WORKSHOP #1

User Facilities 101: Techniques, Applications and Access Focused on Clean Energy & the Environment

Organizers: Lisa Miller (BNL-NSLS-II), Priscilla Antunez (BNL-CFN), Aleida Perez (BNL-OEP)

Are you new to Brookhaven's user facilities? Or do you already use NSLS-II and want to know more about what CFN has to offer? Or vice-versa? Are you interested in how BNL's user facilities can help advance your research? Then this workshop is for you!

The goal of this workshop is to provide college faculty, postdocs, graduate students, undergraduate students, and high school teachers with an entry-level introduction on how to access the research tools made available at the National Synchrotron Light Source II (NSLS-II) and the Center for Functional Nanomaterials (CFN). Through a series of technique-based lectures, "flash" application talks from current users, and interactive QA / quiz sessions, participants will learn about the most popular techniques, scientific applications, and the proposal submission process. Completion of this workshop will give you the knowledge necessary to become the next NSLS-II and/or CFN user.

This year, the theme for this workshop will be applications in clean energy and the environment.

Start Time (ET)	Title		Speaker (Affiliation)
10:00	**Overview of NSLS-II and CFN**		**John Hill (NSLS-II)** **Chuck Black (CFN)**
10:30	**Keynote Talk: Clean Energy & the Environment**		**Eric Stach (UPenn)**
11:00	**X-ray Spectroscopic Imaging**		**Juergen Thieme (Brookhaven/NSLS-II)**
11:30 Flash apps (4 min each)	*Characterization of the main dosimetric trap in K-feldspar mineral grains for application in luminescence dating*		**Taylor Grandfield** Stony Brook University
	X-ray spectroscopy to understand chemical changes within varying maturities of glauconite		**Amanda Chen** Wellesley College
	Elemental Analysis of Lichens through Submicron Resolution X-ray Spectroscopy		**Asfar Chaudhry** West Islip High School
11:45	Q/A, quiz		
12:00	**Photoelectron Spectroscopy**		**Ashley Head (Brookhaven/CFN)**
12:30 Flash apps (4 min each)	*Solid/liquid interface studies with APXPS and its applications*		**Youngseok Yu** Brookhaven National Laboratory, Center for Functional Materials
	APXPS studies of Heterogeneous Catalysis		**Inosh Perera** Univ of Connecticut, Department of Chemistry
	Xenon Trapping in Silica Nano-cages using metal powder		**Laiba Bilal** Stony Brook University, Department of Electrical and Computer Engineering

12:45	Q/A, quiz	
1:00	Vendor Flash Talk	
1:05	BREAK	
1:30	**X-ray Powder Diffraction**	**Eric Dooryhee (Brookhaven/NSLS-II)**
1:50 pm Flash apps (4 min each)	*Diffraction application to olivine*	**Graelyn LoRusso** Westhampton Beach HS
	Diffraction line profile analysis in batteries and catalysis	**Adam Corrao** Stony Brook University
	Mechanochemical ammonia synthesis	**Karoline Hebisch** Georgia Tech
	Phase ID and structure refinement in batteries	**Cheng-Hung Lin** NSLS-II, Brookhaven Lab
2:15	Q/A, quiz	
2:30	**Theory & Modeling**	**Qin Wu (Brookhaven/CFN)**
3:00 Flash apps (4 min each)	*A DFT based investigation of coverage dependent vibrational frequencies of CO on Pd surfaces*	**Talin Avanesian** Brookhaven National Laboratory, Center for Functional Nanomaterials
	Enhanced Descriptor Identification and Mechanism Understanding for Catalytic Activity Using A Data-Driven Framework	**Wenjie Liao** Stony Brook University, Department of Chemistry
	Atomic insights into the degradation mechanisms of Li3PS4 solid electrolyte in lithium-ion batteries	**Chuntian Cao** Brookhaven National Laboratory, Computational Science Initiative
3:15	Q/A, quiz	
3:30	BREAK	
3:45	**User facility logistics & how to write a proposal**	**Priscilla, Lisa, Aleida**
4:15	Q/A (all)	