



Maximizing your Partnership and Building a Pipeline

Idalia Ramos

University of Puerto Rico at Humacao



NSF-DMR-0934195

2010 PREM PI Meeting, Arlington, VA

April 26th, 2010

History of Partnership

Before 1998

Faculty-faculty collaborations

UPR students in Penn's REU programs

1998-2004

NSF-Collaborative to Integrate Research and Education (CIRE)

2004-2009

First PREM Grant

2009-2014

Second PREM Grant



Partners

University of Puerto Rico (10 faculty collaborators)

Humacao: undergraduate, 4500 students

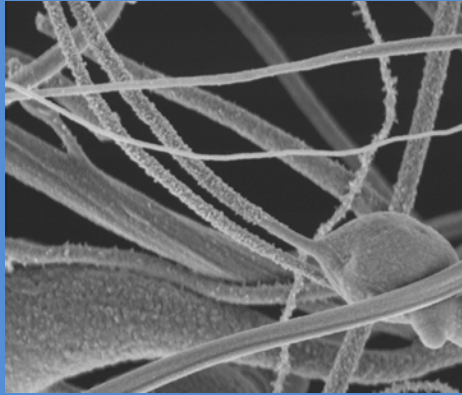
Cayey: undergraduate

Río Piedras: graduate

University of Pennsylvania MRSEC (9 faculty collaborators)

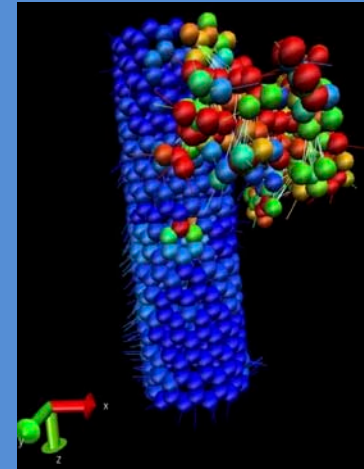
PENN, USiP, Lehigh





Materials for Nano-Electronic
Devices & Sensors

Research



Mathematical Modeling
& Simulation of Materials

Education

Outreach



Maximizing your Partnership

Is the Partnership important?

“The partnership with a large research university has significantly enhanced the research and education productivity and transformed the academic environment in a small minority institution”.

The partnership introduced UPR faculty to new research topics and methods that have evolved into strong and productive research collaborations that are mutually beneficial.

2004-2010: 135 publications (87 with students as co-authors)

355 publications (237 with students as presenters)

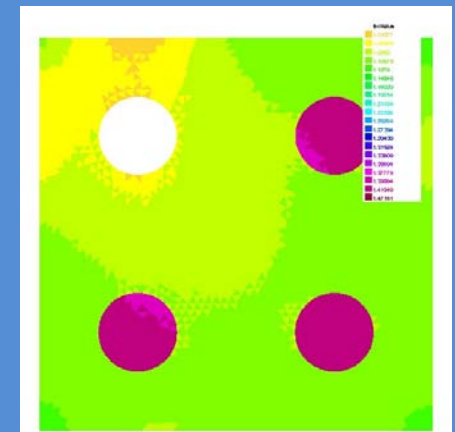
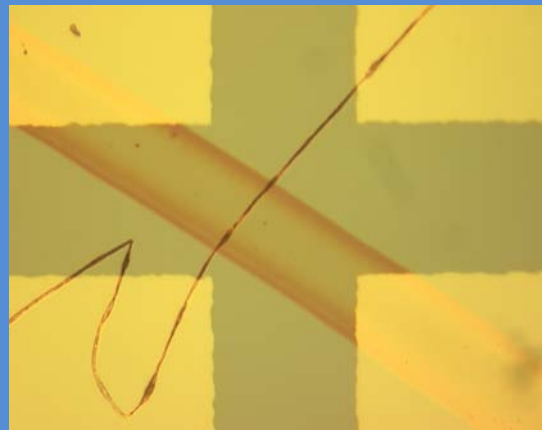


Maximizing your Partnership

The partnership has been essential for the development of an infrastructure for research and education at UPR.

UPR students benefit from having dual mentorship from UPR and PENN faculty, by experiencing the life on a large research university and improving their communication skills before graduate school.

PENN contributions to educational efforts at UPRH includes providing regular speakers for videoconference series.



Maximizing your Partnership

Frequent interactions between partners have kept the collaborations active and evolving.

- ✓ Summer Program at PENN
- ✓ Annual Joint Research Meeting
- ✓ Other collaborative visits
- ✓ Videoconferences
- ✓ Spring Symposium

2004-2010

56 UPR visits to PENN

61 PENN visits to UPR

PREM has changed the vision on how research is done in an undergraduate institution and is serving as a model to other groups at UPR and other institutions.



Maximizing your Partnership

Research facilities shared with other researchers at UPRH and PR. All facilities used for education and outreach.

Spring Research Symposium extends the impact of PREM to the larger scientific community in Puerto Rico.

The poster features logos for LRSM (The Laboratory for Research on the Structure of Matter), UPRH, and Penn State. It lists speakers: Peter Collings (Physics & Astronomy, Swarthmore College), Monica Olvera de la Cruz (Materials Science and Engineering, Northwestern University), Paul Janmey (Physiology, University of Pennsylvania), Daejeon Lee (Chemical & Biomolecular Engineering, University of Pennsylvania), David Pine (Physics, New York University), and Arjun G. Yodh (Physics & Astronomy, University of Pennsylvania). The event is on Friday, May 7, 2010, from 9:45 am to 5:00 pm at Palmas del Mar, Humacao, Puerto Rico. Logos for MRSEC Penn and NSF are also present.

Partnership for Research & Education in Materials

LRSM
The Laboratory for Research on the Structure of Matter

Universidad de Puerto Rico en Humacao

4th Annual Symposium

Soft Matters in Materials Science

Speakers:

- Peter Collings**
Physics & Astronomy, Swarthmore College
- Monica Olvera de la Cruz**
Materials Science and Engineering
Northwestern University
- Paul Janmey**
Physiology, University of Pennsylvania
- Daejeon Lee**
Chemical & Biomolecular Engineering
University of Pennsylvania
- David Pine**
Physics, New York University
- Arjun G. Yodh**
Physics & Astronomy
University of Pennsylvania

Conference Location
Four Points By Sheraton
170 Candelero Drive
Humacao, 00791 PR
Ph. 787-850-6000

date: Friday, May 7, 2010
time: 9:45 am - 5:00 pm
place: Palmas del Mar,
Humacao, Puerto Rico

MRSEC Penn
NSF
NSF-DMR-0934195

For more information, visit <http://prem.uprh.edu/symposium/>
Ph. 787-850-6000 x0027 Fax. 787-850-9308 Email: confer@mate.uprh.edu



Building a Pipeline

PREM students are fully integrated into the Program

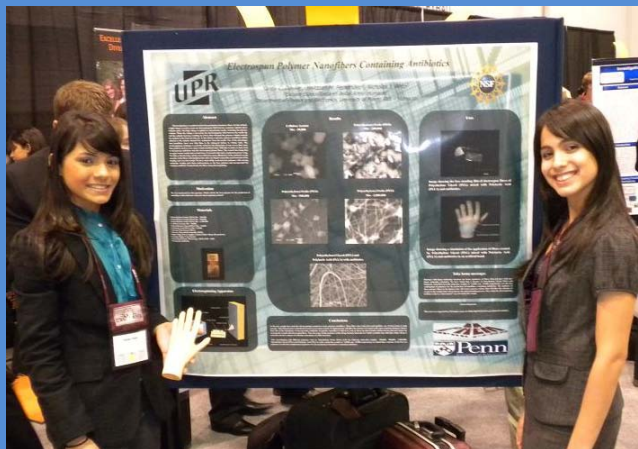
Outreach

Seminars &
courses

Research

100's participate in open houses, workshops, visits to schools and HS summer research each year.

64% of publications have undergraduates as co-authors.



PREM Students in Research

PREM provides:

- Early experiences in research
- UPR and PENN mentors
- Travel to PENN and Conferences
- Publications
- Enhanced Courses, Seminars and Videoconferences
- Outreach Experiences
- Training for GRE and Grad School Application
- Stipends

86 Students in Research 2004-2010

19	High School
55	Undergraduates
3	Master's
5	PhD's
4	Post Docs



2010: 21 students

PREM Graduates

From 2004-2009:

59 new graduates

14	High School
37	BS's
2	Master's
4	PhD's
2	Post Docs

Diversity

33	Women
55	Hispanic US Citizens and Permanents Residents
3	Hispanic Non US

Graduates June 2010

4 HS and 6 BS's



Where are they now?

37 Bachelors and 2 MS's

14	Graduate School
4	Medical School
13	Working Industry
6	Working Education

Of the BS's who continued graduate studies: **3 have MS's and 1 a PhD**

4 BS's graduates will begin graduate studies next Fall



Rut Rivera
BS 2010



Milca Aponte
PhD 2009



Domingo Pérez
MS 2008



Mariem Rosario
Postdoc 2010

