

ATP³ Fall 2015 Workshop: Large-Scale Algal Cultivation, Harvesting and Downstream Processing

DAY 1	Module	Monday, November 2, 2015
1:00 PM	1	Overview of ATP3, AzCATI and UTEX
1:30 PM	2	Tour of AzCATI
2:30 PM	3	Practical Applications: Products and Remediation
3:30 PM	4	Lab Activities: * Using the light microscope to observe diverse microalgae
5:00 PM		Conclude activities
<hr/>		
DAY 2		Tuesday, November 3, 2015
8:00 AM	5	Techniques for Handling and Maintaining Cultures
9:00 AM	6	Culture Monitoring and Mitigation of Contaminants
10:00 AM	7	Lab Activities: * Field sampling from ponds and panels * Dry weight (DW) analysis * Microscopy of field samples
12:00 PM	LUNCH	
1:00 PM	8	Comparison of Cultivation Systems
2:00 PM	9	Principles of Scaling Up Cultures
3:00 PM	10	Lab Activities: * Transfer cultures (from panels to ponds) * Using the spectrophotometer to measure optical density (OD) and growth rates
5:00 PM		Conclude activities
<hr/>		
DAY 3		Wednesday, November 4, 2015
8:00 AM	11	Outdoor Culture Maintenance and Monitoring
9:00 AM	12	Harvesting and Dewatering Techniques
10:00 AM	13	Lab activities: * Overview and demonstration of on-site harvesting and dewatering instrumentation * DW measurements (cont.) * Ash-free dry weight (AFDW)
12:00 PM	LUNCH	
1:00 PM	14	Overview of Biomass Processing Methods
2:00 PM	15	Lab activities: * Overview and demonstration of on-site processing instrumentation * Spectrophotometry (cont. measuring growth rates)
5:00 PM		Conclude activities
<hr/>		
DAY 4		Thursday, November 5, 2015
8:00 AM	16	Screening Strains for Desirable Characteristics
9:00 AM	17	Routine Biochemical Analysis
10:00 AM	18	Lab activities: * AFDW measurements (cont.) * Colorimetric assays for measuring proteins and starch (BioRad DC and Megazyme)
12:00 PM	LUNCH	
1:00 PM	19	Mass Balance
2:00 PM	20	Lab activities: * Thin-layer chromatography (TLC) of lipid extracts * Spectrophotometry (cont. measuring growth rates) * Data entry and analysis
5:00 PM		Conclude activities
<hr/>		
DAY 5		Friday, November 6, 2015
8:00 AM	21	Data Analysis and Discussion of Results * Discuss trends, statistics and sources of variation
9:00 AM	22	Sources of Current Industry Information
10:00 AM		Final Q&A and distribute certificates
11:00 AM		Conclude workshop