Kewei*; Zhan, Hongbin; Burns, Erick; Ingebritsen, Steven E.; Agrinier, Pierre: **THE INFLUENCE OF EPISODIC SHALLOW MAGMA DEGASSING ON HEAT AND CHEMICAL TRANSPORT IN VOLCANIC HYDROTHERMAL SYSTEMS**

SESSION NO. 13

T1. Cordilleran Tectonics from the Basin and Range to Alaska and the Arctic II: A Celebration of Elizabeth Miller's Career (2018 GSA Structure and Tectonics Division Career Contribution Award)

1:30 PM, Oregon Convention Center, Room B117-119

Jeff Lee and Victoria Pease, Presiding

- 13-1 1:30 PM Amato, Jeffrey M.*; Toro, Jaime; Miller, Elizabeth L.: **A HISTORY OF GEOLOGIC RESEARCH ON SEWARD PENINSULA, ALASKA, BY ELIZABETH MILLER AND COLLABORATORS: CRUSTAL EXTENSION FROM TOP TO BOTTOM**
- 13-2 1:50 PM Box, Stephen E.*; Moore, Thomas E.; Aleinikoff, John N.; Wirth, Karl R.; Wang, Da; Nelson, S.W.: **NEW ZIRCON U-PB AGES AND HF ISOTOPES FROM BROOKS RANGE OPHIOLITE**

SESSION NO. 14

T10. Crystal Windows into Igneous Processes I

1:30 PM, Oregon Convention Center, Room C124

Anne Fulton, Michelle Muth and Nicole Rocco, Presiding

- 14-1 1:30 PM Crabtree, Stephen; Stangeland, Quin*; Huber, Abigail; Beck, Karl: **APPLICATION OF A NEW D_{O} (OLIVINE-MELT) GEOTHERMOMETER: A CASE STUDY OF BLUE ROCK SHIELD VOLCANO, JACKSON CO., OREGON**
- 14-2 1:50 PM Bowers, Jade M.*; de Silva, Shanaka L.; Tepley, Frank J.; Pratomo, Indyo; Putra, Armen: **PETROLOGICAL FORENSICS OF THE MOUNT SINABUNG, SUMATRA, INDONESIA MAGMA RESERVOIR PRIOR TO MAY 2016 DOME COLLAPSE**
- 14-3 2:10 PM Fulton, Anne*; Wallace, Paul; Wilson, Colin J.N.: **MELT INCLUSION AND CRYSTAL TEXTURAL INSIGHTS INTO THE ASSEMBLY, STORAGE AND LATE-STAGE EVACUATION OF THE BISHOP TUFF MAGMA SYSTEM**
- 14-4 2:30 PM Weldon, Nicholas*: **KINETIC ARGON ISOTOPE FRACTIONATION IN DEGASSING MAGMA: A POSSIBLE CAUSE OF $^{39}\text{AR}/^{40}\text{AR}$ AGE BIAS IN QUATERNARY LAVAS**
- 14-5 2:50 PM Andrews, Benjamin J.*; Quane, Steve: **BREADCRUST BUBBLES: ESTIMATING EXPLOSIVE ERUPTION EXIT VELOCITY THROUGH TEXTURAL ANALYSIS**
- 14-6 3:10 PM Dungan, Michael*; Bouvet de Maisonneuve, Caroline: **EVIDENCE FOR CRYSTAL-MUSH MOBILIZATION AND AN INTEGRATED MODEL FOR THE UPPER-CRUSTAL, OPEN MAGMATIC SYSTEM BENEATH HISTORICALLY HYPERACTIVE LLAIMA VOLCANO (38.7 S, CHILEAN ANDES)**

SESSION NO. 15

T17. Landscape Changes at Various Temporal and Spatial Scales

1:30 PM, Oregon Convention Center, Room C125-126

Allen Gontz, Joshua T. Kelly, Scott W. Anderson and Kristin L. Jaeger, Presiding

- 15-1 1:30 PM Benson, Mary Alice*; Nitttrouer, Charles A.; Fricke, Aaron T.: **SEDIMENT ACCUMULATION IN A MANIPULATED BAY OF PUGET SOUND, BELLINGHAM, WA**
- 15-2 1:50 PM Gontz, Allen*; Ellerton, Daniel; Shulmeister, James; McCallum, Adrian: **GPR FACIES FROM THE WORLD'S LONGEST CONTINUALLY ACTIVE COASTAL SAND DUNE SYSTEM, GREAT SANDY COAST, SOUTHEAST QUEENSLAND AUSTRALIA – EVIDENCE FOR CHANGE**
- 15-3 2:10 PM Mazzone, Sarina*; Gontz, Allen; Kelly, Joshua T.; Tibby, John; Barr, Cameron; Marshall, Jonathan: **STRATIGRAPHIC SIGNATURES OF LAKE-LEVEL CHANGES AT SWALLOW LAGOON, NORTH STRADBROKE ISLAND, AUSTRALIA**
- 15-4 2:30 PM James, L. Allan*; Monohan, Carrie: **NINETEENTH CENTURY HYDRAULIC MINING IN THE SIERRA NEVADA AS A CONTROLLED SEDIMENT TRANSPORT EXPERIMENT**

- 15-5 2:50 PM Wetherell, Logan R.*; Ely, Lisa L.; Roering, Joshua; Walsh, Megan; Struble, William; Black, Bryan: **QUANTIFYING SEDIMENTATION PATTERNS OF SMALL LANDSLIDE-DAMMED LAKES IN THE CENTRAL OREGON COAST RANGE**
- 15-6 3:10 PM Pfeiffer, Allison M.*; Morey, Susannah; Montgomery, David R.; Davies, Jaycob; High, Branden: **LITHOLOGIC CONTROLS ON THE LONG-TERM DOWNSTREAM FATE OF A SEDIMENT PULSE, SUITATTLE RIVER, WA**
- 15-7 3:30 PM Booth, Adam M.*; Sifford, Christian; Siebert, Cora; Buma, Brian: **COARSE WOOD INHIBITS DEBRIS FLOW RUNOUT IN FORESTED SOUTHEAST ALASKA**
- 15-8 3:50 PM Turzewski, Michael D.*; Huntington, Katharine W.; LeVeque, Randall J.; Morey, Susannah: **SHIFTS IN SEDIMENT TRANSPORT DYNAMICS DRIVEN BY THE INTERACTION OF OUTBURST FLOOD HYDRAULICS AND VALLEY MORPHOLOGY: OBSERVATIONS AND NUMERICAL SIMULATIONS OF THE 2000 YIGONG FLOOD, EASTERN HIMALAYA**
- 16-8 10:40 AM Yule, Doug*; Matti, Jonathan C.; Kendrick, Katherine J.; Heermance, Richard V.: **EVIDENCE FOR INACTIVITY SINCE ~100,000 YRS BP ON THE NORTHERN ROUTE OF THE SAN ANDREAS FAULT, SOUTHERN CALIFORNIA**
- 16-9 11:00 AM Burgette, Reed J.*; Ingram, Jonathan J.; Reed, Michael P.; Scharer, Katherine M.; Lifton, Nathaniel A.; McPhillips, Devin: **QUATERNARY SLIP HISTORY OF THE SANTA SUSANA FAULT, WESTERN TRANSVERSE RANGES, CALIFORNIA**
- 16-10 11:20 AM Sethanant, Israporn*; Kirby, Eric; McDonald, Eric: **LATE HOLOCENE SLIP HISTORY RECORDED IN ALLUVIAL FAN SEQUENCES, PANAMINT VALLEY, EASTERN CALIFORNIA**
- 16-11 11:40 AM Biasi, Glenn P.*; Weldon, Ray J.: **PALEOSEISMIC DATA AND REGIONAL HAZARD MODELING IN CALIFORNIA**

SESSION NO. 17**T5. Recent Advances in Cordilleran Tectonic Evolution—2: Cenozoic**

8:00 AM, Oregon Convention Center, Room C124

James H. MacDonald Jr., Joe D. Dragovich, Megan Anderson, Peter Davis and Jeffrey H. Tepper, Presiding

- 17-1 8:00 AM Reidel, Stephen*; Fecht, Karl; Tolan, Terry L.; Chamness, Michelle: **A RAW LOOK AT THE OWL**
- 17-2 8:20 AM MacDonald, James H.*; Dragovich, Joe D.; Thompson, Glenn T.; Tepper, Jeffrey H.; Wise, Kevin J.; DuFrane, S. Andrew; Anderson, Megan: **PRESSURE AND TEMPERATURE ESTIMATES FOR SEVERAL EOCENE PLUTONS IN THE CASCADE FOOTHILLS AND EASTERN PUGET LOWLANDS OF WASHINGTON STATE: A RECORD OF EOCENE SYN-TECTONIC INTRUSION AND EOCENE TO PRESENT FAULTING**
- 17-3 8:40 AM Miller, Robert B.*; Eddy, Michael P.; Tepper, Jeffrey H.; Umhoefer, Paul J.: **A SYNTHESIS OF THE PALEOGENE TECTONIC EVOLUTION OF WASHINGTON STATE**
- 17-4 9:00 AM Haugerud, Ralph A.*: **COWICHAN FOLD AND THRUST SYSTEM SOUTH AND EAST OF BELLINGHAM, WA**
- 9:20 AM **BREAK**
- 17-5 9:35 AM Thompson, Laird B.*; Armentrout, John M.; Blackwell, David L.S.: **TECTONIC HISTORY OF THE COOS BAY BASIN AND ITS RELATIONSHIP TO PACIFIC NORTHWEST 'SILETZIA' TECTONICS**
- 17-6 9:55 AM Brandon, Mark T.*; Kukla, Tyler: **TOPOGRAPHY AND PRECIPITATION ISOTOPES ACROSS CALIFORNIA AND NEVADA, WITH IMPLICATIONS FOR THE TOPOGRAPHIC EVOLUTION OF THE CORDILLERA OROGEN**
- 17-7 10:15 AM Wilhelmi, Ryan M.*; Vogl, James J.; Bernet, Matthias; Foster, David A.; Min, K.: **DYNAMIC TOPOGRAPHY AND TECTONICS DURING THE DEVELOPMENT OF THE SNAKE RIVER PLAIN-BOISE MOUNTAINS TOPOGRAPHIC CONTRAST: EVIDENCE FROM LOW-T THERMOCHRONOLOGY**
- 17-8 10:35 AM Raymond, Loren A.*: **RETRACING POST-SUBDUCTION HISTORY: A PRELIMINARY PALINSPASTIC AND PSEUDO-PALINSPASTIC RECONSTRUCTION OF PRE-PLIOCENE FRANCISCAN COMPLEX ARCHITECTURE, NORTHEASTERN DIABLO RANGE, CALIFORNIA**
- 17-9 10:55 AM Cheney, Eric S.*; Buddington, A.M.; Doughty, Ted: **THE WEST SIDE STORY OF THE SPOKANE DOME OF THE PRIEST RIVER METAMORPHIC CORE COMPLEX (PRC), WASHINGTON AND IDAHO**

THURSDAY, 16 MAY 2019**MORNING
ORAL TECHNICAL SESSIONS****SESSION NO. 16****T2. Advances in Seismic Hazard Assessment through Paleoseismic and Tectonic Geomorphic Fault Studies I: In Honor of Ray J. Weldon II, for His Career and Contributions to the Field**

8:00 AM, Oregon Convention Center, Room B117-119

Ashley R. Streig, Kate Scharer and Scott E.K. Bennett, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 16-1 8:05 AM Pringle, Patrick T.*; Contreras, Trevor A.; Carson, Emily Lindstrum: **CORRELATING EARTHQUAKE-KILLED TREES FROM THE FIRST MILLENNIUM CE BY MEANS OF RADIOCARBON DATING AND DENDROCHRONOLOGY IN THE PUGET LOWLAND AND SOUTHEAST OLYMPIC MOUNTAINS, WASHINGTON**
- 16-2 8:25 AM Davis, Elizabeth*; Crider, Juliet G.; Roland, Emily: **PALEOSEISMOLOGY ACROSS THE SHORELINE IN THE DUWAMISH WATERWAY AND ELLIOTT BAY, SEATTLE**
- 16-3 8:45 AM Langridge, Robert M.*; Pezzopane, S.: **THE PALEOSEISMIC RECORD OF SUBAQUEOUS DEFORMATION ALONG NORMAL FAULTS IN CENTRAL OREGON AND CENTRAL MEXICO**
- 16-4 9:05 AM Madin, Ian P.*; Weldon, Ray J.: **ACTIVE FAULTS DISCOVERED WITH RECENT LIDAR IMAGERY REQUIRE REASSESSMENT OF SEISMIC HAZARDS IN EAST-CENTRAL OREGON**
- 16-5 9:25 AM Bemis, Sean P.*; Vadman, Michael J.; Melsen, Christopher: **NEW DATA FROM OLD DATA: ADVANCING 3D CHANGE DETECTION FROM ARCHIVAL AERIAL PHOTOGRAPHS THROUGH A MODIFIED STRUCTURE-FROM-MOTION IMPLEMENTATION**
- 16-6 9:45 AM Field, Edward H.*: **A SURVEY OF SOME SALIENT ISSUES WITH RESPECT TO THE IMPACT OF EARTHQUAKE GEOLOGY ON MODERN EARTHQUAKE FORECASTS**
- 10:05 AM **BREAK**
- 16-7 10:20 AM Prentice, Carol S.*; Sickler, Robert R.; Clahan, Kevin B.; Pickering, Alexandra; DeLong, Stephen B.: **PREHISTORIC EARTHQUAKES ON THE PENINSULA SAN ANDREAS FAULT, WOODSIDE, CALIFORNIA**

SESSION NO. 18**T9. Tectonic Processes in Cordilleran Arcs**

8:00 AM, Oregon Convention Center, Room C125-126

Stacia M. Gordon and Robert B. Miller, Presiding

- 18-1** 8:00 AM Miller, Jonathan*; Lackey, Jade Star; Shea, Erin K.: **ARC MAGMATISM, CRUSTAL THICKENING, AND THE EXTINCTION OF CORDILLERAN FLARE-UPS**
- 18-2** 8:20 AM Attia, Snir*; Paterson, Scott R.; Miller, Robert B.: **ARE DEFORMATION AND MAGMATISM LINKED IN ARC OROGENS? MULTI-SCALE TECTONOMAGMATIC RELATIONSHIPS AND OROGENIC EVOLUTION DURING ARC FLARE-UPS**
- 18-3** 8:40 AM Cecil, M. Robinson*; Gehrels, George E.; Yokelson, Intan N.; Homan, Emily; Rusmore, Margaret E.; Stowell, Harold H.; Woodsworth, Glenn J.; Valley, John W.; Kitajima, Kouki: **ZIRCON HF AND O ISOTOPE ANALYSIS OF JURASSIC-EOCENE PLUTONS OF THE SOUTHERN COAST MOUNTAINS BATHOLITH, BRITISH COLUMBIA, INDICATES MAGMATIC EVENTS DOMINATED BY MANTLE SOURCES**
- 18-4** 9:00 AM Gordon, Stacia M.*; Sauer, Kirsten B.; Miller, Robert B.: **SEDIMENT INCORPORATION INTO CONTINENTAL MAGMATIC ARCS: A CASE STUDY OF THE NORTH CASCADES RANGE, WASHINGTON**
- 18-5** 9:20 AM Johnston, Scott M.*; Chapman, Alan D.; Dektar, Emily C.; Kylander-Clark, Andrew R.C.: **IGNEOUS AND METAMORPHIC CHRONOLOGY OF SALINIAN ARC LOWER ARC CRUST, CENTRAL CALIFORNIA COAST**
- 18-6** 9:40 AM Vermillion, Karissa B.*; Van Buer, Nicholas J.; Holk, Gregory J.: **MESOZOIC MAGMATISM AND ARC CESSATION IN THE CENTRAL MOJAVE DESERT, CALIFORNIA**
- 10:00 AM **BREAK**
- 18-7** 10:15 AM Paterson, Scott; Scheland, Cullen L.; Memeti, Vali; Flores, Celeste; White, Megan Luisa*; Vernon, Ron: **ANTITHETICAL MIGRATING PLUTONS IN EVOLVING ARCS**
- 18-8** 10:35 AM Mulcahy, Sean R.*; McClelland, William C.; Roeske, Sarah: **FLARE-UP AND CESSATION OF THE FAMATINA ARC LINKED TO CHANGES IN OBLIQUE CONVERGENCE AND TRANSLATION ON THE GONDWANA MARGIN**
- 18-9** 10:55 AM Dungan, Michael*: **THOLEIITIC (TH) AND CALC-ALKALINE (CA) SERIES AT FRONTAL-ARC VOLCANOES OF THE 33.3-41.1°S PORTION OF THE ANDEAN SOUTHERN VOLCANIC ZONE (SVZ), CHILE: ASSESSING THE IMPACT OF CRUSTAL THICKNESS, PARENT MAGMA COMPOSITIONS, DIFFERENTIATION MECHANISMS, AND CONDITIONS OF MAGMA EVOLUTION**
- 18-10** 11:15 AM Fennell, Lucas Martin*; Hren, Michael T.; Brandon, Mark T.; Colwyn, David; Martos, Federico Exequiel; Lewis, Amelia; Folguera, Andres: **TOPOGRAPHIC EVOLUTION OF THE SOUTHERN CENTRAL ANDES FROM STABLE ISOTOPE PALEOALTIMETRY OF HYDRATED VOLCANIC GLASS**
- 18-11** 11:35 AM Kay, Suzanne Mahlburg*; Spikings, Richard; Jicha, Brian R.: **PLIOCENE UPLIFT OF THE CENTRAL ALEUTIAN ARC: EVIDENCE FROM THE ~35-31 MA HIDDEN BAY AND ~14 MA KAGALASKA PLUTONS ON ADAK ISLAND**

SESSION NO. 19**T16. Landscape Evolution and Tectonic Geomorphology in the Greater Pacific Northwest**

8:00 AM, Oregon Convention Center, Room C123

Matthew Morriss, Philip Schoettle-Greene, William Struble, Lydia M. Staisch and Jim O'Connor, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 19-1** 8:05 AM Watt, Janet*; Brothers, Daniel S.: **SYSTEMATIC CHARACTERIZATION OF MORPHO-TECTONIC VARIABILITY ALONG THE CASCADIA CONVERGENT MARGIN: IMPLICATIONS FOR OUTER WEDGE DYNAMICS AND SHALLOW MEGATHRUST BEHAVIOR**

- 19-2** 8:25 AM Hill, Jenna C.*; Watt, Janet T.; Kluesner, Jared W.; Brothers, Daniel S.; Conrad, James E.; Dartnell, Peter: **TECTONIC GEOMORPHOLOGY OF SUBMARINE CANYON SYSTEMS OFFSHORE OF SOUTHERN CASCADIA**
- 19-3** 8:45 AM Kirby, Eric*; Furlong, Kevin P.; von Dassow, Wesley A.: **DOES TOPOGRAPHY ALONG THE CASCADIA FOREARC REFLECT PERMANENT DEFORMATION OF NORTH AMERICA?**
- 19-4** 9:05 AM Morell, Kristin*; Finley, Theron; Leonard, Lucinda J.; Regalla, Christine: **THE SPATIAL DISTRIBUTION AND LONGEVITY OF ONGOING PERMANENT FOREARC DEFORMATION SURROUNDING THE OLYMPIC MOUNTAINS**
- 19-5** 9:25 AM Biasi, Joseph A.*; Sousa, Francis J.: **UPLIFT HISTORY OF STEENS MOUNTAIN AND ONSET OF BASIN AND RANGE EXTENSION IN EASTERN OREGON**
- 9:45 AM **BREAK**
- 19-6** 10:00 AM Evarts, Russell C.; Conrey, Richard M.*: **POST-PLIOCENE EVOLUTION OF THE COLUMBIA RIVER GORGE**
- 19-7** 10:20 AM Morriss, Matthew C.*; Yanites, Brian J.; Mitchell, Nathaniel A.: **DRAINAGE INTEGRATION AND CANYON INCISION - A HELLS CANYON STORY**
- 19-8** 10:40 AM Staisch, Lydia M.*; O'Connor, Jim E.; Holm-Denoma, Christopher S.; Lasher, John P.; Alexander, Jeremy: **RINGOLD FORMATION SEDIMENTOLOGY, PALEONTOLOGY, AND PROVENANCE: IMPLICATIONS FOR THE ANCESTRAL RIVERS OF THE PACIFIC NORTHWEST**
- 19-9** 11:00 AM Guzzo, Brittany R.; Link, Paul K.*: **DETRITAL ZIRCONS FROM LATE MIOCENE CHALK HILLS FORMATION AND EQUIVALENTS, LAKE IDAHO, SOUTHWEST IDAHO AND SOUTHEAST OREGON**
- 19-10** 11:20 AM Hladky, Frank R.*: **REVISITING A POPULARIZED GEOMORPHOLOGICAL INTERPRETATION: UPPER AND LOWER TABLE ROCK, MEDFORD, OREGON**
- 19-11** 11:40 AM Cummings, Michael L.*: **OUTBURST FLOOD DEPOSIT FROM WILLIAMSON RIVER CANYON, OREGON: FAILURE OF A PYROCLASTIC DAM**
- 19-12** 12:00 PM Waitt, Richard B.*: **MANY LAST-GLACIAL MISSOULA HIGH-ENERGY JÖKULHLAUPS THROUGH HIGH TRACTS OF CHANNLED SCABLAND**

POSTER TECHNICAL SESSIONS

SESSION NO. 20**T2. Advances in Seismic Hazard Assessment through Paleoseismic and Tectonic Geomorphic Fault Studies: In Honor of Ray J. Weldon II, for His Career and Contributions to the Field (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

Booth #

- 20-1** 1 Lynch, Emerson M.*; Regalla, Christine; Morell, Kristin; Harrichhausen, Nicolas; Leonard, Lucinda J.: **SCARPE DIEM: LATE QUATERNARY RUPTURES ON THE BEAUFORT RANGE FAULT, BRITISH COLUMBIA, CANADA**
- 20-2** 2 Alba, Sequoia*; Weldon, Ray J.; Livelybrooks, Dean; Schmidt, David: **CASCADIA ETS IN TIDAL RECORDS 1980 TO PRESENT**
- 20-3** 3 Humphreys, Eugene D.*; Perry-Houts, Jonathan; Nicolaysen, Kirsten P.: **TECTONICS OF THE COLUMBIA RIVER FLOOD BASALTS**
- 20-4** 4 Wang, Teng*; Weldon, Ray J.; Newton, Tyler: **VERTICAL DEFORMATION FIELD FOR THE CASCADIA REGION DERIVED FROM INSAR, LEVELING AND TIDAL RECORDS**

- 20-5 5 Curtiss, Elizabeth R.*; Egger, Anne E.: **ESTIMATED PALEOEARTHQUAKE MAGNITUDES OF NORMAL FAULTS IN SUMMER LAKE BASIN, OREGON**
- 20-6 6 Bacon, Charles R.*; Robinson, Joel E.: **POSTGLACIAL FAULTING NEAR CRATER LAKE, OREGON, AND ITS POSSIBLE ASSOCIATION WITH THE MAZAMA CALDERA-FORMING ERUPTION**
- 20-7 7 Alexander, Katherine A.*; Amos, Colin B.; Balco, Greg; Amidon, William H.; Lesnau, Reyne K.; Clark, Doug; Meigs, Andrew: **RATES AND KINEMATICS OF ACTIVE CRUSTAL FAULTS IN THE CENTRAL OREGON CASCADES**
- 20-8 8 Morey, Ann E.*: **MICRO-X-RAY FLUORESCENCE REVEALS EVIDENCE OF THE SEDIMENTARY PROCESSES THAT CONTROL DEPOSITION: THE RECORD OF EXTREME EVENTS FROM A SMALL OREGON LAKE**
- 20-9 9 Crawford, Brandon*; Hartshorn, Evan J.; Hemphill-Haley, Mark A.; Michalak, Melanie J.: **HOLOCENE MARINE TERRACE FORMATION NEAR THE MENDOCINO TRIPLE JUNCTION: PALEOSEISMIC HISTORY DERIVED FROM HIGH RESOLUTION LIDAR**
- 20-10 10 Streig, Ashley R.*; Weldon, Ray J.; Dawson, Timothy E.; Biasi, Glenn P.; Gavin, Daniel; Guilderson, Thomas P.: **NEW INSIGHTS IN TO PALEOSEISMIC AGE MODELS ON THE NORTHERN SAN ANDREAS FAULT: AND UPDATED EARTHQUAKE CORRELATIONS**
- 20-11 11 Philibosian, Belle E.*; Sickler, Robert R.; Prentice, Carol S.; Pickering, Alexandra; Catchings, Rufus D.; Goldman, Mark R.; Mahan, Shannon A.; Gannon, Patrick; Broudy, Kiara; Titular, Jazmine N.; Turner, Elijah; Folmar, Cameron; Patterson, Sierra F.; Bowman, Emilie: **INVESTIGATION OF THE WEST NAPA FAULT AT EHLERS LANE, NORTH OF SAINT HELENA, CALIFORNIA**
- 20-12 12 De Masi, Conni*; Koehler, Richard D.; Dee, Seth M.; Chupik, Colin; Castillo, Chris M.; Kleber, Emily; Keen-Zebert, Amanda: **NEW OBSERVATIONS ON THE PALEOSEISMIC HISTORY AND SENSE OF SLIP ALONG THE PETERSEN MOUNTAIN FAULT, NORTH WESTERN NEVADA**
- 20-13 13 Dee, Seth M.*; Laabs, Benjamin J.: **LIDAR BASED GEOLOGIC MAPPING AND TERRESTRIAL COSMOGENIC NUCLIDE EXPOSURE DATING TO CHARACTERIZE FAULT SLIP RATES AND THE AGE OF GLACIATION IN THE RUBY MOUNTAINS - EAST HUMBOLDT RANGE, NEVADA**
- 20-14 14 Walker, Alianora*; Blisniuk, Kimberly; Hecker, S.: **EVIDENCE OF TIME-TRANSGRESSIVE DISPLACEMENT ON THE RODGERS CREEK FAULT, WINDSOR, CA**
- 20-15 15 Kendrick, Katherine J.*; Matti, Jonathan C.: **GEO MORPHIC AND GEOLOGIC EVIDENCE FOR SLIP ALONG THE SAN BERNARDINO STRAND OF THE SAN ANDREAS FAULT SYSTEM THROUGH THE SAN GORGONIO PASS STRUCTURAL KNOT, SOUTHERN CALIFORNIA**
- 20-16 16 Matti, Jonathan C.*; Kendrick, Katherine J.; Yule, Doug; Heermance, Richard V.: **THE MISSION CREEK FAULT IN THE SAN GORGONIO PASS REGION: A LONG-ABANDONED STRAND OF THE SAN ANDREAS FAULT, OR A MAJOR PLAYER IN THE LATEST QUATERNARY SAN ANDREAS STRAIN BUDGET?**
- 20-17 17 Scharer, Kate*; Yule, Doug: **THE BIGGEST POSSIBLE EARTHQUAKES: A MAXIMUM RUPTURE MODEL FOR THE SOUTHERN SAN ANDREAS AND SAN JACINTO FAULTS, CALIFORNIA SINCE A.D. 500**
- 20-18 18 Martin, Gregory*; Streig, Ashley R.; Weldon, Ray J.: **THE ROCKY LEDGE FAULT, NE CALIFORNIA: DEVELOPMENT AND MORPHOLOGY OF A QUATERNARY OBLIQUE NORMAL FAULT IN BASALT**
- 20-19 19 Chupik, Colin*; Koehler, Richard D.: **PALEOSEISMIC ASSESSMENT OF SLIP RATE AND EARTHQUAKE HISTORY OF THE WARM SPRINGS VALLEY FAULT, WESTERN NEVADA: IMPLICATIONS FOR DISTRIBUTED FAULT RUPTURES**
- 20-20 20 Seitz, Gordon G.*; Schwartz, David P.: **USING PALEOSEISMOLOGY TO UNDERSTAND RUPTURES AT FAULT**
- BRANCHES: NEW INSIGHTS FROM A PENINSULAR SAN ANDREAS FAULT PALEOSEISMIC RECORD**
- 20-21 21 Harrichhausen, Nicolas*; Morell, Kristin; Regalla, Christine; Bennett, Scott E.K.; Leonard, Lucinda J.; Lynch, Emerson M.: **PALEOSEISMIC TRENCHING REVEALS SPATIALLY-VARIABLE HOLOCENE SLIP BEHAVIOR ON THE LEECH RIVER FAULT**
- 20-22 22 Wiwegwin, Weerachat*; Weldon, Ray; Weldon, Elise M.; Junpanggern, Jutamas; Kosuwan, Suwith; Phumsonklin, Rawee; Hinsaeang, Piyaporn; Xuhua, Shi: **EVIDENCE OF LARGE PALEOEARTHQUAKES GENERATED BY THE MAE CHAN FAULT, CHIANG RAI, NORTHERN THAILAND**
- 20-23 23 Gavillot, Yann*; Weldon, Ray J.; Wiwegwin, Weerachat; Owen, Lewis; Weldon, Elise M.; Shi, Xuhua; Kosuwan, Suwith; Wang, Yu; Streig, Ashley R.; Hidy, Alan J.: **INTEGRATING TECTONIC GEOMORPHOLOGY WITH SEISMIC HAZARDS ON THE MAE CHAN FAULT, NORTHERN THAILAND: DECIPHERING LAND SURFACE CHANGE FROM TECTONICS AND HUMAN ACTIVITY**
- 20-24 24 Langridge, Robert M.*: **PALEOSEISMICITY OF 2016 MW 7.8 KAIKŌURA EARTHQUAKE FAULTS: WHAT HAVE WE LEARNT AND THE IMPLICATIONS FOR THE NEW ZEALAND SEISMIC HAZARD MODEL**
- 20-25 25 Gray, Brian*; Bloszies, Christopher; McDonald, Eric V.; Page, William D.; Baldwin, John N.: **RETHINKING THE COLLUVIAL WEDGE: A REVISED MODEL FOR COLLUVIAL EVENT STRATIGRAPHY IN SLOPED ENVIRONMENTS**

SESSION NO. 21

T4. Recent Advances in Cordilleran Tectonic Evolution—1: Paleozoic to Mesozoic (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

- Booth #
- 21-1 26 Kroeger, Emma D.L.*; Colpron, Maurice; Piercey, Stephen J.; McClelland, William C.; Gehrels, George E.: **DETRITAL ZIRCON PROVENANCE STUDY OF THE YUKON-TANANA TERRANE IN YUKON, CANADA**
- 21-2 27 Anfinson, Owen A.*; Bero, David A.; Raymond, Loren A.; Simoneau, Victoria: **FRANCISCAN COMPLEX STRUCTURAL ARCHITECTURE, DEPOSITIONAL AGE, AND PROVENANCE FOR WEST MT. TAMALPAIS, CA**
- 21-3 28 Barnes, Calvin G.*; Hudson, Rachel; Werts, Kevin; Yoshinobu, Aaron S.: **AUGITE TRACKS CHANGES IN JURASSIC ARC MAGMAS, KLAMATH MOUNTAIN PROVINCE (KMP), CA AND OR**
- 21-4 29 Gates, Katie M.*; Yoshinobu, Aaron S.; Barnes, Calvin G.; Dailey, Shane R.; Leib, Susan E.: **INVERTED METAMORPHIC GRADIENTS AND CRYPTIC CONTACTS SURROUNDING THE ENIGMATIC CONDREY MOUNTAIN DOME, KLAMATH MOUNTAIN PROVINCE, CA AND OR**
- 21-5 30 Dailey, Shane R.*; Barnes, Calvin G.; Leib, Susan E.: **TIMING OF PARTIAL MELTING OF RATTLESNAKE CREEK AMPHIBOLITE— INITIATION OF THE NEVADAN OROGENY?**
- 21-6 31 Davis, Peter*: **NEW INSIGHTS ON SYNTECTONIC EMPLACEMENT OF THE HICKS BUTTE PLUTON IN THE CENTRAL CASCADES OF WASHINGTON STATE**
- 21-7 32 Baker, Peter L.*; Mulcahy, Sean R.; Vervoort, Jeff D.: **AGE OF METAMORPHISM IN THE CASCADES CRYSTALLINE CORE FROM GARNET LU-HF AND SM-ND GEOCHRONOLOGY**
- 21-8 33 Weldon, Nyle*; Schermer, Elizabeth: **TECTONIC SIGNIFICANCE OF DUCTILE STRUCTURES IN THE CHELAN MOUNTAINS TERRANE, NORTH CASCADES, WA**
- 21-9 34 Magloughlin, J.F.; Easley, D.G.*: **GEOCHEMISTRY AND INTERPRETATION OF GARNET AND MANGANESE-RICH METASEDIMENTARY ROCKS ('COTICULES') IN THE CHIWAUKUM SCHIST, NORTH CASCADE MOUNTAINS, WASHINGTON**
- 21-10 35 Box, Stephen E.; Pritchard, Chad*; Stephens, Travis Scott; O'Sullivan, Paul B.: **DEER TRAIL GROUP IN NORTHEASTERN WASHINGTON: AN INTERMEDIATE MESOPROTEROZOIC AGE**

- UNIT BETWEEN THE WESTERNMOST MESOPROTEROZOIC BELT SUPERGROUP AND THE NEOPROTEROZOIC WINDERMERE GROUP**
- 21-11 36 Ma, Chong*; Foster, David A.; Mueller, Paul A.; Dutrow, Barbara L.: **COGENETIC STRUCTURES TO THE WESTERN IDAHO SHEAR ZONE: IMPLICATIONS FOR OROGEN-PARALLEL TRANSLATION OF ACCRETED TERRANES**
- 21-12 37 Clayton, Robert W.; Marcy, Micah*: **A 3-D GEOLOGICAL MODEL OF THE SEVIER THRUST BELT IN THE TENDOY MOUNTAINS, SOUTHWESTERN MONTANA**
- 21-13 38 Clayton, Robert W.*: **A 3D GEOLOGICAL MODEL OF THE BUCKSKIN – HARCUVAR LOW-ANGLE NORMAL FAULT AND RELATED METAMORPHIC CORE COMPLEX STRUCTURES BASED ON SEISMIC REFLECTION PROFILES, WESTERN ARIZONA**
- 21-14 39 Gonzalez-Fonseca, Ana Liseth*; Vega-Granillo, Ricardo; Vidal Solano, Jesus Roberto: **GEOLOGY AND STRUCTURAL EVOLUTION OF THE SAN FRANCISCO OROGENIC GOLD DEPOSIT, SONORA, MEXICO**
- 21-15 40 Galindo-Ruiz, Jocelyn*; Madhavaraju, Jayagopal; Grijalva Noriega, Francisco Javier; Ramirez-Montoya, Erik: **PROVENANCE OF THE SIERRA DE SANTA ROSA FORMATION, SONORA, MEXICO: CONSTRAINTS FROM GEOCHEMISTRY AND U-PB GEOCHRONOLOGY**
- 21-16 41 Vega-Granillo, Ricardo*: **DETRITAL ZIRCON GEOCHRONOLOGY OF PALEOZOIC SEQUENCES IN NORTHWESTERN MEXICO INDICATING LAURENTIAN AND GONDWANAN PROVENANCE**
- 21-17 42 Anderson, James A.*; Mattinson, Chris G.; Marshall, Collin E.: **APPLYING MULTI-METHOD P-T ESTIMATION TECHNIQUES TO CONSTRAIN DEEP CRUSTAL TECTONIC PROCESSES: AN EXAMPLE FROM HP GRANULITES, NORTH QUIDAM TERRANE, CHINA**
- 21-18 43 Morgan, George*; Morgan, J.R.: **JURASSIC INTRUSIVES OF THE COYOTE MOUNTAINS, WESTERN SALTON TROUGH, SOUTHERN CALIFORNIA AND THEIR RELATIONSHIP TO THE NAZAS ARC OF NORTHERN MEXICO**

SESSION NO. 22

T5. Recent Advances in Cordilleran Tectonic Evolution—2: Cenozoic (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

Booth #

- 22-1 44 Malik, Alysala M.*; Fisher, Will Sparhawk; Gross Almonte, Nicholas; Garver, John I.; Davidson, Cameron: **U-PB DATING OF DETRITAL ZIRCON FROM TURBIDITES OF THE CHUGACH AND PRINCE WILLIAM TERRANES IN PRINCE WILLIAM SOUND, ALASKA: IMPLICATIONS FOR THE SIGNIFICANCE OF THE CONTACT FAULT SYSTEM AS A TERRANE BOUNDARY**
- 22-2 45 Gross Almonte, Nicholas*; Fisher, Will S.; Malik, Alysala M.; Garver, John I.; Davidson, Cameron: **AGE AND PROVENANCE OF THE UPPER CRETACEOUS TO PALEOCENE VALDEZ GROUP OF THE CHUGACH TERRANE FROM THE RICHARDSON HIGHWAY AND NORTHERN PRINCE WILLIAM SOUND, ALASKA**
- 22-3 46 Fisher, Will S.*; Pope, Mollie D.; Malik, Alysala M.; Garver, John I.; Davidson, Cameron: **ZIRCON FACIES IN THE PALEOCENE-EOCENE ORCA GROUP INDICATE A PROVENANCE LINK TO THE CHUGACH TERRANE, PRINCE WILLIAM SOUND, ALASKA**
- 22-4 47 Pope, Mollie D.*; Fisher, Will S.; Malik, Alysala M.; Garver, John I.; Davidson, Cameron: **PROVENANCE OF SANDSTONE CLASTS FROM CONGLOMERATE OF THE PALEOCENE-EOCENE ORCA GROUP IN PRINCE WILLIAM SOUND, ALASKA**
- 22-5 48 Clark, Kenneth P.*: **STRATIGRAPHY, GEOCHRONOLOGY, AND FAULTING IN THE SOUTHERN CRESCENT FORMATION, OLYMPIC PENINSULA, WASHINGTON STATE**
- 22-6 49 Shekut, Samuel J.*; Licht, Alexis: **INVESTIGATING THE UPLIFT CHRONOLOGY OF THE OLYMPIC MOUNTAINS WITH SEDIMENTARY PROVENANCE PROXIES**

- 22-7 50 McLaughlin, R.J.*; Sharman, G.R.; Malkowski, M.A.; Vazquez, J.A.; Elder, W.P.; Orchard, D.M.; Stanley, R.G.; Ernst, W.G.; Bawcom, J.: **PROBABLE UNROOFING OF THE CENTRAL BELT OF THE FRANCISCAN COMPLEX RECORDED BY NEWLY RECOGNIZED UPPER CRETACEOUS TO LOWER TERTIARY(?) FOREARC DEPOSITS WEST OF UKIAH BASIN, CALIFORNIA**
- 22-8 51 Tepper, Jeffrey H.*; Clark, Kenneth P.: **INITIATION OF THE CASCADE ARC BY NORTHWARD MIGRATION OF THE FARALLON SLAB**
- 22-9 52 Couch, Sam*; Davis, Peter: **FINDING SOURCE REGIONS FOR OLIGOCENE WELDED TUFF CLASTS IN PUGET SOUND, AND IMPLICATIONS TO LITHOSPHERIC BLOCK ROTATIONAL MODELS**
- 22-10 53 Fonseca-Martínez, A.B.*; Iriondo, Alexander: **ARC MIGRATION DURING THE LATE CRETACEOUS TO EOCENE: GEOCHRONOLOGY OF GRANITOIDS FROM NORTHWESTERN MEXICO**
- 22-11 54 Dragovich, Joe D.*; MacDonald, James H.; Mahan, Shannon A.; Anderson, Megan; DuFrane, S. Andrew; Koger, Curtis J.; Smith, Daniel T.; Mavor, Skyler P.; Saltonstall, Jennifer H.: **CASCADE PROVENANCE OF NON-GLACIAL HOLOCENE AND PLEISTOCENE SANDS IN THE CASCADE FOOTHILLS AND PUGET LOWLANDS OF KING AND SNOHOMISH COUNTIES, WASHINGTON—A RICH HISTORY OF SNOQUALMIE, SKYKOMISH AND PILCHUCK RIVER BASIN DEVELOPMENT AND NEOTECTONICS DURING THE QUATERNARY**
- 22-12 55 Torres Andrade, Eneas*; Miller, D.E.; Montejo, Carlos; James, Robert N.; Moreno, Jesus Eduardo; Mayence, C. Ellery; Torres, Noe A.: **FIELD EVIDENCE FOR EARLY MIOCENE SYNVOLCANIC EXTENSION NORTH OF THE SAN ANDREAS AND GARLOCK FAULTS, WESTERN TEHACHAPI MTNS. AND EASTERN SAN EMIGDIO MTNS. CA,**
- 22-13 56 McCosby, Joseph*; Lee, Jeffery: **LATE MIOCENE EXTENSION AND PLIOCENE SINISTRAL SLIP IN THE MINA DEFLECTION: FIELD STUDIES IN THE HUNTOON MOUNTAINS, CALIFORNIA-NEVADA**

SESSION NO. 23

T9. Tectonic Processes in Cordilleran Arcs (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

Booth #

- 23-1 57 Barth, A.P.*; Jacobson, Carl E.; Wooden, J.L.; Grove, Marty: **AGE OF MYLONITIZATION IN THE MILL CANYON WINDOW AND CRETACEOUS-PALEOCENE REGIONAL DEFORMATION ALONG THE VINCENT THRUST IN THE SAN GABRIEL MOUNTAINS, SOUTHERN CALIFORNIA**
- 23-2 58 Flores, Celeste*; Memeti, Vali; Paterson, Scott: **ZIRCON GEOCHRONOLOGY AND PETROLOGY OF THE MIGRATING TARANA INTRUSIVE COMPLEX, BATHURST BATHOLITH, AUSTRALIA**

SESSION NO. 24

T10. Crystal Windows into Igneous Processes (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

Booth #

- 24-1 59 Lubbers, Jordan*; Kent, Adam J.R.; Tepley, Frank; Szymanowski, Dawid: **DIFFUSION CHRONOMETRY IN SANDINE: HELPING UNRAVEL THERMAL HISTORIES OF LARGE SILICIC MAGMA RESERVOIRS**
- 24-2 60 Thomas, Emily M*; Kent, Adam J.R.: **USING DIFFUSION CHRONOMETRY TO PREDICT VOLCANIC BEHAVIOR AT MOUNT HOOD, OR**
- 24-3 61 Rocco, Nicole*; Kent, Adam J.R.; Cooper, Kari M.; Deering, Chad D.; Gravley, Darren: **GEOCHEMICAL EVOLUTION THROUGH A FULL CALDERA CYCLE: TAUPO VOLCANIC ZONE, NZ**

- 24-4 62 Angulo, Alejandra*; Scheland, Cullen L.; Memeti, Vali: **PETROLOGY OF MAGMATIC ENCLAVES AND MAFIC DIKES IN THE JACK MAIN CANYON INTRUSIVE SUITE, CENTRAL SIERRA NEVADA**
- 24-5 63 Hayward, Jamie Ann*; Scheland, Cullen L.; Memeti, Vali: **THE NATURE OF TEXTURAL AND COMPOSITIONAL VARIABILITY IN THE LAKE VERNON GRANODIORITE IN WESTERN YOSEMITE NATIONAL PARK, CA**
- 24-6 64 Muth, Michelle*; Wallace, Paul: **HOW DOES SLAB-DERIVED SULFUR AFFECT MAGMA REDOX IN THE SOUTHERN CASCADES? INSIGHTS FROM THE MELT INCLUSION RECORD**
- 24-7 65 Lerner, Allan*; Lee, Lopaka; Gansecki, Cheryl; Wallace, Paul; Nadeau, Patricia A.; Elias, Tamar; Clor, Laura; Kelly, Peter J.; Werner, Cynthia; Moore, Lowell R.: **MAGMA SOURCES, MIXING, AND SULFUR DEGASSING DURING THE 2018 KĪLAUEA FISSURE ERUPTION INFERRED FROM MINERAL AND MELT INCLUSION GEOCHEMISTRY**
- 25-12 77 Szymanski, Mark E.*; Browne, Brandon: **SR AND ND ISOTOPE COMPOSITIONS OF QUATERNARY MAFIC LAVAS OF THE GOLDEN TROUT VOLCANIC FIELD, KERN PLATEAU, SIERRA NEVADA**
- 25-13 78 Browne, Brandon*; Khoury, Regina: **THE COMPOSITIONALLY AND THERMALLY ZONED RHYOLITE ERUPTED FROM LONG CANYON DOME, GOLDEN TROUT VOLCANIC FIELD, KERN PLATEAU, SIERRA NEVADA**
- 25-14 79 Glazner, Allen F.*: **DETAILED MAP AND ANALYSIS OF THE JOINT NETWORK AT DEVILS POSTPILE, CALIFORNIA**
- 25-15 80 Montejo, Carlos*; Torres Andrade, Eneas; Miller, D.E.; Moreno, Jesus Eduardo; Mayence, C. Ellery: **STRATIGRAPHY AND PETROGRAPHY OF EARLY MIOCENE SYNEXTENSIONAL VOLCANIC ROCKS, WESTERN TEHACHAPI MTNS., CA**
- 25-16 81 García Rodríguez, Hermes Martín*; Morán-Zenteno, Dante J.; Martiny, Barbara M.: **GEOCHRONOLOGY AND PETROGENESIS OF THE JAMILTEPEC – PUERTO ESCONDIDO BATHOLITHS: NEW INSIGHTS ON SOUTHERN MEXICO CENOZOIC MAGMATISM**
- 25-17 82 García Hernández, Samantha Yahel*; Morán-Zenteno, Dante J.; Martiny, Barbara M.; Tolson, Gustavo: **GEOCHRONOLOGY AND PETROGENESIS OF THE PUERTO ESCONDIDO-HUATULCO INTRUSIONS IN SOUTHERN MEXICO AND STRUCTURAL ANALYSIS OF THE WESTERN CHACALAPA FAULT SYSTEM**
- 25-18 83 Mcleod, Jennifer R.*; Bohrsen, Wendy A.; Worner, Gerhard: **QUANTIFYING MAGMA RECHARGE AT PARINACOTA VOLCANO, NORTHERN CHILE (52 KA - RECENT)**

SESSION NO. 25**T12. Field, Petrological, and Geochemical Constraints on Magmatic Systems in the Cordillera (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

Booth #

- 25-1 66 Davidson, Cameron*; Garver, John I.: **SEDIMENT ASSIMILATION EXERTS PRIMARY CONTROL ON HF ISOTOPE RATIOS IN THE PALEOCENE-Eocene SANAK-BARANOF PLUTONIC BELT, ALASKA**
- 25-2 67 Garcia, Victor R.*; Stockli, Daniel F.; Davidson, Cameron; Garver, John I.: **CRYSTALLIZATION AGES AND GEOCHEMISTRY OF THE MINERS BAY AND CEDAR BAY PLUTONS, PRINCE WILLIAM SOUND, ALASKA**
- 25-3 68 Noseworthy, Caitlin M.*; Flood, Tim P.; Davidson, Cameron; Garver, John I.: **AGE AND TECTONIC SETTING OF THE PALEOCENE GLACIER ISLAND VOLCANIC SEQUENCE OF THE ORCA GROUP IN PRINCE WILLIAM SOUND, ALASKA**
- 25-4 69 Melone, Alec*; Bohrsen, Wendy A.; Spera, Frank J.: **ORIGIN OF THE LOWER ZONE OF THE KIGLAPAIT LAYERED MAFIC INTRUSION, LABRADOR, CANADA: COMPUTATIONAL CONSTRAINTS ON CRYSTALLIZATION AND MAGMA RECHARGE**
- 25-5 70 Buddington, Andrew M.*; Cheney, Eric S.; Doughty, P. Ted: **CRETACEOUS AND EOCENE MAGMATISM IN THE SOUTHERN PRIEST RIVER CORE COMPLEX (PRC) OF NORTHEASTERN WASHINGTON AND NORTHERN IDAHO**
- 25-6 71 Young, Brianna C.*; Orr, Aleya; Streck, Martin J.: **MINERALOGICAL, GEOCHEMICAL, AND PHYSICAL CHARACTERIZATION OF MID-MIOCENE RHYOLITES IN EASTERN OREGON**
- 25-7 72 Barkoff, Drew William*; Jowitt, Simon: **GEOCHEMICAL EVALUATION AND IGNEOUS PETROGENESIS OF A HYDROTHERMALLY ALTERED EVOLVED RHYOLITE, SOUTHERN WAH WAH MOUNTAINS, UTAH**
- 25-8 73 Filkorn, Harry F.*: **GEOCHEMICAL EVIDENCE FOR A COMMON MAGMATIC SOURCE OF SOME DIFFERENT POST-MARKAGUNT MEGABRECCIA VOLCANIC ROCKS (MIOCENE), HIGH PLATEAUS, SOUTHWESTERN UTAH**
- 25-9 74 Pierce, Margaret C.*; Aird, Hannah M.: **GEOCHEMICAL AND PETROGRAPHIC ANALYSIS OF THE LIGHTS CREEK STOCK IN THE PLUMAS COUNTY COPPER BELT**
- 25-10 75 Davis, Evan*; Plascencia, Natalio; Teasdale, Rachel; Wenner, Jennifer M.: **OLIVINE TRACE ELEMENT INDICATORS OF THERMAL HISTORY AND MANTLE SOURCE COMPOSITIONS FOR PRIMITIVE MAGMAS AT THE POISON LAKE CHAIN, LASSEN REGION**
- 25-11 76 Plascencia, Natalio*; Davis, Evan; Teasdale, Rachel; Wenner, Jennifer M.: **TRACE ELEMENT ANALYSIS OF PLAGIOCLASE IN PRIMITIVE BASALTS AT POISON LAKE CHAIN, LASSEN REGION**

SESSION NO. 26**T16. Landscape Evolution and Tectonic Geomorphology in the Greater Pacific Northwest (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

Booth #

- 26-1 84 von Dassow, Wesley*; Reedy, Tabor; Anderson, Megan; Lau, Todd; Cakir, Recep; Steely, Alexander N.: **CHARACTERIZATION AND NEOTECTONIC INVESTIGATION OF THE TRENCH-NORMAL DOTY FAULT, CHEHALIS BASIN, SW WASHINGTON, USA**
- 26-2 85 Davis, Elizabeth*; Morey, Susannah; Podhaisky, Max: **PAIRING INTERTIDAL SEDIMENTARY EVIDENCE WITH OUTBURST-FLOOD MODELS FOR THE BONNEVILLE LANDSLIDE, COLUMBIA RIVER**
- 26-3 86 Yost, Scott*; VanMiddlesworth, Julie; Chess, Dale: **SEASONAL ANOXIA AND METAL MOBILITY IN THE LOWER COEUR D'ALENE RIVER BASIN**
- 26-4 87 Abramson, Noah F.*; Adams, Kenneth D.: **TIME SCALES AND PROCESSES OF SHORELINE FORMATION IN PLUVIAL LAKES OF THE GREAT BASIN, WESTERN USA**

SESSION NO. 27**T20. Glaciers of the North American West (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 3:30 to 6 PM

Booth #

- 27-1 88 Trcka, Allison*; Fountain, Andrew G.: **ROCK GLACIERS OF THE AMERICAN WEST: RE-ANALYSIS OF ROCK GLACIER INVENTORIES**
- 27-2 89 Glenn, Bryce*; Fountain, Andrew G.; Moller, Delwyn: **VOLUME CHANGE ESTIMATES FOR GLACIERS IN THE WESTERN UNITED STATES USING AIRBORNE RADAR**
- 27-3 90 Kimberly, Elizabeth*; Clark, Doug; Shean, David: **TESTING THE POTENTIAL FOR REPEAT STRUCTURE-FROM-MOTION PHOTOGRAMMETRIC SURVEYS TO DETERMINE MASS BALANCE AND MELTWATER DISCHARGE, EASTON GLACIER, MT. BAKER, WA**

- 27-4 91 Bervid, Heather D.*; Meigs, Andrew: **GLACIO-FLUVIAL RESPONSE AND SEDIMENT FLUX IN SOUTHEAST ALASKA DURING THE HISTORIC PARAGLACIAL PERIOD**
- 27-5 92 Francis, Sarah W.*; Clark, Doug; Farley, Ken A.; Amos, Colin B.; Bierman, Paul R.: **QUANTIFYING THE MAGNITUDE AND SPATIAL VARIABILITY OF BEDROCK EROSION BENEATH THE SISTERS GLACIER, WASHINGTON, USING COSMOGENIC ³HE CONCENTRATIONS**
- 27-6 93 Cross, Julian M.*; Fountain, Andrew G.: **GLACIAL MELT WATER MODELING TO SIMULATE STREAMFLOW AND LAKE LEVELS IN TAYLOR VALLEY, ANTARCTICA**
- 27-7 94 Lechler, Alex R.*; Couch, Sam; Schomber, Orion; Huntington, Katharine W.; Schauer, Andrew J.: **A PRELIMINARY LATE-LAST-GLACIAL-PERIOD PALEOTEMPERATURE RECORD FOR SUMMER LAKE, OR FROM CLUMPED ISOTOPE THERMOMETRY**
- 27-8 95 Santos, Joao*; Santos-González, Javier; Redondo-Vega, José Maria; Irwin, Jeffrey: **DISTINGUISHING DIAMICTONS USING TILL MACROFABRIC AND GRAIN SIZE ANALYSIS: A CASE STUDY IN THE NORTHERN SERRA DO GERES MOUNTAINS, NW IBERIAN PENINSULA**

- 29-2 1:50 PM Rivas, Jonathan A.; LaMaskin, Todd A.*; Russell, John A.; Schwartz, Joshua J.; Barbeau, David L.: **TESTING EXOTIC COLLISION VERSUS ENDEMIC RE-ACCRETION MODELS FOR LATE JURASSIC (NEVADAN) DEFORMATION IN THE KLAMATH MOUNTAINS PROVINCE: AGE AND PROVENANCE OF SEDIMENTARY ROCKS IN THE RATTLESNAKE CREEK TERRANE**
- 29-3 2:10 PM Raymond, Loren A.*; Ogawa, Yujiro; Maddock*, Marshall E.: **EVALUATING SUBDUCTION ACCRETIONARY COMPLEX ARCHITECTURE AND HISTORY: ACCRETIONARY UNIT TYPES FROM THE FRANCISCAN AND MIURA-BOSO COMPLEXES**
- 29-4 2:30 PM MacDonald, James H.*; Dragovich, Joe D.; DuFrane, S. Andrew; Anderson, Megan; Sauer, Kirsten B.: **GEOCHEMISTRY AND AGE OF THE WESTERN MÉLANGE BELT IN THE CASCADE FOOTHILLS AND EASTERN PUGET LOWLANDS OF WASHINGTON STATE: A RECORD OF MULTIPLE MESOZOIC ARC TERRANE ACCRETIONS**
- 29-5 2:50 PM Magloughlin, J.F.*; Seymour, N.M.; Zaggler, Richard H.: **U-PB DATING OF THE WENATCHEE RIDGE ORTHOGNEISS AND RELATED ROCKS WITH IMPLICATIONS FOR THE TECTONIC HISTORY OF THE NASON TERRANE**
- 29-6 3:10 PM Cobbett, Rose*: **TWOPETE FAULT: A MULTIPLY REACTIVATED STRUCTURE THAT LOCALLY INFLUENCED THE DEVELOPMENT OF THE SOUTHERN SELWYN BASIN IN CENTRAL YUKON**

AFTERNOON ORAL TECHNICAL SESSIONS

SESSION NO. 28

T2. Advances in Seismic Hazard Assessment through Paleoseismic and Tectonic Geomorphic Fault Studies II: In Honor of Ray J. Weldon II, for His Career and Contributions to the Field

1:30 PM, Oregon Convention Center, Room B117-119

Ashley R. Streig, Kate Scharer and Scott E.K. Bennett, Presiding

- 28-1 1:30 PM Weldon, Ray J.*: **IMPORTANCE OF FIELD SCHOOLS AND INTERNATIONAL COLLABORATION IN ACTIVE FAULT STUDIES**
- 28-2 1:50 PM Abdrakhmatov, Kanatbek*: **ACTIVE FAULTS AND SEISMIC HAZARDS OF THE TIEN SHAN, KYRGYZSTAN**
- 28-3 2:10 PM McLaughlin, Win N.F.*; Weldon, Ray J.; Burgette, Reed J.; Paulson, Kathryn T.: **ACTIVE FAULTING IN THE TIEN SHAN, A CONSISTENT STORY OVER 12 MILLION YEARS**
- 28-4 2:30 PM Liu, Jing*; Yuan, Zhaode; Wang, Wei; Weldon, Ray J.; Oskin, Michael; Shao, Yanxiu: **PALEOSEISMIC RECURRENCE ON THE GEOMETRICALLY SIMPLE SECTION OF THE ALTYN TAGH FAULT, NORTHERN TIBET**
- 28-5 2:50 PM Shi, Xuhua*; Weldon, Ray J.; Liu-Zeng, Jing; Wiwegwin, Weerachat; Li, Zhigang; Shao, Yanxiu; Owen, Lewis A.; Weldon, Elise M.; Wang, Yu; Sieh, Kerry; Figueiredo, Paula M.; Yuan, Daoyang: **UNIFORM LATE QUATERNARY SLIP RATE ALONG THE JINGHONG FAULT, SE OF THE EASTERN HIMALAYAN SYNTAXIS**
- 28-6 3:10 PM Pezzopane, Silvio*: **SPECULATIONS ABOUT BEACH EROSION, SEA-LEVEL RISE, STORM SURGE, HURRICANE, EARTHQUAKE, AND TSUNAMI HAZARDS FOR HOMES IN CABO PULMO NATIONAL PARK, EAST CAPE, CALIFORNIA BAJA SUR, MEXICO**

SESSION NO. 29

T4. Recent Advances in Cordilleran Tectonic Evolution—1: Paleozoic to Mesozoic

1:30 PM, Oregon Convention Center, Room C123

James H. MacDonald Jr., Joe D. Dragovich, Megan Anderson, Peter Davis and Jeffrey H. Tepper, Presiding

- 29-1 1:30 PM Clemens-Knott, Diane*; Gevedon, Michelle L.; Duccini, Kalie M.; Aviles, Rodrigo; Boeshart, Erin; Kohler, Zoe Christine: **ENHANCED GEOCHRONOLOGIC RECORD OF SYN-RIFT PLUTONISM AND VOLCANISM IN THE JURASSIC**

SESSION NO. 30

T10. Crystal Windows into Igneous Processes II

1:30 PM, Oregon Convention Center, Room C124

Anne Fulton, Michelle Muth and Nicole Rocco, Presiding

- 30-1 1:30 PM Ackerson, Michael R.*: **QUARTZ AS A RECORD OF MAGMATIC THERMAL HISTORIES: A CASE STUDY FROM THE TUOLUMNE INTRUSIVE SUITE**
- 30-2 1:50 PM Bartley, John M.*; Glazner, Allen F.: **RECRYSTALLIZATION OF APLITE—A FEATURE, NOT A BUG**
- 30-3 2:10 PM Werts, Kevin*; Barnes, Calvin G.; Memeti, Vali; Ratschbacher, Barbara; Williams, Dustin: **RECOGNIZING THE IMPORTANCE OF CRYSTAL ACCUMULATION ON BULK-ROCK COMPOSITIONAL VARIABILITY IN SILICIC SYSTEMS**
- 30-4 2:30 PM Hirt, William H.*: **IMPLICATIONS OF OPEN-SYSTEM PROCESSES AND THE COMPOSITIONS OF LATE-STAGE MELTS FOR THE ORIGIN OF ALKALI-FELDSPAR MEGACRYSTS IN GRANITIC MAGMAS**
- 30-5 2:50 PM Memeti, Vali*; Chambers, Melissa; Oppenheim, Louis F.; Barnes, Calvin G.; Paterson, Scott: **A TALE OF CRYSTAL-MELT MIXING AND LARGE, PROLONGED MAGMA MUSH BODIES TOLD BY PLAGIOCLASE AND K-FELDSPAR MEGACRYSTS FROM THE INNER UNITS OF THE TUOLUMNE INTRUSIVE COMPLEX**

SESSION NO. 31

T20. Glaciers of the North American West

1:30 PM, Oregon Convention Center, Room C125-126

Andrew G. Fountain, Claire Todd and Erin Whorton, Presiding

- 31-1 1:30 PM Young, Joanna; Arendt, Anthony; Hood, Eran; Pettit, Erin C.*: **VARIABILITY AND TRENDS IN GLACIER MASS BALANCE AND FRESHWATER RUNOFF FOR THE JUNEAU ICEFIELD FROM 1980 TO 2016**
- 31-2 1:50 PM Fountain, Andrew G.*; Glenn, Bryce; Gray, Christina; Menounos, Brian: **GLACIER CHANGE IN THE OLYMPIC MOUNTAINS, WA OVER THE PAST AND FUTURE 100 YEARS**
- 31-3 2:10 PM O'Connor, Jim E.*: **ONE-HUNDRED-PLUS YEARS OF GLACIER PHOTOGRAPHY IN THE THREE SISTERS**

WILDERNESS AREA, CENTRAL OREGON CASCADE RANGE

- 31-4 2:30 PM Knuth, Friedrich*; Shean, David; Whorton, Erin: **UNLOCKING THE ARCHIVES: AN AUTOMATED PROCESSING PIPELINE FOR DECADAL-SCALE GLACIER MASS-BALANCE FROM HISTORICAL IMAGERY**
- 31-5 2:50 PM Todd, Claire*; Yannello, Alex; Krehbiel, Logan; Altenberger, Samuel; Basehart, Aerin; Koutnik, Michelle: **SOURCES AND CHARACTER OF DEBRIS COVER ON EMMONS GLACIER, MOUNT RAINIER**
- 31-6 3:10 PM Clark, Douglas H.*; Clague, John J.: **GLACIERS, ISOSTASY, AND EUSTASY IN THE FRASER LOWLAND: A NEW INTERPRETATION OF LATE PLEISTOCENE GLACIATION ACROSS THE INTERNATIONAL BOUNDARY**

FRIDAY, 17 MAY 2019
MORNING ORAL TECHNICAL SESSIONS
SESSION NO. 32
D6. Tectonics of the Coast Mountains and Insular Superterrane: Magmatism, Deformation, and Translation

8:00 AM, Oregon Convention Center, Room B117-119

Margaret E. Rusmore, M. Robinson Cecil, Darrel S. Cowan and Paul J. Umhoefer, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 32-1 8:05 AM Housen, Bernard A.*: **A PALEOMAGNETIC FRAMEWORK FOR THE PALEO GEOGRAPHY OF NORTH AMERICA AND CORDILLERAN TERRANES DURING CRETACEOUS TIME**
- 32-2 8:25 AM Coutts, Daniel S.*; Matthews, William A.; Boivin, Marie-Pier; Englert, Rebecca G.; Hubbard, Stephen M.: **A METASEDIMENTARY ORIGIN FOR MOJAVE-SONORAN DERIVED DETRITUS IN THE NANAIMO BASIN (BC) AND IMPLICATIONS FOR KULA-FARALLON SPREADING**
- 32-3 8:45 AM Dumitru, Trevor A.*: **PROTEROZOIC-AGE DETRITAL ZIRCON IN CA. 85-68 MA INSULAR SUPERTERRANE SANDSTONE WAS LIKELY SOURCED FROM IDAHO, EVIDENCE AGAINST THE BAJA BRITISH COLUMBIA HYPOTHESIS**
- 32-4 9:05 AM Rusmore, Margaret E.*; Woodsworth, Glenn J.; Cecil, M. Robinson; Bollen, Elizabeth M.; Stowell, Harold H.; Gehrels, George E.; Grove, Marty J.: **NEWLY RECOGNIZED LATEST CRETACEOUS TRANSCURRENT FAULTING WITHIN THE COAST MOUNTAINS BATHOLITH (CMB), BRITISH COLUMBIA**
- 32-5 9:25 AM Umhoefer, Paul J.*: **UPDATE OF THE MODERATE BAJA BRITISH COLUMBIA (AKA MOJAVE BC) HYPOTHESIS FOR 1600 KM OF NORTHWARD TRANSLATION FROM ~90 – 40 MA**
- 9:45 AM **BREAK**
- 32-6 10:00 AM Licht, Alexis*; Westerweel, Jan; Roperch, Pierrick; Dupont-Nivet, Guillaume; Win, Zaw; Swe, Hnin Hnin; Kay Thi, Myat; Ugrai, Tamas; Poblete, Fernando; Aung, Day Wa: **THE BURMA PLATELET IN SOUTHEAST ASIA: A CENOZOIC ANALOGUE FOR THE BAJA-BC COASTWISE TRANSLATIONS**
- 32-7 10:20 AM Tikoff, Basil*; Davenport, Kathy K.; Stanciu, Christian: **TECTONIC HISTORY OF CRETACEOUS-PALEOGENE WESTERN IDAHO: EVIDENCE FOR INTERMONTANE AND INSULAR TERRANE COLLISIONS**
- 32-8 10:40 AM Carrera, Anahi*; Dafov, Michelle Nikolay; Gehrels, George E.; Cecil, M. Robinson; Rusmore, Margaret E.; Stowell, Harold H.; Woodsworth, Glenn J.: **ORIGIN OF ZIRCONS IN**
- METASEDIMENTARY ROCKS OF THE SOUTHERN COAST MOUNTAINS BATHOLITH**
- 32-9 11:00 AM Garver, John I.*; Davidson, Cameron: **REVISIONS TO THE STRATIGRAPHY OF THE FLYSCH FACIES OF THE CHUGACH, PRINCE WILLIAM, AND YAKUTAT TERRANES, SOUTHERN ALASKA: IMPLICATIONS FOR RECONSTRUCTION OF BAJA BC**
- 32-10 11:20 AM Waldien, Trevor S.*; Roeske, Sarah M.; Benowitz, Jeffrey A.: **LATE CRETACEOUS UNDERPLATING OF THE KLUANE-COTTONWOOD-MACLAREN SCHIST BENEATH THE NORTHERN COAST MOUNTAINS ARC, YUKON AND ALASKA**

SESSION NO. 33
T15. Magmatism in the Cascades: Variations in Space and Time

8:00 AM, Oregon Convention Center, Room C124

Adam J.R. Kent, John Dilles and Anita L. Grunder, Presiding

8:00 AM **INTRODUCTORY REMARKS**

- 33-1 8:05 AM Weis, Dominique*: **MAGMATISM IN THE CASCADES: GEOCHEMICAL VARIATIONS ALONG A NORTH SOUTH TRANSECT**
- 33-2 8:35 AM Johnson, Emily R.*; Shaffer, Jamie; Cole, Meredith A.; Ramos, Frank C.; Bindeman, Ilya N.; Calvert, Andrew T.: **VARIATIONS IN MANTLE COMPOSITION AND SUBDUCTION CONTRIBUTIONS TO MAFIC MAGMAS IN THE SOUTHERN CASCADE ARC**
- 33-3 8:55 AM Leeman, William P.*; Evarts, Russell C.; Conrey, Richard M.; Streck, Martin J.: **MAGMATIC DIVERSITY IN THE BORING VOLCANIC FIELD, PORTLAND BASIN, OREGON AND WASHINGTON: IMPLICATIONS FOR SUBDUCTION ZONE MAGMATISM**
- 33-4 9:15 AM Wall, Kellie T.*; Grunder, Anita L.; Weis, Dominique: **DIVERGENCE OF GEOCHEMICAL TRACERS IN ANDESITIC SUITES FROM AMBIENT BASALT OVER ~3 M.Y. OF ACTIVITY AT THE GOAT ROCKS VOLCANIC COMPLEX, CASCADE ARC, WASHINGTON**
- 33-5 9:35 AM Templeton, Jeffrey H.*: **PETROLOGIC LINKAGES BETWEEN CONTEMPORANEOUS ASH-FLOW TUFFS AT NEWBERRY VOLCANO, CENTRAL OREGON**
- 9:55 AM **BREAK**
- 33-6 10:10 AM Miller, Robert B.*; Gordon, Stacia M.: **RESPONSE OF A THICK CONTINENTAL ARC TO CHANGING TECTONIC REGIMES: A REVIEW OF THE EVOLUTION OF THE CRYSTALLINE CORE OF THE NORTH CASCADES, WASHINGTON**
- 33-7 10:40 AM Utevsky, Elinor S.*; Dilles, John H.; Olson, Nansen H.; Kent, Adam J.R.: **GEOCHEMISTRY OF CENOZOIC PLUTONIC ROCKS IN THE WESTERN CASCADES: TRACERS OF ARC EVOLUTION & ORE GENESIS**
- 33-8 11:00 AM D'Allura, Jad Alan*; Carlini, Dylan V.; Sweetland, Alec: **LOWER MIOCENE WESTERN CASCADE AND UPPER MIOCENE TO QUATERNARY HIGH CASCADE VOLCANISM IN SOUTHWESTERN OREGON**
- 33-9 11:20 AM Kent, Adam J.R.*; Till, Christy B.; Cooper, Kari M.: **THE INITIATION OF VOLCANIC ERUPTIONS IN THE CASCADE RANGE**

SESSION NO. 34
T25. Geologic Hazards: Hazard Maps, Risk Analysis and Reduction, and Long-term Landscape Evolution

8:00 AM, Oregon Convention Center, Room C123

William J. Burns, Nancy Calhoun, Christina A. Appleby, Adam M. Booth, Susan Shaw, Dan H. Shugar and Scott F. Burns, Presiding

- 34-1 8:00 AM Forson, Corina*; Eungard, Daniel W.; Coe, Dan: **IF YOU FEEL AN EARTHQUAKE GET TO HIGH GROUND! TSUNAMI HAZARD MAPS FOR WASHINGTON COMMUNITIES**

FRIDAY, 17 MAY

- 34-2 8:20 AM Morkner, Paige*; Housen, Bernard; Grossman, Eric; Caplan-Auerbach, Jackie: **POTENTIAL CASCADIA PALEOTSUNAMI DEPOSIT IN SHIP HARBOR MARSH, ANACORTES, WASHINGTON**
- 34-3 8:40 AM Dolcimascolo, Alexander*; MacInnes, Breanyn; Szeliga, Walter M.; Norford, Benjamin B.; Jeffries, Catherine; Ely, Lisa L.: **DEFINING HISTORICAL EARTHQUAKE RUPTURE PARAMETERS AND PROPOSED SLIP DISTRIBUTIONS THROUGH TSUNAMI MODELING IN SOUTH-CENTRAL CHILE**
- 34-4 9:00 AM Appleby, Christina A.*; Bauer, John: **FLOOD RISK ASSESSMENT WITHIN THE COLUMBIA CORRIDOR DRAINAGE DISTRICTS, MULTNOMAH COUNTY, OREGON**
- 34-5 9:20 AM VanArendonk, Nathan*: **MAPPING FLOOD HAZARDS FOR FUTURE SEA LEVEL RISE ALONG RUSTON WAY, TACOMA, WA**
- 34-6 9:40 AM Roberts, Jed*; Williams, Matt: **A SYSTEMATIC APPROACH TO BUILDING-SCALE GEOHAZARD RISK ASSESSMENTS IN OREGON**
- 10:00 AM **BREAK**
- 34-7 10:15 AM Rubin, Jeffrey N.*: **CONNECTING HAZARDS RESEARCH AND GEOLOGIC MAPS TO RISK REDUCTION**
- 34-8 10:35 AM Calhoun, Nancy*; Burns, William J.; Franczyk, Jon J.: **LANDSLIDE HAZARD AND RISK STUDY IN THE CITIES OF EUGENE-SPRINGFIELD, CENTRAL LANE COUNTY, OREGON**
- 34-9 10:55 AM Schilter, Joseph*; Ely, Lisa L.; Powell, Jack: **IDENTIFYING KEY FACTORS OF TRANSLATIONAL LANDSLIDES IN THE YAKIMA FOLD BELT**
- 34-10 11:15 AM Struble, William*; Roering, Joshua; Black, Bryan; Burns, William J.; Calhoun, Nancy; Wetherell, Logan R.: **TEMPORAL CLUSTERING OF LANDSLIDE-DAMMED LAKES IN WESTERN OREGON USING DENDROCHRONOLOGY**
- 34-11 11:35 AM Burns, Scott F.*: **LESSONS LEARNED ABOUT SLOPE STABILITY AND EROSION OF THE FOREST FIRE IN THE COLUMBIA GORGE, OREGON OF 1991: IMPLICATIONS FOR THE EAGLE CREEK FIRE OF 2017**

SESSION NO. 35

T33. Geoscience Education Research and Practice: Hands-On and Place-Based Learning to the Next Generation Standards

8:00 AM, Oregon Convention Center, Room C125-126

Robyn Mieko Dahl, Natalie Bursztyn, Katrien J. van der Hoeven Kraft, Nancy A. Price, Daina Hardisty, Andrew Hillt and Eriks Puris, Presiding

- 35-1 8:00 AM Faust, Megan Thackeray Scott*: **IMPLEMENTING A CALDERA FORMATION ACTIVITY IN INTRODUCTORY GEOSCIENCE COURSES TO IMPROVE STUDENT UNDERSTANDING OF CALDERA LANDFORMS AND ASSOCIATED VOLCANIC PROCESSES**
- 35-2 8:20 AM Collins, Trevor*; Davies, Sarah J.; Marshall, Anita M.; Atchison, Chris: **EXPLORING REMOTE ACCESS TO FIELD AND LAB-BASED LEARNING THROUGH MOBILE AND ONLINE TECHNOLOGIES**
- 35-3 8:40 AM Collins, Larry*: **EXAMINING STUDENT VIEWS OF SCIENCE AND PEER REVIEW: HIGHLIGHTING THE NEED FOR CRITICAL REALISM IN GER**
- 35-4 9:00 AM Sethi, Parvinder*; Edgell, Rebecca; May, Michaela: **TEACHING AND LEARNING WITH TECHNOLOGY [TILT] – GIGAPANS, DRONES AND 3D MODELS**
- 35-5 9:20 AM Smith, Joshua B.*; Gilliam, Ashley E.; Call, Eric; Swenson, Kristin Lee: **PHENOMENON QUESTS™: FIELDTRIP-BASED IMMERSIVE EXPERIENCES TO COMMUNICATE CORE IDEA CONTENT USING THREE-DIMENSIONAL STANDARDS**
- 35-6 9:40 AM Salisbury, Morgan*: **GEOLOGY IN COLORS: USING SIMPLIFIED, COLORABLE GEOLOGIC MAPS AS A VISUAL AND INTERACTIVE TOOL TO DEMONSTRATE THE**

FUNDAMENTALS OF WHATEVER GEOLOGY CLASS YOU TEACH

10:00 AM **BREAK**

- 35-7 10:15 AM Carlson, Steve*: **HANDS ON BOWENS REACTION SERIES**
- 35-8 10:35 AM Bill, Nilo*: **TEACHING FIELD-BASED GEOSCIENCE AT THE HIGH SCHOOL LEVEL: SUCCESSES, AREAS FOR GROWTH AND APPLICATION TO POST-SECONDARY EDUCATION**
- 35-9 10:55 AM Crabtree, Stephen*: **SIX YEARS OF GEOSCIENCE OUTREACH TO ELEMENTARY AND MIDDLE SCHOOL STUDENTS IN RURAL, WESTERN MINNESOTA: MORE THAN SHOW-AND-TELL**
- 35-10 11:15 AM Dahl, Robyn Mieko*: **USING SOCIAL NETWORK ANALYSIS TO IDENTIFY INEQUITIES IN GEOSCIENCE**
- 35-11 11:35 AM Westby, Elizabeth*; Melander, Sonja M.; Groskopf, Abigail; Allstadt, Kate E.; Driedger, Carolyn L.: **GEOGIRLS ROCK! STEM-BASED OUTDOOR PROGRAM AT MOUNT ST. HELENS ENCOURAGES AND SUPPORTS THE NEXT GENERATION OF SCIENTISTS**

POSTER TECHNICAL SESSIONS

SESSION NO. 36

D1. Economic Geology (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 1:30 to 3:30 PM

Booth #

- 36-1 1 Ingraffia, James T.*; Ressel, Michael: **LITHIUM AT THACKER PASS DEPOSIT, MCDERMITT CALDERA, NORTH-CENTRAL NEVADA: HYDROTHERMAL OR FOSSIL BRINE ORIGIN IN AN INTRACALDERA LACUSTRINE SETTING?**
- 36-2 2 Blakemore, Daniel*; McLeod, Claire; Krekeler, Mark P.S.: **AN INVESTIGATION OF MINERAL ASSOCIATIONS FROM THE TYPE 2 ORE FROM THE ROUND MOUNTAIN GOLD MINE, NEVADA**
- 36-3 3 Bourret, Andre*; Lopez, Alexis R.; Aird, Hannah M.: **CHARACTERIZING THE PARAGENETIC SEQUENCE OF ALTERATION AT THE MOONLIGHT IOCG DEPOSIT, PLUMAS COUNTY, CA**
- 36-4 4 Lopez, Alexis R.*; Bourret, Andre; Aird, Hannah M.: **MINERALIZATION AND ALTERATION OF THE MOONLIGHT (IOCG) DEPOSIT, TAYLORSVILLE DISTRICT OF THE PLUMAS COUNTY COPPER BELT, CA**
- 36-5 5 Bather, Harpreet Kaur*; Shapiro, Russell; Nuester, Jochen: **A HYDROCARBON SEEP MODEL OF LARGE BEDDED BARITE DEPOSITS IN THE DEVONIAN SLAVEN CHERT OF CENTRAL-NORTHERN NEVADA**
- 36-6 6 Hamida, Diab; Sturmer, Daniel M.; Abdelmajid, Chouabbi; Krekeler, Mark P.S.*: **A PRELIMINARY X-RAY FLUORESCENCE INVESTIGATION OF THE DJEBEL HAD IRON FORMATION (DHIF) OF NORTHEASTERN ALGERIA**

SESSION NO. 37

D2. Geohydrology and Geomorphology of the Coast (Posters)

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 1:30 to 3:30 PM

Booth #

- 37-1 7 Maverick, Avery*; Grossman, Eric; Crosby, Sean C.: **WAVE RUNUP AND COARSE SEDIMENT TRANSPORT ON MIXED-SEDIMENT BEACHES FOR COASTAL EVOLUTION MODELING**
- 37-2 8 White, Christopher J.*; Marshall, Jeffrey S.; Hamel, Jennifer; Miller, Caleb N.; Zohbe, Noah M.; McKinney, Emmons; Litchfield, Nicola J.: **FIELD INVESTIGATION OF UPLIFTED PLEISTOCENE MARINE**

- TERRACES, RIVERSDALE BEACH TO FLAT POINT, SOUTHERN WAIRARAPA COAST, NORTH ISLAND, NEW ZEALAND**
- 37-3 9 McInnis, Margarita E.*; Pinter, Nicholas: **QUATERNARY UPLIFT OF SANTA CATALINA ISLAND FROM MARINE TERRACES AND TERRACE DEPOSITS**
- 37-4 10 Sweetkind, D.S.*; Cromwell, Geoffrey; Henson, Wesley R.; Stanko, Zachary: **3D FRAMEWORK MODELS AND SEDIMENTATION CONTROLS IN BASINS FROM THE NORTHERN AND CENTRAL CALIFORNIA COAST**
- 37-5 11 Langenheim, V.E.*; Cromwell, Geoffrey; Sweetkind, D.S.; Morita, Andrew; Roberts, M.A.: **Basin Geometry and Evolution Along the Maacama Fault, Russian River Watershed, Northern California**
- 37-6 12 Cromwell, Geoffrey*; Sweetkind, Donald S.; Langenheim, Victoria: **THREE-DIMENSIONAL HYDROGEOLOGY OF THE RUSSIAN RIVER WATERSHED, CALIFORNIA**
- 37-7 13 Morales Murillo, Jesus Martin*; Ochoa Granillo, Jose Alfredo: **HYDROLOGICAL BALANCE EVALUATION OF THE SUB-BASINS BACOACHI RIVER, LA MANGA STREAM AND LOS PÁPAGOS STREAM AT THE UPPER MIDDLE REGION OF THE BACOACHI RIVER BASIN IN SONORA, MEXICO**

SESSION NO. 38**D4. Paleontology (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 1:30 to 3:30 PM

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| 38-1 | 14 | Spencer, Patrick K.*: WASHINGTON COPROLITES AGAIN (AND AGAIN) |
| 38-2 | 15 | Barton, Bax R.*; Mara, Neil; Adams, Betty L.: UPDATED CHRONOLOGY OF THE CAMELOPS HESTERNUS SPECIMEN FROM THE COYOTE CANYON/SOUTH HILL-MAULDIN SITE, BENTON COUNTY, WASHINGTON |
| 38-3 | 16 | Maughan, Anne E.*; Last, George V.; Austin, Curtis J.; Barton, Bax R.: LITHOLOGY AND PROVENANCE OF ERRATIC PEBBLES FOUND AT THE COYOTE CANYON MAMMOTH SITE, KENNEWICK, WASHINGTON |
| 38-4 | 17 | Retallack, Gregory J.*: OREGON HAS TWO DINOSAURS |
| 38-5 | 18 | Hohman, Charlotte J.H.*; Dooley, Alton C.: THE SMALL MAMMAL FAUNA FROM THE PLEISTOCENE HARVESTON LOCALITY, RIVERSIDE COUNTY, CALIFORNIA |

SESSION NO. 39**T15. Magmatism in the Cascades: Variations in Space and Time (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 1:30 to 3:30 PM

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| 39-1 | 19 | O'Hara, Daniel*; Karlstrom, Leif; Ramsey, David W.: VOLCANIC TOPOGRAPHY COVARIES WITH SUBSURFACE MAGMATIC STRUCTURES THROUGH TIME IN THE CASCADES ARC OF THE WESTERN U.S. |
| 39-2 | 20 | Patridge, Karyn A.*; Hammond, Paul E.: GEOCHEMISTRY AND TEXTURAL CHARACTERISTICS OF THE BUMPING LAKE PLUTON: A RESURGENT BATHOLITH OF THE MOUNT AIX CALDERA, CENTRAL WASHINGTON |
| 39-3 | 21 | Grad-Kaimal, Rajan*; Organ, Robyn; Sullivan, Lexus S.; Foster, Amanda K.; Tepper, Jeffrey H.: PETROLOGIC INVESTIGATION OF THE NORTHCRAFT FORMATION, SOUTHWEST WASHINGTON: INSIGHTS INTO EARLY CASCADES ARC MAGMATISM |
| 39-4 | 22 | Gapasin, William*; Wall, Kellie T.; Grunder, Anita L.: THE CLEAR FORK LAVA: A VIGOROUS LAST GASP OF THE PLIOCENE-PLEISTOCENE GOAT ROCKS VOLCANIC COMPLEX, SOUTHERN WASHINGTON CASCADES |
| 39-5 | 23 | Kent, McKayla*; Kent, Adam J.R.: PETROLOGY AND GEOCHEMISTRY OF VOLCANIC ROCKS FROM THE BASEMENT BENEATH MOUNT HOOD, CASCADE RANGE, OR |

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| 39-7 | 25 | Skocko, Noel E.*; Waters, Laura E.: SHIFTING MANTLE SOURCES BENEATH SOUTH SISTER VOLCANO (OR)? |
| 39-8 | 26 | Landoni, Katherine*; Kent, Adam J.R.: TIMING OF VOLCANISM IN CENTRAL OREGON: DATING THE TAM MCARTHUR RIM VOLCANO |
| 39-9 | 27 | Thomson, Katherine*; Waters, Laura; Andrews, Benjamin J.; Frey, Holli M.: CREATING A STRATOVOLCANO: PETROGENESIS OF THE CONE-BUILDING LAVAS OF SOUTH SISTER VOLCANO, OR |
| 39-10 | 28 | Crabtree, Stephen*; Chute, Justin; Dahle, Jordan: A MAPPING, PETROGRAPHY, AND GEOCHEMISTRY-BASED STUDY OF VOLCANIC UNITS IN THE SOUTHERN OREGON CASCADES |
| 39-11 | 29 | Sanchez, Rachele Pearl*; Bohrsen, Wendy A.: QUANTIFYING THE MAGMA MIXING EVENT OF THE 1915 LASSEN PEAK, CALIFORNIA ERUPTION USING THE MAGMA CHAMBER SIMULATOR |
| 39-12 | 30 | Robson, Amy*; Rodriguez, Angelica; Teasdale, Rachel: VERTICAL VARIATION OF HYDROTHERMAL ALTERATION FROM THE CORE TO UPPER FLANK OF ANCIENT MT. TEHAMA, LASSEN VOLCANIC CENTER |
| 39-13 | 31 | Danielsen, Jacob M.*; Portner, Ryan A.; Johnson, Beth; Clague, David A.; Gurioli, Lucia; Tan, Angela: PHREATOMAGMATIC ASH FROM DEEP-MARINE CALDERA ERUPTIONS ON AXIAL SEAMOUNT, JUAN DE FUCA RIDGE |

SESSION NO. 40**T24. Geologic Maps: Essential Framework Tools Used to Solve Practical Earth Science Problems (Posters)**

9:00 AM, Oregon Convention Center, Exhibit Hall B

Authors will be present from 1:30 to 3:30 PM

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| 40-2 | 33 | Attia, Snir*; Paterson, Scott R.: DATA-RICH, GIS-BASED SYNTHESIS OF MAP, FIELD, AND ANALYTICAL DATA: BEDROCK GEOLOGY OF THE CENTRAL SIERRA NEVADA, EASTERN CALIFORNIA |
| 40-3 | 34 | Taylor, Stephen B.*: SURFICIAL MAP CRITERIA FOR UNGLACIATED LANDSCAPES IN THE OREGON COAST RANGE: ANALOG APPLICATION FROM THE CENTRAL APPALACHIAN MOUNTAINS |
| 40-4 | 35 | Doak, Suzanna*; O'Connor, Jim E.; Haugerud, Ralph A.: MAPPING THE MISSOULA FLOODS, EASTERN WASHINGTON |
| 40-5 | 36 | McClaughry, Jason D.*; Gaylord, David R.; Ferns, Mark L.; Felt, Kristopher Jerome; Spall, Brian N.; Cahoon, Emily B.: SEDIMENTARY AND VOLCANIC EVOLUTION OF THE MIDDLE EOCENE CLARNO FORMATION, NE OREGON |
| 40-6 | 37 | Cannon, Charles M.*; O'Connor, Jim E.: NEW CONSTRAINTS ON THE TIMING OF NEOGENE FILLING AND INCISION OF THE DALLES BASIN, OREGON AND WASHINGTON |
| 40-7 | 38 | Zuza, Andrew V.*; Henry, Christopher D.; Ressel, Michael W.; Thorman, Charles H.; Dee, Seth M.; Long, Sean P.: PROBING THE CORE OF THE NORTH AMERICAN CORDILLERA -- INSIGHTS FROM GEOLOGIC MAPPING OF THE PEQUOP MOUNTAINS, NE NEVADA |
| 40-8 | 39 | Hairston-Porter, Rob*; Appleby, Christina A.; Bauer, John; Burns, William J.: PRELIMINARY UPDATED GEOHAZARD MAPPING FOR EARTHQUAKE RISK ANALYSIS, COLUMBIA COUNTY, OREGON |
| 40-9 | 40 | Mosolf, Jesse G.*; Bobst, Andrew L.: UTILIZING GEOLOGIC MAPPING TO INVESTIGATE HYDROGEOLOGY AND ASSESS NATURAL HAZARDS IN THE HISTORIC VIRGINIA CITY MINING DISTRICT, SOUTHWEST MONTANA |

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- 40-11 42 Conrey, Richard M.*; Deligne, Natalia Irma; Wozniak, Karl; Welch, Robert; Castronovo, Drew; Bourque, Ethan; Huq, Anika C.; Langston, Jada; Shields, Jessica; Skeldon, Christopher: **SAND MOUNTAIN VOLCANIC FIELD UPDATE: COMPLETION OF A FIVE DECADE MAPPING PROJECT IN THE HIGH CASCADE RANGE OF OREGON**
- 40-12 43 Yakovlev, Petr V.*: **MONTANA'S 1:100K SEAMLESS GEODATABASE: PROGRESS, METHODS, AND DERIVATIVES**
- 40-13 44 Steely, Alexander N.*; Schuster, J. Eric: **UPDATED GEOLOGIC MAP OF THE PORT TOWNSEND 1:100,000-SCALE QUADRANGLE, WASHINGTON**
- 40-14 45 Dvorak, Chanel Leigh*; Streck, Martin J.; Isom, Shelby Lee; Cruz, Matthew; Standhaft, Daniel: **NEW GEOLOGIC MAPPING ALONG THE NE HARNEY BASIN CORRIDOR, EASTERN OREGON PROVIDES IMPORTANT LOCAL DATA FOR REGIONAL MAGMATIC HISTORIES**
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- 40-16 47 Sadowski, Andrew J.*; Keller, William E.; Polenz, Michael; Lau, Todd; Cakir, Recep; Nesbitt, Elizabeth A.; Tepper, Jeffrey H.; DuFrane, S. Andrew; Legorreta Paulin, Gabriel: **GEOLOGIC MAP OF THE CENTRALIA 7.5-MINUTE QUADRANGLE, LEWIS COUNTY, WASHINGTON**
- 40-17 48 Polenz, Michael; Ostrom, Brian*; Lau, Todd; Sadowski, Andrew J.; Blanks-Bennett, Angela L.; Cakir, Recep; Tepper, Jeffrey H.; Legorreta Paulin, Gabriel; Nesbitt, Elizabeth A.; DuFrane, S. Andrew: **GEOLOGIC MAP OF THE VIOLET PRAIRIE 7.5-MINUTE QUADRANGLE, THURSTON AND LEWIS COUNTIES, WASHINGTON**
- SESSION NO. 41**
T25. Geologic Hazards: Hazard Maps, Risk Analysis and Reduction, and Long-term Landscape Evolution (Posters)
9:00 AM, Oregon Convention Center, Exhibit Hall B
Authors will be present from 1:30 to 3:30 PM
Booth #
- 41-1 49 Kingen, Kara*; Leshchinsky, Ben; Booth, Adam M.: **CLIMATIC CONTROLS ON THE KINEMATICS OF THE HOOSKANADEN EARTHFLOW, CURRY COUNTY, OREGON**
- 41-2 50 Kite, J. Steven*; Sharma, Maneesh; Donaldson, Kurt; Thompson, James A.; Maxwell, Aaron Edward; Hanwell, Elizabeth; Maynard, Shannon Marie; Slobe, Joel: **A LANDSLIDE RISK ASSESSMENT PROJECT FOR THE MOUNTAIN STATE OF WEST VIRGINIA**
- 41-3 51 Vascik, Bryce*; Booth, Adam M.; Buma, Brian: **PREDICTING DEBRIS FLOW INUNDATION VIA SEMI-EMPIRICAL MODELING IN SE ALASKA**
- 41-4 52 Matos-Llavona, Pedro*; Ely, Lisa L.; MacInnes, Breanyn; Dura, Tina; Cisternas, Marco; Tang, Hui; Dolcimascolo, Alex; Bruce, David: **MAPPING AND RECONSTRUCTING THE PALEOTSUNAMI RECORD IN A NEW SITE IN QUEULE, SOUTH-CENTRAL CHILE**
- 41-5 53 Pacheco, Marcus*; Plattner, Alain: **GEOPHYSICAL INVESTIGATION OF THE ROYAL ARCHES MEADOW ROCK AVALANCHE IN YOSEMITE VALLEY – CA**
- 41-6 54 Dorn, Kathryn Margo*; Braunmiller, Jochen; Thompson, Glenn: **SEISMIC SIGNALS OF STORM-GENERATED FLASH FLOODS TRAVELING ALONG BLACK CANYON CREEK, ARIZONA**
- 41-7 55 Purcell, Benjamin G.*; Glover, James F.; Crocker, Kelsey: **AUTOMATED DETECTION OF DISTURBED LAND SURFACE RELATED TO OIL AND GAS DEVELOPMENT**
- 41-8 56 Lade, Andrew John*: **ERODING NARRATIVES: APPLYING THE NARRATIVE POLICY FRAMEWORK TO A COASTAL EROSION NARRATIVE SHIFT**
- SESSION NO. 42**
T33. Geoscience Education Research and Practice: Hands-On and Place-Based Learning to the Next Generation Standards (Posters)
9:00 AM, Oregon Convention Center, Exhibit Hall B
Authors will be present from 1:30 to 3:30 PM
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- 42-1 57 Salisbury, Morgan*: **GEOLOGY IN COLORS: USING SIMPLIFIED, COLORABLE GEOLOGIC MAPS AS A VISUAL AND INTERACTIVE TOOL TO ENGAGE A WIDE AUDIENCE IN EARTH SCIENCE PRINCIPLES**
- 42-2 58 Ng-Breckwoldt, Victoria S.*; Dahl, Robyn Mieke: **AN ANALYSIS OF GEOSCIENCE KNOWLEDGE: WHAT WE KNOW VS. WHAT EXPERTS THINK WE SHOULD KNOW**
- 42-3 59 Van Wagoner, Nancy A.*: **EPIC TALES OF EARTH: AN ART-SCIENCE INTEGRATION POST RENAISSANCE**
- 42-4 60 Price, Nancy A.*; Wells, Jennifer; Granshaw, Frank: **CAMP NANO: AN NGSS-ALIGNED MIDDLE SCHOOL SUMMER CAMP FOR A MACRO-TO-NANO SCALE OBSERVATIONAL INVESTIGATION WITH A VIRTUAL FIELD ENVIRONMENT COMMUNICATION**
- 42-5 61 Carlson, Steve*: **HANDS ON OROGENICS USING THE CASCADES AS A MODEL**

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CODE OF CONDUCT AT GSA EVENTS



GSA is a premier, international scientific society whose goals and mission are to advance geoscience research and discovery, to provide service to society and to promote stewardship of Earth, within and beyond the geosciences profession. In fulfilling its goals and mission, and in keeping with its Diversity Position Statement, GSA meetings foster the exchange of scientific ideas, through open and respectful dialogues at oral and poster sessions, field trips, short courses, mentorships and other GSA-supported programs. GSA promotes, provides, expects and endorses a professional and respectful atmosphere and values a diversity of views and opinions.

All registrants, guests, volunteers, exhibitors, GSA staff, service providers, and others in attendance are expected to abide by this GSA Events Code of Conduct, which outlines specific expectations for participants at GSA-supported events and is in addition to the provisions of the GSA Code of Conduct.

Expected Behavior

All registrants, guests, volunteers, exhibitors, GSA staff, service providers, and others in attendance are to:

- Be treated with respect and consideration.
- Be considerate, collegial, and collaborative.
- Communicate openly, with civil attitudes, critiquing ideas rather than individuals.
- Avoid personal attacks directed toward other registrants, guests, volunteers, exhibitors, GSA staff, service providers, and others in attendance.
- Obey the rules and policies of the meeting venue, hotels, GSA contracted facility, or any other venue where your meeting badge and GSA affiliation is likely to be displayed.
- Alert meeting security personnel, GSA staff, or GSA leadership if you notice someone in distress, or perceive a potentially dangerous situation, or witness a dangerous situation.

Procedures to be followed in an emergency situation:

- Evaluate the situation and if appropriate call 911 or activate a local fire alarm.
- Do not endanger yourself. Follow the directions of building security, law enforcement, fire department, military personnel, or GSA staff.
- Initiate first aid if appropriate, so trained and necessary.
- Be as observant as possible in order to communicate to emergency staff.

Unacceptable Behavior includes but is not limited to:

- Harassment, intimidation, or discrimination.

- Physical or verbal abuse of any registrant, guest, volunteer, exhibitor, GSA staff, service provider, or other attendee.
- Disruption of presentations at oral or poster sessions, in the exhibit hall, on field trips, or at other events organized by GSA at the meeting venue, hotels, or other GSA-contracted facilities.
- Audio and video recording, or taking images of an individual's oral presentation without the presenters' permission, is expressly forbidden. Images of posters taken without permission are not allowed. Images of posters may be taken with the explicit consent of the presenter, and images may be acquired only in the presence of the presenter.

Examples of unacceptable behavior include but are not limited to:

- Verbal comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, national origin or any other identified characteristic outlined in the GSA Diversity Position Statement .
- Inappropriate use of nudity and/or sexual images in public spaces or in presentations.
- Intentional, uninvited physical contact of any form.
- Threats (implied or real) of, physical, professional or financial harm.
- Stalking registrants, guests, volunteers, exhibitors, GSA staff, service providers, or others in attendance.

Consequences of Unacceptable Behavior

- Anyone requested to stop unacceptable behavior is expected to immediately cease and desist.
- GSA staff, leadership, security, or law enforcement personnel shall take action(s) deemed necessary and appropriate. Actions may include immediate removal from the meeting or field trip without warning or refund.
- GSA reserves the right to prohibit attendance at any future GSA meeting or other GSA-sponsored event.

Reporting Unacceptable Behavior

If you are being harassed, notice that someone else is being harassed, or have any other concerns, please locate a GSA Staff Member or GSA Leader with a GSA RISE button. You may also email GSA at gsaeventscode@gmail.com.

Always remember that if it is a life-threatening emergency, dial 9-1-1. If you are within the meeting venue or hotel, it is helpful to have someone notify a staff member or building employee if possible to avoid delays with emergency responders.

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