

# MRS Meeting

Spring 8/22/2018

# A Conversation with Larry Mann



- ▶ He received his Ph.D. from UC Berkeley in 1983 in Chemical Engineering
- ▶ 2003 VP of Materials and Process Technology at KEMET Electronics
- ▶ 2005 Director of Process and Product Development at Cabot Supermetals
- ▶ 2012 Global R&D Director for Cabot Supermetals
- ▶ 2013 VP Research and Development/Technical Services at Global Advanced Metals
- ▶ Currently VP of Marketing and Sales at Shoei Electronics Materials, Inc.

# Questions for Speaker

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- Your career path after graduate school?
- Do you work on downstream or upstream manufacturing/research?
- How much research is involved in your current and previous positions?
- How much time do you spend in the lab compared to at your desk/in meetings?
- Have you ever published your research findings while working for a tech company? Is this an option?
- Do you have an MBA? Is this advised for workers at your corporate level?
- What was the most exciting project you've worked on while working for a company?
- General advice for students who want to pursue industry after PhD
- Why did you pursue industry as opposed to academia or national lab?
- Do you feel like your job allows you to have a good work/(family) life balance?
- Have you personally worked on something that you have seen used in a commercialized product?
- What skills from your PhD were you able to transfer to your industrial work?

# Meeting Outline

- ▶ **Invited Snippet Speaker**
- ▶ **Summer Events Recap**
  - ▶ Candidacy Jeopardy
  - ▶ MRS trip to Corning
  - ▶ Arts Fest: Kids Day
  - ▶ STEM Extension Weekend
  - ▶ Higher Achievement
  - ▶ Tussey WingFest
- ▶ **Upcoming Activities**
  - ▶ Welcome back MatSE picnic
  - ▶ Corning Tailgate
  - ▶ Bake Sale
  - ▶ Research Fair
  - ▶ Fall Student Choice Seminar Speaker
  - ▶ Art Trip to Philadelphia
  - ▶ Upward Bound Program
  - ▶ Professional Development Trip to Dow
  - ▶ Calendar Fundraising
  - ▶ Social Events: Bowling/Bar Crawl



Corning Inc. Lab Tours  
Next Company Visit: Dow Chemical Company

Kid's Day @ Arts Fest  
Next Outreach Event: Upward Bound Science Demos

Want to learn more about MRS?  
Check out our website:  
[bit.ly/PennStateMRS](http://bit.ly/PennStateMRS)  
Or follow us on facebook:  
[MRS@PENNSTATE](https://www.facebook.com/MRS@PENNSTATE)

*Technical Education*

*STEM Outreach*

## PSU's Materials Research Society

*Our mission is to bring together students and faculty/professionals from various backgrounds in materials fields to further the exchange of knowledge and promote professional development.*

*Art Appreciation*

*Student Community*

### Officers:

President:  
Lyndsey Denis  
lmd342@psu.edu

Vice President:  
Preeya Kuray  
pzk5176@psu.edu

Secretary:  
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Treasurer:  
Alex Wilson-Heid  
alexwilsonheid@psu.edu

Social Chair:  
Michelle Kuzma  
mlk5344@psu.edu



Corning Glass Museum  
Next Art Trip: Philadelphia Museum of Art

Candidacy Jeopardy  
Next Social Event: Back to School Bowling



# Candidacy Jeopardy

## + Candidacy Survival Resource List

Was Jeopardy and the Resource list helpful for candidacy preparation?

What could we have done better?

What more can MRS do to help with Candidacy next year?

i.e. presentation potluck, arranged practice presentations/topic discussions


*MRS Helps with Candidacy Preparation!*

The PSU Materials Research Society is Proud to Announce...

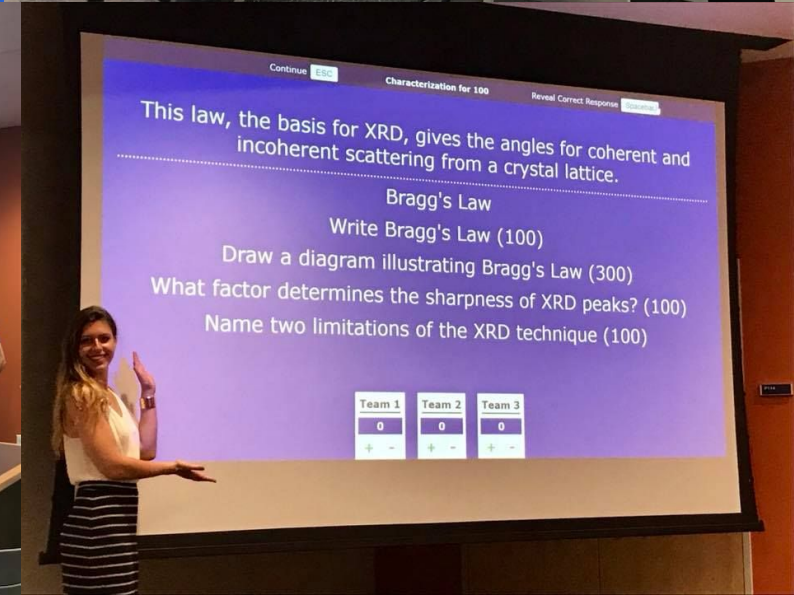
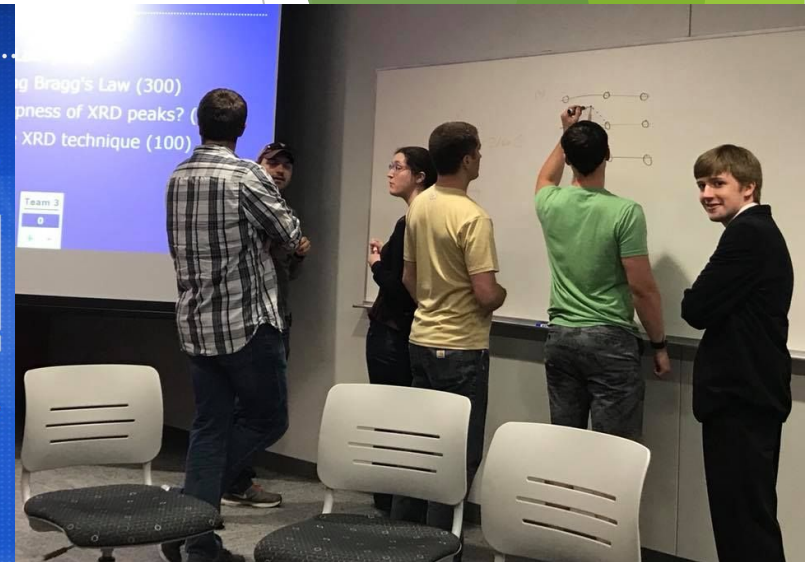
# MatSE Candidacy JEOPARDY!

With Host **Nate Smith**,  
MatSE Ph.D. Candidate

Wednesday, June 20  
7pm to 9pm  
Steidle 114

 **MRS** MATERIALS RESEARCH SOCIETY

MRS MatSE Candidacy Jeopardy is an informal, peer-organized event that is not intended to replace the studying and work necessary to successfully prepare for the Penn State MatSE Ph.D. Candidacy Exam.





# Corning Day Trip

- Guided tour of R&D facilities  
i.e. seeing glass melting, characterization, etc
- Lunch & Q&A Professional Development Panel
- Guided tour of engineering/manufacturing technology facilities
- Corning Glass Museum





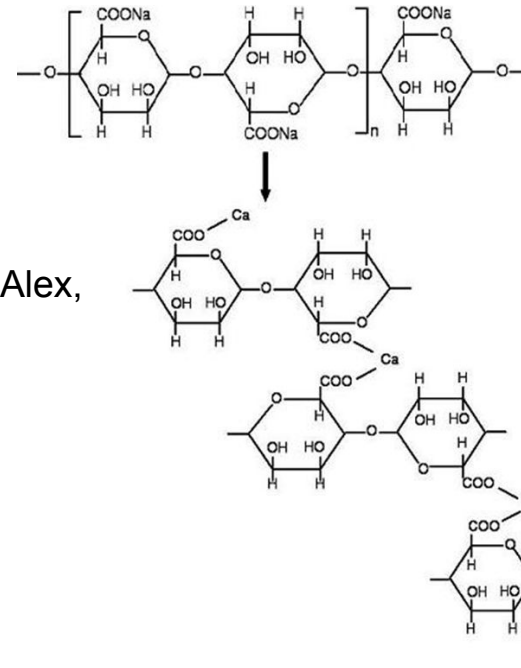
# Arts Fest: Kids Day

*Thank you to all our volunteers*

Lyndsey, Michelle, Preeya, Nathan, Ethan, Lourdes, Gerry, Joseph, Alex,  
Grayson, Marissa, and Ama!



Central Pennsylvania  
Festival of the Arts™





# STEM Extension Weekend

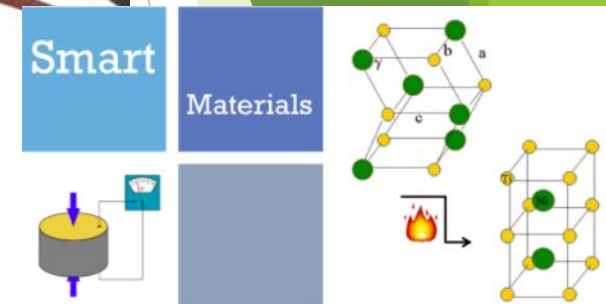
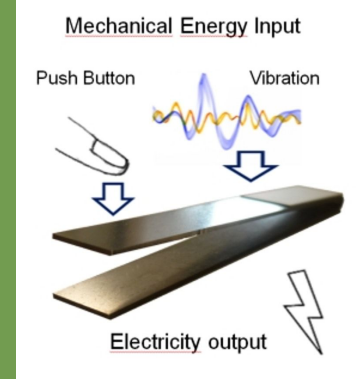
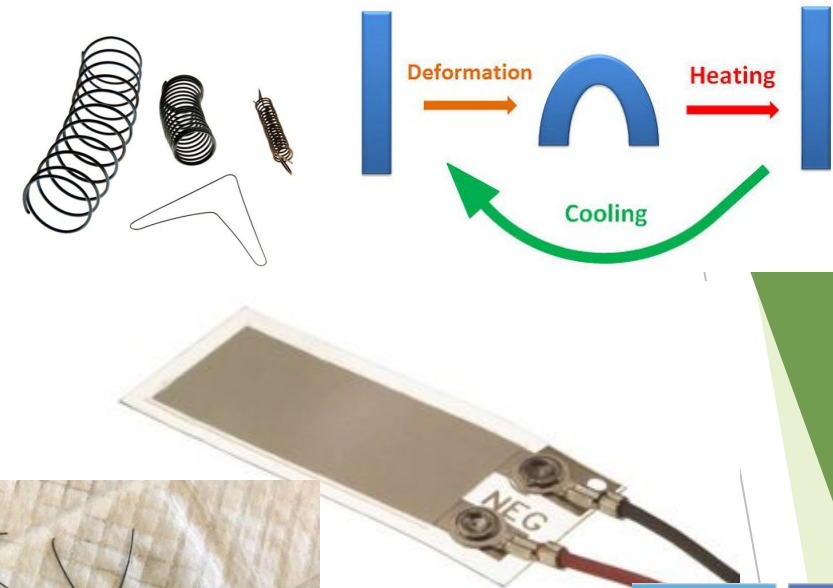
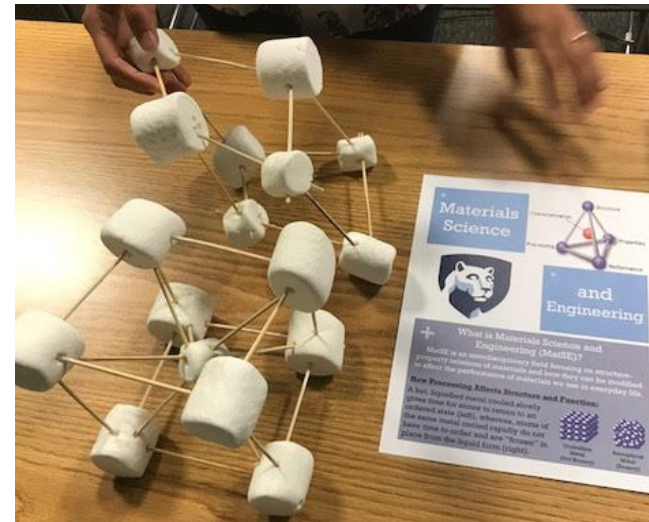
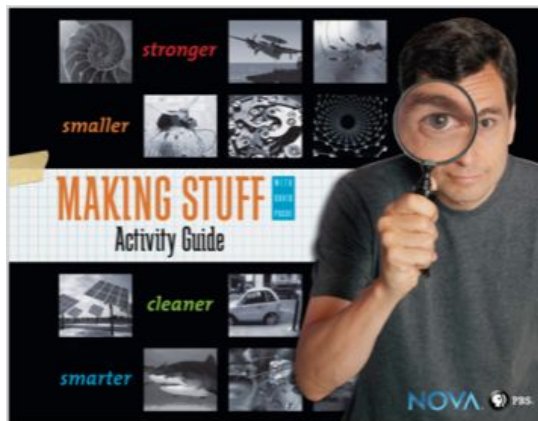
Thank you to all our volunteers  
Lyndsey, Gerry, Michelle



- ▶ Theme: Smart Materials
  - ▶ Piezoelectric energy harvester demo
  - ▶ Nitinol Shape Memory Alloys demo
- ▶ Processing Metallic Glasses Demo

## Higher Achievement Program

Thank you to all our volunteers  
Joseph and Tom!



A smart material is a material that  
+ is able to respond to external  
stimuli in a desired way

Nitinol changes its structure in  
response to temperature



Nitinol is a nickel and titanium alloy that changes from a low symmetry, flexible structure at low temperatures into a high symmetry, rigid structure at high temperatures (top right). Nitinol wire is used in orthodontic braces.

Piezoelectric materials respond to physical force by converting it to electricity and vice versa

Various ceramics and polymers exhibit piezoelectricity (top left). The word "piezo" comes from a Greek word meaning "squeeze." They are used in gas lighters, ultrasound devices, seatbelt alarms, and atomic force microscopes.





# Tussey Wingfest

Winner: Wilderness Lodge





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# Welcome Back MatSE Picnic

Thank you volunteers!

Set up:

3:45-4:30 PM

1. Lyndsey
2. Ama
3. Kayla

Tear down:

6:30-7:15 PM

1. Ethan
2. Michelle





# Corning Tailgate

2nd Annual Corning-PSU Tailgate!

Before the PSU vs. Kent State Game

Location: Little Jeffrey's Field

Date: Sat. Sept. 15th

Time: 8 AM - 5 PM (game starts at noon)

Networking, food and fun!

Meet Corning representatives from diverse technical fields, reconnect with alums, build new collaborations, or simply share good conversation and a cold beverage in a casual setting.



# Bake Sale

**Bake Sale**  
**Sign-Up Link**

(Please comment with what you are making)

## Bake Sale:

- ▶ Thursday, September 20th
- ▶ Time: 10am to 1pm
- ▶ The Corning Room (College Ave/Allen St)
- ▶ **Please sign up by Friday, September 14!**
- ▶ Money earned will be donated to Summer Academy Student Association (SASA)
  - ▶ SASA is made up of individuals who are Blind, Visually Impaired and DeafBlind.
  - ▶ Goal: Build and encourage future growth and success in various settings including: Post Summer Academy Transition, post-secondary transition, and employment transition.
  - ▶ Donation: Sponsors a small scholarship for a potential Summer Academy student in SASA.





# MatSE Undergrad Research Fair

**Thursday, Sept. 27th**

**Steidle Atrium**

**2-5 PM**

**Poster details in [sign up link](#).**

This research fair is for:

1. **Professors**- Display the diverse and exceptional research conducted by faculty and graduate students in the MatSE department
2. **Graduate Students**- Enable targeted recruitment of undergraduate students
3. **Undergraduate Students**- Provide easy access to research opportunities for undergraduate students
4. **The Department**- Encourage collaborations between the graduates and undergraduates within the MatSE department




**[Research Fair Sign Up Link!](#)**

Please comment with which research group you will represent.

# Fall Seminar

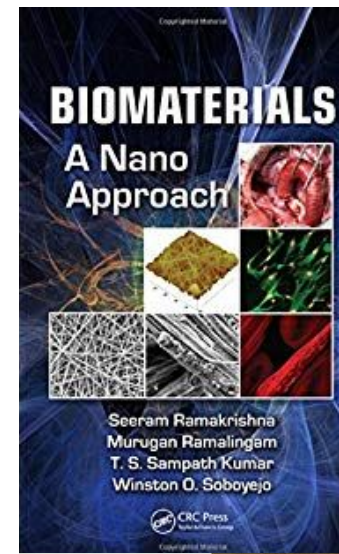
- ▶ Pre-seminar Socials
  - ▶ Lunch with Seminar Speakers
    - ▶ [Sign up here!](#)
    - ▶ One Available Spot:
    - ▶ 11/15 Lunch with Amit Misra, U. Michigan, “Designing Metallic Nanocomposites for High Strength and Damage Tolerance”
  - ▶ Student Choice Seminar Speaker
    - ▶ Dr. Winston Soboyejo
    - ▶ PhD Materials Science and Metallurgy at Churchill College, Cambridge University 1988
- 
- 2012-2014 President and Provost of the African University of Science and Technology in Abuja, Nigeria
  - 2014-2016 Member of the Scientific Advisory Board of the Secretary General of the United Nations
  - Currently, Bernard M. Gordon Dean of Engineering and Professor of Engineering Leadership at Worcester Polytechnic Institute

**MRS Pre-Seminar Social**  
Huck Life Sciences Building 4th Floor Bridge  
Every Thursday **2-3 PM starting Sept. 30th**



*Come meet the speaker  
and enjoy coffee, juice,  
and snacks with us*

Join us each week before the MatSE 590 Seminar





# Art Trip to Philadelphia

2-Day Weekend Trip (Sat.- Sun.)

Must be a MRS national member to attend!

Max. of 30 people.

Mid October



## Rodin Museum

[Planning Your Visit](#) • [The Collection](#) • [Calendar & Events](#) • [Rodin 100](#) • [Get Involved](#)

Free with PMOA Entry

An architectural gem

The Museum—designed by architect Paul Cret and landscape architect Jacques Gréber—opened to the public in 1929 and was restored to its original splendor in 2012.

## Philadelphia Museum of Art

\$12 each for students



## The Franklin Institute

\$15 each for adult groups



# Upward Bound Program



- ▶ **Date: Saturday, November 1**
- ▶ 100 high school students will come to PSU for a fun-filled day of science
- ▶ Students will rotate between 4~5 MATSE workshop sessions in Thomas Building/Life Science Building classrooms.
- ▶ 10:30 am ~ 12:30 pm: Session 1: Polymers & Glass?
- ▶ 12:30 pm ~ 1:15 pm: Break for lunch (provided by PSU)
- ▶ 1:30 pm ~ 3:30 pm : Session 2: Metals & Ceramics?



# Professional Development Day Trip

## Dow Chemical @ Collegeville

### R&D Markets Include:

1. acrylic technology for paints
2. coatings and construction
3. advanced polymers and technologies for home
4. institutional and personal care solutions
5. ingredients and delivery systems for pharmaceuticals and food
6. insulation used in homes and buildings
7. products used to fabricate electronic chips



# MRS/MatSE Calendars

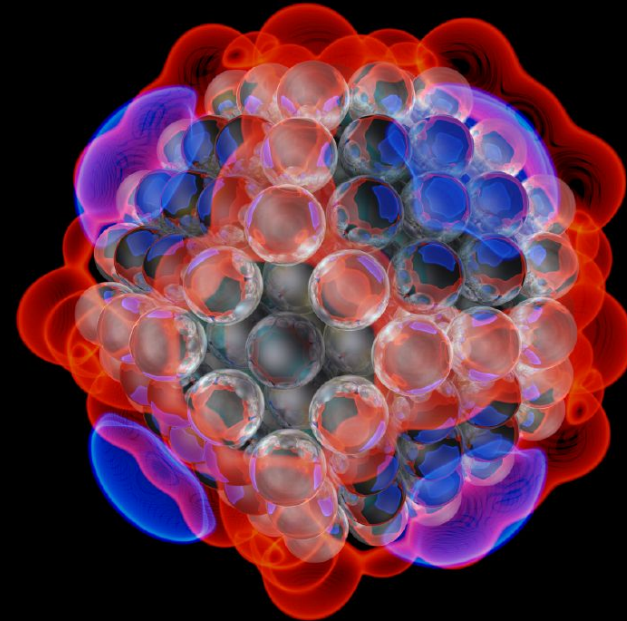
## MRS Fundraiser

- Selling 1 for \$15 or 2 for \$20
- 50 total calendars to sell
- August 2018 to July 2019 (Academic)
- Important department and university dates included
- Can start pre-orders today!

## Other Treasurer Note:

- ~\$3,000 dollars in our account to start the year pre Art money

## 2018 - 2019 ACADEMIC CALENDAR





# Social Events

Back to School Bowling  
Bar Crawl

Dates TBA!

Suggestions welcomed!



Thank You for Your Attention  
Hope to See You at Our Upcoming  
Events!