

NSF

**DISTINGUISHED
LECTURE SERIES** BIOECONOMY COORDINATING COMMITTEE

2021

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BIO-INSPIRED AND SUSTAINABLE DESIGN

TOWARDS FUNCTIONAL MATERIALS

DATE

January 14

TIME

11 am - 12 pm

LOCATION

YouTube

**Dr.
LaShanda
Korley**

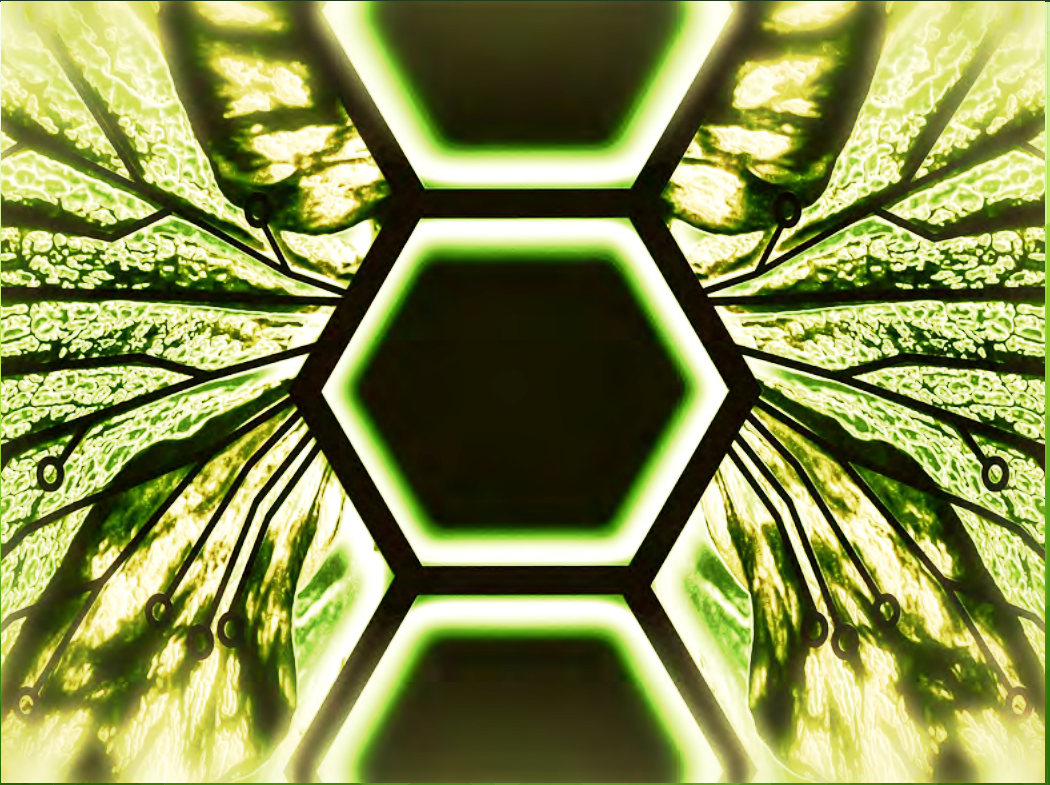
**DISTINGUISHED
PROFESSOR,**
DEPARTMENT OF
MATERIALS SCIENCE
AND ENGINEERING

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RESEARCH IN
SOFT MATTER AND
POLYMERS (CRISP)

**UNIVERSITY
OF DELAWARE**



National Science Foundation
WHERE DISCOVERIES BEGIN



BIO-INSPIRED AND SUSTAINABLE DESIGN: TOWARDS FUNCTIONAL MATERIALS

Materials that are found in nature display a wide range of properties, including responsiveness to the environment, signal transmission, and the ability to adapt to support life. Learning from nature or biomimicry can be a powerful tool in designing, developing, and accessing the next generation of synthetic materials and systems. Supported by the NSF PIRE program, Korley will discuss her Center efforts to utilize inspiration from nature to design new materials that can change toughness in response to their environment, are safer and more effective biological implants, will transmit nerve-like electrical signals, and can respond to the environment to initiate biological processes with an eye toward soft robotic applications. Via an international framework, a suite of educational and innovation activities will be described that guide the training of the next generation of global scientists and engineers in this interdisciplinary endeavor. With support from the NSF GCR and DMR, she will discuss the implementation of a life cycle management framework and collaborative research to develop performance advantaged materials. Sustainability in the context of new materials design will also be highlighted as a pathway for framework for broadening participation in science and engineering fields

**Dr.
LaShanda
Korley**

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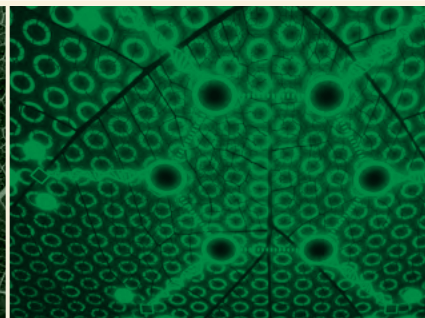
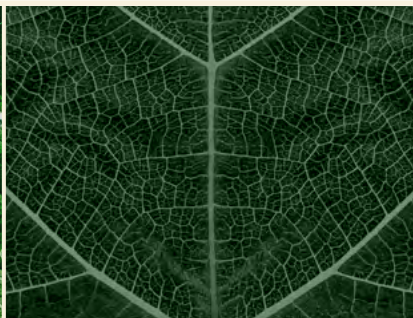
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ABOUT THE SPEAKER

LaShanda T.J. Korley is a Distinguished Professor in the Departments of Materials Science and Engineering, and Chemical and Biomolecular Engineering at the University of Delaware (UDel). Prior to Prof. Korley's appointment at UDel, she held the Climo Associate Professorship of Macromolecular Science and Engineering at Case Western Reserve University, where she started her independent career in 2007. Taking inspiration from nature, her research program involves understanding the design rules employed by nature and applying these strategies to the development of mechanically-enhanced and tunable materials. Prof. Korley is the Principal Investigator of the recently awarded NSF PIRE: Bio-inspired Materials and Systems. She is also the Associate Director for the UD Center for Research in Soft Matter and Polymers (CRiSP).

She received a B.S. in both Chemistry & Engineering from Clark Atlanta University as well as a B.S. in Chemical Engineering from the Georgia Institute of Technology in 1999. Dr. Korley completed her doctoral studies at MIT in Chemical Engineering and the Program in Polymer Science and Technology in 2005. She was the recipient of the Provost's Academic Diversity Postdoctoral Fellowship at Cornell in 2005, where she completed a two-year postdoctoral appointment in the Department of Chemical and Biomolecular Engineering.



UPCOMING LECTURES | 2021

NSF Bioeconomy Coordinating Committee Distinguished Lecture Series

NSF invests in fundamental research to support biotechnology and advance the U.S. bioeconomy across all fields of science and engineering.

Presented by NSF's Bioeconomy Coordinating Committee and NSF Directorates, this distinguished lecture series will bring in individual speakers and panels representing the science and technology funded by a Directorate every month. Speakers will present on research and broader impacts in areas associated with biotechnology and the bioeconomy that are of interest broadly across the foundation.

All sessions will be conducted virtually.

THURSDAY, MARCH 18, 2021

11:00 a.m. – 1:00 p.m.

LYDIA CONTRERAS, PHD
University of Texas

DOUG DENSMORE, PHD
Boston University

JULIUS LUCKS, PHD
Northwestern University

JENNIFER NEMHAUSER, PHD
University of Washington

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Further lectures to be announced

For more information, refer to the NSF Bioeconomy Distinguished Lecture Series [website](#) or contact **Jared Dashoff** at jdashoff@nsf.gov.

WEBSITE
www.nsf.gov

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