

University of Puerto Rico
Mayaguez Campus
Dean's Office or Unit Name

Annual Report 2023-2024

Dean or Director Name

Date

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- I. General Information of the Dean's Office and Associated Units
 - a. Mission and Vision
 - i. Mission and Vision of the Dean's Office

 - b. Organizational Structure
 - i. Organizational Chart of the Dean's Office

 - ii. Organizational Chart of associated units under the Dean's Office

II. Report on Initiatives, Activities, and Achievements in Accordance with the Strategic Plan

a. Executive Summary

b. Objective 1: To institutionalize a culture of strategic planning and assessment

The Geology Department is currently in the process of reviewing the Strategic and Assessment Plans. The new versions should be ready for the 2024-25 academic year. Assessment exercises were continued, especially related to the undergraduate research courses.

c. Objective 2: To lead higher education throughout Puerto Rico while guaranteeing the best education for our students

o Curricular reviews

Geology: We have approved a complete curricular revision of the Bachelor's program. This includes the creation and revision of courses, which has all be completed. The process is currently in the Curricular Committee at the Faculty level, starting with the course revisions and creations.

o New academic programs

o Recognitions given to teaching staff for academic and/or professional achievements.

o Initiatives to strengthen teaching

- Development and implementation of teaching methodologies
- New or different technology used in the classroom
- Teacher training activities

o Student important achievements in academic competitions, sports, or cultural activities

Geology:

- On July 27, 2023 student assistants of the SLIDES-PR group had a meeting with a community organization in Corcovada (Añasco) about landslide hazards and potential partnerships. The students from SLIDES-PR were **Anishka Ruiz, Danishka Medina, and Astrid Romero.**
- On February 2024, graduate student **Jarelys Gonzalez** participated in collaborative field work at Popocatepetl volcano, to conduct SO₂ gas measurements with UV cameras. The collaboration was with volcanologists from the Universidad Nacional Autonoma de Mexico, the Royal Belgium Institute for Space Aeronomy, and the Istituto Nazionale di Geofisica e Vulcanologia (INGV, Italy).

o Strengthening of facilities for academic use

- Improvements to facilities

Geology:

- Residencia 4A has been reconditioned to become the *Puerto Rico Landslide Hazard Mitigation Office*, which will start operations in the first semester 2024-2025, under the coordination of **Dr. K. Stephen Hughes.**

- Acquisition of specialized equipment

Geology:

- 18" Slab Saw - Covington, Engineering
- 2 Trinocular Polarizing Microscopes

d. Objective 3: To increase and diversify the Institution's sources of revenue

- Initiatives to obtain funds
- External funds received

Geology:

- On August 01, 2023 a new project funded by the USGS Landslide Hazards Program started. The \$500k/3-year project is titled "Puerto Rico Landslide Hazard Mitigation Project 2023-2026" and will be managed by the PR Landslide Hazard Mitigation Office in the department. The PI is **Prof. Stephen Hughes**.
- The **PR Seismic Network** has been awarded a grant to continue the tsunami program of PR, for ~\$334,000. The project title is: The Puerto Rico (PR) Component of the NTHMP 23-24. The PRSN was awarded a NOAA contract to support the tsunami center, of ~\$192,000.

- Own income and intended use
- Collaboration agreements (purpose, validity, and agency name)

Geology:

- Ongoing collaboration agreement with the United States Geological Survey (USGS) to establish the UPRM Puerto Rico Hillslope Soil Hydrological Monitoring Network, coordinated by **Prof. Stephen Hughes**. Since August 2021.
 - On July 13, 2023 **Prof. Stephen Hughes** participated in a meeting at the USGS Geological Hazards Science Center in Golden, Colorado. The meeting was with the Director (Jonathan Godt) and Associate Director (Stephen Slaughter) of the USGS Landslide Hazards Program located Also present in the meeting were Alesandra Morales of the UPRM Dept of Civil Engineering and Rafael Bras from Georgia Tech.
 - Several landslide monitoring stations around the island were installed by the SLIDES-PR group, which includes undergraduate and graduate students.

- e. Objective 4: To implement efficient and expedient administrative procedures
- automation of processes
 - Reviewed processes
 - Establishment and documentation of internal administrative procedures
 - Evaluation of administrative processes (provide examples)

- Improvement and recognition activities aimed at administrative and support staff.
- f. Objective 5: To strengthen research and competitive creative endeavors
 - Quantity of external funds received, by source, for research and creative work

Geology:

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- Total number of proposals submitted and approved by department

- Number of new research and creative work projects

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- Number of ongoing research and creative work projects
- Brief description of new and ongoing projects with significant impact

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- Impact outcomes of research and creative work projects (e.g., patents, discoveries)

- Initiatives to involve students in research and creative work projects

Geology:

- Over 20 undergraduate and graduate students participated in summer research internships in 2023, at different universities in USA, agencies, the Laboratory of Communication in Meteorology at WAPA-TV, etc. Some of the students are included here:
 - **Tania Figueroa** and **Estefania Vicens** (graduate): Participated in a summer course offered by the Center for Land-Surface Hazards (CLaSH) in Colorado State University Mountain Campus. Supervisors: Sean Gallen, Ben Mason and Stratis Karantanellis.
 - **Niwde Rivera**: EAGER Program at University of Wisconsin-Madison. Supervisor: Prof. Mayra Oyola Merced. Title of research: Meteorological Influences on Tropospheric Ozone Formation over the Tropical Atlantic Ocean as observed during AEROSE field campaigns.
 - **Edirmarie Velez**: University of Rhode Island, Center for Biotechnology and Life Sciences. Research on planetary geology, specifically of Mars. Supervisors: Dawn Candace, Serena Moseman-Valtierra, and Cybele Collins (graduate student).
 - **Kevin Martinez**: Internship at NOAA's National Weather Service – San Juan Office. Title: A Comparative Study between the Precipitable Water and the Effective Precipitable Water as Predictors of Rainfall in Puerto Rico. Mentors: Meteorologist-in-Charge (MIC) Ernesto Rodríguez and Meteorologist Cecille M. Villanueva Birriel.
 - **Valeria A. Pérez Rivera**: Summer Student Fellowship – Woods Hole Oceanographic Institution. Advisors: Dr. Robert Sohn and Dr. Julia Guimond.
 - **Kimberly Maisonet Gonzalez**: Internship at the Smithsonian National Museum of Natural History, Washington DC. Supervisor: Michael Ackerson (Curator, Mineral Sciences). Part of the Natural History Research Experiences (NHRE) program.
 - **Jovalice E. Torres Rodriguez**: Summer internship at Michigan Technological University, under the supervision of Profs. Radwin Askari and Greg Waite. The topic of the research project was on volcano seismology.
- The AURUM research initiative, led by **Dr. Thomas Hudgins** and Dr. Bilenker, completed its third annual field season which involved two MS students, one PhD student, and four undergraduate students continuing work on the iron deposits of Puerto Rico. This successful field season will form the basis for an NSF funded analytical workshop in November, held at Auburn University and led by Dr. Bilenker and **Dr. Hudgins**.
- On July 27, 2023 student assistants of the SLIDES-PR group had a meeting with a community organization in Corcovada (Añasco) about landslide hazards and potential partnerships. The students from SLIDES-PR were **Anishka Ruiz**, **Danishka Medina**, and **Astrid Romero**.
- On February 2024, graduate student **Jarelys Gonzalez** participated in collaborative field work at Popocatepetl volcano, to conduct SO₂ gas

measurements with UV cameras. The collaboration was with volcanologists from the Universidad Nacional Autonoma de Mexico, the Royal Belgium Institute for Space Aeronomy, and the Istituto Nazionale di Geofisica e Vulcanologia (INGV, Italy).

- The annual Departmental field trip outside PR took place from March 21 to 31. The trip was led by **Profs. Raiza Quintero, Thomas Hudgins, and James Joyce**, and included 12 undergraduate and graduate students. They visited several important geologic sites in Texas, including Big Bend National Park, the Carlsbad Caverns, and the Guadalupe Mountains. They also visited the McDonald Observatory, which is the largest optical telescope in the world.
- Number of research collaboration agreements and brief description (purpose, validity period, and agency name)
 - Ongoing collaboration agreement with the United States Geological Survey (USGS) to establish the UPRM Puerto Rico Hillslope Soil Hydrological Monitoring Network, coordinated by **Prof. Stephen Hughes**. Since August 2021.
 - On July 13, 2023 **Prof. Stephen Hughes** participated in a meeting at the USGS Geological Hazards Science Center in Golden, Colorado. The meeting was with the Director (Jonathan Godt) and Associate Director (Stephen Slaughter) of the USGS Landslide Hazards Program located Also present in the meeting were Alesandra Morales of the UPRM Dept of Civil Engineering and Rafael Bras from Georgia Tech.
 - Several landslide monitoring stations around the island were installed by the SLIDES-PR group, which includes undergraduate and graduate students.
- Most relevant publications and presentations

Geology:

- A paper co-authored by department professors and students was published on 18-July-2023. The lead author is former UPRM GEOL professor David Larue. The publication is a result of undergraduate topico research several years ago. The citation is:
 - Larue, D. K., **Mendez, K. M.**, Albelo, J. L. C., **Martinez, L. N., Hughes, S., Hudgins, T., Santos, H., Smith, A.L.**, and Osterberg, C., 2023, Climato-tectonic evolution of siliciclastic sandstones on Puerto Rico: from lithic arenites to quartz-arenitic sands in an oceanic island-arc setting. Journal of Sedimentary Research, <https://doi.org/10.2110/jsr.2023.016>..
- On August 03, 2023 a report co-authored by **Prof. Stephen Hughes** was published. The report is: West, J., Rodriguez-Cruz, L. A., & **Hughes, K. S.** (2023). Steep Risks: Assessing Social Vulnerability to Landslides in Rural Puerto Rico. Natural Hazards Center Public Health Report Series, 34. University of Colorado Boulder. <https://hazards.colorado.edu/public-health-disaster-research/steep-risks>. The report's key finding is that more

than 1,000,000 residents in Puerto Rico live in zones of high/very high/extreme landslide susceptibility. The study was funded by the NSF and the CDC.

- **Prof. Raiza Quintero** presented a talk at the annual Geological Society of America conference (GSA Connects 2023; 15-18 October; Pittsburgh, PA), titled: "Geochemical characterization of impact melt glass from the Ora Banda impact structure, Western Australia". She served as a mentor for CV writing and career paths for undergraduate and graduate students at the GSA Connects 2023 meeting, and as a volunteer with the GSA-Planetary Geology Division.
- **Prof. Raiza Quintero** published the manuscript: **Quintero, R.R.**, Cavosie, A.J., Alwmark, S., Haines, P.W., Danišík, M., Timms, N.E. and Lim, D. (2024), Shocked quartz in sandstone from the buried Ilkurlka impact structure, Officer Basin, Western Australia. *Meteorit Planet Sci*, 59: 68-87. <https://doi.org/10.1111/maps.14108>.
- **Prof. Stephen Hughes** attended the World Landslide Forum in Florence, Italy from 14-18 November. He gave a presentation titled "Perspective from 5 years (2017-2022) of widespread landslide events in Puerto Rico".
- On 08-December-2023, **Prof. Stephen Hughes** offered a presentation at a FEMA workshop: "Estrategias de manejo y planificación de los usos del suelo para atender deslizamientos, la erosión costera y otras amenazas asociadas al cambio climático." The workshop was in Dorado and included personnel from Florida, Manati, Vega Baja, Vega Alta, Ciales, Morovis, Corozal, Orocovis, Dorado, Toa Baja, Cataño, San Juan, Guaynabo, Bayamón, and Toa Alta. Graduate students **Tania Figueroa** and **Anishka Ruiz** also participated in the event.
- On January 28, 2024 a paper co-authored by **Prof. Stephen Hughes** and MS ex-alumnus **Kimberly Mendez** was accepted for publication in the journal "AGU Advances". The title of the paper is "Volcanic Arc Weathering Rates in the Humid Tropics Controlled by the Interplay Between Physical Erosion and Precipitation". Lead author is Angus Moore and additional co-author is Darryl Granger, both colleagues at Purdue University.
- **Prof. Lizzette A. Rodríguez** participated in the Cities on Volcanoes 12 conference (February 11-17, at La Antigua Guatemala) and gave an oral presentation "La Asociación Latinoamericana de Volcanología (ALVO): su historia, su presente y qué ofrecemos", by **L.A. Rodríguez**, P. Forte, D. Bertin, M.P. Jácome Paz, H. Delgado Granados, J.G. Viramonte, J.L. Palma, M. Agosto, and a poster with the same title.
- On March 04, 2024 **Prof. Stephen Hughes** gave an invited virtual presentation for the International Association of Geomorphologists "International Geomorphology Week 2024" North America webinar. The title of the presentation was "Advances in Landslide Hazard Science in Puerto Rico". The webinar was recorded live and is via the IAG website <http://www.geomorph.org/>.

- M.S. students **Adriel González Rivera** and **Anishka Ruiz Perea**, and undergraduate student Christian Lugo Matos, presented their work "Comparison of Garnet Chemistry and Mineralization at the Keystone and Tibes Iron Skarns, Puerto Rico" at the Southeastern GSA meeting in Asheville, NC on April 15-16.

- o Graduate assistantships for research and teaching (quantity and amount awarded)

Geology:

TA: 17, Total ~\$57,912.50
RA: 14, Total ~\$82,199.85

- o Origin of graduate students (OPIMI).

Geology:

21 graduate students (2023-24): 20 PR

- g. Objective 6: To impact our Puerto Rican society
 - o Participation in community initiatives (students, non-teaching staff, teaching staff)

Geology:

- **Prof. Raiza Quintero** and **Thomas Hudgins** facilitated a collaboration with the American Cancer Association of Puerto Rico, where master's student **Anishka Ruiz Perea** took part in raising awareness for breast cancer screening by explaining the geology of las Tetras de Cayey ("Cuidemos las tetras") <https://www.youtube.com/watch?v=nsPdOoooRw8> This campaign has reached >5,000 views on youtube and was featured in multiple PR news outlets.

- o Projects developed to address community needs

Geology:

- SLIDES-PR Program – research on landslide hazards in PR, led by **Prof. Stephen Hughes**.
- On March 01, 2024 **Prof. Stephen Hughes** met with the Utuado municipal emergency management office Director Arsenio Velez and Planning Specialist Enrique Soto. The purpose of the meeting was to plan the municipality's participation in a new pilot program called "*LandslideReady*" that will be a mechanism to train municipal level staff and community leaders about landslide hazards in Puerto Rico. Graduate students **Anishka Ruiz** and **Tania Figueroa** also participated in the meeting, held in Utuado.

- o Initiatives to promote an entrepreneurial mindset and leadership among students
- o Initiatives to promote the values of ethics, justice, and honesty
- o Activities aimed at students and young people of school age

Geology:

- On 07-September-2023, graduate students **Anishka Ruiz** and **Tania Figueroa**, and undergraduate student **Astrid Romero** gave a presentation at the Escuela Rafael Rexach Dueño in Río Grande. The presentation to approximately fifty 8-11 year old students is part of the SLIDES-PR community engagement campaign to educate residents of Puerto Rico in the theme of landslide hazards.
 - **Prof. Raiza Quintero** presented and formed part of a Panel Discussion for the Career Day at the NASA EUROPA CLIPPER PSG-13 Meeting, San Juan PR. November 10, 2023.
 - On February 02, 2024 graduate students **Tania Figueroa** and **Anishka Ruiz** gave educational presentation about geology and landslides to 2nd and 3rd graders at Academia San Sebastián Mártir in San Sebastián.
 - On March 08, 2024 **Prof. Stephen Hughes** and graduate students **Anishka Ruiz** and **Tania Figueroa** gave an invited presentation to second graders at the SESO school in Mayaguez. The presentation was about earth science and landslides in Puerto Rico.
- Dissemination of the institution's achievements and initiatives that benefit the community.

Geology:

- On July 19, 2023 MS student **Desiree Bayouth** presented at the "Jornada de comunicación de riesgo y salud pública ante eventos de la naturaleza y desastres: Hacia una nueva cultura de comunicación al público" held in San Juan. The joint presentation was with collaborator Luis Rodriguez Cruz and was titled "Vulnerabilidad ante deslizamientos de terrenos en Puerto Rico: Comunicación de riesgos e implicaciones para la salud pública." The event was organized by the Puerto Rico Science Technology and Research Trust.
- On July 27, 2023 student assistants of the SLIDES-PR group had a meeting with a community organization in Corcovada (Añasco) about landslide hazards and potential partnerships. The students from SLIDES-PR were **Anishka Ruiz**, **Danishka Medina**, and **Astrid Romero**.
- On August 28, 2023 graduate students **Anishka Ruiz** and **Tania Figueroa** were interviewed for a special episode of the Spanish-language podcast program called Repaso Noticioso. The interview was focused on the SLIDES-PR project and its objectives and efforts. The episode will be published soon.
- On September 23, students of the SLIDES-PR project participated in the National Public Lands Day event held in El Yunque National Forest of Barrio Cubuy in Naguabo. The students shared landslide hazard educational materials with the general public. BS and MS alumna **Kimberly Méndez** also participated in the event in her current capacity with the US Forest Service.
- On September 25, the podcast "Repaso Noticioso" published a special episode of their program titled "RN Especial: SLIDES-PR". In this

recorded episode, graduate students **Anishka Ruiz** and **Tania Figueroa** were interviewed about the SLIDES-PR project in the island. The 23-minute story can be found here: <https://repasonoticioso.com/rn-especial-slides-pr/>

- **Prof. Stephen Hughes** was interviewed for a story that was published on 15-Oct-2023 by El Nuevo Dia. The cover story was titled "Vulnerables a derrumbes sobre un millón de personas". The subtitle read "Ante la alta susceptibilidad en la que vive más de un 30% de la población, se presentan alternativas como la Red de Monitoreo de la Universidad de Puerto Rico que, aunque en etapa experimental, busca ofrecer pronósticos de deslizamientos de tierra a 24, 48 y 72 horas." The 4-page article summarized work done by **Hughes** and partners to identify landslide susceptibility and vulnerability in the island.
- **Prof. Raiza Quintero** presented her research on planetary geology at the Círculo Astrofísico de Puerto Rico, UPR-Río Piedras, November 3, 2023.
- On 16-November-2023, **Prof. Stephen Hughes** offered a presentation for a FEMA Higher-Ed Roundtable meeting hosted at University of New York Albany. The virtual presentation was titled "Perspective from 5 years (2017-2022) of widespread landslide events in Puerto Rico".
- On 08-December-2023, **Prof. Stephen Hughes** offered a presentation at a FEMA workshop: "Estrategias de manejo y planificación de los usos del suelo para atender deslizamientos, la erosión costera y otras amenazas asociadas al cambio climático." The workshop was in Dorado and included personnel from Florida, Manati, Vega Baja, Vega Alta, Ciales, Morovis, Corozal, Orocovis, Dorado, Toa Baja, Cataño, San Juan, Guaynabo, Bayamón, and Toa Alta. Graduate students **Tania Figueroa** and **Anishka Ruiz** also participated in the event.
- On 24-25 January-2024, **Prof. Stephen Hughes** participated and co-organized a conference at the UPR Medical Sciences campus. The conference was collaborative between the NOAA Caribbean Climate Adaptation Network and the PR Emergency Management Agency. The title was "Reconociendo los efectos del cambio climático ¡Tomemos acción ahora!" and involved around 250 members of federal/state/municipal government groups, non-profit organizations, communities, and universities.

- h. Objective 7: To strengthen school spirit, pride, and identity
 - o Improvement in services offered to students
 - o Activities of student organizations

Geology:

- Initiation of new members of the Student Geological Society, on September 26, 2023.
- The UPRM Open House took place on November 10 at the Plazita de Celis. The students of the Student Geological Society helped in planning our table and helped in the event.
- Annual Symposium of Geology

- The Symposium of Geology took place on the week of April 15 and celebrated the 40th Anniversary of the Student Geological Society. The SGE organized the event, with the support mainly of **Prof. Raiza Quintero** and our administrative official Marsha Irizarry. Oral presentations took place in the Sala Eugene Francis on April 15 and 16, with presentations from several faculty members (**Lizzette A. Rodríguez, Wilson Ramírez, Raiza Quintero, Stephen Hughes**) and invited speakers from UPRM and other campuses or agencies, including 2 alumni (**Kevián Pérez** and **Edil Sepúlveda**). About 30 posters from undergraduate and graduate students were presented on April 15 and 16.
- Activities to promote links with alumni
 - The Symposium of Geology took place on the week of April 15 and celebrated the 40th Anniversary of the Student Geological Society. The SGE organized the event, with the support mainly of **Prof. Raiza Quintero** and our administrative official Marsha Irizarry. Oral presentations took place in the Sala Eugene Francis on April 15 and 16, with presentations from several faculty members (**Lizzette A. Rodríguez, Wilson Ramírez, Raiza Quintero, Stephen Hughes**) and invited speakers from UPRM and other campuses or agencies, including 2 alumni (**Kevián Pérez** and **Edil Sepúlveda**).
- Donations received from alumni
- Collaboration agreements with government agencies, the private sector, and various entities (purpose, validity, and name of the agency)
- Activities aimed at the community in general
 - On August 02, 2023 **Prof. Stephen Hughes** was interviewed by Shannon Garrido of Pasquines News, which covers U.S. territories. The interview was focused on the effect of heat and climate change in geological processes in Puerto Rico. The article was published on August 21: <https://pasquines.us/2023/08/21/rising-heat-and-extreme-weather-puerto-ricos-struggle-amidst-its-hottest-summer/>
- Activities aimed at the university community
- Improvements to infrastructure and buildings.

IMPORTANT ACHIEVEMENTS (did not find where to include them):

- **Prof. Lizzette A. Rodríguez** is a member of the SZ4D Magmatic Drivers of Eruption Working Group (MDE WG). The SZ4D is an initiative in the U.S. research community (funded by NSF) to study subduction zones through both space and time, with a focus on the fundamental processes underlying geologic

hazards such as great earthquakes, tsunamis, landslides, and volcanic eruptions (<https://www.sz4d.org/>). The appointment is for 2-3 years.

- **Prof. Lizzette A. Rodríguez** is the Secretary General of the Latin American Association of Volcanology (ALVO) until December 2024.
- **Prof. Thomas Hudgins** was invited to contribute and participate in the NSF-DUE funded Teaching Petrology Workshop which he attended from August 2-5. The workshop produced teaching materials which are currently being submitted to SERC and four in-prep publications for submission to the Journal of Geoscience Education.
- On August 25, 2023 **Prof. Stephen Hughes** was accepted as a member of the organization LandAware. LandAware is the international network of Landslide Early Warning Systems. He will be a contributor to Working Groups (3) Communication with Stakeholders, and (7) Operational Landslide Early Warning Systems.
- On September 8, 2023 **Prof. Stephen Hughes** was asked to join the Organizing Committee for a collaborative governmental-academic event titled "Reconociendo los efectos del Cambio Climático ¡Tomemos acción ahora!". The event was on January 2024 at the UPR Medical Sciences campus and will include Puerto Rico state agency directors and municipal mayors/emergency managers. The event is co-sponsored by the NOAA Caribbean Climate Adaptation Network (CCAN) and the PR state Emergency Management Office (NMEAD). **Hughes** will also serve as a panelist during the event.
- During the spring semester, **Prof. Stephen Hughes** is running a joint class with colleague Sean Gallen at Colorado State University. There are 7 UPRM students (grad/undergrad) and 7 CSU students (grad/undergrad) in the course about weathering, geomorphology, and landscape evolution. The course will involve the CSU students visiting PR in March and the UPRM students visiting Colorado in the end of April. The class is part of NSF award #2139894, which includes funding for the class and the field trips.
- **Prof. Lizzette A. Rodríguez** participated in the Cities on Volcanoes 12 conference (February 11-17, at La Antigua Guatemala), as member of the Program Organizing Committee, moderator of the plenary titled "Experiencias sobre riesgo y desastre en Latinoamérica", and participant and translator in the workshop titled "Experiences in preparing for and responding to the health impacts of volcanic eruptions in Latin America: Story sharing and information exchange" (joint workshop between the Latin American Association of Volcanology and the International Volcanic Health Hazard Network-IVHHN). She was convener of 2 sessions: Lecciones aprendidas de erupciones recientes y otras crisis (420) and El rol de las asociaciones y organizaciones no gubernamentales en la reducción del riesgo volcánico (426), and co-convener of session 429: 'Can everyone understand us?': Communicating risk to vulnerable populations in volcanic areas. As part of the international conference, which takes place every 2 years, she co-organized and co-led the post-conference field

trip on February 17, titled The June 2018 eruption of Fuego volcano: chronology, deposits, impacts, associated hazards and risks, with Sylvain Charbonnier (University of South Florida), Gustavo Chigna (INSIVUMEH), William Chigna (CONRED), Carla Chun, and Dulce Gonzalez (Universidad Mariano Gálvez). Following the conference **Prof. Lizzette A. Rodríguez** conducted field work at Fuego volcano, related to the PDC deposits of the June 3, 2018 eruption, with Sylvain Charbonnier, Gustavo Chigna, and graduate students **Karla Ayala** and Erika Fancher. Following this field work, she conducted gas emission measurements at Fuego, Santiaguito and Pacaya volcanoes, in collaboration with William Chigna, Jorge Mexicanos, and Edy Maldonado, from CONRED. Graduate student **Giancarlo Ortiz** participated in this part of the field work. On February 22 she participated in a meeting with the volcanology group at INSIVUMEH to discuss current and future research collaborations.

- The annual Departmental field trip outside PR took place from March 21 to 31. The trip was led by **Profs. Raiza Quintero, Thomas Hudgins, and James Joyce**, and included 12 undergraduate and graduate students. They visited several important geologic sites in Texas, including Big Bend National Park, the Carlsbad Caverns, and the Guadalupe Mountains. They also visited the McDonald Observatory, which is the largest optical telescope in the world.
- **Prof. Thomas Hudgins** organized a 4-day laser ablation inductively coupled plasma mass spectrometry workshop in Auburn, AL with collaborator Dr. Laura Bilenker. This workshop was attended by UPRM students **Anishka Ruiz Perea, Adriel González Rivera, and Christian Lugo Matos**, as well as 5 Auburn students. The goal of the workshop was to train students in the instrument, develop new methodologies for sample analysis, and to generate data from a suite of rocks from Puerto Rico.