

UMC Department Updates

1 min each, maximum

Order is alphabetical based on the file name I used...
so not *quite* random

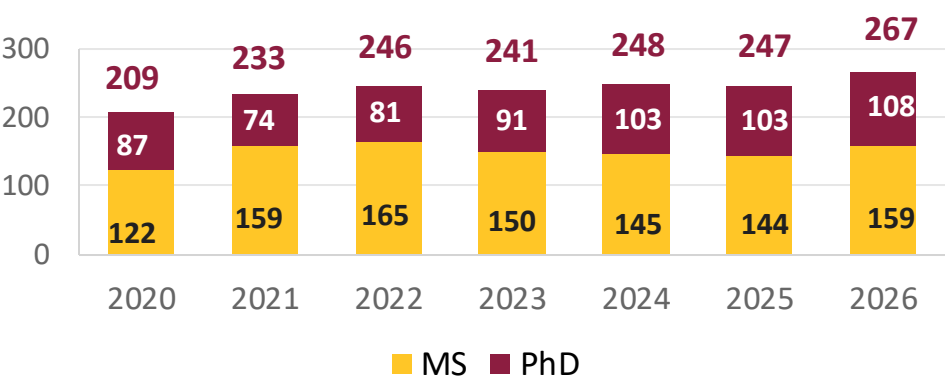
ASU	CWRU	MIT	TAMU	UMN
Auburn	Drexel	MSU	UAB	UNT
Binghamton	Duke	NCSU	UArizona	USC
BSU	GaTech	NWern	UConn	UT-Dallas
BU	Illinois	OSU	UCSB	UTK
CalPoly-SLO	JHU	Pitt	UCSD	UVA
Clemson	Lehigh	Purdue	UF	UWisc
CMU	Michigan	Rice	UMass-Amherst	WPI
Cornell	Mines	Rutgers	UMaryland	WSU

Arizona State University

Materials Science and Engineering

Graduate enrollment

2026: 159 MS / 108 PhD



+28% since 2020 +8.1% over 2025

Faculty honors

MRS David Turnbull Lectureship

ETH Zurich honorary doctorate

RSC and APS fellowships

NSF CAREER awards

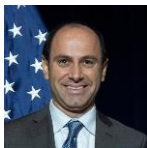
ARO Early Career Award

3M Non-Tenured Faculty Award

CALPHAD Young Leader Award

ABRC New Investigator Award

MSA Albert Crewe Award



Selected honors, 2023–2026

Research, facilities and centers

\$5.7M / 2D semiconductors

BEOL integration for next-generation

FinFET and gate-all-around devices

Selected for Natcast funding

PI: Seth Tongay

ASU Battery Lab / CCEM

Hands-on lithium-ion pouch-cell

fabrication for graduate students

40 students fabricated cells in Spring 2025

Chan seed grant: battery recycling

Carbon-free steelmaking

DOE-supported hydrogen-plasma steelmaking

Co-PI: Ankit and Qijun Hong

Center connection: EPIXC

Centers

EPIXC / ASU Center for Clean Energy Materials / Navrotsky Eyring Center

Graduate pathways

Online MS in MSE / Data Science MS with an MSE concentration



AUBURN

Materials Engineering Program

eng.auburn.edu/matl



Pengyu Chen
Program Chair
Since July 2026

PROGRAM AT A GLANCE

94 STUDENTS
55 BS • 14 MS • 25 PhD

9 TENURE-TRACK FACULTY
3 full • 2 associate •
3 assistant + 1 TBD

\$14.22M

GRANT Enforce

\$2.2 M total

RESEARCH EXPENDITURES

\$275K per current faculty

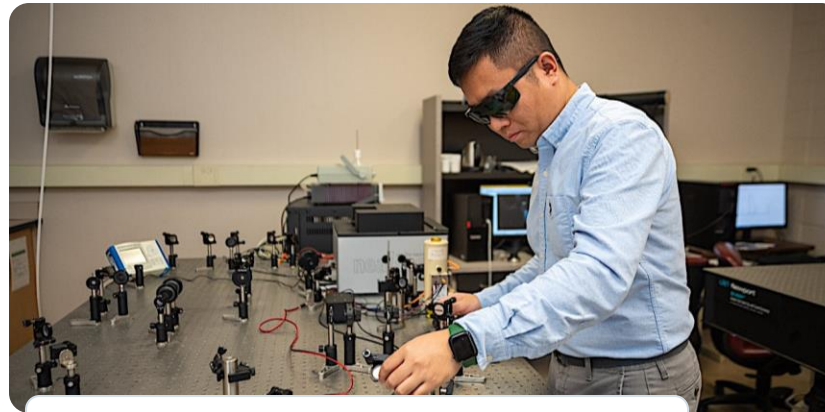
TYPICAL RESEARCH GROUP

1 postdoc • 5 graduate
2 undergraduate researchers

FACULTY EXCELLENCE

3 NSF CAREER
2 NIH MIRA • 1 NIH R01
In the past 5 years

HIGH-PROFILE PUBLICATION



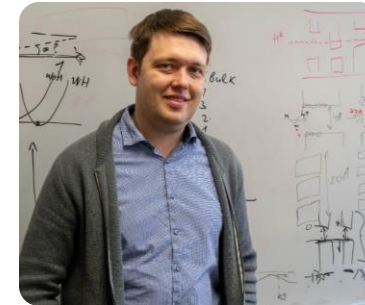
Nature Materials, Nature Communication

Mode conversion of hyperbolic phonon polaritons in van der Waals terraces

Dai team with Chen • Published Dec. 2025

RECENT FACULTY GROWTH

New faculty performance



Konstantin Klyukin

Joined 2022
Computational and 2D materials
\$1.2M NSF DMREF PI



Chanho Lee

Joined 2023
Structural alloys and advanced manufacturing
\$2M NSF DMREF PI

49 journal articles • 6 patent applications/disclosures (2025-2026)



Binghamton University

Materials Science and Engineering

www.binghamton.edu/mse/



Jeffrey Mativetsky
Director since 2021

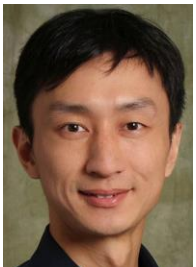
New Members



Hyuna Kwon
Machine learning for
materials discovery



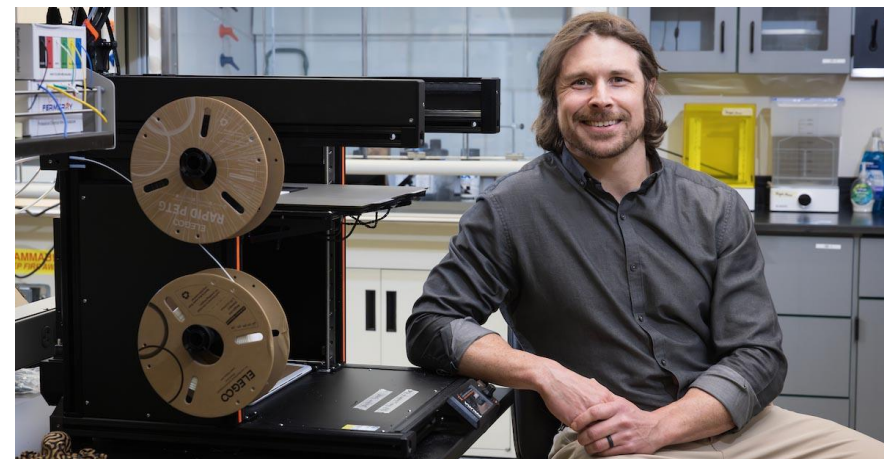
Indranil Bhattacharya
Battery materials



Jingzhou (Frank) Zhao
Nanomanufacturing



Stan Whittingham
\$45 M Phase 2
NSF Energy Storage Engine in
Upstate New York



Robert Wagner
CAREER Award
Polymer modeling



BOISE STATE UNIVERSITY

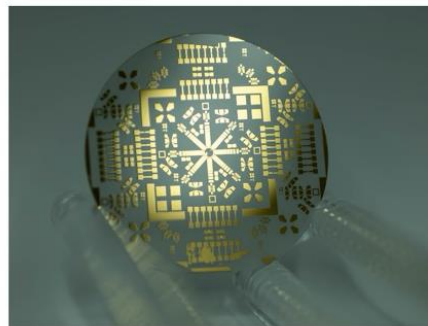
Boise State University

Micron School of Materials Science and Engineering

<https://www.boisestate.edu/coen-materials/>

2025-26 Research Expenditures

- \$6.3M
- \$485k/faculty average



Director: Eric Jankowski

Recent Highlights

- NSF EPSCoR CREST (\$7.4M) on materials for low-cost AI, workforce
- NSF E-RISE (\$8M) on microelectronics for extreme environments
- ARPA-E (\$8M) on additive manufacturing for nuclear fuels
- AFRL/NextFlex center on non-Von Neumann Computing (\$2.7M)



Professor
Rick Ubic

Students, Teachers, Engagement

- ASM Camp for teachers continues to be "best professional development"
- Growing microelectronics connections across US, Taiwan
- 51 PhD, 12 MENG, 5 MS, 62 BS students, 13 faculty

Keith A. Brown (ME, MSE, Physics)

Division Head, Materials Science & Engineering, Associate Professor

Nexus for interdisciplinary research in Mechanical Engineering, Biomedical Engineering, Electrical & Computer Engineering, Chemistry, and Physics.

Concentration of research in polymers, energy, automation, and biomedical applications

NSF Awards BU \$20M to Help Create
National “Cloud Lab” Network



CELL-MET: A \$20M NSF ERC with Potential
Funding of \$40M Over 10 Years



#15

Among Private Graduate
Engineering Schools

\$41M

In MSE-Related Research
Expenditures

18 Primary Faculty

69 Affiliated Faculty

40 Doctoral Students

31 Masters Students

26

Grants with Multiple MSE
Faculty Since 2022



Mohsen Kivy,
Chair since: Sep 2025

We transitioned from quarter to semester system:
Cal Poly was the last campus within the CSU system that transitioned



Kareesa Kron, PhD
Univ. of Southern California
Heterogeneous Catalysis



Nahmoon Kim, PhD
LLNL
AI Training, ML, ICME



Brad Roberts, PhD
Univ. of Washington
Magnetism & Spintronics

1. Advanced Manufacturing for Hypersonic Systems
 - Sponsored by AFRL, \$4.5M
2. New SEM facility
 - Phenom (NSF-MRI \$306k), Zeiss, Dept's old Quanta
 - AFM
3. New Polymer and PMC 3D printing lab
 - 3D Gen (F350 & MMS), MarkForged, etc.
4. AI in curriculum??
5. Enrollment fluctuation?



Kyle Brinkman,
Chair since: March, 2019



- ❖ ***MSE moved into new AMIC Materials Building***
- ❖ ***New X-ray Tomography User Facility opened in AMIC***
- ❖ ***Undergraduate numbers finally starting to see increase***
- ❖ ***Clemson “expense management” limiting hiring, only 1 new faculty member hired in Optics/Glass past year***
- ❖ ***New National Security Institute @ Univ. in formation, will benefit MSE supporting existing DOW projects***
- ❖ ***On our 4th Univ. President over past 6 month period😊***



Chris Pistorius
Interim Head since Oct. 2026

Engineering Health Initiatives

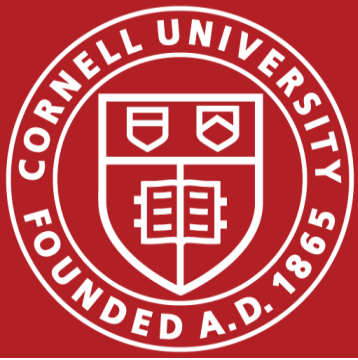
Bioengineered Organs 
CONSTRUCTING LONGER LIFE



CMU AI Science Foundry



MSE Concentration in Kigali Campus MS Degree



Cornell Duffield Engineering

Department of Materials Science and Engineering

Duffield gift leads to naming of the College of Engineering and the construction of expanded Duffield Hall focused on QIS



Christopher Ober
Chair,
July 2026
–June 2028
(Presenting)



Lara Estroff
Chair,
August 2020–
July 2026



Darrell Schlom (NAE) –
inducted into **NAS**
- **DOE Genesis Mission award**
- **Moore Foundation grant**



Judy Cha (CNF director)
- **New NbAs nanowires (Science)**



The engineering college Breakthrough Fund will enhance research in fields such as quantum engineering, artificial intelligence, health and engineering education.

<https://www.mse.cornell.edu>

More than \$520 million in contributions from David A. Duffield '62, MBA '64. Duffield has founded 6 enterprise software companies. He is one of only 2 company founder CEOs in U.S. history to lead two businesses – PeopleSoft and Workday – to an initial public offering at a valuation of \$1 billion or higher.

Engineering Education Research Search

Embedded Model – Faculty based in a traditional engineering discipline while simultaneously studying learning, pedagogy, assessment, and institutional change.

MSE EER search launching this fall; just hired in AI – update next year



Ober returns to Cornell after 2 years at NSF during a very interesting time.

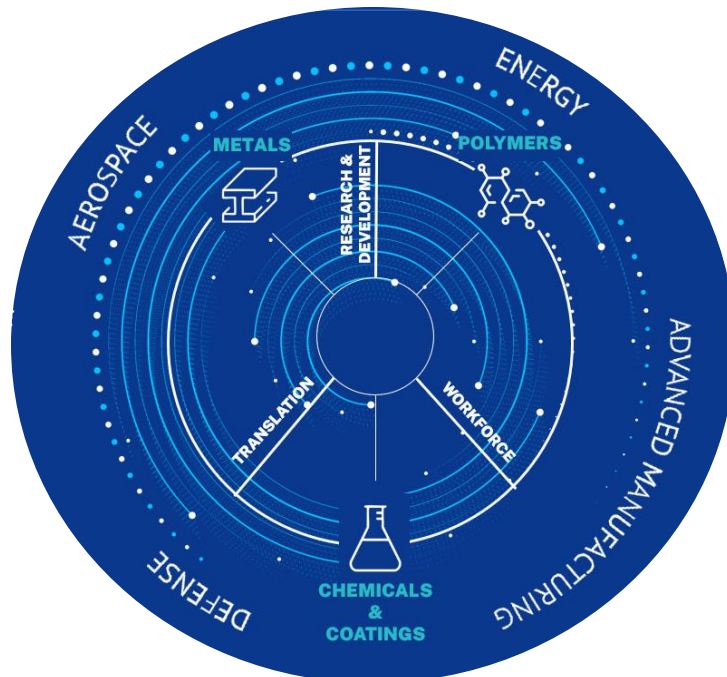
CWRU is leading the new NSF Engine: Northeast Ohio Strengthening Manufacturing for American Resilience through Technology (NEO-SMART)

- \$160 million over 10 years
- It aims to make this region the nation's leader in **materials innovation** for manufacturing.
- Bend the TRL-ARL curve

Interdisciplinary Science and Engineering Building – Fall 26

189k sqft., \$300M, 5 floors, 11k sqft. shared core facility

Focus areas include: Electrochemical engineering, Energy Science, Advanced Materials and Manufacturing etc.

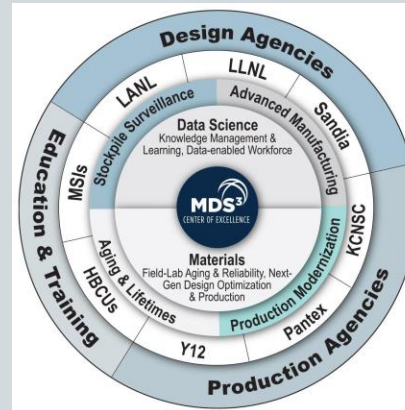


Searching for two new faculty members

AI Enabled Sustainable Manufacturing and Advanced Materials

Semantic Materials Science

Reliability & lifetime performance of metals



Materials Data Science for Stockpile Stewardship DOE-NSA Center of Excellence

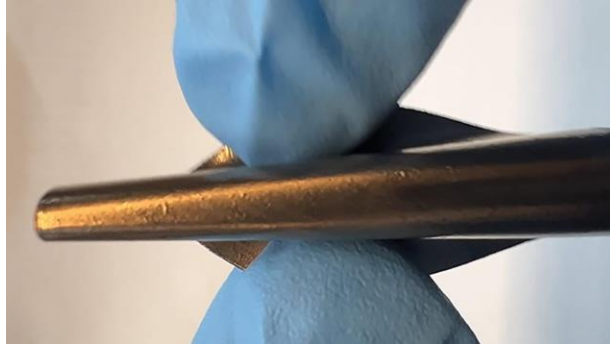


Co-PI NSF-ERC-Hybrid Autonomous Manufacturing, Moving from Evolution to Revolution (NSF-ERC-HAMMER)

Advanced Manufacturing and Mechanical Reliability Center



Caroline Schauer,
Chair since 07, 2025



**Nick Howley's Historic \$112.6M
Gift to Drexel University**

**Howley Family Immersive
Learning Center** — featuring a
robotics facility, flight simulator,
jet engine lab, soil and concrete
analysis lab, and wet labs for
chemical engineering, materials
science, and cell/gene therapy
education

**Walter N. Howley Jr. Innovation
Garage** — a 10,000-square-foot
space for hands-on innovation

Departmental stats:

86% recent graduates employed (14% in
graduate school)

100% over all job satisfaction

Research Expenditures up 35%

Incoming first year enrollment up 120%

Outstanding Alumni's recent awards:

Kelsey Hatzell 2026 Frontiers of Science Fellow



Jill Wenderott's **CAREER**
award: "Entropy-driven
oxynitrides" will develop
new visible-light-activated
photocatalysts that could
lead to more efficient
generation of useful, value-
added products while
supporting cleaner, more
sustainable technologies.



[A Nanomaterial Flex — MXene Electrodes Help OLED Display
Technology Shine, While Bending and Stretching | Drexel Engineering](#)



Christine Payne
Donald M. Alstadt Chair

37 Tenure-Track/Tenured Faculty

- 9 Assistant Professors
- 4 Associate Professors
- 21 Professors
- \$15.2M Research Expenditures

15 Regular Rank Faculty

- 4 Professors of the Practice (POPs)
- 3 Assistant POPs
- 1 Associate POP
- 5 Assistant Research Professors
- 1 Lecturer



ONR YIP

Xiaoyue Ni

Digitally Reprogrammable Soft Composites for Adaptive Fluid-Structure Interactions



DOE Genesis

Gaurav Arya & Stefan Zauscher

AI-Driven Inverse Design of Patchy DNA Origami for Assembly of Programmable Superlattices



Georgia Institute of Technology School of Materials Science and Engineering

<https://www.mse.gatech.edu/>



Natalie Stingelin
Chair since: 08/2022

No. 2

U.S. NEWS & WORLD REPORT
UNDERGRADUATE MATERIALS
SCIENCE PROGRAM
IN THE NATION



Georgia Tech Chosen as Founding Partner for Pentagon Initiative to
Rebuild U.S. Textile Manufacturing



FUTURETEX

The Textile Futures Institute

NC STATE
UNIVERSITY



41

FTE faculty
members



5

Members of the
National Academy of Engineering



1

Presidential Early Career Award for
Scientists and Engineers Recipient



Innovation Ecosystem



AUBURN
UNIVERSITY



HUDSONALPHA
INSTITUTE FOR BIOTECHNOLOGY



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

VOLKSWAGEN
GROUP OF AMERICA



Mark Losego Elected as 2026 AVS Fellow

Lauren Garten Receives NSF CAREER Award





Paul Braun
Dept. Head
since 2026

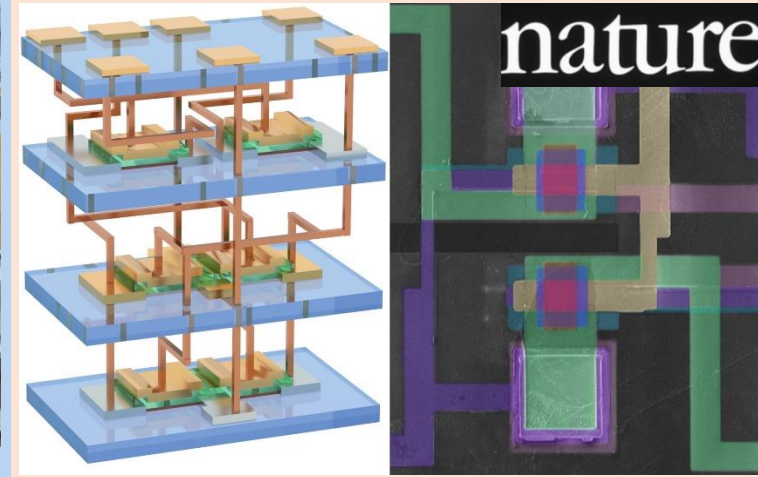
Enrollment continues to grow!
406 undergraduates, 225 grad students



New \$3.6M Illinois Polymer Maker Lab Opens, led by Dan Krogstad



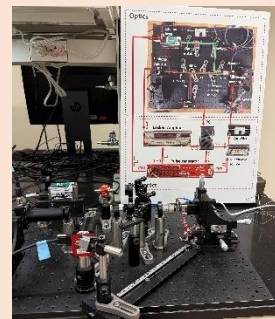
Qing Cao – building chips with stacked silicon layers



Search in computational materials science (2 lines)
New investments in quantum research & teaching



Chris Anderson – optically active spin qubits

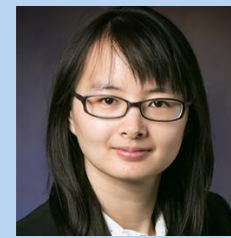


MSE 404: Quantum Materials Lab

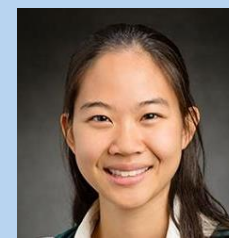
Faculty Recognition



Nancy Sottos
Timoshenko Medal

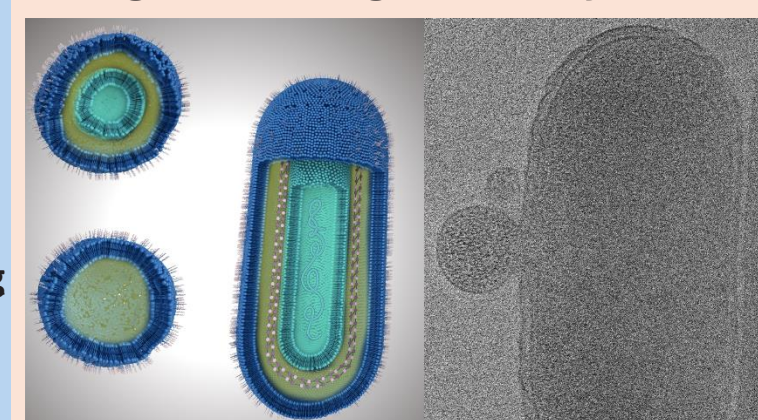


Qian Chen
Blavatnik Finalist



Pinshane Huang
MSA Burton Medal

Cecilia Leal – bacterial delivery of genetic cargo in honeybees



nature communications



JOHNS HOPKINS
WHITING SCHOOL
of ENGINEERING

Department of Materials Science and Engineering

<https://materials.jhu.edu/>



Michael Kessler

Highlights from the Past Year

\$20M

\$20M NSF award for AIMD-Net, led by Prof. Todd Hufnagel: a network of autonomous, AI-driven labs to speed discovery of materials for extreme environments (with HEMI, Northwestern, and UT Knoxville)

NAE

Younan Xia, Bloomberg Distinguished Professor, **elected to the National Academy of Engineering**

NEW

Saaketh Desai joins as Assistant Professor from **Sandia National Laboratories**, hired through the JHU Data Science and AI (DSAI) Institute initiative



Younan Xia, NAE

We are hiring: Faculty searches in **Biomaterials** and in **DSAI and Materials Science**, open at all ranks. Please share with strong candidates!



Lehigh University Materials Science and Engineering

<http://materials.lehigh.edu>

Prof. Laura Moyer, **new faculty** and Associate
Chair of Undergraduate Studies



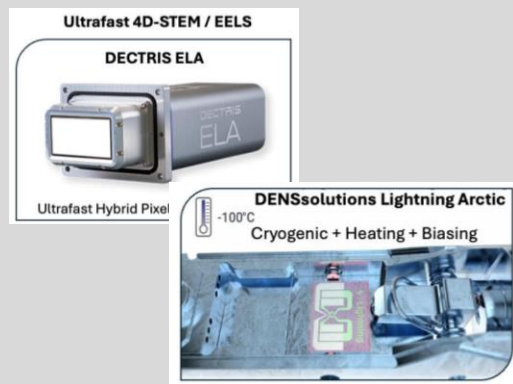
OPEN POSITION: Tenure Track Professor focused on Materials for Extreme Environments
utilizing transmission electron microscopy

Chair: Ricardo Castro
since: April/2023



Two+ new Faculty: Simon Gelin
(*computational*) & Emily McGuinness
(*functional polymer fibers, ALD*)

Continuous Upgrades in World Class Electron Microscopy



Commitment of **yearly**
investments in upgrades.

Three Lehigh materials science students awarded 2026 NSF Graduate Research Fellowships



MatSci's Sean Mills earns Outstanding Paper Award for advanced electron microscopy



FYRE: First Year Engineering Experience: Interdisciplinary educational hands-on modules for freshmen – showcasing materials engineering solutions: **Energy Storage; Carbon Fiber; Electrochromic Window, Blacksmithing, and more.**

University of Michigan
Department of Materials Science and Engineering
<https://mse.engin.umich.edu>



Elizabeth A. Holm
Chair since 1/23

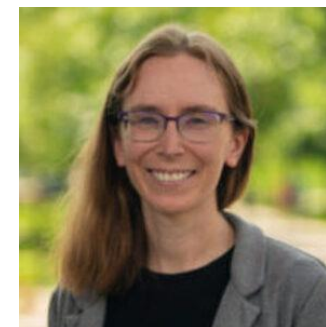
By the numbers:

- Research expenditures: \$941,113/FTE
- PhD program: 30% increase over 5 years
- Undergraduate program: 41 new declares – largest class since 2019
- Rankings: USNWR #5 Undergraduate / #7 Graduate
- Student recognition: 12 NSF GSRF awards
- Undergraduate scholarships awarded: \$334,000
- Faculty searches: 2 active postings

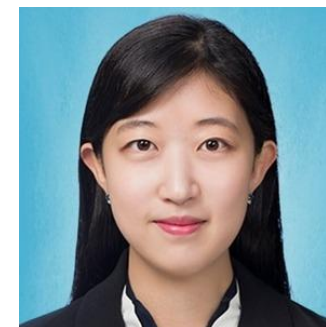


Geoff Brennecka
DH since July 2025

- 16 T/TT faculty, 2 TF**
- ~160 UGs, ~100 grad students, ~\$12M/yr, 3 I/UCRCs**
- 2 BS degrees: MME (metallurgy) and CerEng (ceramics)
 - CERAMIC S-STEM: joint with Alfred U and Missouri S&T*
- New MPEME (mineral processing & extractive metallurgical engineering) BS launching in Jan, joint w/ Mining & ChemE
 - 2 MPEME hires, ads coming soon*



Megan Holtz



Jihye Kim



Lawrence Cho



- NSF RED: concept threading & integration of computational tools
- 2 METAL workforce projects: training hub on campus and foundry/forge on a truck



Robert Macfarlane
Assoc. Head

- 31 + 4 (joint) faculty, 12 lecturers and instructors, 193 grad-students, 60 postdocs and research scientists; 82 undergraduates
- >12,000 sq.ft. of teaching & learning labs: Forge, Foundry, Glass Lab, Breakerspace, etc.
- **New NSF MRSEC '26: Center for Materials Science and Engineering**
Directed by Prof. Rafael Jaramillo and Prof. Caroline Ross
 - *IRG 1: Engineered Metamaterials for Nanophotonic Scintillators*
 - *IRG 2: Chalcogenide Melts for Advanced Materials Processing*
- **Redesign of Graduate Curriculum to enhance transition into research**
 - Modernization of core classes
 - Added rigor to qualifying procedure

MIT DMSE mourns passing of Prof. Thomas Rose (1989-2026).
Prof. Rose was a rising star in archeometallurgy hired in 2025.

Faculty highlights (selected)

Frances Ross



NAE '26

Rodrigo Freitas



AFOSR YIP '26

New faculty hires AI-MSE (2027):

Manasa Kaniselvan:
Semiconductor design



Benjamin Miller:
Molecular design





MICHIGAN STATE
UNIVERSITY

Chemical Engineering and Materials Science

<https://engineering.msu.edu/about/departments/chems>



TEMPEST

An NSF Science and Technology Center for turbulence

Michael S. Murillo, Director · Michigan State University, lead institution

Dedicated center space opening at the entrance of the MSU Engineering Building

\$30M

over five years
renewable for a second five

Three applications, one predictive framework

Predicting and controlling turbulence, with line of sight from every effort to a stated application



Fusion energy

Chaotic motion carries heat out of a burning plasma and disrupts the reaction. Predicting and steering it is the difference between an experiment and a power plant.



Supernova explosions

Turbulent mixing governs how massive stars explode, and with them how the elements that make up the world were forged and dispersed.



Hypersonic re-entry

Shock heating and compressible turbulence on a vehicle entering the atmosphere at extreme speed, where today's models are extrapolated far past their evidence.

Scientific machine learning is the common method. AI and ML built to respect conservation laws and known physics, developed alongside new experiments and theory rather than fitted to them after the fact.

PARTNER UNIVERSITIES

Auburn · Baylor · Emory · Georgia Tech · Rochester ·
San José State · Texas A&M—Corpus Christi · Yale

NATIONAL LABORATORIES

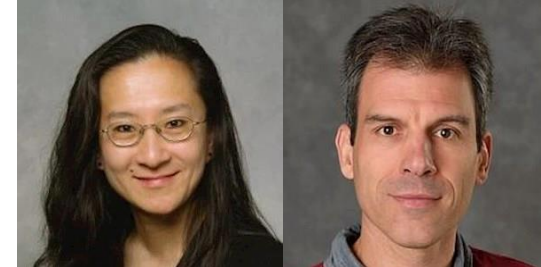
Lawrence Livermore · Los Alamos · Sandia

INDUSTRY PARTNERS

General Atomics · Pacific Fusion

Open Rank Tenure-Stream Faculty position

Seeking applications for a tenure system faculty position related to composite materials manufacturing. This position leverages the [MSU-Fraunhofer USA Center Midwest](#) (CMW) collaboration, designed to address global grand challenges and national priorities through the creation of new faculty positions in some of the most promising – and critical – fields of research related to coatings, materials, and advanced manufacturing.



Kris Chan

Chair

Philip Eisenlohr

Associate Chair

Young Faculty Awards

NSF Career, NIH Trailblazer, and DOE

Early Career

Infrastructure

Celebration groundbreaking and launch of the [Leinweber Center for Engineering and Digital Innovation](#)



Strengthening of synergy between MSE, ECE, and the Facility for Rare Isotope Beams (FRIB): Space electronics; Semiconductors; Electric vehicles; battery technology; and Artificial intelligence

Department of Materials Science and Engineering

mse.ncsu.edu



Don Brenner, Head

\$855k

Research expenditures per faculty

100% research active through expenditures or startup funding.

\$42 million

Major centers

NSF STC on Phosphorus Sustainability renewed. New Platforms for Cloud Laboratories funded.

Nearly 20%

Enrollment growth

Graduate and undergraduate programs.

Workforce initiatives

New Battery Makerspace for educational and industrial workshops.
METAL (Metallurgical Engineering Trades Apprenticeships & Learning) bootcamps for students, active military and community colleges.

Faculty recognition

Jacob Jones, International Award of FMA (Ferroelectric Materials and Applications).
Ruijuan Xu, Goodnight Young Innovators Award.

Hiring four faculty

Lampe professorship and three open-area searches.
College also searching for an engineering dean.





Recent News and Faculty Honors:

Northwestern University (NU)

Department of Materials Science and Engineering



Prof. Erik Luijten

- Northwestern Provost
- Term began July 2026



Prof. Sossina Haile

- Elected MRS President
- Term begins January 2027



Prof. John Rogers

- American Philosophical Society, 2026
- Royal Academy of Engineering, 2026



Mark C. Hersam
Chair since 9/2023

- Joined NU MSE faculty in 2000
- MRSEC Director since 2013

Emerging Research Directions from New Junior Faculty:



Christine Wang, Asst. Prof.
(Arrived Winter 2025)

- Soft functional materials
- Medical biomaterials



Fadi Abdeljawad, Assoc. Prof.
(Arrived Winter 2026)

- Mesoscale modeling
- Additive manufacturing



Ella King, Asst. Prof.
(Arrived Fall 2026)

- Computational soft matter
- Self-healing materials design



Junior Faculty Search
(Target Arrival: FY27)

- Advanced characterization
- Synchrotron X-ray methods



Snapshot of MSE at Ohio State

M.J. Mills



<https://mse.osu.edu>

- Among largest, highly ranked programs in US
- 12 tenure-track faculty hires since 2017
- 6 assistant professors as of AU 2026
- Distance MS in Welding Engineering
- Department Chair and AI + Materials searches
- Comprehensive research program:
 - NSF IUCRC Ma₂JIC Program
 - NSF ERC HAMMER Program (Hybrid Autonomous Manufacturing)
 - Advanced Casting Research Center
 - HSS and NIH programs on regenerative medicine for skin injuries and diseases
 - MURI on quantum materials research
 - NSF DMREF on ODS Superalloys
 - Joining in Space and AFOSR Space-Mat on Materials Survival in Low Earth Orbit

*New Engineering
Research and Education
Laboratory*



*Edison Joining and
Technology Center*



*Center for Electron
Microscopy and Analysis*



**Metals and
Manufacturing**

**34 Tenure Track Profs
(39% women/URM)
4 Profs of Practice**

**Ceramics/
Sensors**

**Materials
Characterization**

**Computational
AI + Materials**

**Welding
Engineering**

**Corrosion
Science**

**Electronic/
Quantum**

Biomaterials

**320 undergraduate students
180 graduate students
Ranking: #13 UG and #18 G**

Purdue University

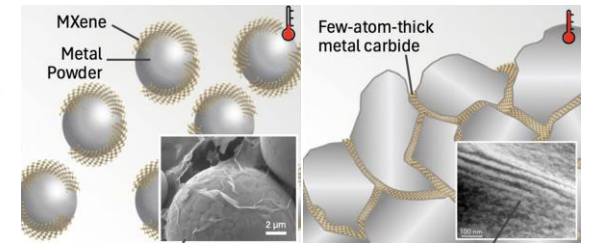
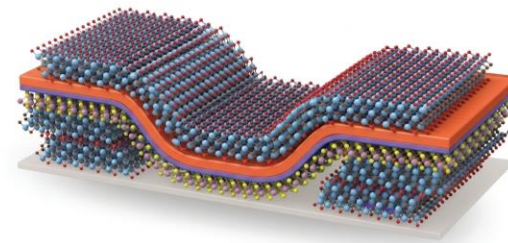
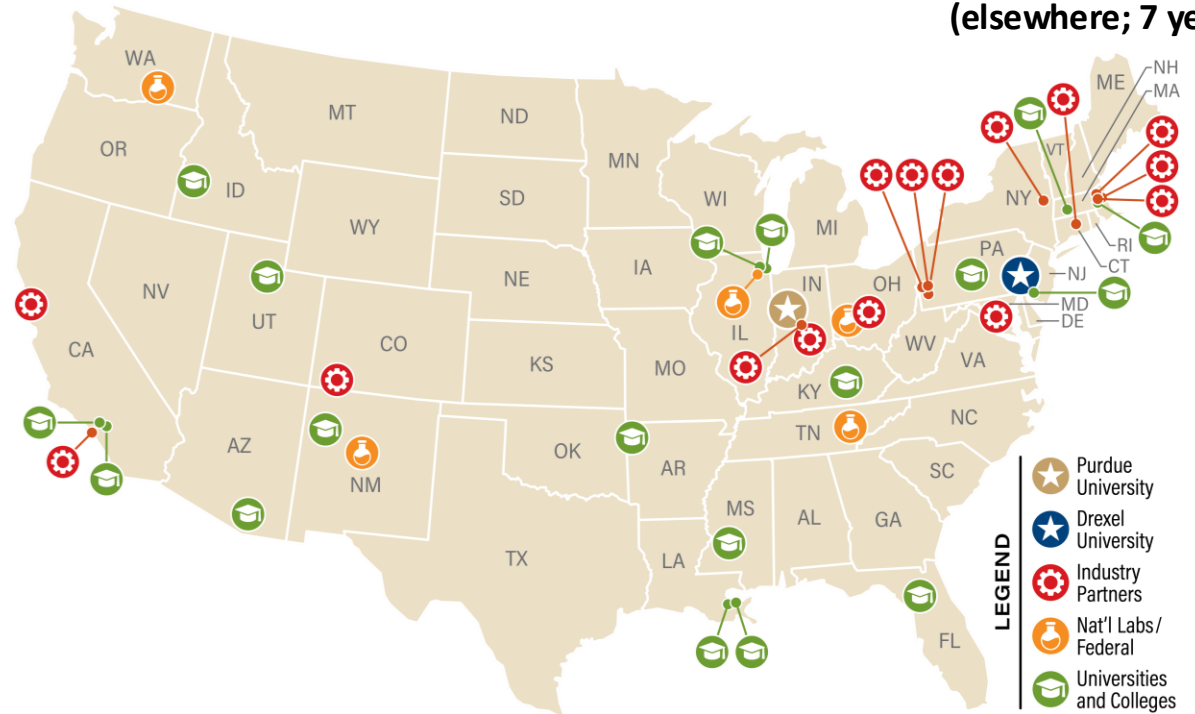
School of Materials Engineering

<https://engineering.purdue.edu/MSE>

- Purdue MSE is 40 core faculty, 270 UG, 155 PhD, 30 MS students
- Dean → NIST director
- Board of Trustees:
AI literacy will be taught ...
- ~\$20M NSF PCL: Strachan
 - “Intelligent Codesign Lab for Non-Equilibrium and Low-Dimensional Materials”
- CoE wide searches: security, space, semiconductors, energy, health



Bryan Huey
Chair since: Aug 2025
(elsewhere; 7 years)





Rice University

Materials Science and NanoEngineering (MSNE)



Karen Lozano
Chair since: 01/25

***Hiring:** Tenure-track in advanced computational, applied AI, or ML-informed materials research

Momentum: UG enrollment has quadrupled. New teaching laboratories are under construction, with dedicated funding for advanced instrumentation.

Texas Materials Consortium: Launched a statewide network connecting materials programs, facilities, and talent across Texas.

Welcome



Five MSNE faculty listed as Highly Cited Researchers

#5 Citations per faculty* **#6** Articles per faculty*
*Academic Analytics



Dr. Tringides named a PEW Biomedical Scholar and Sontag Distinguished Scientist



Dr. Lou leading a NSF PCL Test bed



Dr. Marega

Semiconductors
& 2D Materials



Dr. Pirie

Quantum Materials
& Superconductivity



Alexander von
HUMBOLDT
STIFTUNG



Rutgers Materials Science & Engineering | Fall 2026

Research Momentum • Faculty Excellence • Student Success • 125 Years of Innovation

Research & Funding

- **Riman:** ARPA-E/NREL nitride magnets
- **Amatucci:** IC-PECVD energy storage
- **Goel:** DOE + ARPA-E — nuclear waste
- R&D 100 Award
- IP licensed via Battery Safety Consortium

Faculty Honors

- **Klein:** Glass Hall of Fame
- **Nosker:** Edison Patent Award
- **Sills:** ISMM Early Career Award
- **Mercurio:** Professor of the Year
- **New hire:** Prof. Bor-Rong Chen
- **Goel:** Board of Trustees + ACerS Fellow

Student Success

- **OpenAir Challenge:** CO₂ sequestration
- **Julia Diaz:** DOE SULI Fellow
- **Brian Wang:** Tau Beta Pi + NASA OSTEM

Legacy & Ahead

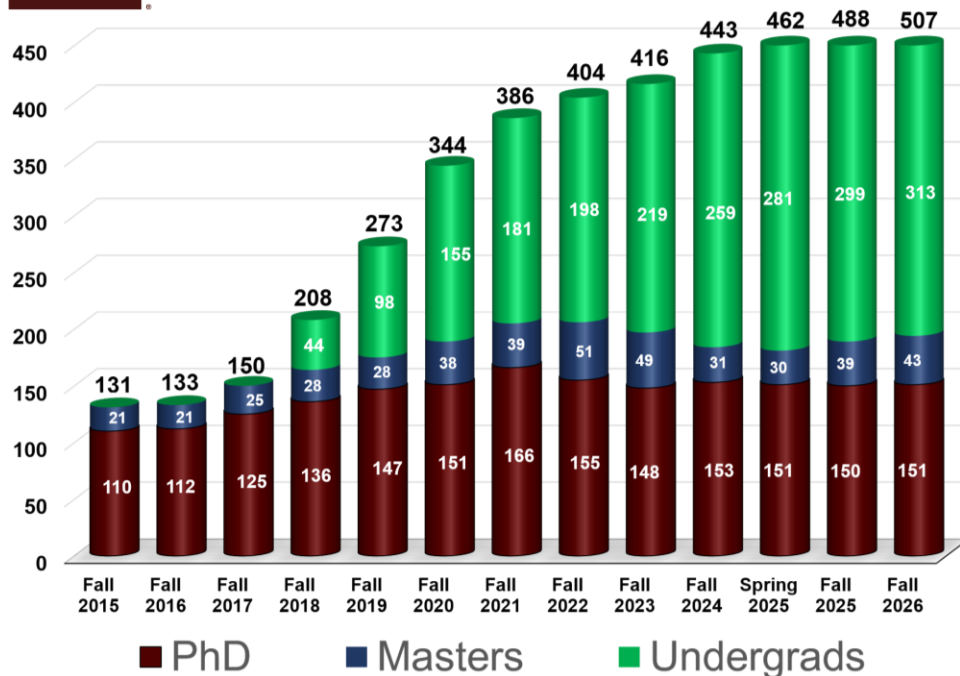
- In memoriam: Prof. **Bernard H. Kear** (NAE)
- 2026 McLaren Distinguished Lecture- **Helen Chan**
- **125th Anniversary:** Apr 16–17, 2027



RUTGERS-NEW BRUNSWICK
School of Engineering



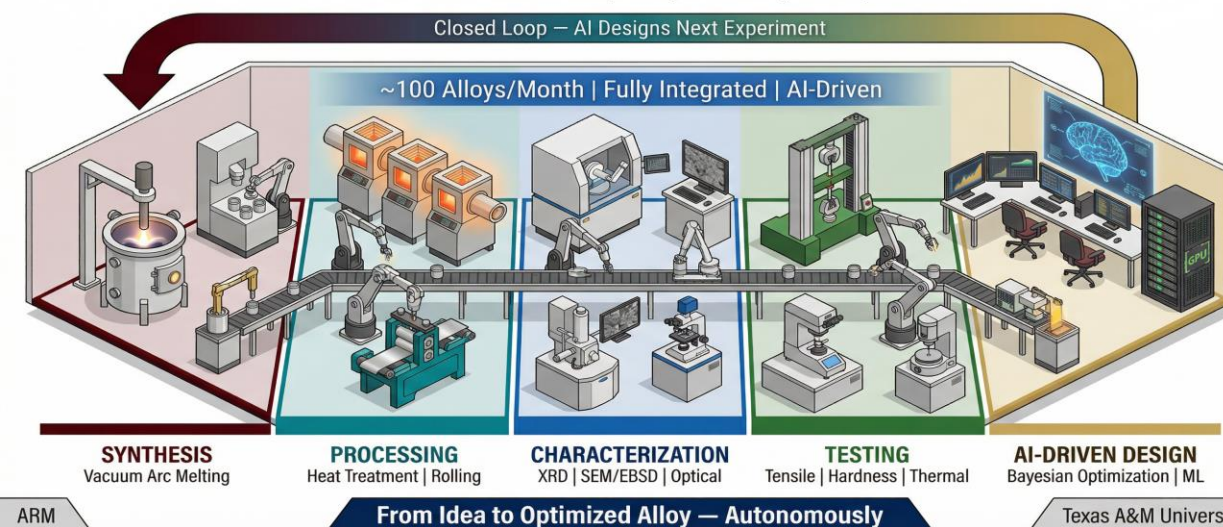
Ibrahim Karaman
Head since: July 2013



4.7% increase in undergraduate and 2.6% in graduate student enrollment (with the lowest student/faculty ratio in the college)

With Freshmen:
~630 students

ARM: THE AUTONOMOUS ROBOTIC METALLURGIST AI-Driven Closed-Loop Alloy Discovery Facility



- **\$24.9M NSF Autonomous Robotic Metallurgist – Materials Innovation Platform (ARM-MIP)**
- **3 active DMREF grants**
- **DH Search, 2 faculty searches, 2 more next year.**
- **2 Ph.D. became faculty (VirginiaTech and WPI)**
- **AI for Materials Innovation Master Specialization**
- **\$100M GPUs for AI, including AI for Materials.**
- **All Capstone Design Projects are industry-funded – Raised \$240K this year**

\$24.9 M NSF Autonomous Robotic Metallurgist Materials Innovation Platform (ARM-MIP) + Raised \$2.4 M from a non-profit foundation

University of Alabama at Birmingham

Department of Mechanical and Materials Engineering

<https://www.uab.edu/engineering/mme/>



Kathy Lu
Chair August 2023

Dr. Brian Pillay Leads \$10.5M Defense Project on Advanced Composites

The program will develop next-generation composite systems for expedient protective systems and other military applications. In collaboration with North Dakota State University, Auburn University, and BARC LLC, Dr. Pillay's team will design modular composite panels combining advanced resins and syntactic foams.

Dr. Kathy Lu Leads \$7.5M Defense Research Project

Dr. Kathy Lu, Chair of UAB's Mechanical and Materials Engineering, leads a \$7.5-million research project funded by the U.S. Air Force through the Department of Defense's MURI program. The project, "*Compositionally Complex Ceramics for Hypersonics via Knowledge Guided Ceramization*", focuses on developing advanced ceramics for extreme temperatures (1,400–3,000°C).



UAB and Metallurgical Engineering Trades Apprenticeship & Learning (METAL) Program (\$2.1M), sponsored by DOE

Led by Prof. Haibin Nin, the METAL program at UAB focuses on automation, casting, forging, and rolling techniques critical to the metalworking and manufacturing industry's future. The UAB METAL hub will teach principles in the metallurgical fields, such as heat treatment of ferrous and non-ferrous alloys.

Blazer Graduate Research Fellows: We offer Blazer Graduate Research Fellowships annually to outstanding, highly qualified doctoral trainees who will engage in full-time research. Financial support includes a stipend, tuition, and health insurance for first-year doctoral students, followed by research assistantship support for the duration of the graduate program.

University of Arizona

Department of Materials Science and Engineering

<https://mse.engineering.arizona.edu>



Head: **Sammy Tin**
since: **8/2021**



MSE Associate Professor Minkyu Kim wins \$1.88 million MIRA Award from NIGMS to develop drug carrier systems that mimic red blood cells

Micro/NanoFab at UofA underwent a \$35.5 million facility expansion to increase cleanroom to 6,800 square feet and equip it with ultramodern tools



NewFoS STC Director and MSE Professor Pierre Deymier awarded Arizona Governor's Innovator of the Year Award



University of Connecticut Materials Science and Engineering

Avinash Dongare,
Professor and Department Head
dongare@uconn.edu



John Morrall Distinguished Lecture Series

- Inaugural Lecture: Tresa Pollock (UCSB)



Xueju “Sophie” Wang:

- National Academy of Engineers Frontiers of Engineering Symposium (2026).



Jasna Jankovic:

- Alexander von Humboldt, Fraunhofer Bessel Research Award (2025)



Lesley Frame:

- President, International Federation of Heat Treaters and Surface Engineers (IFHTSE) (2026)



NSF: Regional Innovation Engines grant (Quantum Technologies)

James Boland Sr. and Owen F. Devereux Undergraduate Excellence Scholarship

- ~\$100K in student scholarships



Radenka Maric
President, UConn



Pamir Alpay
Provost and Executive Vice
President for Academic Affairs



Ji-Cheng ‘JC’ Zhao
Dean, College of Engineering



Science 1 Research Center



Faculty growth

New this year



Greg Mazur
Quantum Materials
Previously Oxford



Erez Berg
Quantum Materials
Previously Weizman



Simon Billinge
Structure and Dynamics
Previously Columbia

Total head count: 27 majority, 6 minority (26.6 FTE)
8 NAE, 1 NAS, 1 Nobel among active

Selected awards

Van de Walle
Welker, 2025

Gianola
Brimacombe, 2026

DenBaars
2xHolonyak, 2026

Beyerlein
NAE, 2024

New space and funding



UC SANTA BARBARA
OASIS

A 100,000 ft² innovation/translation R&D hub

MAJOR CENTERS

COAST PCL (\$20M, '26-'30)

BioPacific MIP (w/ UCLA) (\$19.8M, '25-'30)

MRSEC (\$18M, '23-'29)

Quantum Foundry (\$25M, '19-)

~\$31M total funding in FY26 to Mat'ls Pls

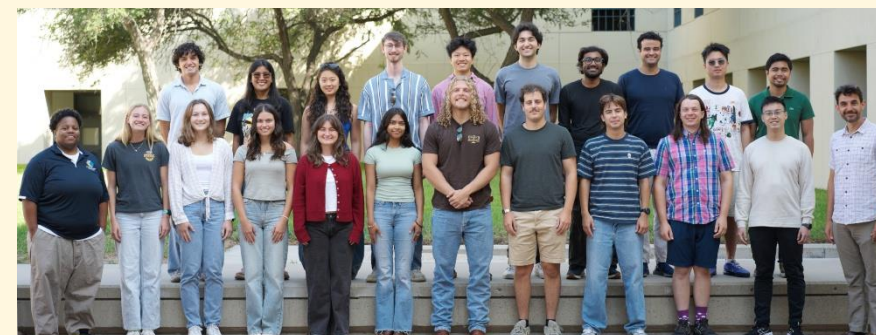
Enrollment is strong

entering PhD students

F24	F25	F26
47	20	22

124 PhD students

13 NSF GRFP
5 NDSEG

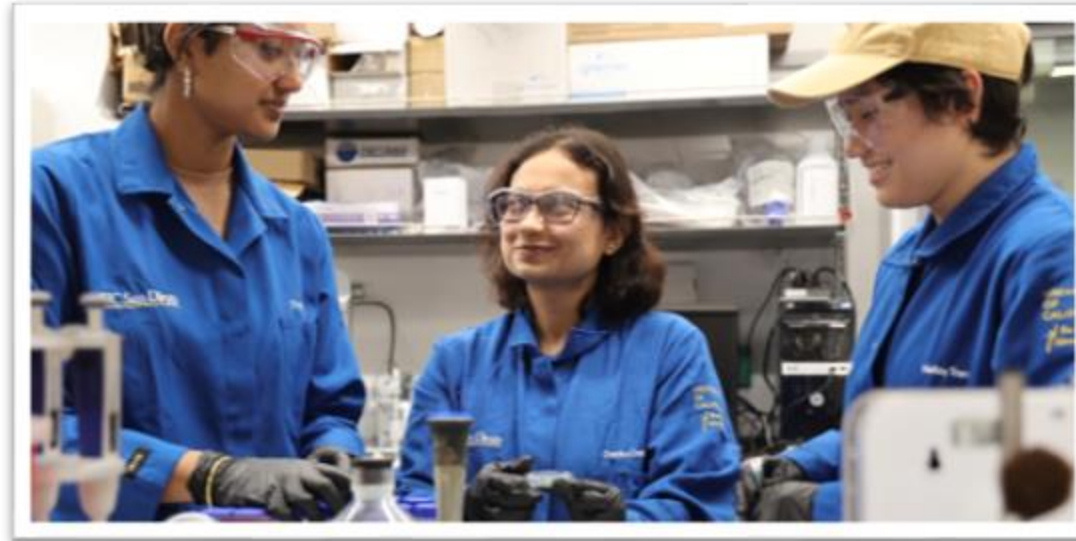


Materials Science and Engineering Graduate Program

<http://matsci.ucsd.edu>

New Curriculum: In Fall 2024 we implemented a new curriculum based on our 2023 strategic planning process. We developed five thrust areas for our students: (1) Biomaterials, soft robotics, and biomedical devices; (2) Computational and data driven design; (3) Extreme properties and environments; (4) Quantum, electronic, and photonic materials; and (5) Sustainability and energy.

MRSEC: Our National Science Foundation Materials Research Science and Engineering Center has been renewed (2026-2032)! Our focus areas are IRG1: Quantum Metamaterials and IRG2: Chemically Tailored Superlattices. <https://mrsec.ucsd.edu/>



We continue to grow! We have 115 affiliated faculty, and a very robust student body that represents a mixture of Master's and PhD students. We are also now nationally ranked 10th (Shanghai ranking)

UC San Diego

World-class research infrastructure and facilities

University of Florida Materials Science and Engineering

- **Headline:** No More Interims!
 - ***Permanent president*** – Stuart Bell



- ***Permanent dean*** – Mark Tehranipoor



- ***Permanent chair*** – Michael Tonks





University of
Massachusetts
Amherst

Materials Science and Engineering



GRADUATE PROGRAM

Interdisciplinary Graduate Program

~60 7 2022

Faculty Departments Launched

Ph.D., thesis and non-thesis M.S., and
4+1 pathways across engineering and
natural sciences

RESEARCH STRENGTHS

Advanced manufacturing · AI/ML ·
biomaterials · catalysis · energy ·
nanoelectronics · quantum · soft matter

FACULTY HONORS

NAS: Granick · NAI: Dimitrakopoulos
APS · ACS · AAAS



Director: Ashwin Ramasubramaniam
mseidgp@umass.edu



ACADEMIC DEPARTMENT

Polymer Science & Engineering

18 1966 770

Faculty Founded Ph.D.s graduated

Chemistry, physics and engineering
coursework; hands-on synthesis and
characterization labs

RESEARCH STRENGTHS

Sustainable materials · living systems ·
interfaces · extreme environments · AI

FACULTY HONORS

NAE: Russell · NAS: Granick
NAI: Russell, Crosby, Watkins
APS · ACS



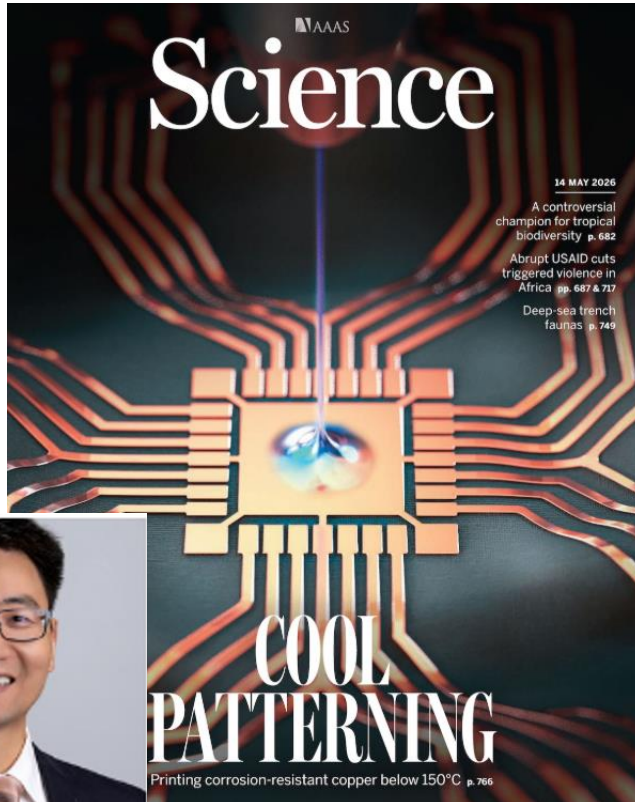
Department head: Alfred J. Crosby
acrosby@umass.edu



University of Maryland MSE Highlights (Chair: Ichiro Takeuchi)

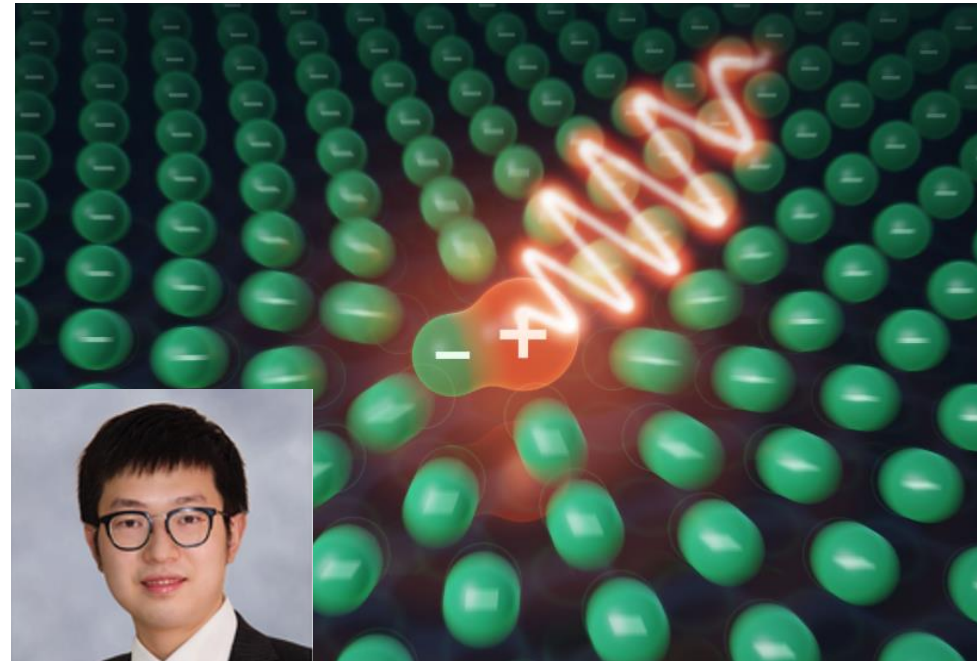
10/4/2026

Nuclear archaeology reassesses Heisenberg's last reactor experiment



Shen Ren Science 6799, 766 (2026)

Wigner polarons probe the dynamics of a Wigner crystal in a monolayer semiconductor



You Zhou Nature Physics August (2026)



Tim Koeth
PNAS Nexus 5, 282 (2026)

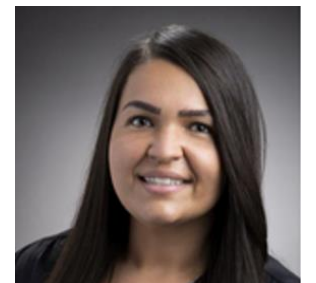
- Ocampo wins the NSF CAREER Award
- Babu, Valentino awarded \$10M+ Navy grant to establish Advanced Manufacturing Center at Maryland



Carlos Ocampo



Suresh Babu



Gianna Valentino



University of Minnesota
Chemical Engineering and Materials Science (CEMS)
<http://cse.umn.edu/cems>



Kevin Dorfman
Chair since: July 2024

- **Renewed and new large-scale projects**
 - *Center for Quantum Materials* (DOE BES/Neutron Scattering), \$5.5M, 3Y
 - *Atomically-Precise Oxide Bicrystals with a Twist* (AFOSR MURI), \$7.5M, 5Y
 - *A general approach to enable high-quality single crystal synthesis of anything on almost anything* (DARPA Crystal Palace), \$4.0M, 3Y
- **Launch of National Security Research Initiative (NSRI)**
 - Nexus for defense-related research - Operating as an industrially-funded consortium supporting multiple materials research projects in CEMS
 - Positioned as a link between UMN and the Minnesota Aerospace Complex, a \$1.1B facility focused on hypersonics and related testing
- **Mechanical Engineering faculty search with materials/manufacturing focus**
(apply.interfolio.com/193364)

University of North Texas

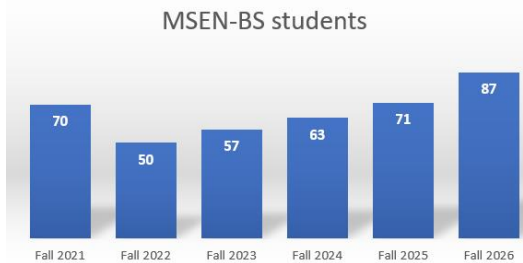
Department of Materials Science and Engineering

engineering.unt.edu/mse/

- **Faculty and research updates:** 20 T/TT+ 8 research faculty. Two new DOE grants: ARPA-E \$1.7M transformer material (PI. Vijay Vasudevan), NEUP-IRP \$400k/3M design molten salt waste forms (PI: Jincheng Du). Existing DOE: \$1.1M RENEW training on advanced materials for fusion energy (PI: Vijay Vasudevan).
- **Programs and outreach:** M.S. in microelectronics manufacturing. Certificate program on advanced manufacturing. ASM Teachers Camp, 2 student camps. Industry collaborations. Visit and workshop with South Korea university.
- **Students:** UG enrollment increases since 2022. SMART scholarship. 1st place shape memory alloy design award.



Prof. Jincheng Du
Chair since: Sept. 1, 2024



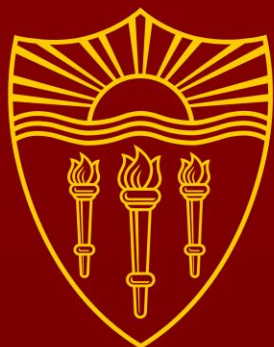
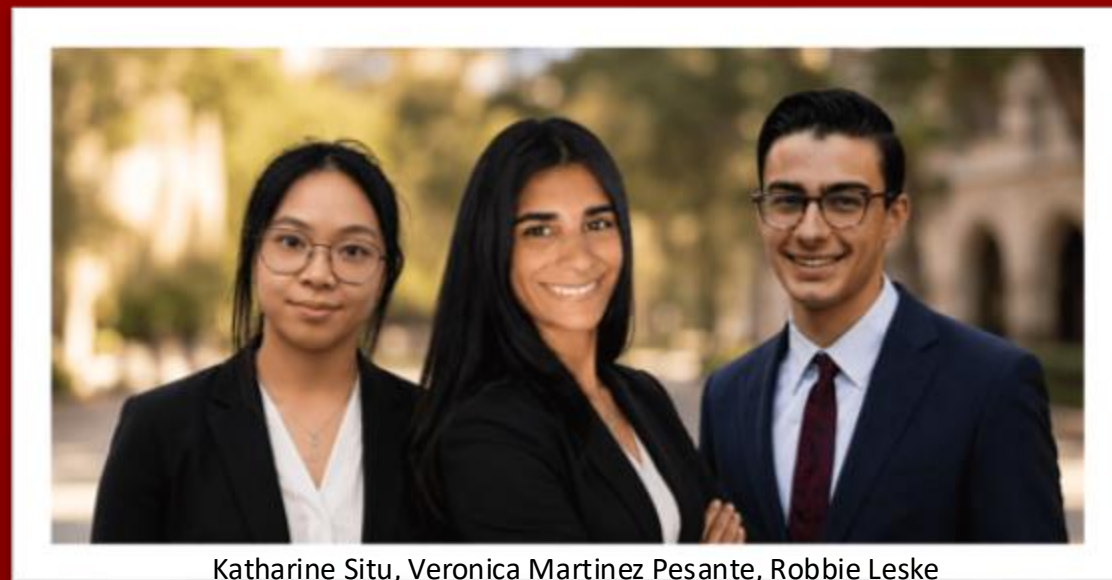
Student Excellence:

- 3 Materials Science Ph.D. students awarded NSF GRFP

New & Noteworthy Grants:

- 2 DOE Genesis
- DOE INCITE (Zhenglu Li)
- NSF CAREER (Zhenglu Li, Paco Villalobos)

All degree programs now require a practicum component



Existing degree programs:
Materials Science (Minor, MS, & PhD)
Chem. Eng. (BS, MS, & PhD)
Petroleum Eng. (Minor, MS, & PhD)
Energy Eng. (MS)

*New Degree Program-
Enrolling F2027*

**Master of Science in Semiconductor Science and
Technology**





New Faculty members



Dr. Nayoung Kim



Dr. Anuththara Alujjage

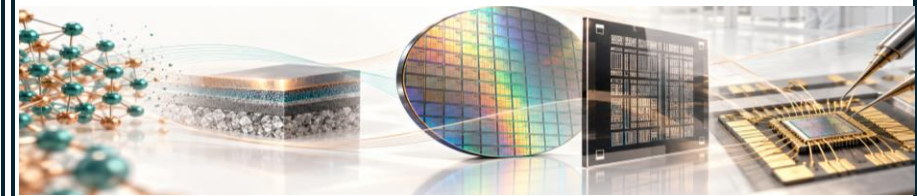
- New UG program started Fall 2026. More than 150 FTIC applications (accepted ~ 20 freshman students for first cohort).
- Prof. Bruce Gnade inducted to the NAE. Now MSE has **4 NAE members** (23 total T/TT).
- Searching for **2** new additional faculty in the areas of energy and microelectronics. This will bring the MSE Faculty size to 25 faculty T/TT
- MSE has established two centers (batteries and semiconductors) and one institute (NTxSI), with one more in grid technologies currently being established



NORTH TEXAS SEMICONDUCTOR INSTITUTE

- MSE selected as Texas Instruments CHIPS Workforce Intermediary (CPO-NIST). First three workforce solution funding orders approved and funded
- MSE received a National Network for Microelectronics Education (NSF): Extend/expand technician development program (through 5/30/27)- Currently establishing a Training Cleanroom
- MSE faculty member Dr. Babu Chalamala (NAE) leading the establishment of a Power Electronics and Grid Technologies Institute

- Research expenditures per faculty member increased \$440K (2024) to \$950K (2026).
- MSE launched a fellowship 50K/year program for 20 MS students funded by the Texas Semiconductor innovation Fund
- Currently MSE leads two strategic thrusts at UT-Dallas – Energy and semiconductor Science and technology



MRSEC

Transform Materials Science? Yes We CAMM

Center for Advanced Materials and Manufacturing



MATERIALS SCIENCE &
ENGINEERING

24 TT/T Full-Time Faculty



Mohsen Asle Zaeem
Department Head

Faculty Highlights

- ❖ Sergei Kalini IEEE Ferroelectrics Winner 2026 & SEC Faculty Excellence 2026
- ❖ Takeshi Egami Shull Prize Winner 2026
- ❖ Yanfei Gao ASM Fellow and Brimacombe Medalist 2026



New Faculty



Deep Jariwala
Governor Chair
Quantum Devices

Jen Schuler
(from Lehigh U)
Refractory Alloys



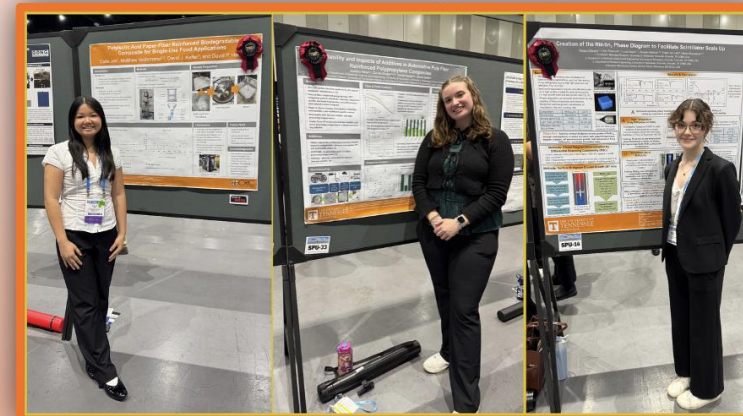
Yixian Wang
(from Texas Austin)
Solid State Batteries



Faculty Opening

Tenured Associate/Full Prof:
Synthesis and Processing Science
of Quantum Materials

Student Highlights



- ❖ TMS 2026, winning three of the five first-place poster awards!
- ❖ Multiple NSF GRFP and Fulbright Awards



**MSE Secures
\$20M NSF Grant**
to Pioneer Breakthroughs in
Automated Materials Discovery

**MSE Joins
\$25M Multi-Institution
Consortium to Advance
Scintillator Research**

University of Virginia

Materials Science & Engineering

<https://engineering.virginia.edu/departments/materials-science-and-engineering>



Beth Opila
Chair since: January 2023

New Faculty

Ned Thomas (NAE) joins UVA MSE
as Research Professor



New ARPA-E award

- ARPA-E's MAGNITO program, Magnetic Acceleration Generating New Innovations and Tactical Outcomes
- "Needles in the Materials Haystack (NeedMatH): Physics-Guided Discovery of Powerful Rare-Earth Magnets"
- PI Liqin Ke, Lin Zhou, and Jerry Floro (UVA), with UMD, UNC-Charlotte, Ames Lab, Princeton, Niron Magnetics

Faculty Awards

- Jerry Floro – 2026 MRS Impact Award
- John Scully – 2026 TMS Fellow

Student Awards

- Noah Burks – NDSEG Fellowship
- Anisha – Barry Goldwater Scholarship





NSF Materials Innovation Platform

MATRIX-MIP

*Materials AI and Transformation
through Research Infrastructure for
eXtreme environments*

- **\$25 MLN** for 6 years (+\$8 MLN from campus)
- Infrastructure and use facilities + research + industry outreach
- Enable high-throughput manufacturing of complex materials for extreme environments
- Partnerships with ANL, APS, and manufacturing industries



**Lead by Izabela
Szulufarska**

New pillar of strength in soft materials/polymers

Padma Gopalan

Professor
*Polymer synthesis
& Self-assembly of
block-copolymer.*



Xudong Wang

Professor
*Electromechanical
soft and
biomaterials for
biomedical
applications.*



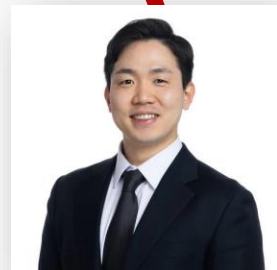
Dylan Barber

Assistant Professor
*Polymer design for
energy storage and
health*



Wonjun Yim

Assistant Professor
*Biopolymers for
biomedical
applications
(Join Jan. 2027)*



Senior Hire

*Data-driven discovery of
soft materials for
batteries, and
electronics
(under negotiation)*





Worcester Polytechnic Institute

Materials and Manufacturing Engineering Program

Mechanical and Materials Engineering Department



Department Head
Robert Hyers



Program Director
Jianyu Liang

PROGRAM AT A GLANCE

Graduate Enrollment

Fall 2026 (new & continuing)

34

PhD students

37

MS students

Faculty

Fall 2026 ([MSE](#) & [MME](#))

12

Core Faculty

2

Teaching
Faculty

7

Affiliated
Faculty

Fellowships

Fall 2026

5

Students

- 1 William Smith Fellowship
- 1 NASA Graduate Fellowship
- 3 Backlin Awards

RESEARCH & FACILITIES

~\$15M

External Research
Funding
FY26

\$3M+

Additional Research
Expenditure
CR3 • CHTE • IMDC

over 1,000

Shared Facility
Users / Year
Internal + External



Metal Processing Lab



Machine Shop



Materials Characterization Lab

FACULTY RECOGNITION

- **Brajendra Mishra** - Board of Trustees' Award Outstanding Research & Creative Scholarship
- **Yan Wang** - National Academy of Inventors Fellow



PROGRAM & FACULTY UPDATES

- **Ph.D. Credit Requirement**
72 credits without an MS • 42 credits with an MS
- **Faculty Search**
Assistant Professor in Soft Materials

WSU School of Mechanical & Materials Engineering

<https://mme.wsu.edu/>

- Research Highlights

- ARL supported ceramics center continues (~8.9M\$ total so far)
- Bulk crystal growth capital influx to IMR from NIST, \$2M
- New JEOL F200 (S)TEM that augments capabilities from older T20, \$2.5M

- Nuclear activities

- Internally funded WSU One Nuclear roadmapping exercise; DOE funded “Reactor Ready” curriculum development; planned Nuclear Eng minor

- MSE Details (#s from 1/26)

	MSE
Faculty	~15 (11 TT) + 12 affiliate TT + 7 postdocs
Undergrad students	~30; 14 BS MSE degrees in AY24-25 (+8 new students F26; overall still down)
Grad students	43 PhD (5 MS) (6 MS + 11 PhD awarded in AY24-25)
Research expenditures	~\$5.3M MSE TT only, ~ \$480k/TTF (\$14.5M all MME, CY25)



Director: **Prashanta Dutta (Mech Eng)**
since: **July 2026**

<https://materialsresearch.wsu.edu/>



Czochralski
(CZ) Crystal
Growth
Furnace

Traveling
Heater
Method
(THM) Crystal
Growth
Furnace

Bridgman
Crystal
Growth
Furnace

High-
Pressure
Bridgman
(HPB) Crystal
Growth
Furnace



WASHINGTON STATE
UNIVERSITY