Partnerships

To Broaden Participation | MRSECs & SACNAS

Advancing Hispanics/Chicanos & Native Americans in Science

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 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
SACNAS is goal oriented

**SACNAS: Society for Advancement of Chicanos/Hispanics 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.
SACNAS is inclusive

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

**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
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
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.
How have MRSECs been involved with SACNAS

Student participation, research symposia, professional development, exhibit booths

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

University of California, Santa Barbara students celebrating the 40th anniversary at SACNAS 2013 National Conference.
How have MRSECs been involved with SACNAS

**Student participation**, research symposia, professional development, exhibit booths

“**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.
How have MRSECs been involved with SACNAS

Student participation, research symposia, professional development, exhibit booths

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

Chair: Ezekiel Johnston-Halperin, PhD, Associate Professor, Ohio State University
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
NSF MRSEC: Innovative Materials Science and 21st Century Skills through Team Based Interdisciplinary Research

Chair: Rolando Valdes Aguilar, PhD, Assistant Professor, Ohio State University
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
NSF MRSEC: Increasing Diversity in Materials Science through Team Based Interdisciplinary Research

Chair: Christine Broadbridge, PhD, Yale/SCSU MRSEC
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
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

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

Long Beach, CA
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
Partnerships
To Broader Participation | MRSECs & SACNAS

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

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.

2008 student award winners
UCSB LSAMP and MRSEC REU