



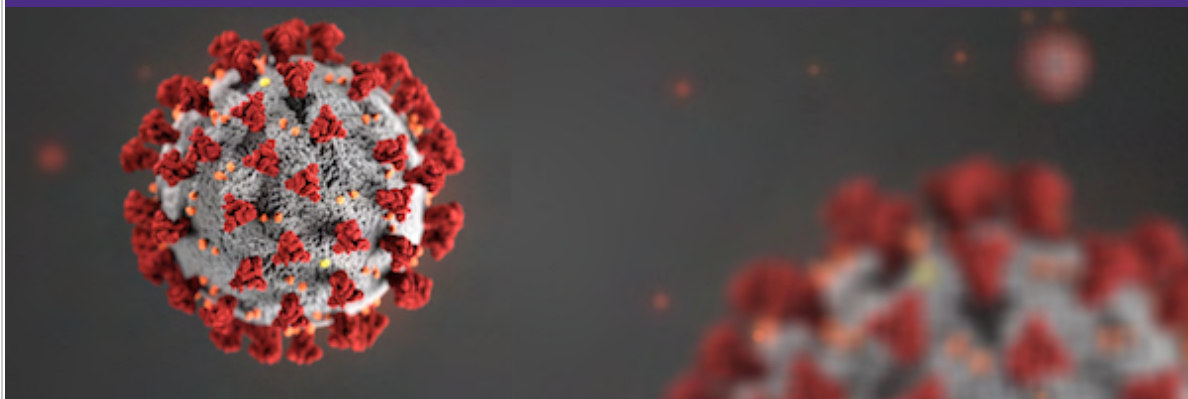
UNIVERSITY *of* WASHINGTON



MOLECULAR ENGINEERING & SCIENCES INSTITUTE

SPRING 2020

## INSTITUTE NEWS



### UW molecular engineers tackle COVID-19

In response to the COVID-19 pandemic, faculty affiliated with MoIES have pivoted their research to develop improved diagnostics and identify targeted treatment strategies for the novel coronavirus, SARS-CoV-2.

[COVID-19 RESEARCH](#)





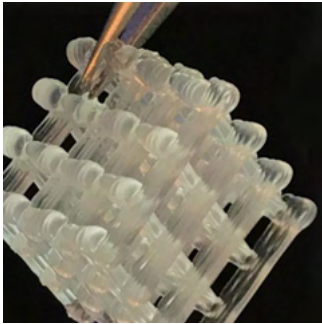
### Designing proteins that can sequence DNA

[Sinduja Marx](#), a molecular engineering graduate student in the labs of physics professor Jens Gundlach and [UW Institute for Protein Design](#) director David Baker, is designing synthetic biological channels for DNA sequencing and molecular diagnostics.

INTERVIEW WITH SINDUJA



## RESEARCH HIGHLIGHTS



### First-of-its-kind hydrogel platform enables on-demand production of medicines and chemicals

Chemistry professor [Al Nelson](#) and collaborators at the University of Texas have unveiled a new way to produce medicines and chemicals and preserve them using portable “biofactories” embedded in 3D-printed, water-based gels known as hydrogels. This approach could make it easier to access medicines in areas where pharmacies, doctor's offices or basic refrigeration are hard to come by.

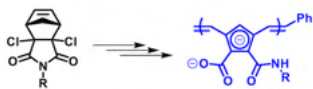
[Nature Communications](#) | [UW News](#)



### Researchers identify rules for effectively regulating gene expression in bacteria

[Jason Fontana](#), a molecular engineering Ph.D. student in the labs of chemical engineering professor James Carothers and chemistry professor Jesse Zalatan, has identified features of bacterial genes that impose strict requirements on CRISPR-Cas transcriptional activation tools. This work defines new strategies to effectively regulate gene expression in bacteria, bringing researchers closer to their goal of using bacteria to produce valuable biosynthetic products.


[Nature Communications](#) | [Science in Seattle Q&A](#)



 *Conductive*

 *Short synthesis*

 *Water-soluble*

 *Non-toxic*

## New water-soluble conjugated polymer enables conductive hydrogels for tissue engineering

[Dan Lee](#), a recent graduate of the molecular engineering Ph.D. program, reports a new water-soluble conjugated polymer that can be used to make conductive hydrogels. These easily synthesized, biocompatible hydrogels could be used to engineer cardiac or neural tissues among other applications.

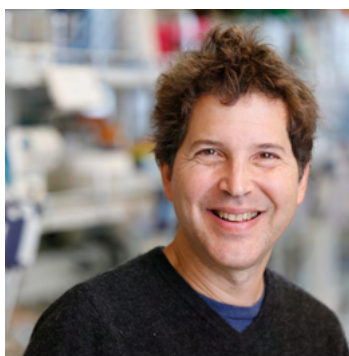
[Angewandte Chemie](#)

## CONGRATULATIONS



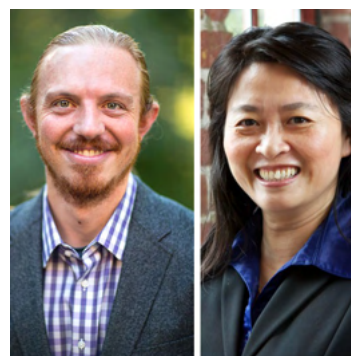
### Four MoES faculty members receive Society for Biomaterials 2020 awards

David Castner, Buddy Ratner and Lara Gamble received the Technology Innovation and Development Award for their leadership of the UW-based National ESCA and Surface Analysis Center for Biomedical Problems. Cole DeForest received the Young Investigators Award.



### David Baker named fellow of the American Institute for Medical and Biological Engineering

UW biochemistry professor David Baker joined AIMBE's 2,000-member College of Fellows which includes outstanding engineers, entrepreneurs and innovators in medical and biological engineering.



### MoES faculty recognized by UW College of Engineering

Materials science and engineering professor Miqin Zhang received the faculty award in research and chemical engineering professor Cole DeForest received the junior faculty award.

## MOLECULAR ANALYSIS FACILITY



## Pacific oysters in the Salish Sea may not contain as many microplastics as previously thought

Using advanced instrumentation in the [Molecular Analysis Facility](#), researchers in the lab of MoES faculty member Christine Luscombe and at the School of Aquatic & Fishery Sciences have discovered that Salish Sea oysters may not contain as many microplastic contaminants as previously thought.

UW NEWS



## Seeing is believing: using electron microscopy to probe teeny tiny structures

Ellen Lavoie, Molecular Analysis Facility staff scientist and electron microscopy expert, shares how she came to be a TEM expert and what she loves about her work.

Q&A WITH ELLEN



## POSTPONED: MOLECULAR ENGINEERING TWITTER POSTER SESSION



We stand in support of the Black Community and stand against the pervasive injustice and inequality that continue to exist in our society. To not distract from the importance of the current moment, we are postponing the Twitter poster session that was to happen today in collaboration with the University of Chicago's Pritzker School of Molecular Engineering and the Royal Society of Chemistry. Details will be updated at

<https://molengposter2020.com/>



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