

**Annual Report 2024-2025**

Dean or Director Name

Date

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## **I. General Information of the Dean's Office and Associated Units**

### **a. Mission and Vision**

#### **1. Mission and Vision of the Dean's Office**

### **b. Organizational Structure**

#### **1. Organizational Chart o the Dean's Office**

#### **2. Organizational Chart of associated units under the Dean's Office**

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

### a. Executive Summary

#### b. Objective 1: Institutionalize a culture of strategic planning and assessment

The Geology Department is currently in the process of reviewing the Strategic and Assessment Plans. 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. Most of the course revisions have been approved at the Faculty of Arts and Sciences level. The remaining course creations and revisions are currently in the Curricular Committee at the Faculty level, to be approved in the fall semester.

##### 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

##### o Strengthening of facilities for academic use

- Improvements to facilities

##### Geology:

- Residencia 4A was reconditioned and is now the location of the *Puerto Rico Landslide Hazard Mitigation Office*, which started operations in the first semester 2024-2025, under the coordination of **Dr. K. Stephen Hughes**.
- Residencia 2 has been re-assigned to the Geology Department for the development of the Museum of Geology, which is currently being reorganized. We expect the museum to open again, at least partially, during the academic year 2025-26.

- Acquisition of specialized equipment

##### Geology:

- Thin section machine: Buehler PetroThin
- 8 Dell Tower Plus 7010 computers for the Computer Laboratory

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

- Initiatives to obtain funds
- External funds received

Geology:

- The NOAA/NTHMP (National Tsunami Hazard and Mitigation Program) grant for PRSN was approved, \$150mil for FY 24-25.
  - On 01-Sep-2024, the Landslide Hazard Mitigation Office started a new project funded by the USGS: "LandslideReady community engagement program in Puerto Rico 2024-2026." The project budget is \$473k and extends through the end of 2026. It will allow the expansion of the LandslideReady effort which will include hiring an Assistant Researcher and a dedicated community engagement vehicle. The new Assistant Researcher position started on 01-Oct-2024, Ms. Isabella Camara.
  - Profs. Raiza Quintero and Thomas Hudgins submitted a proposal for \$499,917 for a Cooperative Agreement between USGS and UPRM for a project titled Assessing the Industrial Mineral Potential of Puerto Rico 2025-2028. It has been granted and will have opportunities for undergraduate and graduate research.
  - Own income and intended use
  - Collaboration agreements (purpose, validity, and agency name)
- e. Objective 4: To implement efficient and expedient competitive creative endeavors
- 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:

- Proposals:
  - On 01-Aug-2024 Prof. Stephen Hughes and colleagues submitted the collaborative NSF proposal "Understanding the Multi-hazard

vulnerabilities of electric power infrastructure in extreme weather events". The UPRM budget is \$75,000 over 2.5 years. The lead institution is University of Albany with PI Jorge Gonzalez.

- Prof. Raiza Quintero was invited to join researchers from PSI (Planetary Science Institute) in developing a proposal for NASA-ICAR (Interdisciplinary Consortia for Astrobiology Research). She has joined as CO-I, and step 1 has been submitted.
- Drs. Stephen Hughes and Pedro Matos collaborated with Dr. Hector Jimenez of the Physics Department and colleagues from the University of Albany to submit a proposal to the FEMA BRIC program via COR3. The project is titled "The Puerto Rico Mesonet Warning System (PRMesonet)" and has a budget of \$29M.
- Drs. Raiza Quintero, Stephen Hughes, and Thomas Hudgins worked with Dr. Ali Bramson at Purdue University to submit a NASA proposal to create the "Purdue - Puerto Rico Partnership in Planetary Science" which seeks to formally establish a link between UPRM and Purdue facilitating participation of our topico students in planetary science research conducted at Purdue University. This was submitted in December.
- On 19-March-2025, a proposal that Pedro Matos and Stephen Hughes are co-PIs on was officially submitted to FEMA. The proposal is "The Puerto Rico Mesonet Warning System (PRMesonet)". This is a \$30M proposal. Lead PI is Hector Jimenez of UPRM Physics Department. University of Albany is a collaborator.
- Proposals granted:
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  - Profs. Raiza Quintero and Thomas Hudgins submitted a proposal for \$499,917 for a Cooperative Agreement between USGS and UPRM for a project titled Assessing the Industrial Mineral Potential of Puerto Rico 2025-2028. It has been granted and will have opportunities for undergraduate and graduate research.
- Total number of proposals submitted and approved by department 3 granted (of which we have the details)

- Number of new research and creative work projects

Geology:

- The NOAA/NTHMP (National Tsunami Hazard and Mitigation Program) grant for PRSN was approved, \$150mil for FY 24-25.
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- Profs. Raiza Quintero and Thomas Hudgins submitted a proposal for \$499,917 for a Cooperative Agreement between USGS and UPRM for a project titled Assessing the Industrial Mineral Potential of Puerto Rico 2025-2028. It has been granted and will have opportunities for undergraduate and graduate research. 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**.

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

Geology:

- The NOAA/NTHMP (National Tsunami Hazard and Mitigation Program) grant for PRSN was approved, \$150mil for FY 24-25.
- On 01-Sep-2024, the Landslide Hazard Mitigation Office started a new project funded by the USGS: "LandslideReady community engagement program in Puerto Rico 2024-2026." The project budget is \$473k and extends through the end of 2026. It will allow the expansion of the LandslideReady effort which will include hiring an Assistant Researcher and a dedicated community engagement vehicle. The new Assistant Researcher position started on 01-Oct-2024, Ms. Isabella Camara.

- Impact outcomes of research and creative work projects (e.g., patents, discoveries)
- Initiatives to involve students in research and creative work projects

Geology (a lot of events have involved students and are included in other parts of this report):

- **Prof. Thomas Hudgins** and collaborator Dr. Laura Bilenker, from Auburn University, completed their fourth annual NSF funded field sampling excursion from July 27-31, 2024. This field work was in support of a collaborative NSF award studying the iron skarns in Puerto Rico and produced samples and data in support of 3 MS projects, 1 PhD project, and 4 undergraduate projects. Participants included MS students Anishka

Ruiz Perea, Adriel Gonzalez Rivera, Samantha VanDenburgh, Prof. Thomas Hudgins, Dr. Bilenker, and Prof. Raiza Quintero.

- Over 20 undergraduate and graduate students participated in summer research internships in 2024, at different universities in USA, agencies, etc. Some of the students are included here:
  - Tania Figueroa (graduate): Participated in a summer internship in the Construction Engineering Research Laboratory, in Champaign, IL. This is part of the Education and Research Internship Program, which is a collaborative program between UPRM and the Engineering Research Development Center. The supervisor in Mayagüez was Prof. Ismael Pagán and the mentor in CERL was Ryan Busby. The title of the Project was "Developing a Carbon Concentration Map for Puerto Rico".
  - Zaira M. Oñativia Berríos: Participated in an internship at Michigan Technological University, in volcano seismology. The advisor was Dr. Radwin Askari, but she was working directly with 2 doctoral students: Sananda Ray and Nontawat Srisapan.
  - Gabriel A. Martínez-Ruiz: Participated in the NSF-funded Digital Paleontology internship from Johns Hopkins University's School of Medicine (in Baltimore, Maryland). The supervisor was Dr. Siobhán Cooke.
  - Ednet Lopez: Currently a Visitor Center Assistant and River Ranger (May 20th - October 18th) at the Hells Canyon Creek Visitor Center, Hells Canyon National Recreation Area and Snake River, Oregon-Idaho. Supervisors: Anna-Louise Calliham (Project Manager - EPIC BLM/USFS - ACE 'American Conservation Experience'), John Alexander (River Ranger Manager - USFS, Riggins Office - Riggins, Idaho).
  - Jean M. Jiemenez: Participated in the REU Biology Program, American Natural History Museum, analyzing dinosaur growth rates through bone histology. The supervisors were Zoe Kulik and Roger Benson.
  - Andrea S. Jimenez Moreno: Participated in an internship at Brown University (REU), through the Summer Research Early Identification Program (SR-EIP) from the Leadership Alliance. The advisor was James W. Dottin III. The title of the project was "Triple Oxygen Isotope Evidence for Crustal Recycling Within the Samoan Mantle Plume."
  - Yanira Santiago Perez (graduate): Participated in a workshop in Kingston, NY - 2024 Summer Earthworm Course, from June 24 to 28. The instructors were Paul Friberg and Stefan Lisowski.
  - Beverly J. Malugin Ayala: Participated in the NASA Europa ICONS Internship, with the project "One crater to rule them all: Digitizing the geologic map of Tyre."
  - Jarelys A. Hernández Molina: Participated in a REU with the University of Northern Illinois, focused on groundwater resources in the Yucatan Peninsula, Mexico. Supervisors: Dr. Melissa Lenszewski and other



faculty members from NIU and Mexico. She participated in 2 projects: "Impact of Hurricane Beryl in a karstic aquifer" and "Comparison of Freshwater and Saltwater Flow in an 85m Deep Sinkhole in Northeast Yucatán, Mexico".

- Pedro H. Rivera Ramos: Participated in an internship at James Madison University, Virginia. The program has the acronym U-ROCKS (Undergraduate Research Opportunities in Cave and Karst Sciences) and is financed by NSF. His project was titled "Analysis of Cave Sediments and Morphological Controls on Deposition, Butler Cave, Burnsville Cove, Virginia" and his mentors were Bryan Crowell, Caver Rose-Anna Behr, and Dhanuska Wijesinghe.
- Cesar Rodriguez (graduate): Participated in an internship at BGC Geotechnical Engineering Firm, Vancouver, Canada.
- On 27-Aug-2024, graduate student Estefania Vicens traveled to Indiana to do fluvial sediment sample processing and isotopic analysis. This is part of an NSF project where she is working in the Purdue University rare isotope measurement accelerator mass spectrometer laboratory.
- Number of research collaboration agreements and brief description (purpose, validity period, and agency name)

#### **Geology:**

- Ongoing collaboration agreement with Dr. Laura Bilenker, from Auburn University. Principal UPRM investigator is Prof. Thomas Hudgins. They completed their fourth annual NSF funded field sampling excursion from July 27-31, 2024. This field work was in support of a collaborative NSF award studying the iron skarns in Puerto Rico and produced samples and data in support of 3 MS projects, 1 PhD project, and 4 undergraduate projects. Participants included MS students Anishka Ruiz Perea, Adriel Gonzalez Rivera, Samantha VanDenburgh, Prof. Thomas Hudgins, Dr. Bilenker, and Prof. Raiza Quintero.
- Most relevant publications and presentations

#### **Geology:**

- On 16-Aug-2024, Prof. Stephen Hughes gave an invited virtual lecture to the international consulting firm BGC Engineering. The presentation was focused on the work that has led to the establishment of the PR Landslide Hazard Mitigation Office.
- The IDRIM (Integrated Disaster Risk Management Society) 2024 took place from August 24-28, at Cartagena, Colombia. The PR Seismic Network presented the work "The Puerto Rico Tsunami Warning and Mitigation Program (PR - TWMP)".
- The 2025 USGS PRVI NSHM (National Seismic Hazard Map) and beyond workshop took place at the Colegio de Ingenieros & Agrimensores, on

August 28-29. Profs. Alberto López, Elizabeth Vanacore, and Víctor Huérfano presented advances in research and PRSN monitoring: on GNSS, on the current and future land passive seismic experiments, on the preliminary results from the analysis of active source lines, and on the PRSN.

- On 18-Sept-2024, Drs. Stephen Hughes and Pedro Matos gave an invited presentation and participated in a virtual workshop organized by the USGS (US Geological Survey). The Spanish-language workshop was titled “Manejo de tormentas: Viene, llegó, pasó” and included different agencies and groups from Puerto Rico, Dominican Republic, and Cuba.
- Anishka Ruiz, Isabella Cámara, and Stephen Hughes; “LANDSLIDEREADY COMMUNITY ENGAGEMENT PROGRAM IN PUERTO RICO 2024-2026”; Geological Society of America 2025 Southeastern Section Meeting; Harrisonburg, Virginia [19-21 March, 2025].
- César Rodríguez and Stephen Hughes; “TRACKING A LIMESTONE BEDROCK LANDSLIDE ON AN URBANIZED HILLSLOPE IN GUANICA, PUERTO RICO”; Geological Society of America 2025 Southeastern Section Meeting; Harrisonburg, Virginia [19-21 March, 2025].
- An article authored by undergraduate student Kyle Shakill Fred-Velez, with co-authors Santa L. Perez-Cortes (alumnus), Ali M. Bramson, and Thomas Hudgins was accepted for publication at the end of January. The link to the article is: <https://authors.elsevier.com/c/1kX7W4L-YqbFr>. The article is titled "Mapping of potential mass wasting on Enceladus" and is an extension of the work he did for his undergraduate research project. It will be published on April 2025 in the Icarus journal, Volume 430, 116471.
- On 20-March-2025, Cesar Rodriguez, Anishka Ruiz, and Isabella Camara attended the southeast GSA conference in Harrisonburg, Virginia. They presented the following abstracts:
  - LandslideReady Community Engagement Program in Puerto Rico 2024-2026:  
<https://gsa.confex.com/gsa/2025SE/meetingapp.cgi/Paper/407165>
  - Tracking a Limestone Bedrock Landslide on an Urbanized Hillslope in Guanica, PR:  
<https://gsa.confex.com/gsa/2025SE/meetingapp.cgi/Paper/407972>
- Graduate assistantships for research and teaching (quantity and amount awarded)

#### Geology:

TA: 14, Total ~\$46,466.69  
RA: 13, Total ~\$71,815.98

- Origin of graduate students (OPIMI).

#### Geology:

21 graduate students (2024-25): 21 PR

g. Objective 6: To impact our Puerto Rican society

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

Geology:

- LandslideReady Project – research on landslide hazards in PR, led by Prof. Stephen Hughes and Assistant Researcher Isabella Camara. The project's objectives are to involve communities in landslide hazards and risk. The first municipality certified as LandslideReady is Utuado.

- Projects developed to address community needs

Geology:

- LandslideReady Project – research on landslide hazards in PR, led by Prof. Stephen Hughes and Assistant Researcher Isabella Camara. The project's objectives are to involve communities in landslide hazards and risk. The first municipality certified as LandslideReady is Utuado.

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

Geology:

- Prof. Lizzette A. Rodríguez was invited to be a speaker on the Ecoexploratorio event titled “Volcanismo en el Caribe, Hawai y Puerto Rico”, on August 10. The second speaker was alumnus Jobel V. Villafañe, who is currently doing an MS in hydrology at the University of Hawaii at Manoa.
- Students Anishka Ruiz, Valeria Vargas, Tania Figueroa, and Estefania Vicens participated in EcoExploratorio events in Mayaguez and Ponce on 10-Aug and 24-Aug, respectively. They gave presentations about landslide hazards in Puerto Rico.
- Prof. Raiza Quintero, along with the Student Geological Society, represented the University and Department in an outreach event “Geología de la Luna” at Ecoexploratorio on September 7. Prof. Raiza Quintero and undergraduate student Gabriel Colon gave the main event presentation. Students Daniel Valentin, Kyleshaquill Fred, and Andrea Jimenez also participated. The audience was mixed and included kids aged 5-12, some teens up to 17, and parents.
- A group of 15 students from the Colegio Presbiteriano Rehma, in Hormigueros, visited the Department of Geology on September 26. The students came with their teacher, Prof. Ernesto Balay, and visited the PRSN, the PR Landslide Hazard Mitigation Office, and the Department.

- The Student Geological Society gave a presentation and activity to the students, together with Prof. Raiza Quintero and Lizzette A. Rodríguez.
- On October 17, Anishka Ruiz and Pedro Matos visited the school Manuel Bou Gali in Corozal for a presentation on Landslides. Students were from 7th and 8th grade. Also, the team encouraged the Shake Out Drill for the students to participate.
  - The Student Geological Society represented the Department of Geology in a visit from a group of homeschoolers and their parents on October 17. The students learned about Geology and the Department, and participated in a dynamic related to dinosaurs.
  - The Department of Geology participated in the opening event of the Museo de Historia Natural de PR (MHNPR) on October 20-27. The participation was organized and led by Profs. Hernán Santos, Lizzette A. Rodríguez, Raiza Quintero, and the Student Geological Society (especially graduate student Daniel Valentin and undergraduate students Gabriel Martínez and Jean M. Jiménez). The Department had 10 displays, which included minerals, rocks, and fossils, plus 2 Dept. tables with recruitment materials and a hands-on experience for the visitors to be able to have a more direct interaction with different samples. About 22 volunteer students, both graduate and undergraduate, helped during the exhibit and interacted with the visitors. Several faculty members also volunteered their time in the event, both in the exhibits and through presentations: Lizzette A. Rodríguez, Raiza Quintero, Thomas Hudgins, Hernán Santos, Wilson R. Ramírez, Pedro Matos, Elizabeth Vanacore, Stephen Hughes, and Isabella Cámara. Ms. Marsha Irizarry (Administrative Official I), also helped out on one of the days, as well as the organization of the Department exhibits. Computer technician Robert Ropiza helped us with the materials included in the 2 tables of the Department. Together with the Department exhibits, there were exhibits from the PR Seismic Network (organized mainly by Jesenia Figueroa) and the PR Landslide Hazard Mitigation Office. More information on the event and the museum can be found in their web site ([https://www.mhnpr.org/?fbclid=IwY2xjawGc61hleHRuA2FlbQlXMAABHefPiTGhVtX2N2VRAJwHHhPQqUjAMTxlaBVhtIDISQabv6KKrO\\_s-liaGQ\\_aem\\_MN7gV0a3kWZNgxvG9KaSDQ](https://www.mhnpr.org/?fbclid=IwY2xjawGc61hleHRuA2FlbQlXMAABHefPiTGhVtX2N2VRAJwHHhPQqUjAMTxlaBVhtIDISQabv6KKrO_s-liaGQ_aem_MN7gV0a3kWZNgxvG9KaSDQ)) and social networks (<https://www.facebook.com/MHNPR.ORG>). The Department will continue to collaborate with the museum, as it develops with the plan to open in 2025.
  - On November 21, 2024, Anishka M. Ruiz Perea, Isabella Cámara Torres and César Rodríguez Feliciano visited Escuela Florencia García in Las Piedras to give a presentation to students from high school.
  - The Department and the Student Geological Society participated in an event at the Museo del Niño in Carolina, on Saturday, March 15, from 1-4 pm. Profs. Lizzette A. Rodríguez and Hernán Santos led the group, which also included an exhibit from the Puerto Rico Landslide Hazard Mitigation

Office and from the PR Seismic Network. The Department had 5 exhibit tables. The event was a complete success.

- On 24-March-2025, Isabella Camara and Anishka Ruiz gave a presentation about the UPRM landslide office for 7th-9th graders at the Escuela Marcelino Rodriguez Roman in Moca.
- The Student Geological Society organized a visit from a group of homeschool children (ages 5 to 10) and their parents, on March 25. The focus was on volcanoes and Lizzette A. Rodríguez prepared demonstrations on volcanic processes, with the students of the SGE. The group also visited the PRSN and the Landslide Office.
- The Department of Geology, including the Student Geological Society, the Landslide Office, and the PR Seismic Network, were invited to an event organized by the Administración & la Junta de Directores del Proyecto Huella de Mayagüez. The activity was titled '10ma Conferencia Sobre Asuntos Ambientales' and took place on April 11 at the central plaza of Mayaguez. The Department had exhibit tables and gave presentations to the school students and public.

- Dissemination of the institution's achievements and initiatives that benefit the community.

#### Geology:

- On 19-July-2024 the company MeterGroup published a podcast interview of **Prof. Stephen Hughes** about landslide hazard science in Puerto Rico. It is available at: <https://metergroup.com/podcasts/episode-36-the-70000-landslide-storm/>
- Prof. Stephen Hughes did some interviews about landsliding related to tropical storm Ernesto. Two were with Jay Fonseca WAPA-TV interview 13-Aug and WKAQ 580AM interview 14-Aug. Another was for an article published by yaleclimateconnections.org.
- On 22-Aug-2024, Prof. Stephen Hughes participated in a workshop hosted by the USGS at the Mayaguez Colegio de Ingenieros facility. The workshop was focused on storm/hurricane preparation, products, and collaboration. Participants were from municipal, state, private, and federal groups.
- Prof. Raiza Quintero, along with the Student Geological Society, represented the University and Department in an outreach event "Geología de la Luna" at Ecoexploratorio on September 7. Prof. Raiza Quintero and undergraduate student Gabriel Colon gave the main event presentation. Students Daniel Valentin, Kyleshaquill Fred, and Andrea Jimenez also participated. The audience was mixed and included kids aged 5-12, some teens up to 17, and parents.
- On 25-Sept-2024, Drs. Stephen Hughes and Pedro Matos gave an invited virtual presentation for the US National Forest Service El Yunque office. The presentation was organized by UPRM GEOL alumnus Pablo Llerandi.



- Prof. Raiza Quintero was invited as “invitada especial” to give a talk at “Noches de observación en Observatorio Astronómico” UPR-Humacao. The event was held on November 7, 2024.
- On October 11, Stephen Hughes, Isabella Camara, Anishka Ruiz and Anthony Collazo presented for the first community meeting in Utuado at Barrio Arenas. During the meeting they presented what Landslide Ready is and the efforts in Utuado.
- On October 14, Anishka Ruiz, Isabella Camara and Valeria Vargas presented at the second community meeting in Utuado at Barrio Caonillas Arriba. They presented what Landslide Ready is and the efforts in Utuado. Gave out Landslide Guides.
- On October 16, Stephen Hughes, Isabella Camara, and Pedro Matos met with Pablo Mendez of the NOAA CCAN group to discuss expanded collaboration efforts with the Landslide Office and different community-based organizations.
- On October 18, Stephen Hughes and Pedro Matos gave an invited presentation at the FEMA workshop “Acercamiento Regional para la Recuperación” in Cinema teatro Fundación Ángel Ramos in Caguas, P.R. Participants included officials from around 15 different municipalities in the Caguas and Guayama NMEAD zones of the island.
- The Department of Geology participated in the opening event of the Museo de Historia Natural de PR (MHNPR) on October 20-27. The participation was organized and led by Profs. Hernán Santos, Lizzette A. Rodríguez, Raiza Quintero, and the Student Geological Society (especialmente estudiante graduado Daniel Valentin and estudiantes de pregrado Gabriel Martínez and Jean M. Jiménez). The Department had 10 displays, which included minerals, rocks, and fossils, plus 2 Dept. tables with recruitment materials and a hands-on experience for the visitors to be able to have a more direct interaction with different samples. About 22 volunteer students, both graduate and undergraduate, helped during the exhibit and interacted with the visitors. Several faculty members also volunteered their time in the event, both in the exhibits and through presentations: Lizzette A. Rodríguez, Raiza Quintero, Thomas Hudgins, Hernán Santos, Wilson R. Ramírez, Pedro Matos, Elizabeth Vanacore, Stephen Hughes, and Isabella Cámara. Ms. Marsha Irizarry (Administrative Official I), also helped out on one of the days, as well as the organization of the Department exhibits. Computer technician Robert Ropiza helped us with the materials included in the 2 tables of the Department. Together with the Department exhibits, there were exhibits from the PR Seismic Network (organized mainly by Jesenia Figueroa) and the PR Landslide Hazard Mitigation Office. More information on the event and the museum can be found in their web site ([https://www.mhnpr.org/?fbclid=IwY2xjawGc61hleHRuA2FlbQIxMAABHefPiTGhVtX2N2VRAJwHHhPQqUjAMTxlaBVhtIDISQabv6KKrO\\_s-liaGQ\\_aem\\_MN7gV0a3kWZNngxvG9KaSDQ](https://www.mhnpr.org/?fbclid=IwY2xjawGc61hleHRuA2FlbQIxMAABHefPiTGhVtX2N2VRAJwHHhPQqUjAMTxlaBVhtIDISQabv6KKrO_s-liaGQ_aem_MN7gV0a3kWZNngxvG9KaSDQ)) and social networks (<https://www.facebook.com/MHNPR.ORG>). The Department will continue

to collaborate with the museum, as it develops with the plan to open in 2025.

- On November 20, 2024, the PR Landslide Hazard Mitigation Office visited the Office of Emergency Management in Utuado to give them a workshop about landslides and the program LandslideReady. Stephen Hughes, Isabella Cámara, Pedro Matos, and Anishka Ruiz.
- On December 11, 2024, Stephen Hughes gave an invited presentation about landslide hazards in Puerto Rico for the USDA Caribbean climate hub "Tech Talks" series.
- On January 31, the PR Landslide Hazard Office team (Stephen Hughes, Pedro Matos, Isabella Cámara, Anishka Ruiz, and Karla Torres), and Lizzette A. Rodríguez participated in the event to recognize the Utuado municipality Office of Emergency Management for completing LandslideReady Program (the first in PR). The event had the participation of the staff and director of Emergency Management in Utuado, the regional director of Emergency Management, and other personnel from the municipality. The event was covered by Noticentro WAPA.
- On February 7, 2025, Stephen Hughes, Anishka Ruiz, and Karla Torres of the PR Landslide Hazard Office met at the Office of Emergency Management of Ponce with various municipality departments to present them with the opportunity to participate in the LandslideReady recognition program. The year 2025 will be the 40th anniversary of the Mameyes landslide disaster.
- On February 11, 2025, Manuel Matos and Samuel Rios from National Resources Conservation Service Caribbean Area Division visited the PR Landslide Hazard Mitigation Office to discuss collaboration possibilities.
- On February 18, Stephen Hughes and Pedro Matos met with personnel at the FEMA Caribbean Area headquarters in San Juan to discuss the ongoing efforts of the landslide office.
- On February 19, Isabella Cámara, Anishka Ruiz, Pedro Matos, and Stephen Hughes met in Adjuntas with the municipality emergency management office director and staff. The meeting was organized to include Adjuntas in our LandslideReady project.
- On February 28, Isabella Cámara and Stephen Hughes met in Maricao with the mayor and other municipality personnel to introduce that municipality to the LandslideReady project.
- On March 5, the Landslide Office prepared and submitted a "Memorial Explicativo" (attached here for reference) about the active Alturas de Bélgica (Guánica) landslide at request of the PR House of Representatives Housing and Urban Development Commission. The document was prepared by Stephen Hughes, Cesar Rodríguez, and Pedro Matos. The summary of the landslide was approved by the UPRM administration and UPR president's office. This is related to House of Representatives Resolution 46.
- On 12-March-2025, Isabella Camara, Anishka Ruiz, and Stephen Hughes had an introductory in-person reunion with the Jayuya emergency

management director. It went very well and we look forward to incorporating Jayuya into the LandslideReady process.

- On 01-Apr-2025, Anishka Ruiz and Isabella Camara attended an in-person meeting in Jayuya of the municipio's "Junta Comunitaria". This meeting will help us coordinate future activities for the Jayuya LandslideReady recognition cycle.

#### h. Objective 7: To strengthen school spirit, pride, and identity

- o Improvement in services offered to students
- o Activities of student organizations

#### Geology:

- The initiation of new members of the Student Geological Society took place on September 26, at F-321/322. 14 new members were initiated.
- The Student Geological Society represented the Department of Geology in a visit from a group of homeschoolers and their parents on October 17. The students learned about Geology and the Department, and participated in a dynamic related to dinosaurs.
- The UPRM Open House took place on October 24 at the Plazita de Celis. The students of the Student Geological Society helped in planning our table and helped in the event.
- On February 6, the Student Geological Society participated in the Student Associations Fair at the Placita de Chardón.
- The Annual Symposium of Geology took place on February 28-29. The topic of the Symposium was "Geo-Careers: Exploring Opportunities and Shaping the Future." This year it was dedicated to Prof. James Joyce, who has been part of our faculty since 1981 and was instrumental in the organization of the first Symposium of Caribbean Geology, back in 1982. The event included 11 presentations, given by 12 alumni of our undergraduate and graduate programs, and Víctor Huérfano. It also included a panel discussion on geo-careers, with experts from academia, industry and research, who shared career paths, insights, and advise for our students. The Symposium also included a field trip to a landslide in Guánica and to Pico Rodadero, in Yauco. The event was a complete success and participation was higher than in previous years. The main organizers were Drs. Raiza Quintero and Pedro Matos, with the Student Geological Society, and with the support of the administrative personnel of the Department.
- The Department and the Student Geological Society participated in an event at the Museo del Niño in Carolina, on Saturday, March 15, from 1-4 pm. Profs. Lizzette A. Rodríguez and Hernán Santos led the group, which also included an exhibit from the Puerto Rico Landslide Hazard Mitigation



Office and from the PR Seismic Network. The Department had 5 exhibit tables. The event was a complete success.

- The Student Geological Society organized a visit from a group of homeschool children (ages 5 to 10) and their parents, on March 25. The focus was on volcanoes and Lizzette A. Rodríguez prepared demonstrations on volcanic processes, with the students of the SGE. The group also visited the PRSN and the Landslide Office.
- Activities to promote links with alumni
  - The Annual Symposium of Geology took place on February 28-29. The topic of the Symposium was “Geo-Careers: Exploring Opportunities and Shaping the Future.” This year it was dedicated to Prof. James Joyce, who has been part of our faculty since 1981 and was instrumental in the organization of the first Symposium of Caribbean Geology, back in 1982. The event included 11 presentations, given by 12 alumni of our undergraduate and graduate programs, and Víctor Huérfano. It also included a panel discussion on geo-careers, with experts from academia, industry and research, who shared career paths, insights, and advice for our students. The Symposium also included a field trip to a landslide in Guánica and to Pico Rodadero, in Yauco. The event was a complete success and participation was higher than in previous years. The main organizers were Drs. Raiza Quintero and Pedro Matos, with the Student Geological Society, and with the support of the administrative personnel of the Department.
- Donations received from alumni
- Collaboration agreements with government agencies, the private sector, and various entities (purpose, validity, and name of the agency)

#### Geology:

- UPRM has a Memorandum of Understanding with the Museo de Historia Natural de Puerto Rico (MSHPR) in Aguadilla. In the MOU, the Department of Geology has an important role, in the preparation of the geological/paleontological exhibit and as collaborators in outreach activities.
- Activities aimed at the community in general
  - *All included in the previous sections.*
- Activities aimed at the university community
- Improvements to infrastructure and buildings.

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

- **Prof. Lizzette A. Rodriguez** is the Secretary General of the Latin American Association of Volcanology (ALVO) until December 2024.
- **Prof. Elizabeth Vanacore** was appointed to the NOAA Science Advisory Board Tsunami Science & Technology Advisory Panel. As part of her participation in TSTAP she has been subsequently appointed to be the TSTAP representative on the SAB panel/working group on Artificial Intelligence.
- **Dr. Elizabeth Vanacore**, as Chair of the Mapping and Modeling (MMS) subcommittee, attended the NTHMP meeting in American Samoa in July 2024. There she represented PR at the MMS and ran the MMS meeting in her role as co-chair. She also represented PR in the NTHMP coordinating committee, WCS, and MRPWG and provided the MES presentations for PR and the USVI.
- **Prof. Lizzette A. Rodriguez** is a member of the organizing committee of the 2<sup>nd</sup> Congress of the Latin American Association of Volcanology (ALVO), which will take place on November 2025 at Manizales, Colombia.
- **Dr. Elizabeth Vanacore** was invited to the “Expert Meeting on Seismic Sources in the Northwest Caribbean and on NonSeismic Sources of Tsunamis for the Caribbean and Adjacent Regions” (UNESCO-IOC-EMCR-2024), which took place on 3-5 December 2024, in Heredia - Costa Rica. The event was hosted by the Sistema Nacional de Monitoreo de Tsunamis (SINAMOT) of Universidad Nacional.
- On February 6, the Department participated in the Graduate Studies Fair, at the Student Center. Mrs. Marsha Irizarry and Prof. Lizzette A. Rodríguez represented the Department and talked to many students about our programs, both BS and MS.
- IOC/UNESCO Task team for tsunami watch operations: during the dates of February 18-26 Elizabeth Vanacore traveled to Paris, France to act as one of the Caribe-EWS representatives in the TOWS task team for tsunami watch operations (TT-TWO). During the meeting, topics regarding the cutting edge of tsunami detection and monitoring as well as best practices were discussed in a global context. Elizabeth also presented on the CARIBE Wave exercise as well as current monitoring capabilities within the Caribbean basin. Notably a tool developed by Elizabeth to quantify seismic performance via earthquake detection time is expected to be shared with other global ICG partners. A similar code is to be developed by the TT-TWO for sea level/tsunameters and a study conducted by its members to determine the quantifiable detection capabilities of all ICGs. The report is expected to be presented at the next TT-TWO in February 2026.
- The Caribe Wave tsunami exercise took place on March 20. It was based on the Lisbon 1755 earthquake and tsunami, which traveled across the Atlantic.
- On 01-Apr-2025, Prof. Stephen Hughes gave an invited virtual presentation for the USGS Federal Advisory Committee on Landslides. This group will provide guidance for future USGS Landslide Hazard Program collaborative opportunities

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through the National Landslide Preparedness Act funding, appropriated through the US Congress.