Generous Gift Funds
UO Volcanology Cluster
by Paul Wallace

We are excited to announce that Gwendolyn and Charles Lillis PhD '72—long-time UO advocates, volunteers, and benefactors—have donated $10 million to endow two new faculty positions in the Department of Earth Sciences. Combined with the recent hiring of Thomas Giachetti, these new hires will establish a Volcanology Cluster of Excellence as part of the university’s drive to increase the number of tenured research faculty. This generous gift provides us with an amazing opportunity to elevate the UO’s research capabilities in volcanology and volcanic hazards. UO President Michael Schill said last summer, “I am so delighted that the Lillises have made another amazing investment in our university. Chuck and Gwen have served in virtually every university leadership role one can play, and their support has been inspirational. This gift is a vote of confidence in our top objective of building our academic and research profile.”

We are currently conducting a search for the two new faculty positions. One position is focused on the use of satellite, airborne, and ground-based techniques for monitoring deformation of volcanoes, eruption processes, and the transport of ash and gas in the atmosphere. The other position is focused on numerical modeling of the physics of volcanic plumes, pyroclastic flows, and ash deposition, with applications to human and aviation hazards. We will be interviewing candidates for these positions during winter of 2017. Our department has had a strong volcanology research program since the 1960s when Professor Alexander McBirney assembled and led an internationally prominent research group. Now, thanks to this major gift, we have an opportunity to become the top academic center for the study of volcanoes in the US and one of the top programs worldwide. As one of only five states in the US with active volcanism, and with our proximity to the USGS Cascades Volcano Observatory in Vancouver, Washington, the UO is an ideal location for a national center for research in volcanology.

As part of their gift, the Lillises put forth a $2 million dollar challenge to encourage other donors to join them in investing in our volcanology program’s great potential. Their hope is that future support will expand this cluster to include a third new faculty position focused on geothermal energy, an area that could help sustain our nation’s evolving...
Greetings From the Department Head

Paul Wallace is the new head of the Department of Earth Sciences

It's official! In summer of 2016 we changed our name to “Department of Earth Sciences” to better express the wide range of exciting science being done by our faculty and students. It has been a busy summer and fall for me, as I settled into my new role as department head. Fortunately Josh Roering agreed to continue as associate head, and I am extremely grateful for all that he does for the department. Big thanks to Becky Dorsey for her tireless work as head for the past three years. I’m sure many of you have heard the incredible news that we received an extraordinarily generous gift from Charles and Gwen Lillis to launch our Volcanology Cluster of Excellence (see cover story).

In September 2016 faculty and students attended a spectacular Staples Field Trip to Valles Caldera, Taos Plateau, and San Juan volcanic field led by Mike Dungan (UO) and Ren Thompson (USGS) (see page 6). Dave Sutherland was awarded a prestigious NSF CAREER grant for his innovative study of iceberg motion and melting in Greenland’s glacial fjords (see story on next page). Our faculty and students continue to do world-class research, with about 30 talks and posters presented at the 2016 American Geophysical Union Fall Meeting where we had another wonderful alumni reception thanks to Jenny Riker (MS ’05) and Hannah Dietterich (PhD ’14). We look forward to seeing everyone again next fall!

Paul Wallace
Department Head

Thank You for your generous donations

We are grateful for generous donations by alumni and friends of the department who supported a large number of undergraduate and graduate student scholarship awards in 2016.

**Undergraduate Awards** The Emeritus Faculty Fund provided critical support to all UO students who attended our summer Geology Field Camp. The James C. & Mary Douglas Stovall Award for meritorious performance and promise was shared by Daniel DeBell and Chloe Elliott. The NW Energy Association / AAPG Scholarship went to Taylor Barnhart, Spencer Jones, Kieran McKann, and Megan Mortimer-Lamb. The Walter Youngquist Scholarship for academic achievement and excellence in mentored undergraduate research was awarded to Dylan Carlini, Martin Harris, Geena Little, and Morgan Nasholds.

**Graduate Awards** for excellence in research and teaching went to Dustin Carroll, Madison Meyers, Nick Famoso, David Zacharov, and Win McLaughlin. The Baldwin Fund supported research in geomorphology, environmental geology, and paleontology by Dustin Carroll, Meaghan Emery, Win McLaughlin, Genevieve Perdue, and Dana Reuter. The Johnston Fund supported research in geophysics, structure, and petrology by Gillean Arnoux, Miles Bodmer, Ben Heath, Corey Jarrett, and Brandon Vanderbeek. The Jay M. McMurray Scholarship Fund supported international travel for research in tectonics and geomorphology by Matthew Morris and Sam Shaw. The Staples Fund provided support for research in geochemistry and petrology by Dylan Colon, Allan Lerner, Madison Meyers, Brandon Vanderbeek, and David Zacharov. Many additional contributions to the Department General Fund allowed us to support undergraduate student field trips including the Colorado Plateau trip led by Dave Blackwell, graduate student attendance at professional meetings and workshops, and our weekly department seminar series of distinguished visiting speakers.

Honor Roll of Donors

With gratitude we offer special thanks to our Kimberlite class of donors, who have contributed $100 or more to the department during the past year: Freddie Gustafson ’56, Evelyn ’64 and John Armentrout ’64, ’65, MS ’67, Sharon and Paul Hess ’65, MS ’67; Patricia and John Kerns ’52; Joseph Davis III ’57; Carole and William Schetter MS ’62; Bonnie and Jack West ’57, MS ’61; Sue ’58, MS ’62 and James House ’60; Deborah Cordell; Jason Spiller MS ’58; ExxonMobil Foundation; Elizabeth Stearns; Ann Staley and James Cloyd ’68; June ’70, ’88 and Norman McAtee; Jean ’74 and David McClain ’74; Gail ’68 and Gregory Miles ’68, MA ’73, PhD ’77; Dorothy ’69, MEd ’75, PhD ’90 and M. Allan Kays; Karen Artiaco and John Hart Jr. ’75, MS ’86; Phoebe Atwood ’46; Carole Hickman MS ’68; Katherine McMurray ’63; Sandra Lilligren ’70; Sally Thomas ’58; Ellen MS ’80 and James Leavitt MS ’80; Marilyn PhD ’76 and David Lindstrom PhD ’76; Melanie MS ’81 and Calvin Barnes MS ’78, PhD ’82; Karen and Frank Hladky ’82; Dorothy and Thomas Atwood; Tom Brikowski MS ’83; James Palandri ’87, ’89, PhD ’00; Daria and Christopher Cappucci ’95; Rachel ’00 and Gregory Leo ’74; Karen and Mark Reed; James Tyburczy PhD ’83; Sally Davis ’56; Eric Nelson; Davis Family Trust; Estate of Joseph J. Davis III; Estate of Phoebe Atwood; West Living Trust.
Welcome Matthew Polizzotto

We are delighted to welcome Matt Polizzotto, our newest assistant professor, hired in spring 2016. Matt got his PhD in Environmental Earth System Science at Stanford University, served a stint as Science and Technology Policy Fellow with the AAAS, and has been a faculty member in the Department of Soil Science at North Carolina State University since 2010. Matt is a soil scientist and groundwater chemist developing methods to better understand how natural chemical complexity has an impact on the mobility of contaminants in the subsurface. His research has yielded novel insights into coupled biogeochemical-hydrological processes that govern the distribution of arsenic in contaminated aquifers of Bangladesh, Cambodia, and the southeastern US. Matt is taking a leave of absence for AY 2016–17 to wrap up work in North Carolina. He will move to Eugene in summer of 2017 with his wife, Nadia Singh, an evolutionary geneticist who recently joined the faculty in the UO Department of Biology.

Dave Sutherland Receives NSF CAREER Award

A assistant Professor Dave Sutherland recently received a prestigious National Science Foundation CAREER Award to support his research on ice-ocean interactions in northern polar regions. The grant, titled “Chasing Icebergs: Quantifying Iceberg Motion and Melt in Greenland’s Outlet Glacial Fjords,” provides five years of support for Dave and his students and postdocs to study iceberg dynamics using a combination of field observations and numerical modeling experiments. Dave and his team will track the motion of large deep-keeled icebergs using modern ship- and drone-based surveys. This approach will allow researchers to quantify iceberg melt rates, their movement through the fjord, and eventual dispersal across the shelf into the interior arctic ocean. The group will also collaborate with the UO STEM CORE program to bring results of this research to local middle schools, and help teachers develop new K-12 science curricula. Ultimately the results of the project will lead to improved understanding of iceberg dynamics, which are important for constraining global climate models.

Dream Team in the Front Office!

Business Manager Sandy Thoms and Graduate Coordinator Marla Trox have been in their respective positions for about 1½ years now, running an incredibly well organized, efficient, welcoming, and friendly front office. Rounding out the Dream Team is accountant Dave Stemple. Sandy, Marla, and Dave provide invaluable support to faculty, students, and staff in our increasingly complicated and growing department, and they make it look easy! We are grateful for their many talents, caring attitude, rock solid reliability, and good humor that make it such a pleasure to be part of this dynamic community of researchers and scholars.

Faculty Grants

Continued success in research by our faculty is illustrated by external funding awards. Thirty-nine grants totaling about $7 million are currently active, including (all new since last year):

Becky Dorsey (NSF) “Reconstructing the origins of the Colorado River: an integrative study of the Miocene-Pliocene Bouse formation”

Gene Humphreys (NSF) “Understanding the crustal link between the Columbia River flood basalts and lithospheric foundering”

Qusheng Jin (NASA) “Habitability: from methanogens to minimum energy flux of life”

Qusheng Jin (NSF) “Geomicrobial kinetics: a genome-scale metabolic modeling approach”

Leif Karlstrom (NASA) “Fluvial supraglacial erosion on the Greenland ice sheet as a tracer of spatially and temporally evolving melt and ice sheet dynamics”

Leif Karlstrom (NSF) “Waves in volcanic conduit-crack systems and very long period seismicity at Kilauea Volcano, Hawaii”

Mark Reed (NSF) “Formation of magmatic-hydrothermal veins: interpreting quartz textures and vein mineral assemblages in the Butte, Montana, porphyry copper system”

Alan Rempel (NSF) “Multi-scale models of thermo-mechanical feedbacks on a soft, wet bed”

Josh Roering (NSF) “Clarifying the ingredients and significance of nonlocal versus local sediment transport on steepland hillslopes”

Josh Roering (NSF) “Incorporating hillslope transport into laboratory landscape experiments”

Dave Sutherland (NSF) “CAREER: chasing icebergs: quantifying iceberg motion and melt in Greenland’s outlet glacial fjords”

Dave Sutherland (NSF) “The impact of oceanic forcing on the melting of west Antarctic peninsula glaciers”

Amanda Thomas (NSF) “Using low frequency earthquake families on the San Andreas as deep creep meters”

Doug Toomey (NSF) “Next-generation 3D imaging of the on- and off-axis mantle and crustal magmatic systems at the Endeavour segment”

Doug Toomey (USGS) “Implementation and Development of US West Coast ShakeAlert”
**Faculty News**

**Becky Dorsey**

**Probing the Origins of the Colorado River**

Professor Becky Dorsey is working with MS student Brennan O’Connell, Professor Gene Humphreys, and other collaborators to reconstruct processes that controlled the birth and evolution of the Colorado River. Current research is focused on the late Miocene to early Pliocene Bouse Formation south of Blythe, California. Process sedimentology, sequence stratigraphy, and correlation to deposits in the Salton Trough show that river sediment output first turned on at ~5.3 Ma, stopped for a short time at ca. 5.0 Ma (see figure, right), and started again at ~4.5 Ma. This pattern of punctuated, on-off-on sediment discharge during river initiation is not predicted by existing models, and likely was controlled by changes in sea level, basin subsidence, and/or rate of sediment delivery from the Colorado Plateau. A related study by O’Connell, Dorsey, and Humphreys in the journal *Geology* shows that sedimentary rhythmites in the Bouse basal carbonate member were deposited by tidal currents in a marine embayment. This finding supports a marine origin for the southern Bouse Formation, and provides new evidence for post-Miocene uplift of a broad region from the San Andreas fault to the western Colorado Plateau.

**Alan Rempel**

**Freezing Sucks to Cause Crack Growth**

Professor Alan Rempel collaborated with former PhD student Jill Marshall and Professor Josh Roering to develop a new bedrock-weathering model that tracks crack expansion driven by ice growth. Wetting interactions cause liquid films to coat interfaces between mineral and ice surfaces. The films thin at colder temperatures as the wetting forces strengthen, so the film pressure must drop to maintain force equilibrium, causing liquid flow towards colder temperatures. The drop in permeability along the flow path produces flux gradients that are accommodated by continued ice growth in expanding cracks. The figure above shows predictions for the porosity change due to frost cracking in different climates; locations of stars indicate the depth-integrated expansion (e.g., 0.24 mm for mean annual temperature (MAT)=5°C, with half occurring above/below 2.15m). The greatest damage occurs at temperatures just sufficiently cold that wetting interactions are strong enough to drive crack extension, whereas colder conditions produce less damage because of limitations to liquid supply. Model predictions provide insight into the role frost weathering plays in the evolution of landforms over long time periods on Earth and Mars.

**Doug Toomey**

**Shaking Up Earthquake Early Warning: The Internet of (Wild) Things**

The beauty of the Pacific Northwest is accompanied by hazards—earthquakes, forest fires, floods, landslides, volcanic eruptions—that pose threats to society, built infrastructure, and the economic vitality of the region. In addition to natural hazards, climatic changes have an impact on the health of forests, the quality and availability of water, and extreme weather events. How society plans for and mitigates both natural and manmade hazards is vital to our resilient and prosperous future. The Pacific Northwest Seismic Network, operated by the University of Oregon and the University of Washington, is currently testing an Earthquake Early Warning system. Parallel to this effort, Professor Doug Toomey and Project Manager Leland O’Driscoll are exploring emerging technologies that would leverage the seismic network into a multi-hazards facility. With UO’s Office of Government and Community Relations (Betsy Boyd and Karen Hyatt), we have been working behind the scenes to identify key stakeholders that would support an Oregon-based initiative. Our immediate goal is to install a pilot project in 2017. Our decadal goal is to build “The Internet of (Wild) Things,” which will allow remote 24/7 monitoring of PNW hazards and deliver real-time actionable alerts to the public.
Alumni News

Please visit us and share your stories at earthsciences.uoregon.edu/alumni

Benjamin Byerly (BS ’08) is a research associate at Louisiana State University where he is studying Komatites and early-Earth impacts. After graduating from the UO, Ben got his PhD from the University of Texas at Austin with a focus on high-temperature geochemistry of mantle xenoliths and upper mantle evolution. After that he was a postdoctoral fellow in the Actinide Analytical Chemistry group at Los Alamos National Laboratory, before moving to LSU.

Rich Bykowski (BS ’07) finished his MS degree at the University of Iowa in 2009, and completed his PhD in paleontology at Indiana University in 2014 while supported as a predoctoral fellow at the Smithsonian Natural Museum of Natural History. His PhD research focused on studies of paleoecology, morphology, and growth of theropod dinosaurs. He is now an adjunct assistant professor of geology at Georgia Southern University in Statesboro, and teaches paleobiology for the Johns Hopkins Center for Talented Youth during the summers.

Trevor Contreras (BS ’98, MS ’04) works for the Washington Department of Natural Resources in Olympia where he mapped along Hood Canal focusing on glacial stratigraphy and faulting. He earned his engineering geology license in 2014 and transitioned into the new state Landslides Hazard Program where he’s mapping landslides and trying to help communities reduce the impacts of slides. His path is rocky—he’s fallen in with a group of degenerate stone sculptors who pollute the air with rock dust while drinking strong espresso and IPAs.

Mike Darin (MS ’11) spent two years after his UO graduation working for ConocoPhillips in Houston and teaching part of the UO Summer Field Camp in Dillon, Montana. He is currently a PhD candidate and part-time instructor at Northern Arizona University. Mike’s dissertation research in central Turkey involves understanding how plate boundaries evolve in space and time, using classical methods such as geologic mapping and stratigraphy in combination with modern methods like low-temperature thermochronology.

Brittany Train (BS ’15) works for Ecology and Environment, an environmental consulting company in Portland, Oregon. She provides technical support for remedial and removal projects, including abandoned mine site assessments, project oversight, and groundwater and soil sampling. Much of her work leads her to remote areas such as the Alaskan wilderness. Brittany is continuously learning about environmental geology and enjoys applying new techniques to the work she does. She plans to take her GIT exam in March 2017.

Lucy Walsh (MS ‘12) works as an emergency manager with Coconino County Public Health in Flagstaff, Arizona. Currently, she is preparing response plans for potential Zika transmission as the virus crosses the Mexican border into Arizona. Lucy also constructs maps and runs excel codes to track infectious disease outbreaks within the county. More recently she was chosen to present her work on vaping products at two national public health conferences.

Varina Zinno (BS ’07) got her MSc degree from McGill University in 2010, and is now an independent consulting exploration geologist. Based in Alaska, she enjoys working on projects ranging from grass-roots exploration in the Arctic to helicopter-supported field mapping in Prince William Sound to active underground gold mines in Southeast Alaska. She also is an active volunteer with the Alaska Miners Association (AMA), and in 2016 she was the first woman ever featured on the cover of the AMA Member and Service Directory.

Faculty News Briefs

Edward Davis contributed to an international symposium in Peru on the extinction of South American megafaunas ~13,000 years ago.

Meaghan Emery defended her PhD and is now working in research administration at Central Washington University.

Nick Famoso (defense planned for March 2017) was recently hired as chief of paleontology for the John Day Fossil Beds National Monument.

Thomas Giachetti’s textural laboratory now includes optical microscopes, a particle size analyzer, helium-pycnometer, and a capillary flow porometer. Graduate students Kathy Lipshultz and Erin Hoxsie will work on the last eruption of Newberry volcano, Oregon, and post-eruptive hydration of obsidian. Thomas is also studying Medicine Lake Volcano, California, to decipher variations in eruptive activity during the last eruption ~1,000 years ago.

Gene Humphreys deployed a seismic array in NE Oregon and SE Washington to study the origin of the Columbia River flood basalt eruptions. Gene’s group is imaging structures in the mantle that indicate foundering of the lithosphere beneath the main eruptions, which intensified and refocused magmatism and uplifted the Wallowa Mountains as dense lithosphere fell away.

Leif Karlstrom was awarded an NSF grant to study Very Long Period (VLP) seismicity at Kilauea volcano in Hawaii, and a NASA grant to study supraglacial stream formation on the Greenland Ice Sheet. Leif welcomes new PhD student Josh Crozier and postdoc Paul Richardson, who is studying landscape evolution in volcanic environments at the UO.
Staples Field Trip to New Mexico and Colorado
Allan Lerner, Jonathan Perry-Houts, Paul Wallace

In September 2016, 16 graduate and undergraduate students, one post-doc, and four faculty members spent seven days studying the geology, tectonics and volcanology of the Rio Grande Rift, Valles Caldera, Taos Plateau, and San Juan volcanic field. Students’ costs were paid largely by the Lloyd Staples Scholarship Fund, which subsidizes a major department field trip every three to four years. The purpose of this trip was to learn about the Oligocene to present-day evolution of the northern Rio Grande Rift and voluminous Oligocene calc-alkaline volcanism that preceded the onset of rifting. The underlying theme was how volcanism and tectonic setting changed in relation to each other over the last 35 Ma. This theme was explored through study of physical volcanology, rift-basin structure, volcano-sedimentary stratigraphy, landscape evolution, igneous petrology, and a wealth of new geochronologic and geophysical constraints.

The trip was led by Mike Dungan (UO) and Ren Thompson (USGS)—who have worked in this region for decades—with help from Ren’s USGS colleagues Kenzie Turner, Leah Morgan, Mike Cosca, and Christine Chan.

The trip started in Santa Fe, New Mexico, where we visited the Pleistocene Valles Caldera, a well preserved example of a geomorphically “pristine” multi-cyclic, resurgent caldera, including the multiple eruptive units of the Bandelier Tuff. In the 1950s and ’60s these iconic examples were foundational for volcanologists in unraveling the geologic relations between large-scale caldera collapse, voluminous ignimbrites, lateral and vertical variations of welding in tuffs, internal caldera structures, and post-caldera volcanism. We also began what became a nightly tradition of gorging ourselves on delicious New Mexican food!

We then headed north to Taos and explored the Rio Grande gorge, which is carved into the 3.5 million year old Servilleta Basalts. Photo by Marli Miller

Below: The group explores a baked red paleosol beneath an andesite flow unit of the Taos Plateau volcanic field in Red River Gorge, New Mexico. Photo by Marli Miller

spent two days venturing into one of the world’s largest and best studied nested caldera systems—the Central San Juan Caldera Complex. A phenomenal volume of material—at least 8000 km³ of magma—erupted from this region over about 2 million years. Highlights included the famous Fish Canyon Tuff, the highly unusual and enigmatic Pagosa Peak dacite, nested calderas and resurgent domes of the La Garita, Creede, and Bachelor calderas, and ore bodies and fossil-bearing lake sediments exposed in the Creede caldera.

After a celebratory dinner on the last evening, we drove back to Alamosa for the night and headed out the next morning for our return to Eugene. We added an amazing stop at Great Sand Dunes National Park on our way to the Denver airport. Huge thanks to the monumental efforts of UO and USGS personnel who helped make the trip a success!

Photos and notes from the trip can be found at blogs.uoregon.edu/staples2016.
Geology Club and Willamette Valley AAPG Student Chapter

The Geology Club led by Dave Blackwell continues to be very active with field trips and outreach to the Eugene-Springfield community. Last year the Geology Club volunteered more than 300 hours in local schools by teaching classes and labs, assisting with projects, and other assistance. The Spring Break field trip went to Grand Staircase-Escalante National Monument, with side trips to Capital Reef and Bryce Canyon National Parks. Additional trips explored the Channeled Scablands, John Day Fossil Beds, Crater Lake, and Lava Beds National Monument. Visit the Geology Club website at instagram.com/uogeologyclub for more information and to view photos.

The Willamette Valley AAPG Student Chapter had a productive year that was highlighted by John Armentrout’s teaching of our petroleum geology course. His field trip to Coos Bay provided an excellent introduction to the stratigraphy of the region and various applications to the petroleum system. In fall 2016, the chapter attended the Pacific-Rocky Mountain AAPG sectional meeting. Students were introduced to some excellent talks, got a chance to network and explore career and college opportunities, and visited Death Valley National Park on the return trip.

Clockwise from left: Taylor Barnhart, Kieran McCann, and John Armentrout at Death Valley after the AAPG sectional meeting in Las Vegas; AAPG members at Cape Arago, Oregon; Geology Club at Crater Lake, Oregon; and at the Museum of Natural and Cultural History on campus in Eugene

Fund for Faculty Excellence Awards

Last year, Professors Ilya Bindeman and Paul Wallace received the prestigious UO Fund for Faculty Excellence Award for 2016–17. The award is made each year to honor UO faculty performing at the forefront of research and discovery, who have a sustained record of distinction in research, teaching and leadership at the university. Paul integrates field studies, geochemical data, and thermodynamic modeling to understand the effects of volatiles on melting, degassing, and volcanic eruptions. During the past 2-3 years he was the coordinator of our Volcanology Cluster initiative, which was funded in the summer of 2016. Ilya uses high-precision mass spectrometry of oxygen and carbon isotopes to interpret controls on magmatism and eruptive cycles of large volcanoes. He also uses isotopes to study the origins of major climatic shifts that took place during Precambrian time, in a series of debated global ice ages known as “Snowball Earth.” Congratulations Paul and Ilya!

Graduate Degrees 2016

Corina Cerovski-Darriau (PhD): “Landslides and Landscape Evolution over Decades to Millennia: Using Tephrochronology, Air Photos, Lidar, and Geophysical Investigations to Reconstruct Past Landscapes”

Gisell Conde (MS): “Stomatal Index of Ginko biloba as a Proxy for Atmospheric CO2”

Meaghan Emery (PhD): “Species Diagnosis in the Fossil Record: Scope, Scale, and revision”

Randy Krogstad (PhD): “Kinematic Constraints on Tremor and Slow Slip in Cascadia and Implications for Fault Properties”

Scott Maguffin (PhD): “A Biogeochemical Study of Groundwater Arsenic Contamination in the Southern Willamette Basin, Oregon, USA”

Nathan Mathabane (MS): “Potential Impacts of Timber Harvesting, Climate, and Conservation on Sediment Accumulation and Dispersal in the South Slough National Estuarine Reserve, Oregon”

Brennan O’Connell (MS): “Sedimentology and Depositional History of the Miocene-Pliocene Southern Bouse Formation, Arizona and California”

Angela Seligman (PhD): “Oxygen and Hydrogen Investigation of Volcanic Rocks: Petrogenesis to Paleoclimate”

Daniel Sulak (MS): “Quantifying Properties of Icebergs in Greenlandic Fjords using Multiple Satellite Datasets”
continued from front page

energy needs. The Lillis gift also comes at an opportune time by focusing attention on the UO’s investment in volcanology in advance of the 2017 IAVCEI Scientific Assembly that will bring about 1,200 volcanologists from around the world to Portland, Oregon, in August 2017. The UO is providing financial sponsorship for this conference, the first major IAVCEI meeting to be held in the US since 1989. We look forward to seeing many of our alumni there!

Volcano research has taken on new importance as the world has become more interconnected and its population has swelled. An estimated 600 million people are at direct risk from ash plumes, pyroclastic flows, and other kinds of eruptive activity, particularly in Pacific Rim countries and in many developing nations where the fertile soils on volcanic flanks have attracted legions of farmers. Meanwhile, the economic effects of eruptions are felt globally, such as when ash in the atmosphere after the 2010 eruption of Eyjafjallajökull in Iceland closed down western Europe’s airports, leading to economic losses of ~$1.7 billion. Our goal is to build on our current strengths in volcanology, petrology, and seismology to create a world-class center focused on active volcanic processes and hazards.

This is an exciting time in volcanology. The interdisciplinary nature of the field, rapidly evolving new technologies, advances in computer modeling, and emerging ability to handle very large datasets ensure that dramatic scientific advances are on the near horizon. Our volcanology cluster will expand the UO’s national and international visibility in the earth sciences and natural hazards research, as well as our ability to partner with the USGS Volcano Hazards Program. We expect it will also increase our involvement with scientists and volcano observatories in developing nations, particularly around the Pacific Rim. This initiative will also be integrated with the growing Pacific Northwest Seismic Network, providing new opportunities for research and leveraging of funds for multidisciplinary studies of Cascade volcanoes.