



MRS University Chapter Special Project Grants offer learning and collaboration

The Materials Research Society (MRS) University Chapter Special Projects Program is dedicated to supporting projects proposed by MRS University Chapters. These projects generate student interest and membership for the Chapters. The goal is to support a broad variety of projects.

With the MRS University Chapter Special Projects Grant, the Materials Science Umbrella Society (MSUS) at

Northwestern University (NU) was able to organize **Software Workshops for Materials Science Graduate Students** and related outreach events. Prior to starting these workshops, MSUS sent a survey to all materials science and engineering (MS&E) graduate students and asked for their input on what software programs are most relevant for classes and research projects. The software workshops focused

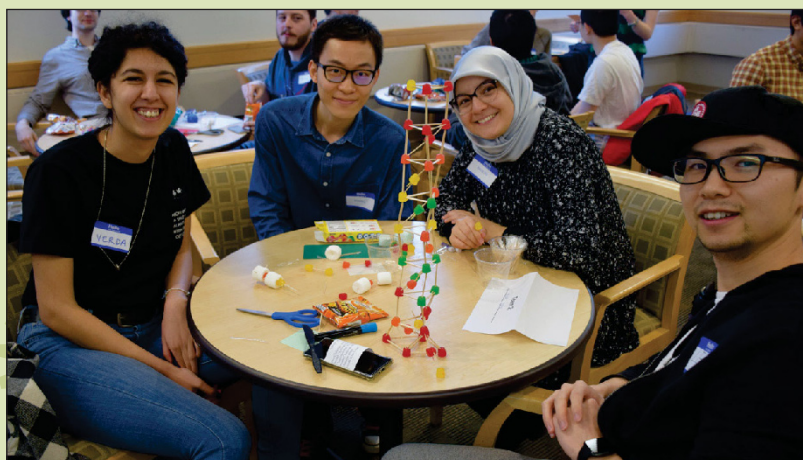
on how to use Adobe Illustrator, ImageJ, and MATLAB. Senior graduate students who were experts in Adobe Illustrator and MATLAB led the workshops. The operations director at NU's Biological Imaging Facility led the ImageJ workshop.

MSUS also ran outreach events to gather feedback, gauge interest in future workshops, and provide context for why these workshops are useful. The events proved to be good complements to the workshops.

The University of North Carolina at Chapel Hill (UNC) ran an **Industry Panel and Networking Session**, where they invited local industry scientists to discuss their careers. They had representatives from several large companies (Eastman Chemical Company, Lucideon), a few startups (Tethis, Inc., Trio Labs, Inc.), and a government organization (US Environmental Protection Agency). During the Q&A panel, attendees had the opportunity to ask the panelists about their jobs and career paths. After the Q&A panel, attendees were invited to a networking social, where everyone had an opportunity to ask the panel guests and some of their co-workers additional questions.

Remaining money in the budget was used to host a lunch meeting with UNC's industry relations officer. At this meeting, they learned about his job as a "bridge" between academic and industry scientists and how he helps foster partnerships between the two.

The UNC chapter also held an **Undergraduate Outreach Seminar Series**. The goals of this project were to help expose



The MRS University Chapter at Boston University held a Materials Madness event, where teams competed in materials science challenges. Top: Students work together to build the strongest/tallest tower using toothpicks, gumdrops, and marshmallows. Bottom: Students are enjoying liquid nitrogen ice cream made during the event. Photos courtesy of MRS University Chapter, Boston University.

STEM students at primarily undergraduate institutions (PUIs) in the nearby area to materials science and the possibility of graduate school, and to provide opportunities for materials science graduate students to present their research to a more general audience. To realize these goals, they contacted student-run STEM organizations at several PUIs across North Carolina and coordinated visits to their campus. At these visits, two graduate students from the MRS University Chapter gave a short research talk followed by a Q&A session with graduate students about graduate school (e.g., application process, day-to-day life). Fifteen graduate students participated by either giving a research talk or participating on the Q&A panel.

The goal of the **Diversity Seminar Series** at UNC was to invite two minority (based on gender, race) materials scientist speakers to UNC. Last fall, they hosted Evelyn Wang, a female mechanical engineering profes-

sor at the Massachusetts Institute of Technology, and in the spring, they hosted Kristin Persson, a materials scientist at Lawrence Berkeley National Laboratory and the director of the Materials Project. They also partnered with Allies for Minorities and Women in Science and Engineering to help organize and advertise these events. The seminars were quite successful and had high attendance from several departments. The Q&A breakfasts were particularly valuable because attendees were able to talk with the speakers about their career paths and some of the obstacles they faced.

The **Materials Science Challenge** activity in Uruguay was inspired by an Advent Calendar, which counts the days between April 1 and 13, when the “Primer Encuentro de Jóvenes Investigadores en Ciencia de Materiales” (First Meeting of Young Researchers in Materials Science) started. Its main goals were to disseminate materials science in Uruguay and



Top: Students at Northwestern University attend an ImageJ software workshop to become familiar with the image processing tool. Photo courtesy of MRS University Chapter, Northwestern University.

Right: Student receives her certificate of participation at the Materials Science Challenge event in Uruguay. Photo courtesy of MRS University Chapter, Universidad de la República-CURE, Uruguay.



to encourage the participation of young people, from Uruguay and the region, in materials science.

Every day, a new challenge was uploaded to their web page (ucudelar.wixsite.com/ucudelar). At the end of each challenge, they held an awards ceremony, where they explained university chapters, what they do at the MRS University Chapter, Universidad de la República-CURE, and invited everyone to join them for activities and networking.

Boston University (BU) held an event called **Materials Madness**, where teams competed in materials science challenges (the world’s tallest gumdrop/toothpick tower or polymers spike ball). BU provided dinner and dessert (liquid nitrogen ice cream). The event was open to all graduate students. Other events included a surface tension boat race and materials Jeopardy.

One of the goals of the event was to facilitate building a stronger materials community within BU. Team members

were able to bond throughout the event, and many of the groups were comprised of people who had not previously met. Procedural documents were created to assist future groups who are looking to host similar events or to plan outreach events for younger students to encourage them in their scientific endeavors.

The MRS University Chapter Program comprises a passionate and talented network of students from universities around the world that fosters an environment for collaboration and open exchange of ideas across all scientific disciplines, spanning campuses and continents. These students represent the next generation of materials researchers. If there is a Chapter at your college or university, we urge you to join. If there isn’t a Chapter at your location, you may be the person to get one started. **For more information on requesting a grant and the evaluation process, visit mrs.org/foundation-university-chapter-special-projects.** □



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Fall Meeting registrations include MRS Membership January – December 2020

BROADER IMPACT

BI01 Materials Data Science—Transformations in Interdisciplinary Education

ELECTRONIC, PHOTONIC AND MAGNETIC MATERIALS

- EL01 Emerging Material Platforms and Approaches for Plasmonics, Metamaterials and Metasurfaces
- EL02 Molecular and Organic Ferro- and Piezoelectrics—Science and Applications
- EL03 Multiferroics and Magnetolectrics
- EL04 Emerging Chalcogenide Electronic Materials—From Theory to Applications
- EL05 Diamond and Diamond Heterojunctions—From Growth and Technology to Applications

ENERGY AND ENVIRONMENT

- EN01 Challenges in Battery Technologies for Next-Generation Electric Vehicles and Grid Storage Applications
- EN02 Materials for High-Energy and Safe Electrochemical Energy Storage
- EN03 Green Electrochemical Energy Storage Solutions—Materials, Processes and Devices
- EN04 Advanced Membranes for Energy-Efficient Molecular Separation and Ion Conduction
- EN05 Chemomechanical and Interfacial Challenges in Energy Storage and Conversion—Batteries and Fuel Cells
- EN06 Development in Catalytic Materials for Sustainable Energy—Bridging the Homogeneous/Heterogeneous Divide
- EN07 Materials Science for Efficient Water Splitting
- EN08 Halide Perovskites for Photovoltaic Applications—Devices, Stability and Upscaling
- EN09 Advances in the Fundamental Science of Halide Perovskite Optoelectronics
- EN10 Emerging Light-Emitting Materials and Devices—Perovskite Emitters, Quantum Dots and Other Low-Dimensional Nanoscale Emitters
- EN11 Silicon for Photovoltaics
- EN12 Structure–Function Relationships and Interfacial Processes in Organic Semiconductors for Optoelectronics
- EN13 Flexible and Miniaturized Thermoelectric Devices Based on Organic Semiconductors and Hybrid Materials
- EN14 Thermoelectric Energy Conversion (TEC)—Complex Materials and Novel Theoretical Methods
- EN15 Nanomaterials for Sensing and Control of Energy Systems—Processing, Characterization and Theory
- EN16 Advanced Materials, Fabrication Routes and Devices for Environmental Monitoring
- EN17 Structure–Property Processing Performance Relationships in Materials for Nuclear Technologies

FABRICATION OF FUNCTIONAL MATERIALS AND NANOMATERIALS

- FF01 Beyond Graphene 2D Materials—Synthesis, Properties and Device Applications
- FF02 2D Nanomaterials-Based Nanofluidics
- FF03 Building Advanced Materials via Particle-Based Crystallization and Self-Assembly of Molecules with Aggregation-Induced Emission
- FF04 Crystal Engineering of Functional Materials—Solution-Based Strategies
- FF05 Advanced Atomic Layer Deposition and Chemical Vapor Deposition Techniques and Applications
- FF06 Advances in the Fundamental Understanding and Functionalization of Reactive Materials

MATERIALS FOR QUANTUM TECHNOLOGY

- MQ01 Coherent and Correlated Magnetic Materials for Hybrid Quantum Interfaces
- MQ02 Materials for Quantum Computing Applications
- MQ03 Predictive Synthesis and Advanced Characterization of Emerging Quantum Materials

MATERIALS THEORY, COMPUTATION AND CHARACTERIZATION

- MT01 Advanced Atomistic Algorithms in Materials Science
- MT02 Closing the Loop—Using Machine Learning in High-Throughput Discovery of New Materials
- MT03 Automated and Data-Driven Approaches to Materials Development—Bridging the Gap Between Theory and Industry
- MT04 Advanced Materials Exploration with Neutrons
- MT05 Emerging Prospects and Capabilities in Focused Ion-Beam Technologies and Applications
- MT06 *In Situ* Characterization of Dynamic Phenomena During Materials Synthesis
- MT07 *In Situ/Operando* Studies of Dynamic Processes in Ferroelectric, Magnetic and Multiferroic Materials

MECHANICAL BEHAVIOR AND STRUCTURAL MATERIALS

- MS01 Extreme Mechanics
- MS02 Mechanically Coupled and Defect-Enabled Functionality in Atomically Thin Materials
- MS03 Mechanics of Nanocomposites and Hybrid Materials
- MS04 High-Entropy Alloys and Other Novel High-Temperature Structural Alloys

SOFT MATERIALS AND BIOMATERIALS

- SB01 Multifunctional Materials—From Conceptual Design to Application-Motivated Systems
- SB02 Multiscale Materials Engineering Within Biological Systems
- SB03 Smart Materials, Devices and Systems for Interface with Plants and Microorganisms
- SB04 Hydrogel Materials—From Theory to Applications via 3D and 4D Printing
- SB05 Light–Matter Interactions at the Interface with Living Cells, Tissues and Organisms
- SB06 Bringing Mechanobiology to Materials—From Molecular Understanding to Biological Design
- SB07 Bioelectrical Interfaces
- SB08 Advanced Neural Materials and Devices
- SB09 Interfacing Bio/Nano Materials with Cancer and the Immune System
- SB10 Electronic Textiles
- SB11 Multiphase Fluids for Materials Science—Droplets, Bubbles and Emulsions

mrs.org/fall2019

Meeting Chairs

Bryan D. Huey University of Connecticut
Stéphanie P. Lacour École Polytechnique Fédérale de Lausanne
Conal E. Murray IBM T.J. Watson Research Center
Jeffrey B. Neaton University of California, Berkeley, and Lawrence Berkeley National Laboratory
Iris Visoly-Fisher Ben-Gurion University of the Negev

Don't Miss These Future MRS Meetings!

2020 MRS Spring Meeting & Exhibit
April 13–17, 2020, Phoenix, Arizona

2020 MRS Fall Meeting & Exhibit
November 29–December 4, 2020, Boston, Massachusetts

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