



TEAM **M** MSE

Take a break

Tomorrow (Wed., Feb. 24) is a Well-being day, implemented to give you a little time to take of you. Fortuitously, our "MSE Recommends" list this week features your favorite meditation and exercise videos, so check it out if you're looking for a new way to de-stress. Unfortunately, we're not getting a break when it comes to campus Covid cases, so please continue to stay safe.

Questions, comments or ideas for TeamMSE? Contact Kristen at krisfres@umich.edu.

We'd love to hear from you!



Campus COVID Status

Covid cases continue to rise among U-M students

As COVID-19 activity nationwide decreases, unfortunately, cases on campus continue to rise. U-M cases now represent about **62% of all cases in Washtenaw County**. Public health official report that it's frequently taking more than two days to reach students who have tested positive. This seriously hinders officials' ability to prevent further spread, so please help our community by being responsive to their calls, and please [get tested regularly through U-M resources](#).

Well-being break tomorrow: February 24

Tomorrow is the first of two scheduled University well-being breaks. All academic activities should be paused so that our community can reflect and recharge. If you are on campus, you can add free coffee and doughnuts to your well-being breather. MDining and OSA have teamed up to safely distribute free coffee and doughnuts on Wednesdays from 10-11 a.m. in the Duderstadt

Connector. **Remember these important resources are always available:**

- [Engineering CARE Center](#)
- [Counseling and Psychological Service](#)
- [Inclusive Campus Resources](#)

The next Well-being break is scheduled for **Tuesday, March 23**.

North Campus Food Distribution tomorrow, Feb 24

U-M's Maize & Blue Cupboard and Food Gatherers will be distributing pre-bagged vegetables, fruit and other non-perishables tomorrow, Feb. 24, in the connector between Pierpont and Duderstadt from **2:00-4:00 p.m.** **Make a reservation [here](#).**

Testing available at Pierpont

Convenient, saliva-based testing is available at **Pierpont Commons**, Boulevard Room (1st floor Mezzanine behind Fireside Cafe) **Monday-Friday, 9:00 a.m.-4:30 p.m.**

ResponsiBLUE updates

The [ResponsiBLUE app](#) will soon include a quarantine and isolation indicator for students, an additional question in the daily symptom tracking questionnaire and a number of usability improvements based on feedback from the community.

[Click here for U-M's COVID-19 Dashboard](#)

Upcoming Events

Seminar Lecturer this Friday:
Ilia Valov

Head of Nanoelectrochemistry at



Research Centre Juelich (Germany),
Ilia Valov will present "Materials,
Interfaces and Processes -- a
Different Perspective on
Neuromorphic Computing," this
Friday, Feb. 26 at 10:30 a.m.
umich.zoom.us/j/98607485659,
passcode 098235

**Wonjin Choi PhD Defense:
Today, February 23**

Wonjin Choi (Kotov) will defend his
dissertation, "Reconfigurable
Kirigami Optics and Chiral Phonons,"
today, February 23, at 3:00 p.m.
Zoom link:

umich.zoom.us/j/99931937340



**Jiseok Gim PhD defense:
Friday, March 5**

A member of the Hovden lab, Jiseok
Gim will present "Hierarchical
Nanostructure of Natural Biominerals
and Man-made Semiconductors" on
Friday, March 5, at 1:30 p.m. Zoom
link:

umich.zoom.us/j/97861640341,
passcode 749646



Last week to get your MSE apparel! Sale ends

Monday, March 1



The *binding* MSE Apparel Order Form can be found [here](#). The form will close on **Monday, March 1**.

If you are on campus this semester, you will be expected to pick up your order from a designated location. If you are off campus this semester, MMS will be shipping your order to you. *Make sure to fill out your address on the form.*

The items we have for sale this year are (pictured above):

Navy Blue T-shirt (\$13)

Light Blue T-shirt (\$13)

Gray Crewneck (\$18)

Navy Blue Quarterzip (\$30)

More information on distribution/shipping and payment will be sent out later. If you have any questions or concerns, please [let us know!](#)

Scenes from last week's MSE Open House



Top: Just-poured recycled aluminum cools in a sand mold.

Middle: Tim Chambers examines a bee in the scanning electron microscope to illustrate how MSE can draw inspiration from natural structures and materials to improve materials design.

Bottom: Assistant Professor John Heron shows off the lab's newest acquisition: the physical properties measurement system, or PPMS, which allows for electrical, magnetic, and thermal properties of materials to be investigated in the temperature range of 1.8 K to 400 K and magnetic fields up to 9 T. Considered the gold standard for characterization of semiconductors and quantum materials, the tool can be used to investigate dopant activation energies, carrier type, resistivity in semiconductors, first and second order phase transitions (structural, magnetic, superconducting), magnetic and electric susceptibility, as well as thermal conductivity and heat capacity.



Meditation Resources

[Ambition: Lofi hiphop mix](#) on Youtube

[Calm app](#)

[Daily Calm](#) - 10-minute mindfulness meditation

[Meditation with fire](#) - relax and warm up to logs burning in a fireplace

Yoga

Exercise Videos

@[blogilates's](#) 30 & 7 day challenges. The videos are pretty quick and you focus on one area of your body for the time period. Also, any kind of zumba video on Youtube.

Anything by [Chloe Ting](#)!! It's free and she is very encouraging!!

[Heather Robertson](#)

[Peloton app](#) videos (crazy dance videos)

[Yoga with Adriene](#)

[Yoga with Kassandra](#)

***Next week's **MSE Recommends** will feature favorite Youtube/TikTok videos. Add your top picks to the list [here](#).



Research Highlights

Laine group collaborating on the development of innovative solid-state battery technology



Canadian technology company Nano One recently announced positive updates from a collaboration with MSE Professor Rick Laine's group, which is leveraging Nano One's advancements in HVS cathode material for solid-state batteries.

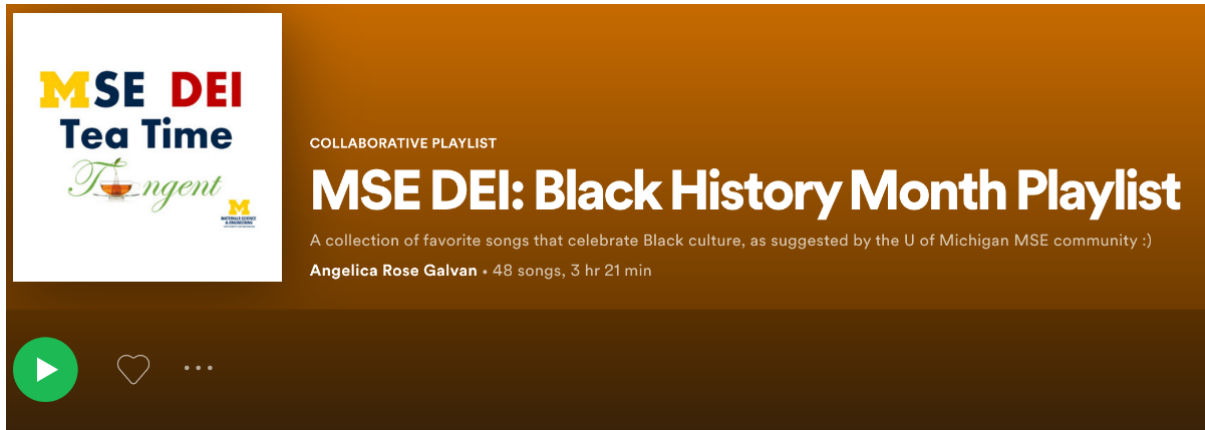
Nano One's proprietary coated single crystal HVS cathode material is inexpensive, fast charging, cobalt free, and suited for solid-state battery configuration because it does not expand, contract and stress the cathode-electrolyte interface like other materials.

"Initial results from our evaluations show that Nano One's HVS materials perform well with our innovative agricultural waste derived electrolytes and we look forward to advancing our collaboration to demonstrate a viable solid-state battery configuration," said Laine.

Professor Laine's group and several others are exploring in U-M's battery labs various aspects of battery components, designs, interfaces and assembly of solid-state electrochemical energy storage devices.



Thanks to last week's MSE DEI: Tea Time Tangent participants for compiling this [Black History Month playlist](#). Check it out!



The next **MSE DEI: Tea Time Tangent** will be **Friday, March 5, from 2-3:00 p.m.** Please sign up/ submit discussion questions [here](#). These are free-form tea time discussions, with a monthly musical theme. All of MSE is welcome!

MSE DEI

Tea Time



Black History Month Alumni Round Table

Tuesday, February 23
6-7:30 pm EST

This year as part of Black History Month, CoE invites you to join in celebrating the stories, experiences, and accomplishments of some of our

Distinguished Black Alumni through a Virtual Round Table. Alec D. Gallimore, the Robert J. Vlasic Dean of Engineering, will kick-off the event and we will introduce our special alumni guests. After the introductions, you will join breakout rooms with alumni to learn about their journey and have the opportunity to converse. It will be a fun night of engagement and connection.

This event is open to any U-M student and takes place on February 23rd from 6-7:30pm EST on Zoom. Joining details will be sent to all RSVP participants two days before the event. We hope you will join us!

[RSVP Here](#)



M
COLLEGE OF ENGINEERING
DIVERSITY, EQUITY & INCLUSION
UNIVERSITY OF MICHIGAN

March 2021

DEI LECTURE SERIES

Driving Change: Privilege, Leadership and Urban Entrepreneurship

MARCH 9

11:15 AM - 12:15 PM | Presented via Zoom

Most of us want to live in a society in which we compete and collaborate as equals – neither advantaged nor disadvantaged by race, ethnicity, gender, sexual orientation, and other differences that historically divide privileged and oppressed.

What can we as individuals, as leaders and as engineers do to level the playing field and ensure that everyone is represented among the people choosing the directions of the future?

Our panel comprises three speakers who served as sources for the [Six Diversity Myths series](#):



[George Halow](#), 31-year Ford engineer and professor of practice in aerospace engineering:
How can the privileged drive change?



[Jennifer Linderman](#), the Pamela Raymond Collegiate Professor of Engineering and Director of the ADVANCE Program: Why don't we have enough women and under-represented minorities in leadership positions, and what can we do about it?



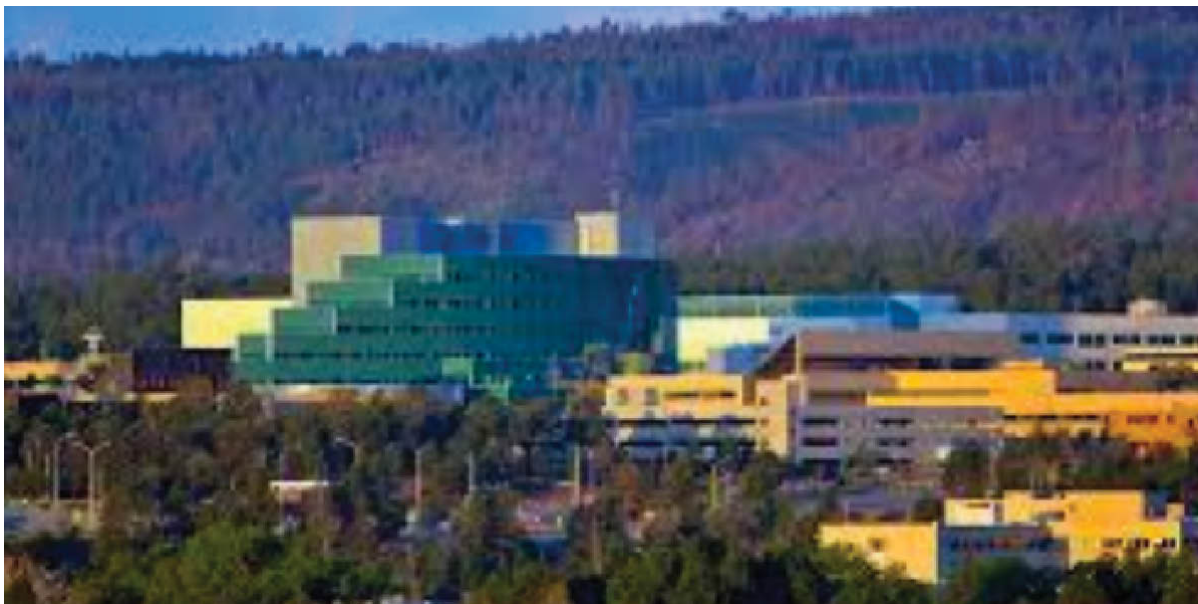
[David Tarver](#), President of the Urban Entrepreneurship Initiative and lecturer in the Center for Entrepreneurship: How could a new generation of tech-aware entrepreneurs empower the sustainable, equitable and multicultural cities of the future?

RSVP

DEI Student Allies Mailbox

Share your feedback on the DEI program and/or ask the DEI student allies questions: <https://forms.gle/98uKGHPbcAMzCF3B7>

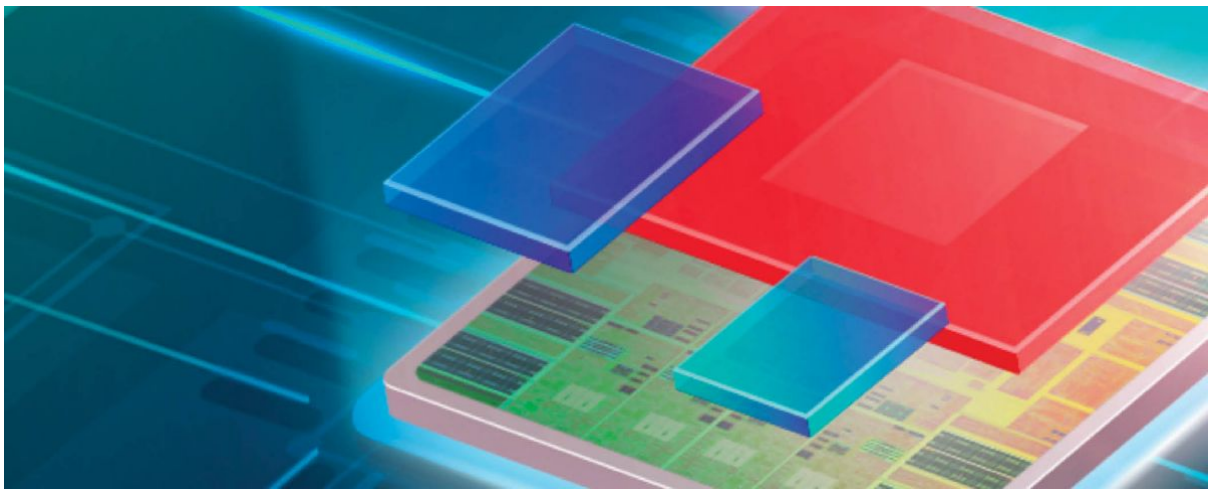
Internship/Job Opportunities



Los Alamos National Laboratory looking for Advanced Electron Microscopy Postdoc

The Nuclear Materials Science Group (MST-16) at that Los Alamos National Laboratory (LANL) is looking to fill a postdoctoral research position that is focused on high-resolution analytical and *in situ* (S)TEM development utilizing our new monochromated, probe-corrected 300kV Titan Themis (S)TEM. *In situ* observation (characterization) and control (synthesis) of materials is a strong component of LANL plans for programs focusing on the ageing and lifetimes of materials and the performance and resilience of material in extremes. Emphasis is on the characterization of materials under actual conditions of use, materials undergoing phase transitions or corrosion, or materials obtained under controlled and directly observed synthesis processes. The successful candidate will be expected to both develop relevant lines of research to meet the programmatic objectives of the position and interact closely or assist with a number of projects across groups and divisions to develop and adapt microscopy capabilities to address LANL materials development needs. The position will be awarded to the candidate demonstrating exceptional talent with a successful collaborative and scientific track record.

[Click here](#) to learn more about the position, including how to apply.



Taiwan Semiconductor hiring engineers for June start date

[TSMC](#) is currently hiring hundreds of new semiconductor engineers (mostly Process Engineers for their Fabrication Facilities) this Summer 2021.

TSMC is currently building a [\\$12 billion fab facility](#) in Phoenix, AZ.

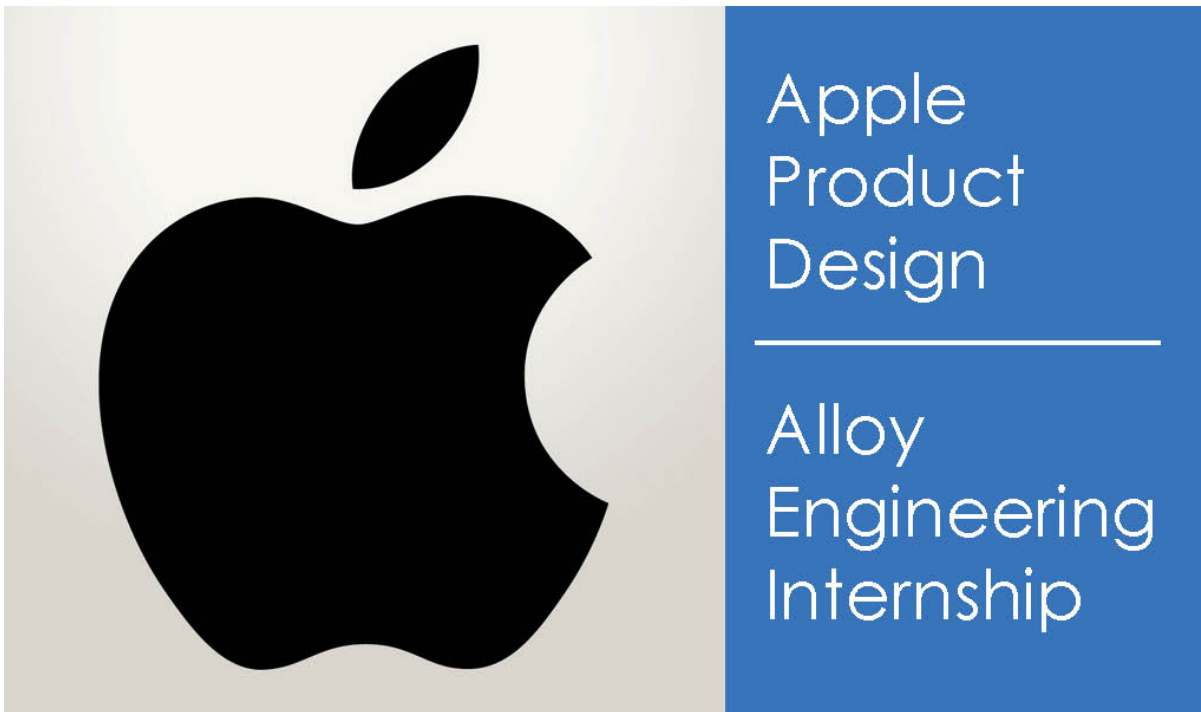
A large reason for this is due to [Apple's transition to TSMC to build their M1 chips](#).

TSMC is hiring for a targeted start date of June 2021 where additional details include:

- TSMC will pay to relocate the employee to Taiwan
- TSMC will provide corporate housing to the employee during their stay in Taiwan
- TSMC will have the employee work in Taiwan on 7nm chip technology, starting June 2021, for 18 months. After 18 months, the employee will relocate to Phoenix, AZ in order to start working in the 5nm fab facility.
- TSMC starting salary is approx. \$80-90k (with up to \$110k for Masters, PhD Students, or a candidate with extensive experience in the semiconductor industry) - which is above market salary for this position.

This is a groundbreaking opportunity for new engineers to pioneer a career at TSMC, as they will be directly involved in the first group of individuals to work at the Phoenix facility by setting up and troubleshooting the first semiconductor technology out of that facility.

Submit resume to Matt Sharkey: sharkeym@broadleafresults.com



[Alloy Engineering Product Design Internship at Apple](#)

Apple is currently seeking enthusiastic Metallurgical and Materials Science Engineering students that will provide support to alloy design, engineering, failure analysis, microstructural characterization, and materials modeling and validation activities for all hardware product lines. The intern position will be available as early as September 2021, concluding before September 2022.

As a member of a cross-functional Product Design team at Apple, you will help create the next generation of the world's finest hardware devices. You will work closely with a team of metallurgists to conceive, design, test, and validate metals and products that will re-define the user experience. You will also work with cross-functional teams within Apple and with outside vendors to fabricate and characterize alloys and components.

While we can employ students for the summer of 2022 for this program, we strongly prefer candidates who are available for more than one semester during the fiscal year (e.g. winter + summer) for the most effective and impactful internship experience.

Required Experience

- Working towards a BS, MS or PhD in Metallurgy, Materials Science or related Engineering field*
- Flexibility and comfort working in a quickly changing environment
- Strong oral, written, and visual communication skills
- Strong physical metallurgy background

- Ability to work in fast paced, team-based environment
- Self-motivating, creative, proactive, and resourceful

Desired Experience

- Metallographic sample preparation and mechanical testing
- Light optical microscopy and scanning electron microscopy (SEM)
- Fractography and failure analysis of metals and alloys
- Laboratory experience with metal alloys and structure-property relationships
- Computational thermodynamics and materials design

***You must be enrolled in school or have applied to graduate school to qualify for an internship. Recent graduates who have NOT applied to graduate school are not eligible.*

Contact

Please send questions and resumes to Isabel Yang at isabel_yang@apple.com, and include “Alloy Engineering Internship” in the email subject.



59 postdoctoral opportunities listed!

Application deadline Feb. 26, 2021

The Intelligence Community (IC) Postdoctoral Research Fellowship Program offers scientists and engineers from a wide variety of disciplines unique opportunities to conduct research in a wide range of topics relevant to the Intelligence Community. The research is conducted by the Postdocs, while working in partnership with a Research Advisor and collaborating with an advisor from the Intelligence Community.

The Program supports postdocs to conduct research at universities, colleges, and U.S. government laboratories throughout the United States.

In partnership with the Research Advisor, the Postdoc composes and submits a technical proposal that responds to a research opportunity identified at: <https://orise.orau.gov/icpostdoc/current-opportunities.html>

Award Details:

- Stipends range from \$75,000 to \$79,000, depending on research location.
- Annual travel budget of up to \$6,000
- Appointments for two years, and option to extend for a third year
- Host institutions receive an annual laboratory budget of up to \$5,000.
- Advisors receive a \$10,000 stipend and a travel budget of up to \$2,000.

Postdoc Eligibility:

- U. S. citizenship required
- Ph.D. received within 5 years of the application deadline

[Learn More](#)



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