

Partnerships

To Broaden Participation | MRSECs & SACNAS



*Advancing Hispanics/Chicanos
& Native Americans in Science*

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MRSEC Directors' Meeting | October 18th, 2016

Christine C. Broadbridge, Ph.D.; CRISP at Yale/SCSU

Representing the MRSEC education directors network

What is SACNAS?

SACNAS: Society for Advancement of Chicanos/Hispanics and Native Americans in Science.



SACNAS

Devoted to Advancing Hispanics,
Chicanos & Native Americans in Science

SACNAS is an inclusive organization dedicated to fostering the success of Chicano/Hispanic and Native American scientists, from college students to professionals, in attaining advanced degrees, careers, and positions of leadership in STEM.

Ideal synergy with the MRSEC mission of broadening participation in STEM



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SACNAS is goal oriented



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and Native Americans in Science.*

Goals/Outcomes

- To increase the number of Chicanos/Hispanics and Native Americans with advanced degrees in science and the motivation to be leaders.
- To increase the number of Chicanos/Hispanics and Native Americans in science research, leadership, and teaching careers at all levels.
- To increase governmental commitment to advancing Chicanos/Hispanics and Native Americans in science resulting in increased resources, elimination of barriers, and greater equity.



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SACNAS is inclusive



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Values

- Inclusive of ethnicities, cultures, and scientific disciplines
- Focused on having a real impact through purpose and mission
- Committed to standards of excellence in science and education
- Fully mindful of the importance of students' K-12 experience
- Devoted to full engagement of members in society's work



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SACNAS and MRSEC have shared values

Wisconsin MRSEC middle school program participants



Nebraska MRSEC Sovereign Native Youth Leadership Academy participants



MRSECs:

- Address issues of inequitable representation across STEM disciplines
- Broaden participation of groups under-represented in the sciences (MSE focus)
- Foster partnerships between academia & industry
- Strengthen depth of applicant pool for graduate studies, post-docs, & faculty
- Grow partnerships to support professional development for future scientists



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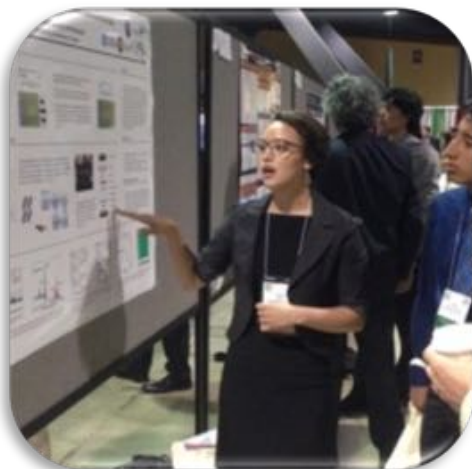
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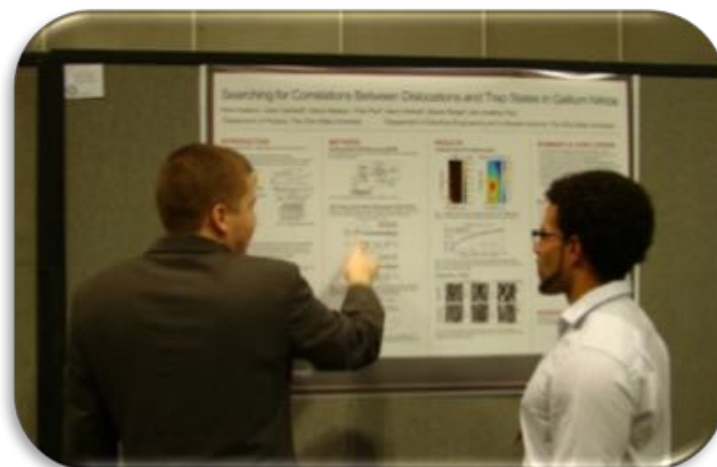
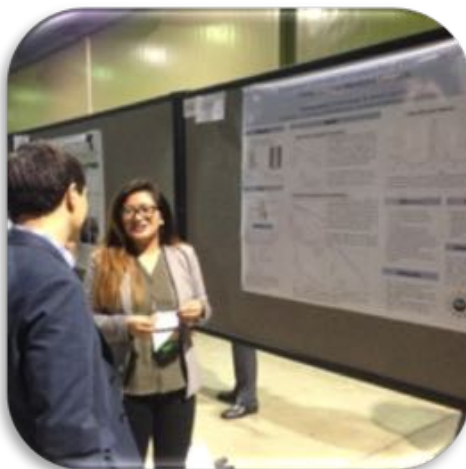
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How have MRSECs been involved with SACNAS

Student participation, research symposia, professional development, exhibit booths



UCSB Chemistry majors **Catrina Wilson** and **Charlene Salamat** presenting REU research conducted in MRSEC labs. **Catrina earned poster award this past Friday at 2016 SACNAS!**



Ohio State University: NSF funded APS Bridge student **Kevin Galiano** presenting to **Shaun Hampton** (poster award winner) at the 2014 SACNAS Conference.

- 800+ undergraduate and graduate poster presentations, oral presentations with professionals acting as mentors and judges.
- 100+ students recognized with awards.



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University of California, Santa Barbara students celebrating the 40th anniversary at SACNAS 2013 National Conference.

Students gather between technical sessions to network with fellow students, faculty and industry professionals.



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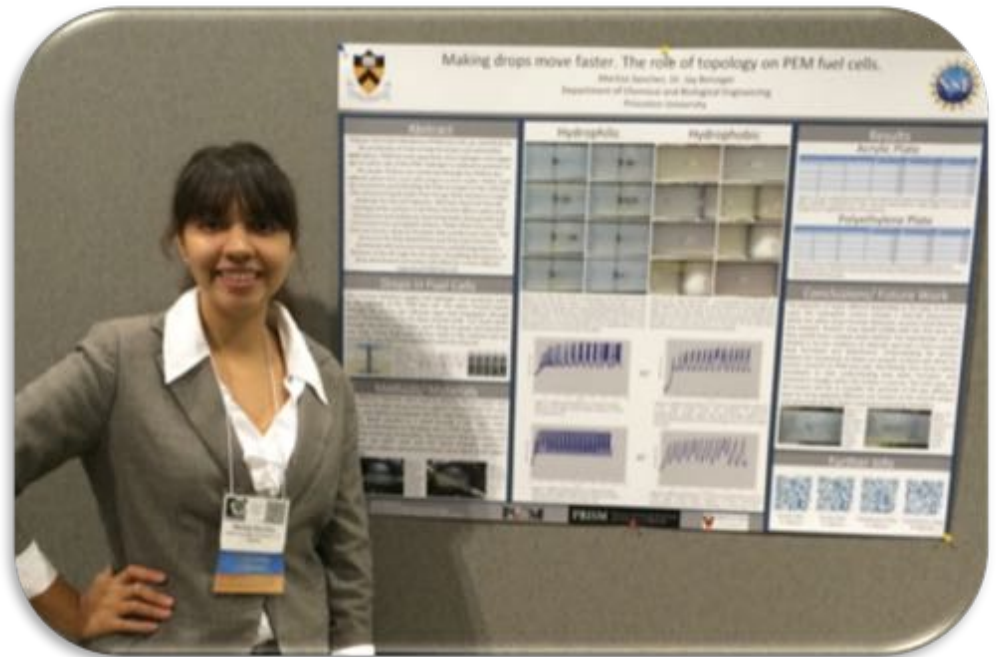
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“SACNAS opened my eyes to the possibility of graduate school. Having this community helped me grow as a scholar and as a researcher.”

2015 Northwestern MRSEC REU student at California State University, **Maritza Sanchez**, presenting at SACNAS. Maritza will begin graduate school at UCSD.



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“SACNAS and MRSEC cultivate scientists by offering opportunities to get involved with the community, industry, and foster collaborative environments.”

Lisa Au, 2016 MRSEC REU Participant
Chemistry, Carleton College



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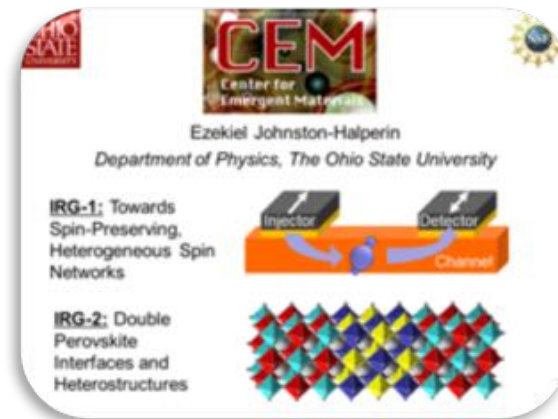
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NSF MRSEC: Innovative Materials Science – Magnetic Materials and Programmable Assembly of Materials



Chair: **Ezekiel Johnston-Halperin**, PhD, Associate Professor, Ohio State University



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2013 Session:

NSF MRSEC: Innovative Materials Science – Magnetic Materials and Programmable Assembly of Materials

Presentations:

Components of Nanostructure Design

Nick Carroll, Harvard

Programmable Assembly of Soft Matter

Gabriel Lopez, Duke University

PREM: NSF Effort to Increase STEM Participation

William Brittain, Texas State University



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NSF MRSEC: Innovative Materials Science and 21st Century Skills through Team Based Interdisciplinary Research

Chair: **Rolando Valdes Aguilar**, PhD, Assistant Professor, Ohio State University



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2014 Session:

NSF MRSEC: Innovative Materials Science and 21st Century Skills through Team Based Interdisciplinary Research

Presentations:

Achievement of 21st Century Skills via Team Based Interdisciplinary Research in MSE

Christine Broadbridge, Yale/SCSU MRSEC

Exciting Undergrad Research Experiences

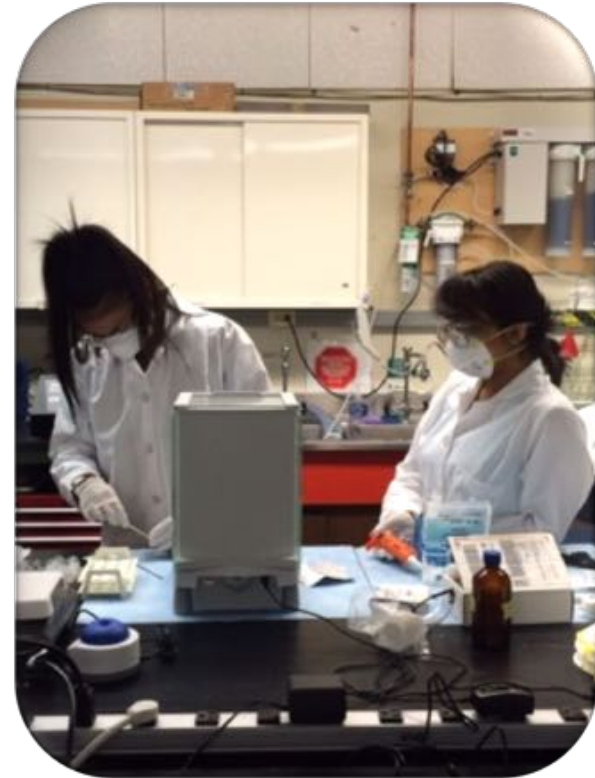
Javier Read de Alaniz, Santa Barbara MRSEC

Navigating Mentor-student Dynamics

Melissa Kosinski-Collins Brandeis MRSEC

Programmable Drops for Hierarchical Microstructures

Nick Carroll, Duke University MRSEC



Team-Based Interdisciplinary Research
at CRISP, a Yale/SCSU MRSEC



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Interdisciplinary Collaboration: The Role of Diversity in STEM Innovation



2015 SACNAS
NATIONAL CONFERENCE
Washington, DC
October 29-31, 2015



NSF MRSEC: Increasing Diversity in Materials Science through Team Based Interdisciplinary Research

Chair: **Christine Broadbridge**, PhD, Yale/SCSU MRSEC



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SACNAS 2015

NSF MRSEC: Increasing Diversity in Materials Science through Team Based Interdisciplinary Research

Presentations by MRSEC participants:

Marco Bedolla Pantoja, MS

Liquid Crystals from UW MRSEC

Luis Oquendo, PhD

Nanopattern formation from U. of Minnesota

Leonidas Ocola, PhD

Engineering Quantum Materials

U. of Chicago MRSEC, Argonne National Lab

Katherine Macri, MS

Liquid crystal interfaces from U of Colorado MRSEC



U of Colorado MRSEC graduate student
Katherine Macri presenting



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2016 Session:

Increasing Understanding of Materials Science – Engineering Materials for Diverse Applications

Presentations:

Darlene Taylor, PhD
Stimuli responsive materials
North Carolina State University



Volanda Vasquez, PhD
All that Glitters is Gold
Oklahoma State University

Megan Valentine, PhD
Learning from Nature: How Organisms Create Materials and Humans do it Better
University of CA, Santa Barbara (UCSB MRSEC)



Tania Betancourt, PhD
Activatable Biomaterials: Integration of Synthetic and Natural Polymers for the Detection and Treatment of Cancer
Texas State University-San Marcos

Chair: **Miquella Chavez**, Executive Director, Research Triangle MRSEC



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SACNAS 2016



Long Beach, CA



**Improving the Effectiveness
of Mentors**

Dr. Kermin J. Martínez-Hernández
Assistant Professor – Chemistry, St. John Fisher College, Rochester, NY

Dr. Lori Adams
IMSD Program Director and Lecturer - Biology, University of Iowa

Dr. Amy Prunuske
Assistant Professor – Biomedical Sciences, University of Minnesota Medical School Duluth

Dr. Anne Lynn Gillian-Daniel
Director MRSEC Education/Outreach Group, University of Wisconsin-Madison



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2016 Professional Development:

An Essential Roadmap for Undergraduate Success in Science

Session Chairs/Presenters:

Mareshia Donald, PhD
Education/Diversity
MIT

Anique Olivier-Mason, PhD
Education/outreach/diversity
Brandeis MRSEC

Marlina Duncan, PhD
Associate Dean of Diversity Initiatives
Brown University



Presenters facilitated a highly interactive “how-to” workshop providing a roadmap for success in undergraduate research



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2015 Exhibit Booth

Collaborative effort showcasing the MRSEC network
100+ contacts for follow-up!



2016 Exhibit Booth



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Partnerships

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- 100s of contacts with potential REUs, graduate students, and post-docs
- MRSEC student participation in technical sessions, professional development and awards



2008 student award winners
UCSB LSAMP and MRSEC REU

SACNAS is a model organization deeply committed to broadening participation of under-represented groups in STEM.

MRSECs efforts are perfectly aligned and collaboration maximizes impact.



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