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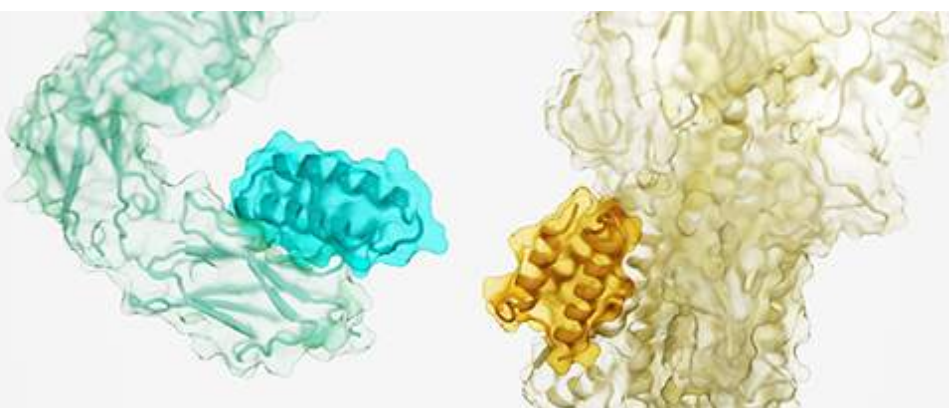


UNIVERSITY of WASHINGTON



MOLECULAR ENGINEERING & SCIENCES INSTITUTE

SPRING 2022



Researchers find new way to design potential therapeutics

Recent molecular engineering graduate Brian Coventry co-authored a paper in [Nature](#) describing a new way to generate drugs for therapeutic and diagnostic applications, potentially accelerating the long, cumbersome and expensive process of drug development.

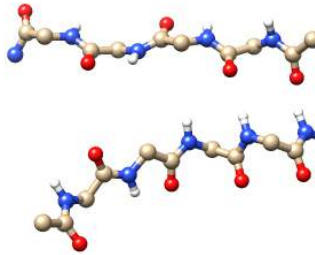
Featured in [Geekwire](#) and [Science Magazine](#).



[A non-engineer's journey into molecular engineering](#)



Ayumi Pottenger never planned to study engineering. Here, the third-year molecular engineering Ph.D. student reflects on what drew her to the program and where she's headed next.



Startup success story: **AltPep**

AltPep, a spinout from Professor Valerie Daggett's research group, has developed a new platform to detect and treat Alzheimer's disease by specifically targeting the root causes of disease at the molecular level.

UW BIOFAB: A force for **reproducible science**

The UW's Biofabrication Center, a unique facility dedicated to enabling the rapid design, construction and testing of genetically reprogrammed organisms, is partnering with Agilent Technologies in pursuit of automated, reproducible research.

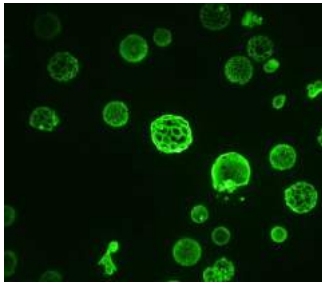
Podcast: Jessica Ray **and William Tarpeh on** **clean water, turning** **trash into treasure,** **and life as assistant** **professors**

Learn more about how they are using their chemical engineering know-how to develop simple systems for filtering toxic chemicals from our water and harvesting useful chemicals from urine.

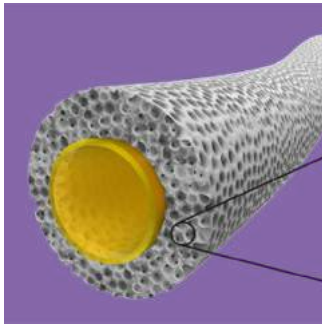
RESEARCH HIGHLIGHTS



Hungry yeast are tiny, living thermometers



New findings show for the first time that, in response to environmental conditions, yeast cells precisely regulate the temperature at which their membrane undergoes phase separation.



Precision-engineered porous, flexible grafts promote healing, reduce scarring

A new study presents the first biomaterial designed for vascular grafts with tuned mechanical properties and a precision-engineered porous structure optimized for healing.

MOLECULAR ANALYSIS FACILITY



ANALYZING MATERIALS WITH X-RAYS TO REVEAL THEIR MOLECULAR MAKEUP

MAF staff scientist Dr. Samantha Young manages instruments that use each x-rays to analyze materials, but provide different information. Learn more about Samantha and her work in our Q&A!

CONGRATULATIONS



Univ. of Washington AI protein folding



Corie L. Cobb awarded prestigious DARPA



DoD gives \$1.1M to Seattle startup that

discovery wins
'Breakthrough of the
Year' award from
Science

Scientists at the Institute for Protein Design developed a tool called RoseTTAfold that is able to quickly and accurately predict how proteins form three-dimensional shapes.

Director's Fellowship

Cobb will receive \$400,000 in additional funding to develop new manufacturing methods for society's most pressing energy storage challenges.

will help find new
antibodies against
COVID-19 variants

A-Alpha Bio, a spinout from the labs of David Baker and Eric Klavins, is investigating new therapies for COVID-19 variants in collaboration with Lawrence Livermore National Laboratory.

RECENT PUBLICATIONS

[Multiplex genomic recording of enhancer and signal transduction activity in mammalian cells](#)

[Multi-layer CRISPRa/i circuits for dynamic genetic programs in cell-free and bacterial systems](#)

[An Exception to the Carothers Equation Caused by the Accelerated Chain Extension in a Pd/Ag Cocatalyzed Cross Dehydrogenative Coupling Polymerization](#)

[Computational design of a neutralizing antibody with picomolar binding affinity for all concerning SARS-CoV-2 variants](#)

[Well-Defined Mannosylated Polymer for Peptide Vaccine Delivery with Enhanced Antitumor Immunity](#)

[Universal machine learning framework for defect predictions in zinc blende semiconductors](#)

[Brain Tissue-Derived Extracellular Vesicle Mediated Therapy in the Neonatal Ischemic Brain](#)

[Predictive Theoretical Framework for Dynamic Control of Bioinspired Hybrid Nanoparticle Self-Assembly](#)

[Hierarchical Self-Assembly Pathways of Peptoid Helices and Sheets](#)

[Monocytes contribute to a pro-healing response in 40 \$\mu\text{m}\$ diameter uniform-pore,](#)

[precision-templated scaffolds](#)

SPRING SEMINAR SERIES

[Tuesdays 1:00 - 2:00 PM in Nano Engineering and Sciences \(NAN 181\)](#)

4/12 - Oleg Gang, Professor of Chemical Engineering, *Columbia*

4/19 - Carsten Prasse, Assistant Professor of Environ. Health & Engineering, *Johns Hopkins*

4/26 - Malia Fullerton, Professor of Bioethics, *University of Washington*

5/3 - Krista Walton, Professor of Chemical Engineering, *Georgia Tech*

5/10 - Mingjiang Zhong, Assistant Professor of Chemical & Environ. Eng, *Yale*

5/17 - Mark Allen, Professor of Electrical and Systems Eng, *University of Pennsylvania*

5/31 - Samarth Kulkarni, CEO, *CRISPR Therapeutics AG*



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