



ATP³ Workshop Summer 2014



**Taxonomy and Biochemistry of Microalgae
with Commercial Potential**

August 18-22, 2014

University of Texas at Austin



**UTEX The Culture Collection of Algae
at The University of Texas at Austin**

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Taxonomy and Biochemistry of Microalgae with Commercial Potential



When: August 18-22, 2014

Where: UTEX Culture Collection of Algae
The University of Texas at Austin
T. S. Painter Hall
2391 University Avenue
Austin, TX 78705

Instructors: Jerry Brand (UTEX), Milton Sommerfeld (AzCATI)
Tom Dempster (AzCATI), Schonna Manning (UTEX)

Cost: \$1600 (includes training, materials and 3 lunches)

The ATP³ workshop, "Taxonomy and Biochemistry of Microalgae with Commercial Potential", will take place the week of August 18-22, 2014 at The University of Texas at Austin. This workshop will provide an introduction to the major classifications of microalgae, including their diversity, nutrition, ecology, and biochemical content. Topics are designed for advanced students, instructors and trainees who are interested in obtaining a broad survey of the microalgae and the field of applied phycology. Presentations will cover algal nomenclature, phylogeny and molecular genetics.

Specialized training will include managing algal cultures, using compound light and fluorescence microscopy, counting cells, measuring culture growth rates, and the analysis of biomass proteins, lipids and carbohydrates. Activities will take place at the Culture Collection of Algae (UTEX) facilities, located in the center of the University of Texas campus.

Participants are encouraged to ask questions, share information with the group, and network. Printed and electronic materials will be provided, and a certificate of completion will be received at the conclusion of the workshop. Workshop enrollment is limited to 15 participants and will be filled on a first-come basis.

ATP³ workshops offer a diverse range of topics pertaining to the management and processing of microalgal cultures, and uses of their products. Laboratory and field training are led by highly-trained scientists and engineers. For more information about this and future workshops please visit www.atp3.org.

Agenda

Day 1: August 18 (1 pm – 5 pm)

Overview of ATP³, UTEX and AzCATI
Introduction to Microalgae

- Lab Activities: using the light microscope to observe diverse microalgae

Day 2: August 19 (8 am – 5 pm)

Microalgal Diversity
Nutrition and Ecology of Microalgae
Managing Microalgal Cultures
Measuring Growth Rates and Culture Density
Traditional Methods for Microalgal Identification

- Lab Activities: field collections; measuring culture dry weight (DW); counting cells using a hemocytometer; measuring culture optical density (OD) and growth rate

Day 3: August 20 (8 am – 5 pm)

Modern Methods for Identifying Microalgae
Biochemistry of Microalgae
Analysis of Microalgal Carbohydrates and Proteins

- Lab Activities: computational methods for identifying microalgae; microscopy for the analysis of biochemical content; measuring culture ash-free dry weight (AFDW); measurement of biomass starch

Day 4: August 21 (8 am – 5 pm)

Practical Applications of Microalgae
Screening for Desirable Characteristics
Analysis of Microalgal Lipids

- Lab Activities: measurement of biomass proteins; characterization of biomass lipids by thin-layer chromatography (TLC)

Day 5: August 22 (8 am – 11 am)

Data Analysis and Discussion of Results
Modern Large-Scale Cultivation Systems
Workshop Conclusion and Distribution of Certificates