

Materials Science and Engineering

FROM THE CHAIR / Spring 2021

Dear friends and colleagues,

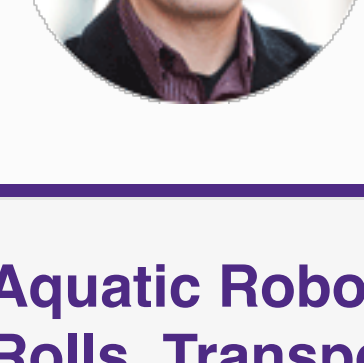
Spring has arrived in Evanston, and although we are all still abiding by rules that keep us masked and socially distanced, we are all welcoming the chance to spend a bit more time outdoors.

Although the pandemic has affected the way we do things, it has not hampered our progress in research or our efforts to stay connected and to provide a quality educational experience to all of our students. The articles in this issue highlight recent research accomplishments and also how our students have dealt with the pandemic.

Along with being mindful of the challenges we face, we embrace our diverse backgrounds and experiences. This year, the annual Hilliard Symposium keynote address will be given by Mariana Bertoni (PhD '07), and the event highlighting student research will also feature a DEI workshop and a talk on diversity, equity, and inclusion delivered by Michael J. Rawlings (PhD '15).

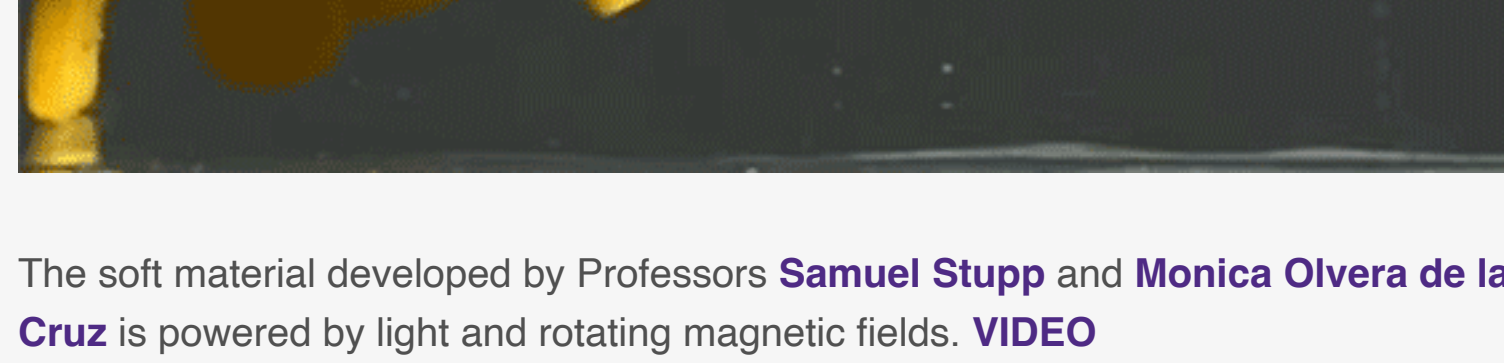
In faculty news, Steve Carr retired in January and transitioned to professor emeritus. An interview below highlights just a few of Steve's many accomplishments. Congratulations also to all faculty and students who have recently received honors and awards.

I hope you are staying healthy and safe, and I am hopeful for the prospect of seeing each other in person again soon.



Erik Luijten
Professor and Chair
Department of Materials Science and Engineering
McCormick School of Engineering

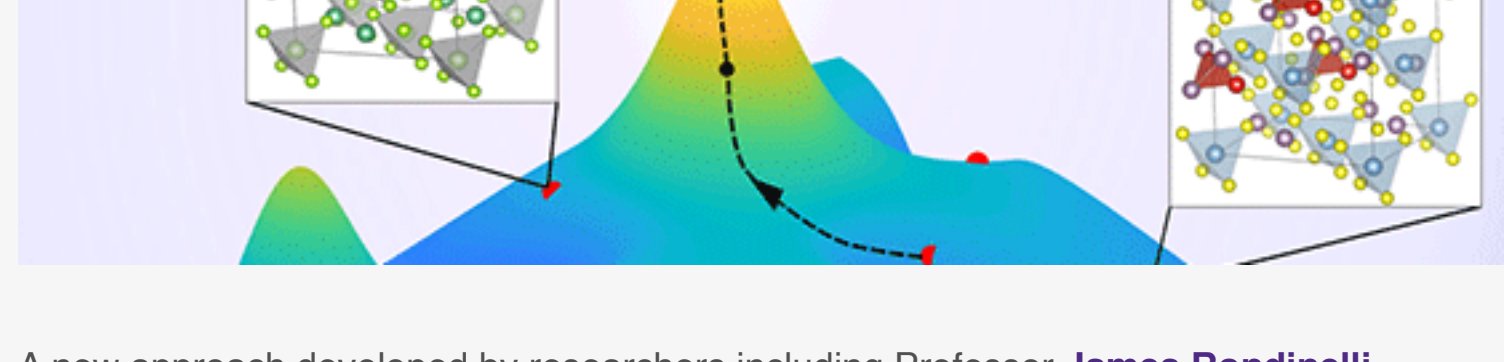
Aquatic Robot Inspired by Sea Creatures Walks, Rolls, Transports Cargo



The soft material developed by Professors **Samuel Stupp** and **Monica Olvera de la Cruz** is powered by light and rotating magnetic fields. **VIDEO**

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Optimizing the Design of New Materials



A new approach developed by researchers including Professor **James Rondinelli** combines statistical inference, optimization theory, and computational materials physics to design new materials without large amounts of existing data.

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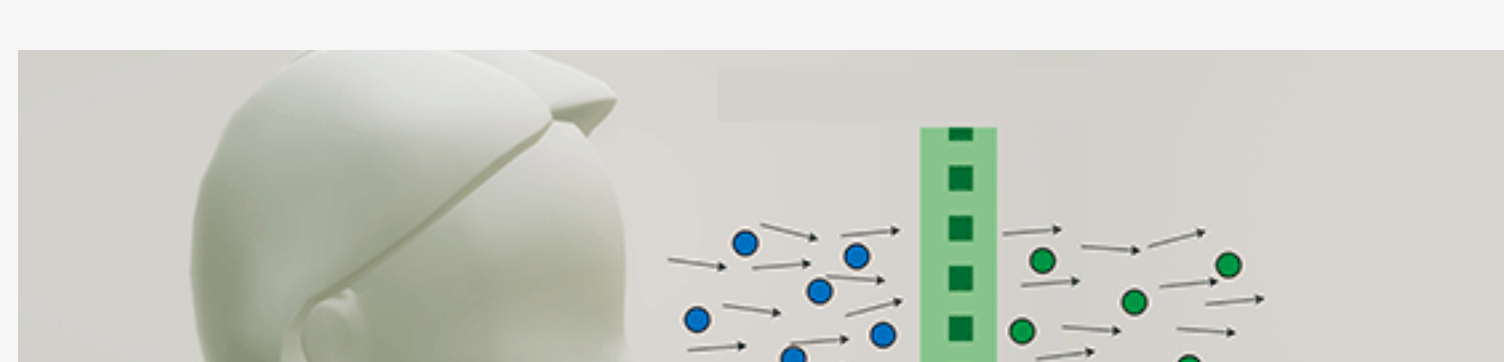
Carr Looks Back on Impactful Career



Stephen Carr, who became a professor emeritus in January, impacted the McCormick community through both his research and his time as senior associate dean for undergraduate engineering.

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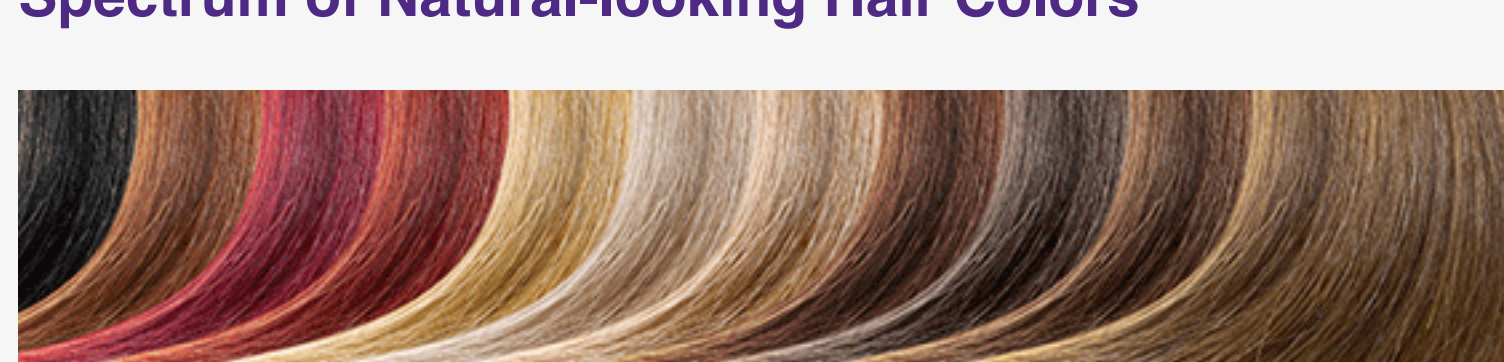
Face Mask Aims to Deactivate Virus to Protect Others



Professor **Jiaying Huang** developed a mask with an anti-viral layer that attacks respiratory droplets to make the wearer less infectious.

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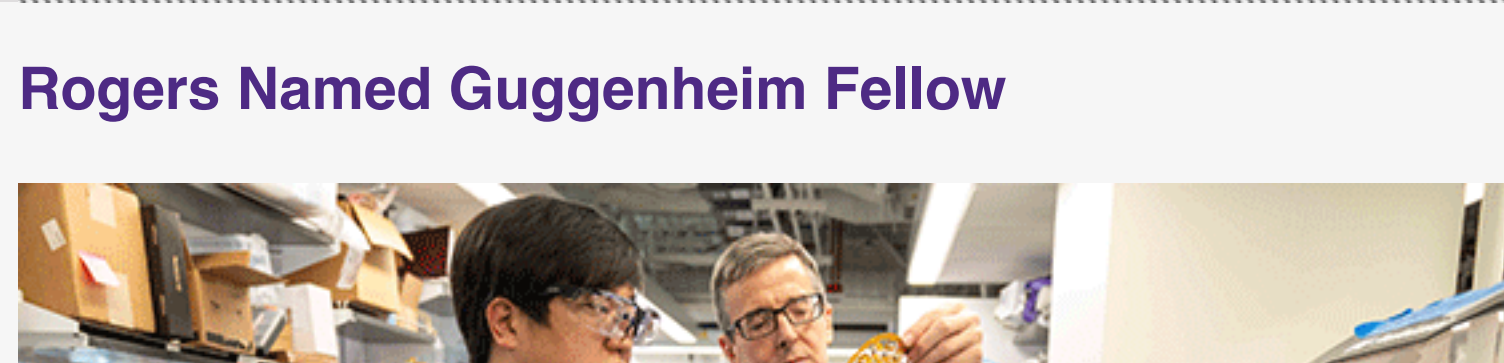
Researchers Develop a New Way to Create a Spectrum of Natural-looking Hair Colors



Created by Professor **Nathan Gianneschi**, the dyes use synthetic melanin to mimic natural hair pigmentation.

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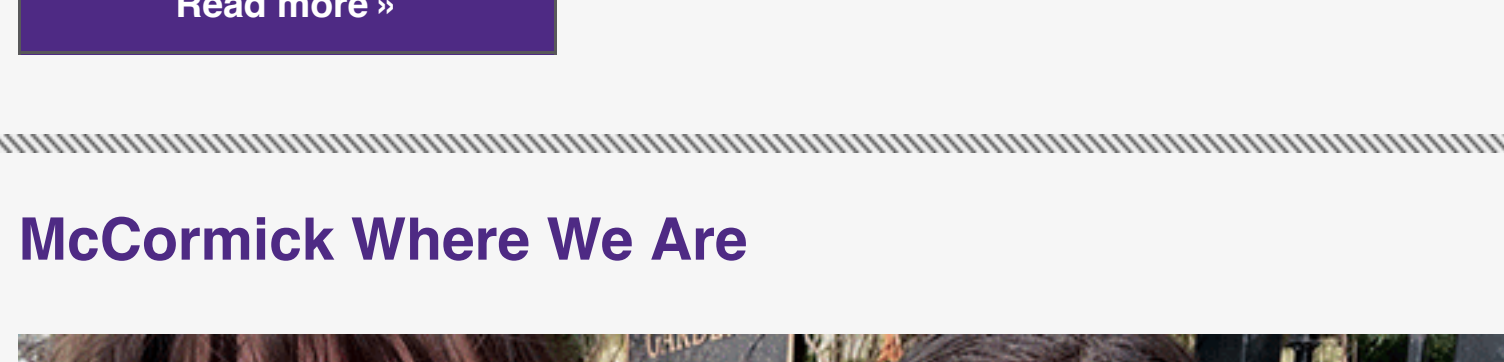
Rogers Named Guggenheim Fellow



One of four Northwestern faculty members to earn the prestigious honor in 2021, Professor **John Rogers** will use the fellowship to continue developing wireless, bioresorbable stimulators as bioelectronic medicine.

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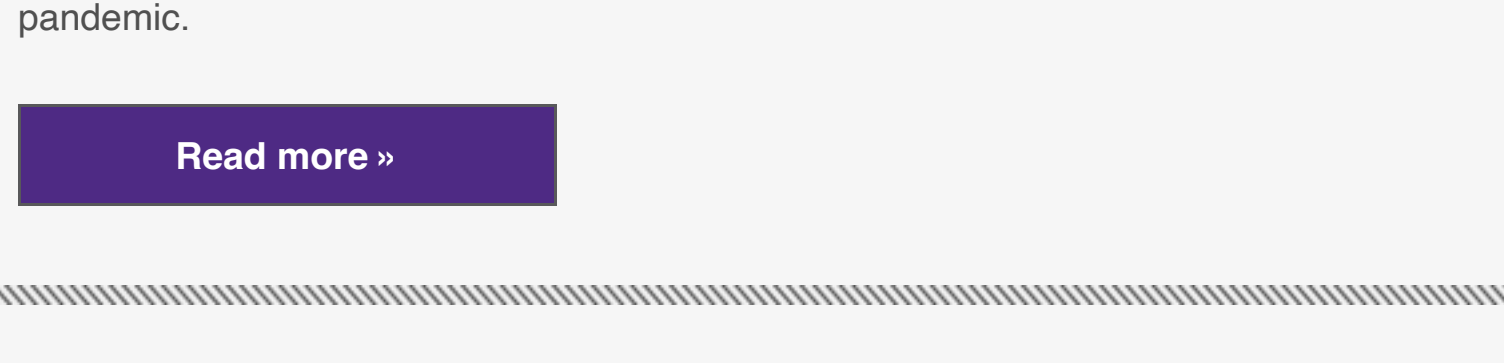
McCormick Where We Are



PhD students and neighbors – **Lauren Lopez** and **Maryam Kazemzadeh-Atoufi** helped each other deal with serious home remodeling issues while juggling research and the pandemic.

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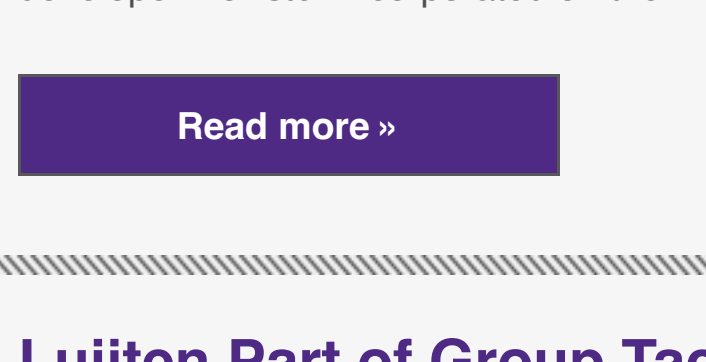
Leung Named Co-op Student of the Year



A BS/MS student studying materials science, **Adam Leung** worked for medical device developer Hollister Incorporated on thermoplastic elastomers, a type of polymer.

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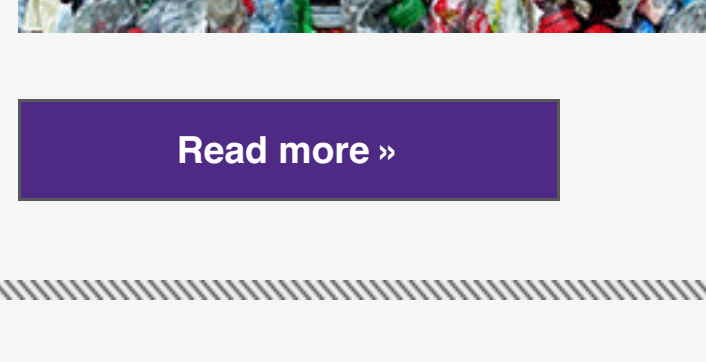
Luijten Part of Group Tackling Plastic Waste with \$12.8 Million Award from Department of Energy



An interdisciplinary team of researchers including Professor **Erik Luijten** is exploring new methods of plastic upcycling.

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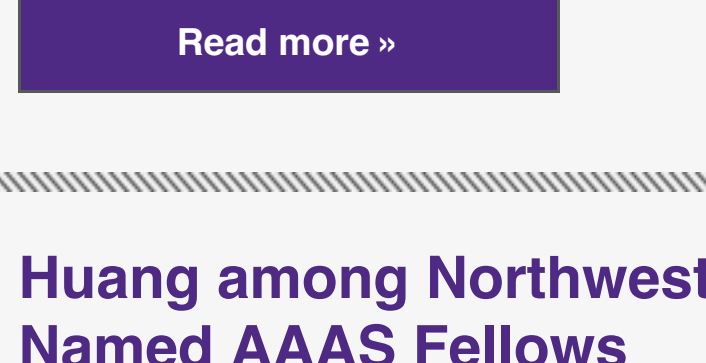
Wearable COVID-19 Sensor Invented by John Rogers Receives Major Award from US Department of Defense



A Northwestern spinout commercializing the sensor has received a highly competitive \$2.4 million grant from the US Department of Defense through a Medical Technology Enterprise Consortium award

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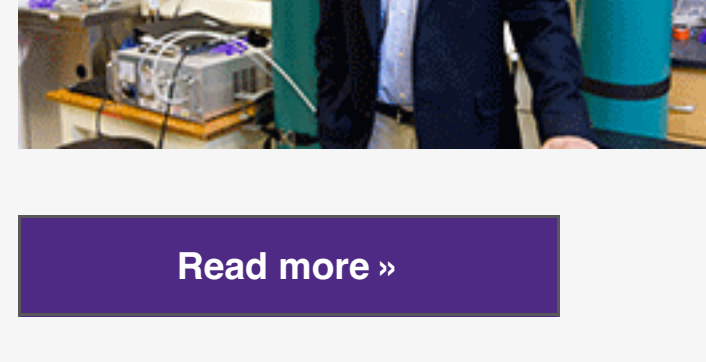
Huang among Northwestern Engineering Professors Named AAAS Fellows



The American Association for the Advancement of Science recognizes faculty who have made significant contributions to science and its applications.

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Seven Faculty Members Named Among Global 'Highly Cited Researchers'



The annual list identifies researchers who demonstrated significant influence through the publication of multiple highly cited papers during the last decade.

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EVENT: 38th Annual Hilliard Symposium

Thursday, May 20, 8:20 a.m-4 p.m., CDT

The symposium will feature presentations highlighting our students' original research. Friends and alumni of the department are welcome, and attendance is free.

Mariana Bertoni (PhD '07) will deliver the keynote address, and the event also feature a workshop and talk on diversity, equity, and inclusion by Michael J. Rawlings (PhD '15).

If you have any questions or want to register, please contact program assistant **Kristina Lugo**.

FACULTY NEWS

David Dunand, **David Seidman**, and post-docs **Anthony DeLuca** and **Shipeng Shu** were awarded the TMS Light Metals Subject Award - Aluminum Alloys.

ALUMNI AND STUDENT NEWS

Eric Anderson ('18), **Evan Guo** ('19), **Yakira Mirabito** ('18), and **Joshua Roan** ('20) received 2021 National Science Foundation graduate research fellowships.

Songting Cai (Kanatzidis, David) received the Johannes and Julia Randall Weertman Graduate Fellowship.

Jingshan Du (David, Mirkin) was awarded an SPIE Optics and Photonics Education Scholarship and the Materials Research Society Graduate Student Silver Award.

Carolyn Duran (PhD '98) was appointed an adjunct member of the MSE faculty.

Haiyue Huang (Huang), **Young-Ah (Lucy) Lee** (Odom), **Chamille Lescott** (David), **Kelly Parker** (David), **Adam Ladd** (Gianneschi), **Thomas Song** (Hersam), **Christopher Hareland** (Voorhees), **Justin Qian** (Hersam), **Alessandro Benadia** (Wessels, Kanatzidis), and **John Hegarty** (David) were awarded Ryan Fellowships from The Graduate School at Northwestern.

PhD students **Jaron Ma** (Joester) and **Corey Thomas West** (Hersam) were awarded National Science Foundation graduate research fellowships. Graduate student **Thomas Song** (Hersam) and senior **Naomi Pieczulewski** (Snyder) were recognized with honorable mentions.

James Male (Snyder) received the NASA Space Technology Graduate Research Opportunity.

Lele Mathis (Odom) and **Jose Martinez** ('18) were awarded a National Defense Science and Engineering graduate fellowship.

Graduate students **Roger Reinertsen** (Bedzyk), **Donghoon Shin** (Mirkin), **Ramya Gurunathan** (Snyder), **Emily Greenstein** (Poepplmeier, L. Marks), **Christopher Sharpe** (Gianneschi), **Louis Wang** (Haile), **Haiyue Huang** (Huang), and **Garrett Watson** (Luijten) were awarded PPG Fellowships for professional development.

Stephanie Ribet (David) was awarded the Raleigh and Clara Miller Scholarship Award from the Microscopy Society of America.

Jin Suntivich ('06) was promoted to associate professor with tenure in the Department of Materials Science and Engineering at Cornell University.

Maria Vratsanos was awarded a Dr. John N. Nicholson Fellowship, which provides financial support for outstanding Northwestern graduate students enrolled in PhD programs in the sciences, engineering, and management.

Grace Wang (PhD '01) was appointed to serve as the executive vice president for research, innovation, and knowledge enterprise at Ohio State University.

Zhehao Zhu (Luhon) received the Best Poster or Talk award for at the 2020 MRS Fall Symposium for Symposium EL04: Beyond Graphene 2D Materials—Synthesis, Properties and Device Applications.

FACTS & FIGURES

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