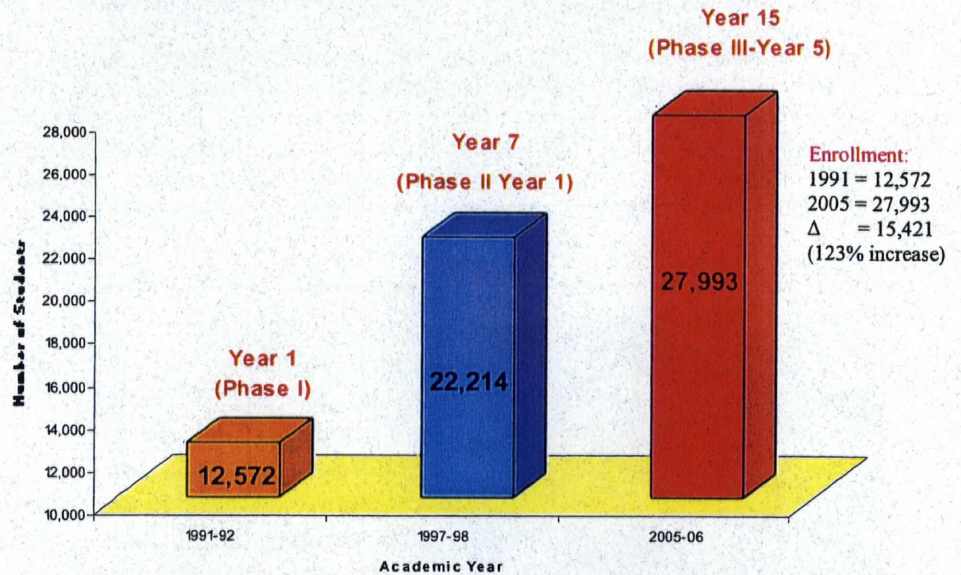


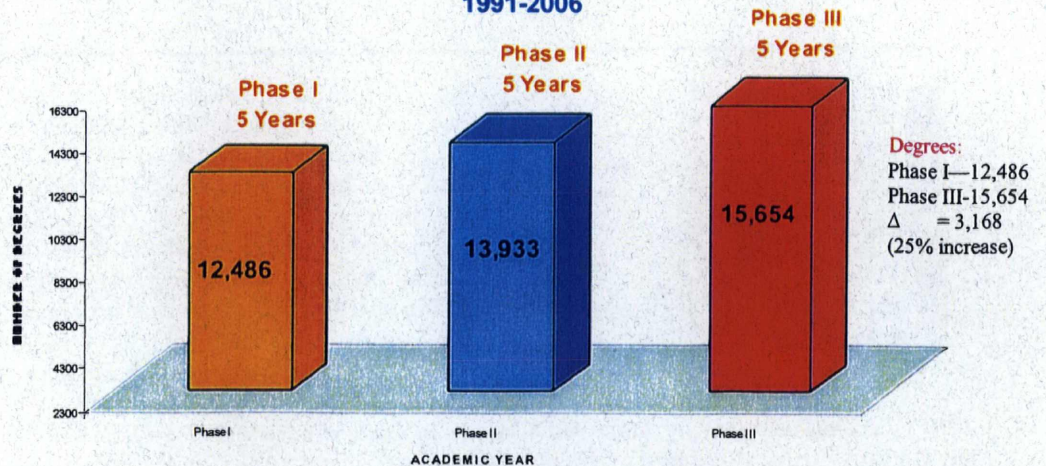
HIGHLIGHTS 2005-06

STEM Undergraduate Enrollment and BS Degrees

STEM ENROLLMENT INCREMENT AT PR-LSAMP INSTITUTIONS



STEM Degrees Awarded by PR - LSAMP Institutions 1991-2006



Annual degree production has increased from 1,709 in 1991 to 3,124 in 2005 (82% increase)

Pre-College to College Bridging Program



2006 Summer Academy "The Geology of Puerto Rico" where Agustin Diaz, BDP Fellow-Cohort I, was one of the resources

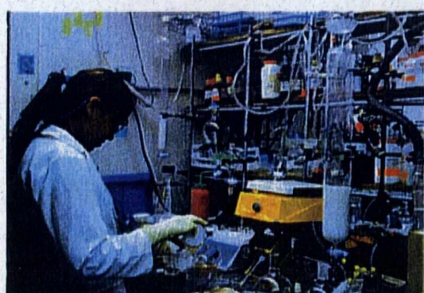
The PR-LSAMP Pre-College to College Bridging Component included a STEM Research program for junior and senior high school students with challenging research activities to strengthen their conceptual knowledge and research skills. Sixteen Saturday Academies were offered per semester that covered five scientific topics. Local scientists and BDP fellows served as resources to a total of 200 students from eight different high schools. The topics of the workshops were paleontology (Fossils of Puerto Rico); Chemistry (Chemical Process in Our Daily Lives); Biology (Marine Turtles and Puerto Rican Flora); Physics (Physical Laws Applied to Daily Life), and Astronomy (The Solar System).



Physics Saturday Academy—Azlin Biaggi, BDP Fellow from Cohort I, was the workshop resource

The theme of the 2006 Summer Academy was the Geology of Puerto Rico, with field trips and workshops integrating chemistry and mathematical concepts. Twenty-five junior high school students from the Luis Muñoz Marin school in the town of Yabucoa (southeastern region) participated in this two-week academy. Data from the 2005 Summer Academy showed that 92% of the participants enrolled in a STEM undergraduate program at a PR-LSAMP institution. These students have joined PR-LSAMP undergraduate activities, progressing through the educational pipeline supported by PR-LSAMP.

Undergraduate Research Experiences Program



Organic Chemistry Lab

During academic year 2005-06 and during the Summer of 2006, PR-LSAMP awarded 276 stipends to STEM undergraduate majors to participate in research experiences at local research laboratories. Also, 238 stipends were awarded to researchers to cover laboratory materials to be used by the students during their research experiences (\$200 per student). Three students were selected by the National Institute of Standards and Technology (NIST) to participate in their Summer Internship Program at Gaithersburg, MD. Also,

two PR-LSAMP students and a STEM faculty member participated in the NSF and DOE FaST Program.



Nanotechnology Lab

2006 ANNUAL BEST PRACTICES CONFERENCE



Invited Speakers and PR-LSAMP Staff

The 2006 PR-LSAMP Annual Best Practices Conference on Teaching and Learning was held in October at the Embassy Suites Hotel in Dorado, Puerto Rico. One hundred and fifty STEM faculty members from the different PR-LSAMP institutions attended. The speakers were Dr. Robert Chang, Northwestern University, (*"The Materials World Modules Program and It's Impact on Science Learning and Teaching"*); Dr. John R. Jungck, Beloit College (*"Using the Ten Equations that Changed Biology in Implementing NRC Bio*



Dr. Howard Adams and PR-LSAMP BDP Fellows

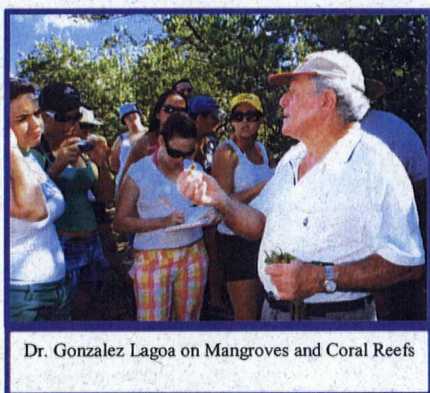
2010's Recommendations for More Mathematics in Undergraduate Biology Education"); Dr. Howard Adams, President of H.G. Adams & Associates (*"The Undergraduate Research Experience: Forming Effective Mentoring Alliances"*), and two UPR-Humacao professors, Dr. Denny Fernández and Dr. Elio Ramos (*"MeCoBi: Exploring Biocomplexity in an Interdisciplinary Undergraduate Course"*).

(cont) HIGHLIGHTS 2005-06

PR-LSAMP BRIDGE TO THE DOCTORATE PROGRAM

PR-LSAMP has awarded 46 Bridge-to-the-Doctorate Fellowships since the beginning of the program in 2003. Cohort 1 Fellows are expected to obtain their PhD degree in 2008. Fellows have served as role models to high school students and as mentors to undergraduate STEM students participating in the PR-LSAMP Program. They benefited from a rigorous and rewarding Support Program that consisted of a series of workshops, seminars, and field trips to enhance their academic preparation. The last Cohort of Fellows (Cohort IV) began graduate studies at UPR-Rio Piedras in August 2006.

PR-LSAMP BDP Activities



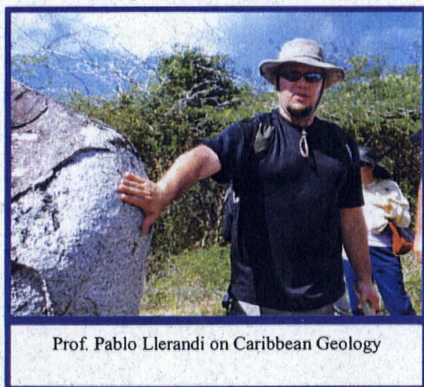
Dr. Gonzalez Lagoa on Mangroves and Coral Reefs



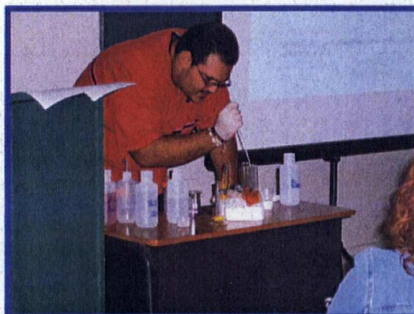
BDP Fellows (Cohorts 2&3) and STEM Resources Field Trip to Vieques-Summer 2006



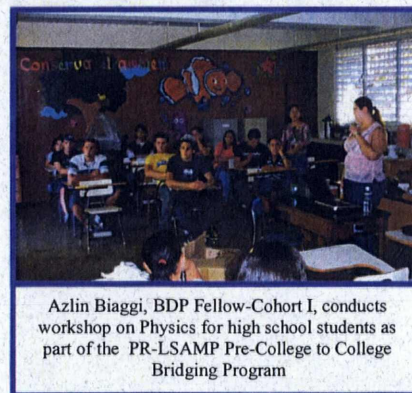
Dr. Eugenio Santiago on Puerto Rican Flora



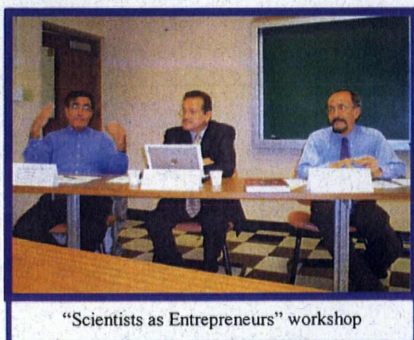
Prof. Pablo Llerandi on Caribbean Geology



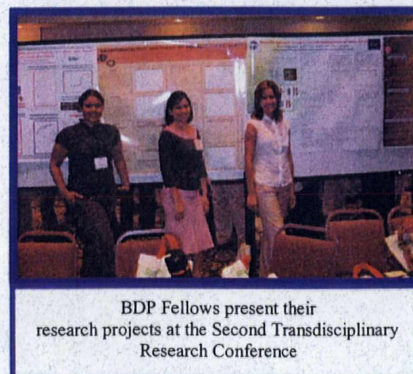
Agustin Diaz, BDP Fellow-Cohort I, leads the Chemistry workshop for high school students participating in the Saturday Academies



Azlin Biaggi, BDP Fellow-Cohort I, conducts workshop on Physics for high school students as part of the PR-LSAMP Pre-College to College Bridging Program



“Scientists as Entrepreneurs” workshop



BDP Fellows present their research projects at the Second Transdisciplinary Research Conference

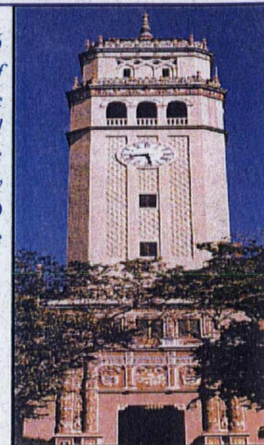


Cohort IV Bridge to the Doctorate Fellows



Through the Bridge-to-the-Doctorate Program, PR-LSAMP has awarded a total of 46 fellowships to former PR-LSAMP undergraduate STEM students for their first two years of graduate studies. This year we conducted the first external evaluation on the academic progress of Cohort I (2003) and results showed that Fellows outperformed their peers in all categories; the average number of credits completed was substantially higher; publications were greater; presentations of research projects in national scientific conferences were nearly doubled, and first time passing grades on qualifying exams was much higher. The BD Program has indeed proved to be very successful in helping students achieve academic excellence while pursuing their doctoral studies"

Dr. Manuel Gomez, PI



The University of Puerto Rico at Rio Piedras (UPR-Rio Piedras) is the flagship institution of the Island's public higher education system. Located in the San Juan metropolitan area, UPR-Rio Piedras enrolls almost 18,000 undergraduate students and over 3,000 graduate students. The large majority of students, 98%, are Puerto Rican; 68% are women, and 60% are first generation college students. The institution grants bachelors' degrees in 69 areas of specialization, 10 master's degrees in 43 areas of specialization and three doctoral degrees (Ph.D., J.D. and Ed.D.) in 14 areas of specialization. Although the Carnegie Foundation classifies UPR-Rio Piedras as a Research Intensive University, it is positioned to become a Research Extensive University while maintaining its commitment to quality undergraduate education. Nationwide, 10% of the Hispanics who earned a Ph.D. degree in a natural science field from 1998 to 2003 attained their BS degree from UPR-Rio Piedras.



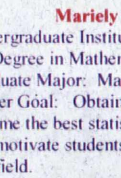
Pamela Vallejo

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Physics (2006)
Graduate Major: Chemistry
Career Goal: Complete a Ph.D. and pursue research in material science working specifically with photoluminescent properties of silicon nanoparticles.



Griselle Hernandez

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Chemistry (2006)
Graduate Major: Chemistry
Career Goal: Obtain a Ph.D. in organic chemistry and continue research either in the academia or the industry.



Mariely Hernandez

Undergraduate Institution: UPR-Cayey
BS Degree in Mathematics(2006)
Graduate Major: Mathematics
Career Goal: Obtain a Ph.D. in this area to become the best statistics professor ever, and motivate students to pursue studies in this field.



Pablo Hernandez

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Biology (2004)
Graduate Major: Biology
Career Goal: Obtain my Ph.D. and continue post-doctoral studies to be better prepared for an academic position as a professor and researcher.



Edward Aviles

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Chemistry (2006)
Graduate Major: Analytical Chemistry
Career Goal: Specialize in nanotechnology focusing in subnanostructuring of catalyst for direct methanol fuel cell in order to find alternatives for sources of energy.



Francheska Ruiz

Undergraduate Institution: UPR-Humacao
BS Degree in Biology-Wild Life Mgmt (2006)
Graduate Major: Ecology
Career Goal: Obtain my Ph.D. and continue to do research in Environmental Biology and Conservation with an interdisciplinary approach.



Maria del Mar Garcia

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Chemistry (2006)
Graduate Major: Analytical Chemistry
Career Goal: Obtain a Ph.D., enhance my knowledge in Biotechnology and contribute to the development of biosensors and devices to improve the quality of life.



Ivan Lopez

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Physics (2006)
Graduate Major: Physics
Career Goal: Obtain a high quality education while engaging in productive research projects, to become a professor and researcher.



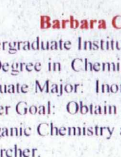
Jesuan Betancourt

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Physics (2006)
Graduate Major: Chemical Physics
Career Goal: Complete my Ph.D. -continue my research and become a college professor.



Fernando Piñero

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Mathematics (2006)
Graduate Major: Mathematics
Career Goal: Become a professional mathematician and work in the application of algebra to real-world problems.



Barbara Casañas

Undergraduate Institution: UPR-BS Degree in Chemistry (2006)
Graduate Major: Inorganic Chemistry
Career Goal: Obtain a Ph.D. in Inorganic Chemistry and become a researcher.



Yanira Enriquez

Undergraduate Institution: UPR-Rio Piedras
BS Degree in Chemistry (2006)
Graduate Major: Analytical Chemistry
Career Goal: Work in the pharmaceutical industry doing characterization, analysis and structural determinations of biological compounds. Becoming a college professor is also part of my career plans.



(cont) HIGHLIGHTS 2005-06

PR-LSAMP Advisory Board Meeting



PR-LSAMP Advisory Board Members: Anson Hines (Smithsonian Institute), Sandra Borres (Pfizer PR), Alberto Maldonado (Chancellor, UNE), and Yolanda George (AAAS)

In January 2006 the PR-LSAMP Advisory Board met with PR-LSAMP Staff and Liaison Officers, the Chancellor of UPR-Humacao and the Dean of Research of IAU-Bayamón, in representation of the Chancellors and Deans of the PR-LSAMP institutions, to discuss overall achievements of Phase III, and proposed activities for Phase IV. Advisory Board members also met with a group of BDP Fellows to learn about their educational and career plans. Following the Board's recommendations, PR-LSAMP designed and offered a workshop on "Scientists as Entrepreneurs", to expose students to successful entrepreneurs, learn the nature of entrepreneurship, the skills needed to be a successful



Advisory Board Members with a group of BDP Fellows

entrepreneur, the challenges and opportunities of entrepreneurship in Puerto Rico, and how entrepreneurs contribute to the economic development of Puerto Rico.

Mentoring Program for Undergraduate STEM Students



Dr. Lorna Jaramillo, UPR Rio Piedras, and STEM Students

At UPR-Rio Piedras, thirteen workshops were offered to 35 undergraduate STEM students in a sustained one-year effort to strengthen their academic preparation and encourage them to pursue graduate studies. Also, twenty-six professors and 39 upper level STEM students from five other PR-LSAMP institutions served as mentors to 706 STEM students. STEM courses impacted included General Chemistry, Organic Chemistry, General Biology, Microbiology, Genetics, Agriculture (Fisheries), Pre-Calculus and Calculus I.



Undergraduate STEM Students at UPR Rio Piedras

The Second Transdisciplinary Research Conference

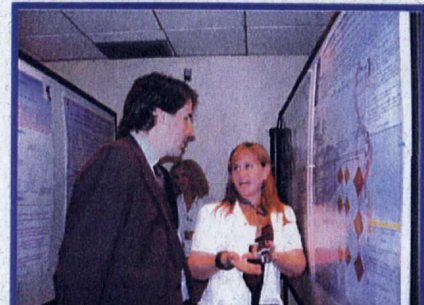
Local and international researchers presented the latest research trends in Nanotechnology. Invited speakers included Dr. Eric D. Isaacs, Argonne National Laboratory; Dr. Gregory N. Tew and Dr. Jim Watkins, from the University of Massachusetts at Amherst. Local speakers were Dr. Oscar Perales (UPR-Mayaguez); Dr. Luis Fonseca (UPR-Rio Piedras), and Dr. Nicholas Pinto (UPR-Humacao). Fifty two STEM faculty members, 84 STEM graduate students, and 51 undergraduate STEM students attended the conference, held at the Mayaguez Resort Hotel. Seventy five students presented their research projects in a poster session.



Conference speakers with a group of STEM Researchers



Bridge to the Doctorate Fellows



Poster Session

(cont) HIGHLIGHTS 2005-06

The 2006 NSF/HRD Joint Annual Meeting

The PR-LSAMP Staff and a group of Cohort III Bridge-to-the-Doctorate Fellows attended the 2006 Annual NSF-HRD Joint Meeting, held in Washington, D.C. A poster was presented highlighting PR-LSAMP accomplishments during Phase III. Newsletters and materials developed were shared with other LSAMP alliances. BDP Fellows had the opportunity to meet fellows from other alliances and established networking collaborations.



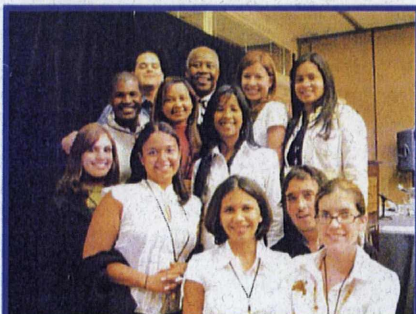
Prof. Javier Figueroa, BDP Coordinator, with BDP Fellows



Congressman Louis Stokes



BDP Fellows from the different alliances with Dr. Arthur Hicks, Congressman Stokes and Dr. Arden Bement



Dr. Arthur Hicks with BDP Fellows



BDP Fellows with Congressman Stokes



Louis Dale (Alabama), Dr. Bement (NSF), Diola Bagayoko (Louisiana), Omnia Hakim (Colorado), Congressman Stokes, Earl Mitchell (Oklahoma), Ana Feliciano (PR), Manuel Gomez (PR), Dr. Arthur Hicks (NSF) & Javier Figueroa (PR)

(cont) HIGHLIGHTS 2005-06

The Puerto Rico Interdisciplinary Scientific Meeting (PRISM)

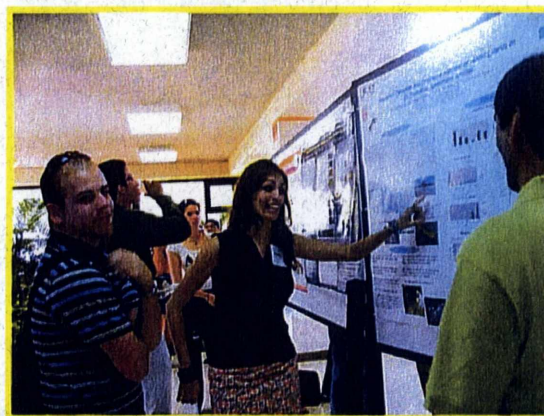
The Puerto Rico Interdisciplinary Scientific Meeting (PRISM) was held at UPR-Cayey on March 11, 2006. PRISM is the island's largest scientific forum for undergraduate and graduate STEM students to present their research projects to peers and faculty members from the different institutions of higher education in Puerto Rico.

The invited plenary speaker was Dr. Kurt Gibble, an Associate Professor of Physics at The Pennsylvania State University (PSU). Dr. Gibble is best known for his work on Rubidium clocks and for atom-juggling experiments. His research focuses on atomic clocks and the scattering of ultra-cold atoms. The title of his conference was: *"Atomic Clocks: How They Work and Why We Need Them"*.

Two hundred and twenty seven (227) undergraduate STEM students and 128 STEM graduate students, including PR-LSAMP Bridge-to-the-Doctorate Fellows, presented their research projects to an audience of 300 students and faculty members.



Dr. Kurt Gibble, Penn State University
Plenary Speaker



Graduate STEM students, including BDP Fellows, presented their research projects at the poster session



PR-LSAMP ANNOUNCEMENTS

- ▶ PR-LSAMP Phase IV was approved! We look forward to five more challenging and rewarding years.....
- ▶ PRISM 2007 will take place on March 10, 2007, at UIA Bayamon. Undergraduate and graduate students will be presenting their research projects. Come and join us!! Visit our website for more information.
- ▶ May 15, 2007 is the deadline to submit your application for the Summer 2007 PR-LSAMP Mentored Undergraduate Research Experiences Program. Mark your calendars to make sure you do not miss the deadline!



PR-LSAMP is on the WEB!!! Visit us at:

www.prlsamp.org



PUERTO RICO LOUIS STOKES-ALLIANCE FOR MINORITY PARTICIPATION

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