

NSF

DISTINGUISHED LECTURE SERIES BIOECONOMY COORDINATING COMMITTEE

2021

CO-SPONSORED BY BIOLOGICAL SCIENCES DIRECTORATE | BIO EDUCATION AND HUMAN RESOURCES DIRECTORATE | EHR

SCOPING AND EDUCATING THE DYNAMIC BIOTECH WORKFORCE

DATE
May 13

TIME
11 am - 1 pm

LOCATION
[Register](#)

SPEAKERS



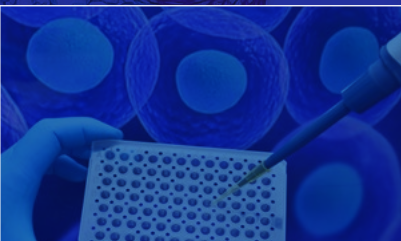
Linnea Fletcher, PhD



Russ Read



Thomas Tubon, PhD



National Science Foundation
WHERE DISCOVERIES BEGIN



SCOPING AND EDUCATING THE DYNAMIC BIOTECH WORKFORCE

Advancing the U.S. bioeconomy will require a growing biotechnology workforce that is well educated and diverse. Located at Austin Community College in Texas and partnering with institutions of higher education, high schools, industry, and non-profits throughout the country, the ***InnovATEBIO National Biotechnology Education Center***, an ***NSF-funded*** Advanced Technological Education Center, works with the biotech community to scope out workforce needs and address them by educating highly skilled technicians. InnovATEBIO supports a cadre of well-trained instructors and is helping to increase the number and quality of biotechnology education programs, as well as introducing a wide range of underrepresented students to biotechnology.

In this lecture, InnovATEBIO's Principal Investigators Dr. Linnea Fletcher, Russ Read, and Dr. Thomas Tubon, will discuss their work to lead the biotechnology community to evaluate and meet workforce needs across biomanufacturing and biotech and how preparing the workforce can also increase economic development. They will also highlight unique partnerships they have established through their efforts in workforce development, including partnerships with ***Manufacturing USA*** and other federal agencies. The panel will also describe their efforts to broaden participation in the biotechnology workforce including participation in the NSF-funded ***Center for Advancing Research Impact in Society (ARIS)*** and working with industry partners to develop skills standards, improve onshore manufacturing, and increase supply chain security.

**DR.
LINNEA
FLETCHER**

**CHAIR
DEPARTMENT OF
BIOTECHNOLOGY**

**AUSTIN
COMMUNITY
COLLEGE**



Dr. Linnea Fletcher was trained in biology, chemistry, and biochemistry at the University of California at Irvine and obtained her PhD degree from the University of Texas at Austin in Microbiology. She completed two postdoctoral fellowships, the first one at Southwestern Medical School in Dallas in Immunology, and the second in the Biochemistry Department at the University of Texas in Molecular Biology. Based on her interests in education, she became Department Chair of Biology at Austin Community College (ACC). To meet the increasing need for more biotechnology technicians in the area, Linnea started the Biotechnology Program. At the same time, she received a National Science Foundation (NSF) funded Advanced Technological Educational (ATE) grant, BioTechEd, which put biotechnology into area high schools and trained both in-service and pre-service teachers in biotechnology. In 1999, she joined Bio-Link, an ATE Center of Excellence in Biotechnology as a co-principal investigator. During this time, Linnea has been on numerous related ATE projects and state funded grants for the purpose of supporting the Biotechnology industry in Texas. These grants always include other educational partners.

In 2008 she joined NSF as a program director in the Division of Undergraduate Education (DUE). There she had the opportunity to work on several programs, TUES, S-STEM, Noyce, and ATE.

After leaving NSF she went back to ACC and quickly got involved in a variety of grants based on what she learned at NSF. Believing that community colleges have a role in economic development, Linnea pushed for the development of a wet lab incubator at ACC. ACC and Dr. Fletcher were awarded an Emerging Technology Fund grant to build one. It opened Spring 2017 and continues under the direction of Nancy Lyon. In 2015, ACC and Dr Fletcher were awarded an ATE Center of Excellence known as AC2 Bio-Link Regional Center in 2015 for the purpose of coordinating biotechnology workforce education in Texas and Kentucky. In 2019, ACC was awarded the National Biotechnology Center Grant known as InnovATEBIO of which she is principal investigator. The Leadership Team for this grant spans the United States and is responsible for coordinating biotechnology workforce education at 117 community colleges and over 59 high school programs. The grant works with nonprofits, USA Manufacturing Institutes, and trade organizations to accomplish this task.



RUSS READ

EXECUTIVE DIRECTOR

**NATIONAL CENTER
FOR THE
BIOTECHNOLOGY
WORKFORCE**

**FORSYTH TECH
COMMUNITY COLLEGE**



Russ Read has worked in the bioscience industry for over thirty-five years. He was formerly an executive with the Burroughs Wellcome and Glaxo Wellcome companies, heavily involved with the commercial development of antivirals for HIV illness like AZT and 3TC, and was CEO of the Kucera Pharmaceutical Company, a bio-pharmaceutical company.

He has led a national biotechnology workforce effort for sixteen years called the National Center for the Biotechnology Workforce (NCBW), based in Winston-Salem is a part of North Carolina's Community College System and Forsyth Technical Community College which focuses on achieving best practices for bioscience workforce training. Forsyth Tech won a \$15 million US DOL Trade Adjustment Assistance grant looking at building biosciences workforce skill standards and credentials. Russ was the consortium's Project Director from start to finish in October 2016. He was the Principal Investigator for the NSF Advanced Technological Education (ATE) Project grant named the Biosciences Industry Fellowship Program and is the Principal Investigator for another NSF ATE Project grant called Biomedical Emerging Technology Applications or BETA Skills, at the interface between biomedical devices and tissue engineering, and most recently became a CO-PI of InnovATEBIO, an NSF ATE Biotech Education Center based out of Austin.

He currently serves as a Past-Chair of the Advisory Committee for the NC Biotech Center's Piedmont Triad regional office and is a Director of NCBIO. He also served on the National Visitor's Committee of Bio-Link and AC2 Bio-Link Regional Center, Austin TX, an advisor to the NSF ATE NBC2 Bio-manufacturing program and a member of the workforce committee for the National Institute for Innovation in Manufacturing Biopharmaceuticals or NIIMBL.

Russ has been twice recognized for his work by the North Carolina Biotechnology Center's TRIAD BIONIGHT for community support and service and for academic excellence.



Thomas Tubon is an established scientist and professor in the Biotechnology Department at Madison College and is an honorary research fellow at UW Madison. Dr. Tubon holds a PhD in Molecular Genetics from Stony Brook University and Cold Spring Harbor Laboratory and a BS in Molecular Biology from San Diego State University. He currently teaches program courses in the Applied Associates Degree in Biotechnology, Post-Baccalaureate Certificates in Biotechnology, and Human Stem Cell Technologies.

Prior to joining the Biotechnology Department at Madison College in 2008, Dr. Tubon held a position at the University of Madison, Wisconsin in the Department of Medical Genetics as an NIH-awarded research fellow. His interests focused on neurodegenerative diseases and aging-related disorders which resulted in several high-profile peer-reviewed publications.

He currently serves as the Principal Investigator and Director for the National Science Foundation – Advanced Technological Education (ATE) program for developing workforce-centered programming in Emerging Technologies and for the creation of a National Coordination Network for Cell and Tissue Manufacturing. He serves leadership roles the NSF Engineering Research Center for Cell Manufacturing, and the ATE InnovATEBIO National Center for Biotechnology Education.

Dr. Tubon oversees development of community college technical bioscience workforce and strategic implementation for local, regional, and national-level program scale-up. In this role, he has facilitated the creation of a broad network of industry, community, and academic stakeholders through outreach and education initiatives empowering career pathways in Science, Technology, Engineering, and Mathematics (STEM).

**DR. THOMAS
TUBON**

**PROFESSOR
BIOTECHNOLOGY
DEPARTMENT**

**MADISON
AREA
TECHNICAL
COLLEGE**



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, JUNE 10, 2021

11:00 a.m. – 1:00 p.m.

PANEL PRESENTATION:

TULLIS ONSTOTT, PHD

Princeton University

PAULA WELANDER, PHD

Stanford University

ANDREW THURBER, PHD

Oregon State University

KRISTIN O'BRIEN, PHD

University of Alaska-Fairbanks

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COORDINATING COMMITTEE, BIO, AND GEO

THURSDAY, SEPTEMBER 9, 2021

11:00 a.m. – 1:00 p.m.

PANEL PRESENTATION:

TOM MUIR, PHD

Princeton University

BEN GARCIA, PHD

Washington University School of Medicine

LISSA ANDERSON, PHD

National High Magnetic Field Laboratory

PING MA, PHD

University of Georgia

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COORDINATING COMMITTEE, BIO, AND MPS

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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