SCIENTIFIC COURSES

With the support of Promega Corporation and often in partnership with UW-Madison, the BTC Institute is pleased to offer the following courses for college and university students, graduate students, postdoctoral fellows, staff and faculty, as well as for scientific personnel employed by the industry and the general public:

Molecular Technology Basics for the Non-Scientist
One-day workshops, four themes (take one or more):

• Molecular Technology Basics for the Non-Scientist: Biotechnology and Human Health
  DEC 12, 2019 | MAR 5, 2020

• Molecular Technology Basics for the Non-Scientist: DNA, RNA & Proteins
  OCT 15, 2019 | JAN 21, 2020 | MAY 6, 2020

• Molecular Technology Basics for the Non-Scientist: Forensic DNA Analysis
  OCT 22, 2019 | JAN 23, 2020 | MAY 7, 2020

• Molecular Technology Basics for the Non-Scientist: Understanding GMOs
  NOV 7, 2019 | FEB 12, 2020

Molecular Approaches to Neuroscience:
Gene Expression and Cell Analysis
JUNE 15–19, 2020

Core Techniques in Protein and Genetic Engineering
JULY 13–17, 2020

Emerging Techniques in Protein and Genetic Engineering
JULY 20–24, 2020

Customized Training for Individuals and Small Groups
Dates arranged with instructor.

The BTC Institute is proud to serve as a partner for the UW-Madison Master of Science in Biotechnology Program, delivering three lab-based courses for this innovative degree. The program overall features an integrated curriculum in science, policy, law and business that prepares students to be leaders in the development and commercialization of new technologies.

Since 2018, the BTC Institute has also been collaborating with the UW-Madison Center for Educational Opportunity (CoE) to provide a 4-day workshop during Spring Break for students who are interested in pursuing scientific careers. CoE provides sessions for students who are first-generation, who meet certain federal family income guidelines, and those with documented disabilities.

www.promega.com

OVERVIEW

Founded in 1993 and located in Madison, WI, the BioPharmaceutical Technology Center Institute (BTC Institute) is a 501(c)(3) non-profit educational organization that focuses on building effective partnerships in order to provide a wide range of programs, including:

• Biotechnology Field Trips for middle, high school and college students

• The Dane County Youth Apprenticeship Program in Biotechnology, and a semester-long course, Biotechnology in the World of Medicine, for high school juniors and seniors

• Summer science programs for upper elementary, middle and high school students

• Teacher workshops and courses on-site and at conferences

• Introductory to advanced courses for graduate students, postdoctoral fellows, faculty, industry scientists and the general public

• Conferences, including the annual Wisconsin Stem Cell Symposium, annual International Forum on Consciousness and biannual Wisconsin Human Proteomics Symposium

In partnership with many other community organizations, the BioPharmaceutical Technology Center Institute provides educational opportunities that support scientific understanding, contributing to the continued success of the biotechnology industry. Focusing on the life sciences, programs are designed for a wide range of learners—from upper elementary school students to scientists in academia and industry, as well as the general public. Engaged participation is emphasized, and many activities are laboratory-based.

www.btci.org
BIOTECHNOLOGY FIELD TRIPS
Providing hands-on activities for middle and high school students and their teachers, field trip experiences include laboratory experiments based on molecular biology techniques. Most of these labs also can be taken “on the road” to schools. A current goal is to incorporate more opportunities for inquiry-based learning. 2019/2020 topics include:

- Bioluminescence
- **NEW!** Bioluminescence II–Serial Dilution with Luciferase
- DNA & Principles of Gel Electrophoresis
- Scientific Inquiry and DNA Extraction from Fruit
- **NEW!** Restriction Enzyme Digest & Gel Electrophoresis
- **NEW!** Restriction Enzyme Digest Inquiry for Advanced Students
- Immunology
- Polymerase Chain Reaction (PCR) for Genetic Screening
- PCR to Detect GMOs
- Short Tandem Repeats & Genetic Identity

FROM PARTICIPANTS:

“We had an absolutely outstanding time, and the balance of background information in the auditorium and lab time was perfect.”
—SARAH WRIGHT, Eagle School

“We have been attending for years. This is an excellent opportunity for our students. We were, as always, completely satisfied with the experience.”
—PAM LEVERSON, Cambridge High School

“We always enjoy this field trip. The career opportunities are explained and the labs conducted align with the topics and expectations of an AP Biology course.”
—JAKE ROBERTS, Pecatonica High School

CAMP BIOTECH
For students entering 9th or 10th grade in fall semester 2020 who are interested in learning more about DNA and genetic engineering, we have two options:

- Camp Biotech I: The Wonders of DNA (Introductory) JULY 6–10, 2020
- Camp Biotech II: The Return of DNA (Intermediate) JULY 13–17, 2020

A CELEBRATION OF LIFE: SUMMER SCIENCE PROGRAMS
In partnership with the African American Ethnic Academy, we offer two sessions, one for upper elementary and one for middle school students. Each session runs Monday–Friday mornings. Exploration of annual themes through hands-on activities is emphasized.

Elementary School: JUNE 15–26, 2020
Middle School: JULY 6–17, 2020

DANE COUNTY YOUTH APPRENTICESHIP PROGRAM IN BIOTECHNOLOGY
In partnership with the Dane County School Consortium, high school juniors and seniors receive advanced training at the BTC Institute and are placed with a mentor at a scientific workite. They work 400 hours/year to earn either a one- or two-year STEM certificate from the Wisconsin Department of Workforce Development.

BIOTECHNOLOGY IN THE WORLD OF MEDICINE
This fall semester course engages high school juniors and seniors in the exploration of ways in which basic biology can be used for biotechnological applications that impact human health. Through technical lectures and laboratory work, they have opportunities to acquire knowledge and scientific skills that focus on the study of DNA, RNA and proteins in a real-world, problem-centered context. Students also research ways to prevent, diagnose and treat human disease and engage with scientists to explore associated career pathways. This course has been offered since 2014 through a collaboration with the Dane County School Consortium for high school credit.

PROFESSIONAL DEVELOPMENT FOR TEACHERS

- **NEW!** Biotechnology: Genetic Identity JUNE 28–JULY 1, 2020
- Biotechnology: The Basics JULY 20–24, 2020
- Biotechnology: Beyond the Basics JULY 27–31, 2020

FROM 2019 PARTICIPANTS:

“I want to come back next year for the second ‘round’ and bring a friend. Seriously, the best PD [professional development] I have ever been part of.”
—Biotechnology: The Basics participant

“This was such an incredible and mind-blowing and humbling experience! I feel like I won the lottery—FOR REAL. Thank you all from the bottom of my heart.”
—Biotechnology: Beyond the Basics participant

CONFERENCES

15th Annual Wisconsin Stem Cell Symposium: Breaking Barriers with Single Cell Omics APRIL 22, 2020
In partnership with the University of Wisconsin Stem Cell & Regenerative Medicine Center, this annual event features talks from world leaders who represent multidisciplinary approaches to the selected topic. It is supported by academic, corporate and community sponsors whose displays showcase their contributions to the field.

International Forum on Consciousness MAY 21–22, 2020
The International Forum on Consciousness promises a lively two days of information sharing and discussion regarding exciting—and often challenging—topics. As always, we’ll focus on the sharing of current scientific research, including consideration of related social issues.

“...The forum was a mind-opening experience that fortified my enthusiasm for the topic, introduced me to a wonderful community of people with like interests but very different approaches and focuses, and motivated me to find ways that I can do more to contribute and amplify others’ voices.”
—Community builder & event producer

Wisconsin Human Proteomics Symposium: Omics in Precision Medicine JULY 31, 2020
In collaboration with the Human Proteomics Program at the University of Wisconsin-Madison, this excellent program includes presentations from internationally recognized researchers in modern mass spectrometry and proteomics. It is sponsored by academic, corporate and community organizations, who offer attendees the opportunity to learn about their support of relevant research areas.