



A. Executive Summary

Include a narrative summarizing your Dean's most relevant initiatives, activities, and accomplishments (1-2 pages).

B. Mission

Include a narrative of your deanery's initiatives, activities, and achievements supporting the Campus Mission.

C. To institutionalize a culture of strategic planning and assessment

Include a narrative summarizing the activities undertaken to update your unit's strategic plan and assessment initiatives. This objective applies to the four faculties, Rector, CID, and the three service deaneries. Some points to consider:

- a) Developing and updating metrics (provide examples)
- b) Improvement initiatives based on metrics
- c) Assessment of results (present examples of assessment projects in your unit)
- d) Resources assigned to meet the objectives of the strategic plan.

D. To lead higher education throughout Puerto Rico while guaranteeing the best education for our students

Summarize the initiatives developed to strengthen academic programs, provide an academic offering according to the needs of the student community, promote an environment conducive to the teaching-learning process, and recognize academic achievements. **This objective applies to the four faculties and the Dean's Office of Academic Affairs.** Some points to consider:

- a) Curricular reviews

Geology: We have prepared a complete curricular revision of the Bachelor's program. This includes the creation and revision of courses, which has all be completed. It will be presented for evaluation at the Faculty's level in the fall semester 2023.

- b) New academic programs
- c) Recognition of teaching staff
- d) Initiatives to strengthen teaching
 - i) Development and implementation of teaching methodologies
 - ii) Use of technology in the classroom
 - iii) Teacher training activities
- e) Collaboration agreements (purpose, validity, and agency name)
- f) Student participation in academic competitions and activities

Geology:

Kimberly Méndez (graduate student) participated in a workshop titled: "Expanding the Critical Zone Research Coordination Network", on July 18-21, at the Colorado School of Mines, in Golden, CO.

Undergraduate student **Cherilyn Toro-Acosta** participated in an intensive workshop and training at Golden, Colorado, during the week of August 14 to 19, under the supervision of geophysicist William Stephenson. The training is related to her undergraduate research.

Graduate student **Jarelys González** participated in the Convective and Volcanic Clouds (CVC) detecting, monitoring and modeling training course, which took place in Nicolosi, Italy, on 5-13 September 2022. It was organized with support from the European Geosciences Union and included 4 days in the topic of volcanic clouds and 4 days in the topic of convective clouds, plus 1.5 days of field work at Etna volcano.

- g) Strengthening of facilities for academic use
 - i) Improvements to facilities

Geology: Two virtual rooms have been completed, F-201 (for classes) and F-204 (for labs).

- ii) Acquisition of specialized equipment
- h) Academic offerings
- i) Dissemination of academic achievements (students and faculty).

E. To increase and diversify the Institution's sources of revenue

Include a narrative that presents the actions taken to obtain additional sources of income. Specify the type of source, the agency that granted the funds, the amount, and the purpose. Some points to consider:

- a) Initiatives to obtain funds
- b) External funds received
- c) Own income and intended use.

F. To implement efficient and expedient administrative procedures

Summarize the projects developed to promote the automation, simplification, standardization, review, and documentation of administrative processes. Also, include mechanisms for evaluating administrative processes and an overview of training activities aimed at non-teaching staff to strengthen their skills in their respective areas of work. Some points to consider:

- a) automation of processes
- b) Reviewed processes
- c) Establishment and documentation of internal administrative procedures
- d. Evaluation of administrative processes (provide examples)
- d) Improvement and recognition activities aimed at administrative and support staff.

G. To strengthen research and competitive creative endeavors

The Research and Development Center should summarize the external funds received by the agency type and faculty. Academic departments should provide the total number of ongoing projects, new projects, submitted and approved proposals, publications, and presentations. Regarding project narratives and dissemination, they should focus on active research areas and a general description of the most impactful projects. **This objective mainly applies to the four faculties, the Dean's Office of Academic Affairs, and the Research and Development Center.** Some points to consider:

- a) Quantity of external funds received, by source, for research and creative work.
- b) Total number of proposals submitted and approved by department.

Geology:

On 26-January-2023, **Prof. Stephen Hughes** submitted an invited collaborative proposal with colleagues at SUNY Albany to the NSF Environmental Sustainability program. The title of the proposal is "Collaborative Research: On the Resiliency of the Power Infrastructure to Recurrent Extreme Weather Events of Islanded Communities". The \$494k proposal is for a 2.5 year project that would be coordinated with the local electricity utility in Puerto Rico and would add to the research portfolio of the department.

c) Number of new research and creative work projects.

Geology:

On July 22, 2022 **Prof. Stephen Hughes** was informed that a proposal he is co-PI on and submitted to the NSF Centers for Innovation and Community Engagement in Solid Earth Geohazards program was recommended for funding. The 2 year \$497k project is titled "Track I Center Catalyst: Collaborative Center for Landslides and Ground Failure Geohazards" and is collaborative with Georgia Tech and the University of Colorado. Additional UPRM co-PIs are Alesandra Morales and Ismael Pagan of the Civil Engineering department. At the end of the 2-year period, the group will have the opportunity to submit a proposal for a 5-year, \$15 Million project.

On July 23, 2022 **Prof. Stephen Hughes** was informed that a proposal he is co-PI on and submitted to the NOAA Climate Program Office Regional Integrated Sciences and Assessments opportunity was recommended for funding. The 5-year \$5 Million project is titled "Caribbean Climate Adaptation Network: Building equitable adaptive capacities of the US Virgin Islands and Puerto Rico." and is collaborative with several institutions including the lead university: UPR-Medical Sciences. The other UPRM co-PI is Eric Harmsen of the Department of Agricultural and Biosystems Engineering.

An NSF grant of **Prof. Thomas Hudgins** has been awarded. The title is "Collaborative Research: Characterizing Iron Deposits in Puerto Rico to Elucidate Metal Transport and Magnetite Mineralization Processes in Skarn Systems".

The Puerto Rico (PR) Component of the NTHMP 22-23 was awarded, in the sum of \$400,864.00. This project will allow for the continuity of the PR tsunami program. **Prof. Victor Huerfano** is PI and **Prof. Elizabeth Vanacore** is Co-I of the grant.

The following proposal was approved for funding with the USGS: "UPRM Geophysical Studies for Updating the Puerto Rico Seismic Hazard Map: A Local Workshop Approach." The proposal is for 2 years (September 1, 2022 to August 31, 2024), with the objective of providing information conducive to the updating of the seismic risk map of PR. The funding is of \$497,523. The proposal was submitted by **Profs. Alberto López, Víctor Huérfano, Elizabeth Vanacore**, and José Martínez Cruzado.

On October 24, 2022, **Prof. Stephen Hughes** received a \$21,750 grant from NSF titled Collaborative Research: RAPID: The fate of landslide-derived sediment following tropical cyclones: a case study of Hurricane Fiona in Puerto Rico.

On Oct 25, 2022, the NOAA Climate Program Office officially announced it would fund a 5-year, \$6M Climate Adaptation Partnership in PR and USVI. The project title is "Caribbean Climate Adaptation Network" and includes PI at UPR-Ciencias Médicas and co-PIs Eric Harmsen and **Prof. Stephen Hughes** at UPRM.

- Press release for the national scale program: <https://www.noaa.gov/news-release/noaa-awards-over-15-million-for-climate-science-community-resilience>
- Press release about the Caribbean project: <https://cpo.noaa.gov/Funding-Opportunities/FY2022-Recipients/CAP-RISA-Teams-in-New-Regions-US-Caribbean>

- d) Number of ongoing research and creative work projects.
- e) Brief description of new and ongoing projects with significant impact.
- f) Impact outcomes of research and creative work projects (e.g., patents, discoveries).
- g) Initiatives to involve students in research and creative work projects.

Geology:

Over 20 undergraduate and graduate students participated in summer research internships in 2022, at different universities in USA, the National Weather Service in Pennsylvania, IRIS, the Arctic REU internship, NOAA, the NSF initiative Student-Driven Internship Opportunities in the Atmospheric Sciences, the National Weather Center in Oklahoma, the Denver Museum of Nature & Science, the Laboratory of Communication in Meteorology at WAPA-TV.

- h) Number of research collaboration agreements and brief description (purpose, validity period, and agency name).
- i) Most relevant publications and presentations.

Geology:

Presentations at the 2022 Geological Society of America conference, celebrated in Denver, CO, in October 9-12, 2022:

- "Inventing AUGR: Reflections on designing and implementing an Authentic Undergraduate Geoscience Research experience", co-authored by **Prof. Stephen Hughes**. Lead author is Isabella Bennett of the Univ. of Vermont.
- "Remote mapping and landscape morphology of potentially active faults in Puerto Rico", co-authored by **Prof. Stephen Hughes**. Lead author is Jessica Thompson-Jobe of the USGS Earthquake Hazards program.

Graduate student **Yanira Rivera** participated in the NOAA EPP/MSI Education and Science Forum, in Tallahassee, FL, in August 2022. Her poster was titled: "Measuring Hurricane Maria's Impacts and Recovery Remotely with Blue-Roof-Tarps and Nighttime Lights throughout Puerto Rico". She received a third-place award in Social Science, Education and Communications, in recognition of her excellent presentation during the NOAA Educational Partnership Program with Minority Serving Institutions 2022 Summer Symposium.

The following manuscript was accepted for publication at BSSA: "CARIBE WAVE: A Decade of Exercises for Validating Tsunami Preparedness in the Caribbean and Adjacent Regions", by alumnus Stephanie Soto, Christa von Hillebrandt-Andrade, **Prof. Elizabeth A. Vanacore**, Silvia Chacón-Barrantes, and Alison Brome.

Alumnus Giovanni Nin presented his MS thesis research at the Simposio Santiaguito 100 Años, a hybrid conference dedicated to research related to the activity at the Santiaguito Dome Complex, in Guatemala, which started growing in 2022 and continues. It was a keynote presentation with the title *Estudio de la evolución de un campo de flujos de lava utilizando ASTER, OLI y vehículos aéreos no tripulados: los flujos de lava del complejo de domos de Santiaguito, Guatemala (2013-2017)*, and the author list is: Giovanni G. Nin Hernández, **Prof. Lizzette A. Rodríguez Iglesias**, **Prof. Fernando Gilbes Santaella**, Andrew Harris, Gustavo Chigna, and Javier Juárez.

Presentations at the AGU Fall Meeting 2022, in Chicago, IL (12-16 December 2022):

- *Local Magnitude (Ml) Calibration for the Puerto Rico Seismic Network*. Poster presentation by graduate student **Sandra P. Rosero Rueda**, with **Profs. Victor Huérfano Moreno, Elizabeth Vanacore**, and **Alberto López**.
- *Characterizing Tsunami Signals from the Hunga Tonga Hunga Ha'apai Eruption and its Effects on the Caribbean*, Authors: **Jelis Sostre-Cortés**, **Prof. Elizabeth A. Vanacore**, Christa von Hillebrandt-Andrade, Roy A. Watlington, Erouscilla P. Joseph, Francisco Dourado, Benjamin

Colón-Rodríguez, Fabrice R. Fontaine, Silvia Chacón-Barrantes, Raphael Paris, Octavio Gómez-Ramos, Stephanie Soto, Valerie Coulard, Bernardo Aliaga, Sebastien Deroussi

- *Local-S Shear Wave Splitting and Mantle Wedge Dynamics in the Alaska Aleutian Subduction Zone*, by undergraduate student **Cherilyn Toro** and Eve Paulson and Colton Lynner.

Prof. Lizzette A. Rodríguez traveled to New Zealand from January 23 to February 5, to participate in the IAVCEI Scientific Assembly, which took place in Rotorua. She presented a poster titled "Study of the evolution of a lava flow field using ASTER, OLI and Unmanned Aerial Vehicle imagery: the 2013-2017 lava flows from the Santiaguito dome complex, Guatemala" (Nin Hernández, G.G., **Rodríguez Iglesias, L.A., Gilbes Santaella, F.**, Harris, A., Chigna, G.).

The following article was published: "Estimating Co-seismic Deformation of Southwestern Puerto Rico from the 7 January 2020 Mw 6.4 Earthquake: Constraints from Campaign and Continuous GPS", by **Alberto M. López-Venegas**; Glen S. Mattioli; Margarita Solares-Colón; David Mencin; Pamela E. Jansma, at Bulletin of the Seismological Society of America (2023) 113 (1): 99–114. The link to the article is: <https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fpubs.geoscienceworld.org%2Fssa%2Fbssa%2Farticle%2F113%2F1%2F99%2F619405%2FEstimating-Coseismic-Deformation-of-Southwestern&data=05%7C01%7C%7Clizzette.rodriguez1%40upr.edu%7Cb73b9ecc4fd8471bee3d08db0f6f4c31%7C0dfa5dc0036f461599e494af822f2b84%7C0%7C0%7C638120742913156412%7CUnknown%7C%7CTWfPbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQljojV2luMzliLCJBTiI6Ikk1haWwiLCJXVCiI6Mn0%3D%7C3000%7C%7C%7C&sdata=r2%2BGU6EnLUGz08NbRutvNacBMiCoLKEGGilMQEWrQck%3D&reserved=0>

Delgado Maisonet, D., Rodríguez Iglesias, L.A., 2023, "Analysis of SO₂ Emissions from Active Volcanoes in Guatemala to Assess Volcanic Degassing and Eruptive Activity", Sigma Xi Poster Day, 27 April, University of Puerto Rico-Mayaguez Campus.

Clouard, V., Angove, M., **Rodríguez, L.**, Tenorio, V., Joseph, E., Ryan, G., McCreery, C., Calvache, M., Paris, R., Lynch, L., McNamara, D., Arcos, N., Talavera, E., von Hillebrandt-Andrade, C., Aliaga, B., 2022, "On-going implementation of tsunami procedures for volcano crisis in the Caribbean", LACSC 4th Assembly, Quito, Ecuador.

Charbonnier, S.J., Garín, F., **Rodríguez, L., Ayala, K.**, Cancel, S., Escobar-Wolf, R., Chigna, G., Chun-Quinillo, C., González, D., Chigna, W., Chun-Quinillo, K., Mérida, R., Juárez, F., Calder, E.S., 2023, "Unravelling the Dynamics and Hazards of the June 3rd, 2018, Pyroclastic Density Currents at Fuego volcano (Guatemala)", Journal of Volcanology and Geothermal Research, Volume 436, 107791, ISSN 0377-0273, <https://doi.org/10.1016/j.jvolgeores.2023.107791>.

Prof. Elizabeth Vanacore was informed in March 2023 that the final version of the Global Key Performance Indicators for Tsunami Warning and Mitigation of which she was a member of the UNESCO/IOC task team to develop will be published as a Terms of Reference by UNSECO/IOC and developed into a webtool by UNESCO/IOC for global tsunami hazard mitigation reporting.

On 08-March-2023 the Geotechnical Extreme Events Reconnaissance report for Hurricane Fiona was published. The report was a collaboration between UPRM, Georgia Tech Univ., Univ. of Michigan, and Univ. of California Berkeley. UPRM authors include Alesandra Morales (INCI), **Stephen Hughes, Edwin Irizarry, Estefania Vicens, Tania Figueroa, Coralís Friedman, Kiara Cunillera, Anishka Ruiz**, and **Victor Ortega**. https://geerassociation.org/component/geer_reports/?view=geerreports&id=108

Presentations at the Seismological Society of America (SSA) Annual Meeting, in San Juan, PR (17-20 April 2023):

- *Integrating Volcanic Sources into the Tsunami Warning System for the Caribbean and Adjacent Regions*, Authors: Christa von Hillebrandt-Andrade, Valerie Clouard, **Jelis J. Sostre-Cortés**,

Elizabeth Vanacore, Bernardo Aliaga, Mike Angove, Nicolas Arcos, Silvia Chacón-Barrantes, Francisco Dourado, Octavio Gomez-Ramos, Erouscilla Joseph, Laura Kong, Lloyd Lynch, Charles McCreery, Dan McNamara, Raphael Paris, **Lizzette Rodriguez**, Roy Watlington

- *Vs30 Measurements at Puerto Rico Seismic Sites*, by **Cherilyn Toro** and **Elizabeth Vanacore**.

On 27-Apr-2023 **Prof. Stephen Hughes** gave an invited presentation for the FEMA Community Assistance Recovery Support Function Virtual "Simposio de Agua". The title of the webinar was "Recovery Strategies for Community Access to Drinking Water and Landslides Mitigation". There were over 150 audience members in the webinar, mostly planning and municipality professionals.

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

Geology:

TA: 11; Total = \$44374.99

RA: 8; Total = \$47216.60

- k) Origin of graduate students (OPIMI).

Geology:

20 graduate students (2022-23): 18 PR, 1 USA, 1 Colombia

H. To impact our Puerto Rican society

Provide a general summary of the projects and initiatives developed that include the different sectors of society that benefited and indicate the sector of the university community involved. **This objective mainly applies to the four faculties, Rectorate, Student Affairs Dean's Office, and Academic Affairs Dean's Office.** Some points to consider:

- a) Participation in community initiatives (students, non-teaching staff, teaching staff)

Geology:

On 17-December-2022, undergraduate students **Anishka Ruiz** and **Kimberly Trahan** co-led a community engagement event in Almirante y Jaguas de Cidra about landslide hazards. They gave an orientation to the community about the SLIDES-PR program, landslide susceptibility maps, and the landslide guide for residents of Puerto Rico.

On 09-February-2023, students **Tania Figueroa** and **Kimberly Trahan** went to Utuado as representatives of the SLIDES-PR project and the Department of Geology to co-organize a focus group on landslide hazards at the UPR-Utuado campus and also meet with the director of the Utuado municipal office of emergency management. The activity is related to a project sponsored by NSF and the CDC that is collaborative between **Prof. Stephen Hughes** and colleagues at the CU-Boulder Natural Hazards Center and the USDA Caribbean Climate Hub.

Puerto Rico Regional Vulnerability Assessment Workshop in Salinas, PR (spring 2023): Undergraduate student **Idamis Rodriguez** gave an oral presentation with the group from The Ocean Foundation to show the results of the project titled: *Developing a scientific and stakeholder-led regional vulnerability assessment in Puerto Rico*. Co-authors: Lily Rios-Brady (The Ocean Foundation, Washington, DC), Nias Hernández Montcourt (University of Puerto Rico, Río Piedras), Dylan Álvarez Ramos (University of Puerto Rico, Mayagüez), Melissa Meléndez (University of Hawai'i, Honolulu, Hawai'i), Jannette Ramos García (Puerto Rico Sea Grant), Kaitlyn Lowder (The Ocean Foundation, Washington, DC), Alexis Valauri-Orton (The Ocean Foundation, Washington, DC).

- b) Projects developed to address community needs

Geology:

On July 12, 2022 **Prof. Stephen Hughes** and students **Tania Figueroa**, **Kiara Cunillera**, and **Kimberly Trahan** along with colleagues from the USGS Landslide Hazards Program installed a new hillslope monitoring station in Naguabo. The station is the 11th of the Puerto Rico Landslide Forecast Network.

On August 23, 2022 **Prof. Stephen Hughes** and students **Tania Figueroa**, **Jonathan Pérez**, and **Victor Ortega** along with colleagues from the USGS Landslide Hazards Program installed a new hillslope monitoring station in Naranjito. The station is the 12th of the Puerto Rico Landslide Forecast Network.

Prof. Stephen Hughes was designated as the co-Leader for an NSF-funded GEER ("Geotechnical Extreme Event Response") mission here in PR to document geotechnical impacts of Hurricane Fiona. The team is also led by Dr. Alesandra Morales of the UPRM Civil Engineering Department. Other members include 2 professors and 2 PhD students from Georgia Tech. The reconnaissance field days will be from 15-19 October and will benefit from the participation of several of our department's graduate and undergraduate students.

On 27-January-2023, the 13th station in the Puerto Rico Landslide Forecast Network was installed in Yauco. Thank you to the students enrolled in GEOL 6105 for your efforts. They are **Tania Figueroa**, **Estefania Vicens**, **Cesar Rodriguez**, **Anishka Ruiz**, and **Kimberly Maisonet**.

On 02-February-2023, **Prof. Stephen Hughes** traveled to a remote part of Utuado to meet with a local community organization "COSSAO" (Corporación de Servicios de Salud Primaria y Desarrollo Socioeconómico EL OTOAO) to discuss collaboration with the SLIDES-PR landslide program.

On 24-March-2023 **Prof. Stephen Hughes** and students **Anishka Ruiz**, **Estefania Vicens**, **Tania Figueroa**, **Victor Ortega**, and **Kimberly Trahan** installed the 15th monitoring station of the Puerto Rico Landslide Forecast Network in a remote steep area of the UPR Mayaguez campus property. This installation was coordinated with the Dean of Administration office and the office of Edificios y Terrenos.

- c) Initiatives to promote an entrepreneurial mindset and leadership among students
- d) Initiatives to promote the values of ethics, justice, and honesty
- e) Activities aimed at students and young people of school age
- f) Dissemination of the institution's achievements and initiatives that benefit the community.

Geology:

Prof. Stephen Hughes participated in various television interviews following Hurricane Fiona (October-November 2022). These included Fox Weather channel, Noticentro al Amanecer, Cuarto Poder, PrensaRUM, WORA, and WIPR. Here is the link for the story that was featured on Cuarto Poder: https://www.wapa.tv/programas/cuartopoder/nueva-tecnologia-podria-ayudar-a-salvar-vidas-ante-un-deslizamiento-de-terreno-_20131122538954.html. **Stephen Hughes** also participated in an educational forum for EcoExploratorio that was moderated by Ada Monzon: Inundaciones y Derrumbes en Puerto Rico. Several news articles were also published that included information about the landslides monitoring network following Hurricane Fiona:

- https://www.wapa.tv/programas/cuartopoder/nueva-tecnologia-podria-ayudar-a-salvar-vidas-ante-un-deslizamiento-de-terreno-_20131122538954.html
- https://www.wapa.tv/noticias/locales/entre-lagrimas-relatan-como-sobrevivieron-a-fiona_20131122538482.html
- <https://www.youtube.com/watch?v=JPMEDNKnMzU>
- <https://www.elnuevodia.com/noticias/locales/notas/un-sistema-experimental-de-la-upr-salvo-a-trabajadores-de-un-deslizamiento-de-terreno-en-naguabo/>

On 01-Apr-2023 **Prof. Stephen Hughes** gave an invited presentation at the EcoExploratorio in Plaza Las Americas titled "Deslizamientos de tierra y su impacto en la infraestructura". There were around 50 people present for the talk and had over 1,500 online views: <https://www.facebook.com/watch/?v=215823061040074>

On 10-Apr-2023 **Prof. Stephen Hughes** had an interview with WAPA meteorologist Suheily López about landslide hazards for their upcoming Earth week materials. The interview was part of a 6-minute segment that aired on 20-April-2023: https://www.wapa.tv/noticias/ciencia/puerto-rico-ante-la-amenaza-de-deslizamientos-y-derrumbes_20131122550358.html

On 23-Apr-2023 undergraduate students **Anishka Ruiz** and **Kimberly Maisonet** gave an invited presentation for the EcoExploratorio EXPO Planeta Digital 2023 event that was held in Plaza Las Americas. The presentation was an initiative of the SLIDES-PR outreach program and was titled "Efecto de los derrumbes en P.R. y cómo prepararnos".

I. To strengthen school spirit, pride, and identity

Provide a narrative summarizing activities, projects, and initiatives developed by their respective units that strengthen the sense of belonging and collegiate pride. This objective applies to the four faculties, the Rectoría, and the three service deaneries. Some points to consider:

- a) Improvement in services offered to students
- b) Activities of student organizations

Geology:

Initiation of new members of the **Student Geological Society**, on September 8, 2022. A large number of students participated, including the 46 new members.

During the weekend of March 10 to 12, 2023, there was a departmental field trip to the area of Isabela, organized by the **Student Geological Society**, **Prof. Hernán Santos** and **Prof. Wilson Ramírez**, as part of the Annual Symposium of Geology. 20 students participated in the field trip, which was a huge success.

- c) Activities to promote links with alumni
- d) Donations received from alumni
- e) Collaboration agreements with government agencies, the private sector, and various entities (purpose, validity, and name of the agency)
- f) Activities aimed at the community in general
- g) Activities aimed at the university community
- h) Improvements to infrastructure and buildings.

J. International activity

Provide a summary of activities and initiatives with an international component:

- a) Number of international students in the department/faculty
- b) Number of international faculty in department/faculty
Geology: 11 professors (6 PR, 4 USA, 1 Colombia), 1 instructor (PR)
- c) Publications with international co-authors
- d) Projects and initiatives with international collaboration

Geology:

Jarelys Gonzalez Perez (graduate student) participated in the International Summer Experience in Hydrological and Sociocultural Research, in El Salvador, during the summer 2022. Internship from Michigan Technological University. Supervisors: Drs. Luke Bowman and John Gierke.

- e) Collaborations resulting in internships or exchanges in other countries
- f) Participation in international conferences, symposiums, forums, or seminars

Geology:

Prof. Lizzette A. Rodríguez participated in the “1st EPOS International Conference - EPOS Meets Africa and Latin America”, which took place on July 11-13, at Sal Island, Cape Verde. The meeting was organized by EPOS, “the European Plate Observing System, which is a multidisciplinary, distributed research infrastructure that facilitates the integrated use of data, data products, and facilities from the solid Earth science community in Europe” (<https://www.epos-eu.org/about-epos>). The meeting’s objectives were to gather earth scientists from Africa and Latin America, representing their regions and different geology fields, to discuss the initiatives of EPOS and possible future collaborations among the regions. Lizzette participated as a representative of the Latin American Association of Volcanology (ALVO) and presented the following invited talk: “The ALVO Network”. She also chaired Sub-session 2.2: Let’s meet Latin American Partners, together with Brazilian seismologist Aderson Nascimento.

Prof. Lizzette A. Rodríguez participated in the General Assembly of the Latin American Association of Volcanology on December 2, 2022.

- g) Study trips to other countries organized by the department/faculty

Geology:

The annual Departmental field trip took place from April 2-10, 2023, in Costa Rica. It was led by **Prof. Lizzette A. Rodríguez** and included 5 graduate students, 18 undergraduate students, and 1 alumnus. The field trip was organized and led in collaboration with Carlos Ramírez, volcanologist from OVSICORI, and Yemerith Alpizar, volcanologist from the Universidad Técnica Nacional. The field trip included visits to the volcanoes Arenal, Rincón de la Vieja, and Turrialba, as well as to an old gold mine, an area with CO₂ emissions from cold springs, a quarry to learn about geotechnical experiments, a travertine deposit with fossils from vegetation, a cave, a geothermal area, a dam, a maar lake, and other areas. It was a great success and opened possibilities for future trips to Panama and other areas, as well as opportunities for online workshops on different applications that the participants were introduced to.

- h) Courses with international collaborators.

OTHER ACHIEVEMENTS (didn’t find where to include them):

Prof. Lizzette A. Rodríguez was invited to join the SZ4D Magmatic Drivers of Eruption Working Group (MDE WG). The SZ4D is a new 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.

Several GEOL undergraduate and graduate students participated in the Soil Erosion Research decadal research symposium organized by the American Society of Agricultural and Biological Engineers in Aguadilla, Puerto Rico 08-13 January-2023. **Prof. Stephen Hughes** was a co-organizer for a conference field trip and several workshops related to an active NSF Landslide Geohazards Center planning project. He also offered a presentation to the conference participants during one day of the conference that was held at the UPRM Department of Civil Engineering and Surveying Department. Student participants included **Edwin Irizarry, Desiree Bayouth, Kimberly Mendez, Tania Figueroa, Kiara Cunillera, Jonathan Perez, Coralís Friedman, Anishka Ruiz,** and **Kimberly Trahan**. GEOL ex-alumnus and current U-Mass Amherst PhD student Pedro Matos won the 1st place best student poster prize and **Kiara Cunillera** won the 2nd place best student poster award.

Prof. Elizabeth Vanacore participated in the kick-off of the C-CIES (CENTER FOR COLLECTIVE IMPACT IN EARTHQUAKE SCIENCE) at the University of Texas El Paso on Jan. 11-13. As a result of this meeting she will be participating in a pilot project on ground motions which will be supported by the Center with the possibility of additional funding as proposals are planned to be submitted for NEHRP this spring by the pilot Co-Is. It is expected that **Dr. Vanacore** will be a Co-I or Senior Personnel for a full proposal for the Center to be submitted in March 2024.

As a result of the winter NTHMP (National Tsunami Hazard Mitigation Program) meeting in February, **Prof. Elizabeth Vanacore** has been named a co-chair of the NTHMP Mapping and Modeling Sub-Committee Meeting.

Prof. Elizabeth Vanacore travelled to UNESCO/IOC in Paris, France on Feb. 27-March 3 in her role as a Caribbean representative of the TOWS Task Team on Tsunami Watch Operations. Global Tsunami Policy including response protocols to volcano induced tsunamis, meteotsunami monitoring, data needs for rapid responses and dissemination of information for local tsunamis, research advances and opportunities related to the Ocean Decade were among the topics discussed.

From February 28 to March 3 we had the visit from representatives of the USGS, working on the aeromagnetic survey of PR. Anjana Shah and Tom Pratt visited the Department on February 28 and gave a seminar titled: "Mapping geology from the sky: New airborne geophysical data over Puerto Rico to assist studies of geologic hazards and natural resources". They met with different faculty members and visited the PRSN. On Friday, March 3, a group of ~22 students, PRSN analysts, **Prof. Lizzette A. Rodríguez** and **Víctor Huérfano**, traveled to the Ponce airport to visit the airplane that is conducting the geophysical survey until the month of June.

On 17-Apr-2023 **Prof. Stephen Hughes** co-led a workshop at the Seismological Society of America Conference in San Juan. The workshop was titled "Post-earthquake Reconnaissance: Turning Disasters into Knowledge". Other workshop leaders included colleagues from North Carolina State University, the National Institute of Standards and Technology, the University of Michigan, the University of Washington, and the University of Illinois.

On 21-Apr-2023 **Prof. Elizabeth Vanacore** and **Stephen Hughes** led an all-day field trip for over 50 participants of the Seismological Society of America Conference. The field trip focused on the geology and earthquake activity in the southwestern area of the island. Participants were provided with a 30-page field guide and enjoyed stops in Guayanilla, Guanica, Cabo Rojo, and at the PR Seismic Network. Gisela Baez of PRSN and Rich Briggs and Jessie Jobe of the USGS also helped organize the field trip.

The Symposium of Geology took place on April 20, with a poster session, in which ~15 students presented their undergraduate or graduate research projects.

Dr. Alan L. Smith, former professor and director of our Department for over 25 years, has received the honor of becoming Professor Emeritus of the University of Puerto Rico. The Department made the recommendation, and the Certification 118 (2022-2023) of the Junta de Gobierno approved it. It is a great honor for Alan and for our Department. There was a special event on May 31st to honor him and others.

Prof. Lizzette A. Rodriguez is a Member of the Executive Committee of the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI), from 2019-2023).

Prof. Lizzette A. Rodriguez was the Treasurer of the Latin American Association of Volcanology (ALVO) until December 2022. She is currently Secretary General of ALVO (2023-2024).