

PSC ALL-HANDS PRIORITIES MEETING JULY 28, 2021



STEPHEN STREIFFER

Deputy Laboratory Director for Science & Technology
Interim Associate Laboratory Director, Photon Sciences

AGENDA

- **APS** – Stephen Streiffer
 - Update
 - Priorities
- **ASD Priorities** – John Byrd
- **AES Priorities** – John Connolly
- **XSD Priorities** – Jonathan Lang
- **APS-U** – Bob Hettel

Call 9-1-1 to report any unusual event or emergency



9-1-1

From the nearest Lab phone



630-252-1911

From your cell phone



COVID

**JOIN THE RESISTANCE
GET VACCINATED**

SAFETY

- Photon Sciences safety record is very good for FY21
 - 3 staff incidents - 1 OSHA recordable 0 DART, and 2 first aid injuries
 - 3 subcontractor incidents – 2 OSHA recordable, 0 DART, and 1 first aid injuries

- New incident: Certain electrical panels and disconnects in Bldg. 382 found to be incorrectly labelled as 208V when actually 480V. Subsequent electrical work done without required controls.

- **COVID: Federal requirements and CDC guidance are in flux.**

SEPTEMBER 7-10, 2021

DOE-BES REVIEW OF APS OPERATIONS



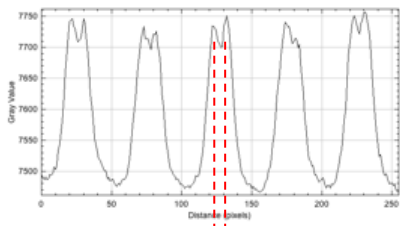
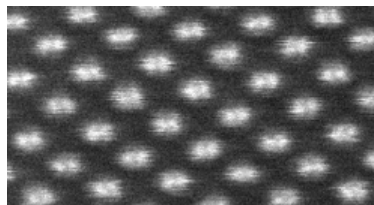
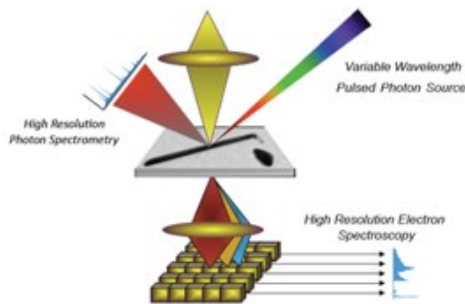
U.S. DEPARTMENT OF
ENERGY

Office of
Science



Our
turn

The PSC Analytical PicoProbe Electron Optical Beam Line



<211> GaN sub-atomic image
Ga-Ga = 63 pm

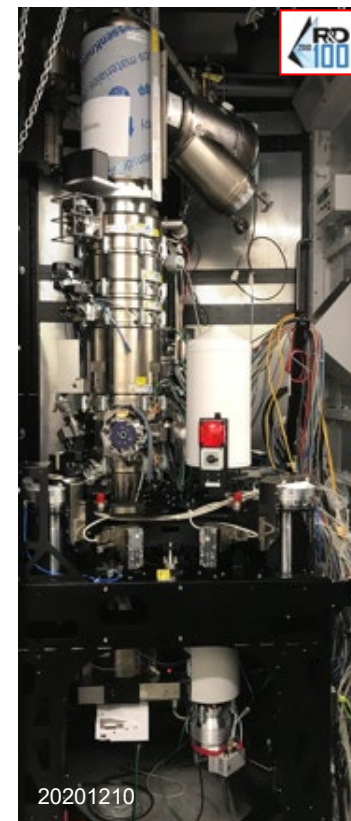
Image Resolution: CTEM < 100 pm / STEM ~ 50 pm
Temporal Resolution: 0- 25+ fps (CTEM), ≤ 1 usec/pixel (STEM)
XPAD Spectrometer: Worlds most sensitive AEM XEDS detector
Environmental: Commercial and Custom Ambient, in-Situ Holders

Key Features/Attributes at Commissioning

- E_0 : 30-300 kV Electron Source
- High Brightness Coherent Field Emission Gun
- Probe Corrector ($\delta x \sim 50$ pm)
- Monochromator ($\delta E \leq 50$ meV)
- XPAD 4.5 sR X-ray Spectrometer
- HR/LowDrift Piezo Goniometer
- 4Kx4Kx16 bit CMOS Imaging Detector
- 128x128x30bit Diffraction Camera
- CTEM/STEM/iDPC Modes
- Analytical LBHV DTilt Holder
- Ambient Tomography Holder
- Ptychography/Tomography Holder
- Liquid Cell Holder
- Cryo-Tomography/Spectroscopy Holder
- Multi-Modal Enabled
- Telepresence Enabled

Future Upgrades

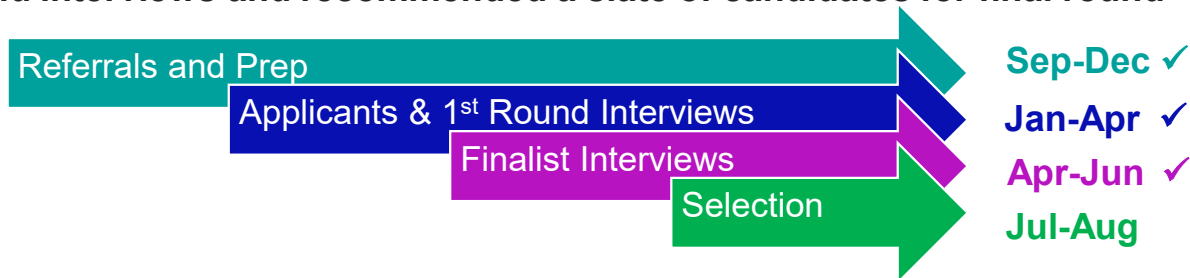
- Electron Energy Filter / UltraMono Spring 2022
- Direct Electron Detector
- Phase Plate /Adaptive Holographic Optics





PSC ALD SEARCH UPDATE: SELECTION PHASE

Committee completed first-round interviews and recommended a slate of candidates for final round



- 12 candidates were interviewed by the search committee in the first round
 - Slate was highly-qualified, internal and external, national and international institutions, diverse
- 6 finalists interviewed, followed by additional detailed discussion with selected candidates
- Final search committee report to be delivered to Paul Kearns this week

Please continue to respect the candidates' requests for strict confidentiality within/beyond Argonne
Any questions? Please reach out to Stephen Streiffer, Kathy Harkay, Jim Bluemond, or any search committee member: PSCALDSearch@anl.gov

Diversity, Equity & Inclusion

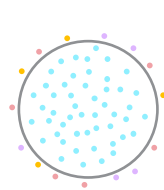
The latest edition of **PSC DEI Quarterly E-News** was released on July 1, 2021.

DEI Cross-Council Collaborative Learning Club – June 30st:

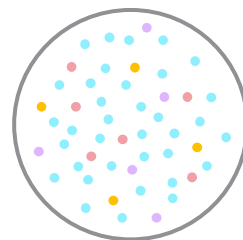
**INTELLECTUAL
HUMILITY**

**HOSTED BY ANL
DEI COUNCILS**
DivE-In • EGS •
ESHQ • IS • PSC •
S&TPO

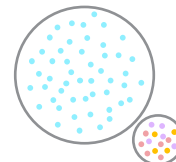
Excellent event with good participation from all Directorates across the Laboratory.



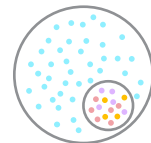
Exclusion



Inclusion



Segregation



Integration

“The Voice of PSC”: every 3rd Thursday of the month

Safe and open forum to share videos, thoughts, ideas and concerns. Next Topics for August: the **“Mental Load”**

Pulse Survey: Register in TMS for *confidential* focus groups led by ALI; *everyone is strongly encouraged to attend!*



To find out more about DEI Council and ongoing activities & events, visit <https://www.aps.anl.gov/About/Committees/Diversity-Equity-Inclusion>

IMPACT ARGONNE AWARDS RECIPIENTS

Innovation

- **Rebecca Sikes (PSC)**
- **Jacki Flood (PSC) and Juli Wu (AES)**



Program Development

- **Kristin Ahrens (XSD), Paula Bulaon (XSD), Colleen Trattner, (XSD), Christine McGhee (PSC), Diane Hart (STP), Kristen Bylica (STP), Peter Slawniak (LEG) and Vanessa Mendez (CLS)**
- **Andrey Yakovenko (XSD), Wenqian Xu (XSD) and Bryan Monk (XSD)**
- **Jason Lerch (AES), Nicholas Weir (ASD), Grace Avellar (AES), Ethan Anliker (AES) and Megan Szubert (AES)**

Enhancement of Argonne's Reputation

- **Beth Schlesinger (CPA) and Andre Salles (CPA)**

Diversity and Inclusion Results

- **Mary Westbrook (AES), Brian Pruitt (AES), Clarence Clark (AES), Vince Nobles (AES) and Edward Wrobel (AES)**

IMPACT ARGONNE AWARDS RECIPIENTS

Extraordinary Effort

- **Fabricio Marin (XSD)**
- **Jade Thomas (APSU)**
- **Thomas Flanagan (PSC)**
- **Eric Dufresne (XSD)**
- **Christopher Piatak (XSD)**
- **Elmie Peoples-Evans (APSU) and Jeffrey Toeller (AES)**
- **Gregory Markovich (AES) and Anthony Puttkammer (ASD)**
- **Ryan Roberts (FAC), Brian McFadden (FAC) and Robert Lange (FAC)**
- **Charles Kurtz (XSD), Xiaobing Zuo (XSD), Soenke Seifert (XSD), Alexis Quental (XSD), Benjamin Reinhart (XSD), Ivan Kuzmenko (XSD) and Byeongdu Lee (XSD)**
- **Timothy Clute (AES), Mark Martens (AES), Robert Wilson (AES), Wayne Michalek (AES), Regina Mekler (AES), Andrew Mattillion (AES), Guy Harris (AES), Ralph Bechtold (AES), Glenn Moonier (AES), Brian Poncin (AES), Mike Bracken (AES), Scott Peterson (AES), Joseph Budz (AES), Curt Forth (AES), Shane Flood (AES), Claybourne White (AES), Michael Henry (ESQH), Dusan Banjanac (FAC), Brian McFadden (FAC), and Ryan Roberts (FAC)**



IMPACT ARGONNE AWARDS RECIPIENTS



Extraordinary Effort (con't)

- Geoff Pile (AES), Greg Markovich (AES), Brian Pruitt (AES), Claybourne White (AES), Glenn Moonier (AES), Alex Smith (STE), John Surdey (PMO), Curtis Lovejoy (PMO), Glenn Emerson (PMO), Brian Van Acker (PMO), Rogelio Camacho (FAC), David Kazenko (FAC), Vincent Lockett (FAC) and George Doktorczyk (FAC)
- Robert Wright (AES), Ralph Bechtold (AES), Michael Bracken (AES), John Dench (AES), Cedric Putnam (AES), John Hoyt (AES), John Pace (AES), Brian Poncin (AES), Guy Harris (AES), Aaron Lopez (AES), Andrew Mattillion (AES), Regina Mekler (AES), Wendy VanWingeren (AES), Timothy Clute (AES), Debra Curry (AES), Noel Gonzales (AES), Wayne Michalek (AES), Glenn Moonier (AES), Anthony Puttkammer (ASD), Iftikhar Abid (ASD), Joseph Vanis (ASD), Ryan Roberts (FAC), Brian McFadden (FAC), Michael Henry (ESHQ), and Michael O'Connor (ESHQ)

25+ YEARS SERVICE AWARDS

30 years

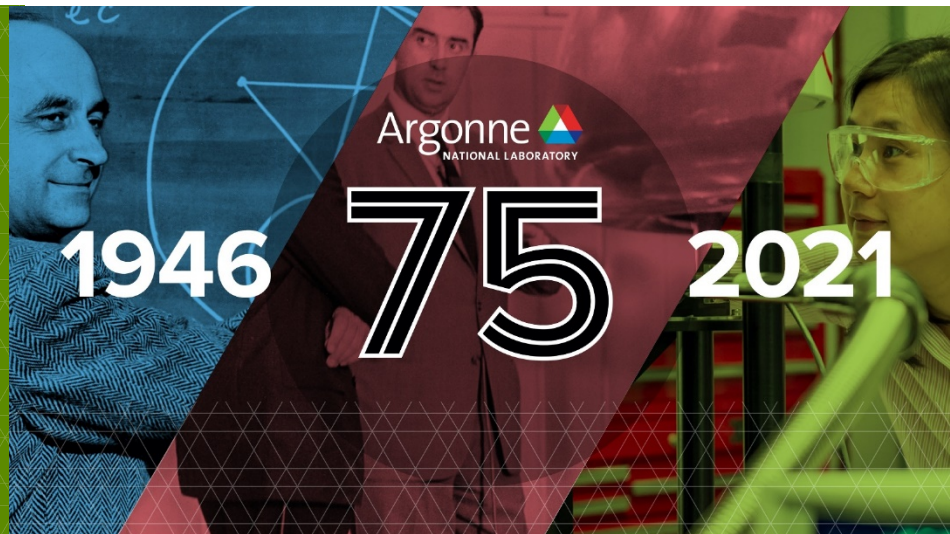
**Deming Shu, Kenneth Belcher, Steven Davey,
Darryl Reigle, Scott Benes**

35 Years

David Leibfritz

Priorities

ANNUAL LABORATORY PLAN



Paul Kearns, Director

June 21, 2021

UChicago
Argonne, LLC



U.S. DEPARTMENT OF
ENERGY

Argonne National Laboratory is a
U.S. Department of Energy laboratory
managed by UChicago Argonne, LLC.

Our signature contributions: today and looking ahead

Discovery science

Unravel the deepest mysteries in materials, chemistry, physics, biology and environmental science

Energy and climate R&D

Meet clean energy needs, translate discoveries to market, and provide critical new insights into climate change

Global security

Make the world safer through our work in infrastructure resilience, physical and cyber security, nonproliferation, critical materials, and disease response

Large-scale research facilities

Design and operate leading facilities for computing, climate science, nuclear physics, and the exploration of matter through x-rays and nanoscience

Emerging R&D labs for the 21st century

Transform research by bringing together advanced computing, modeling, artificial intelligence, robotics, and advanced characterization methods

Five DOE-SC facilities support the second largest user community in the lab complex

Advanced Photon Source

Argonne Leadership Computing Facility

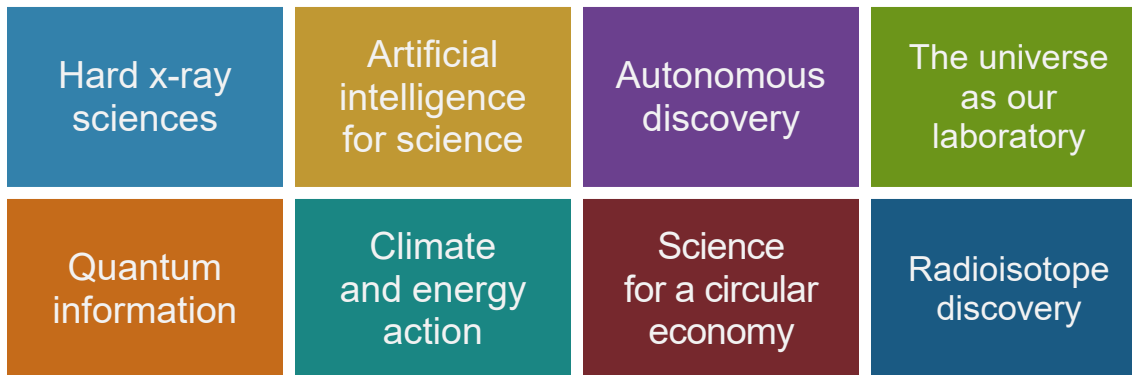
Argonne Tandem Linac Accelerator System

Center for Nanoscale Materials

Southern Great Plains ARM Climate Observatory

Our research initiatives will amplify Argonne's signature contributions

Research initiatives



Signature contributions



Hard x-ray sciences

MAJOR
INITIATIVE

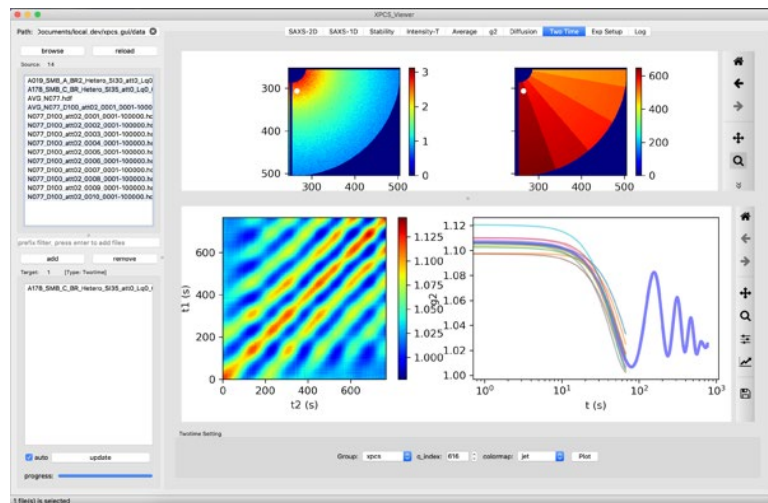
Goal Equip users of the upgraded APS with revolutionary research techniques starting at first light, even as we frame a vision for the next generation of light sources

Strategy Develop new experimental approaches that capitalize on APS-U capabilities

Control experiments and data flows in real time by coupling x-ray delivery and detection to automated analysis via edge computing and the ALCF

Investigate technologies to transform future x-ray light sources

Highlight Working with Brookhaven and Berkeley national laboratories, we developed an automated system to accelerate analysis of x-ray photon correlation spectroscopy



The recently developed system for x-ray photon correlation spectroscopy (XPCS) analysis will be used at the current and upgraded APS, the Advanced Light Source at LBNL, and the National Synchrotron Light Source II at BNL.



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2021