

# PSC ALL-HANDS MEETING APRIL 28, 2021

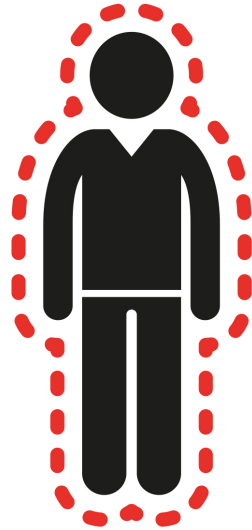


## STEPHEN STREIFFER

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

# AGENDA

- **APS update** – Stephen Streiffer
  - Safety
  - Budget
  - DEI
  - ALD search
  - Technical Updates
  - Post-COVID planning
  - User Office news
  - Awards
- **Ops update & power outage**– John Connolly
- **APS-U update** – Bob Hettel
- **Questions from audience / responses from APS leaders**



# COVID

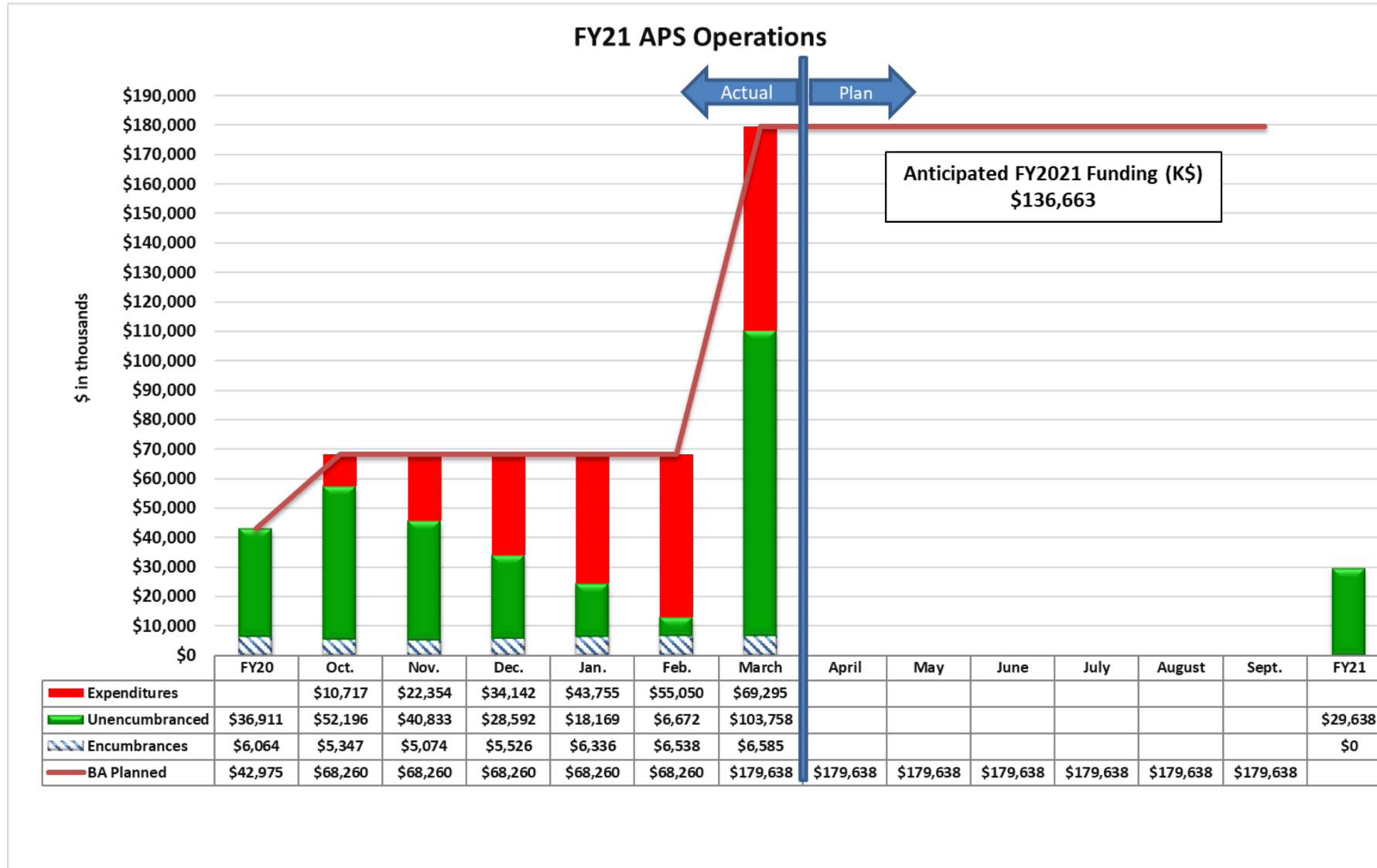
**JOIN THE RESISTANCE  
GET VACCINATED**

To keep up with the latest APS news & research: [www.aps.anl.gov](http://www.aps.anl.gov)

# SAFETY

- **PSC safety record is good so far for FY21 – 2 First Aid for Staff**
  - 3 subcontractor incidents – 2 OSHA recordable, 0 DART, and 1 first aid injuries.
- **COVID Controls recently modified:**
  - Face coverings are required in **all situations when in a cubicle or other open workspace**, even when social distancing is maintained.
  - Face coverings are required inside government-owned vehicles.
- **Individuals may remove a mask only under one of the following conditions:**
  - When alone in an enclosed workspace (personal office, laboratory, high bay, or shop) with floor-to-ceiling walls and a closed door.
  - While eating or drinking in an approved location and a minimum of 6 feet away from other people.
  - Outdoors when separated by more than 6 feet from other people; however, the face covering must be worn when another person approaches within 6 feet.

# APS OPERATIONS – FY21 BUDGET





# Diversity, Equity & Inclusion

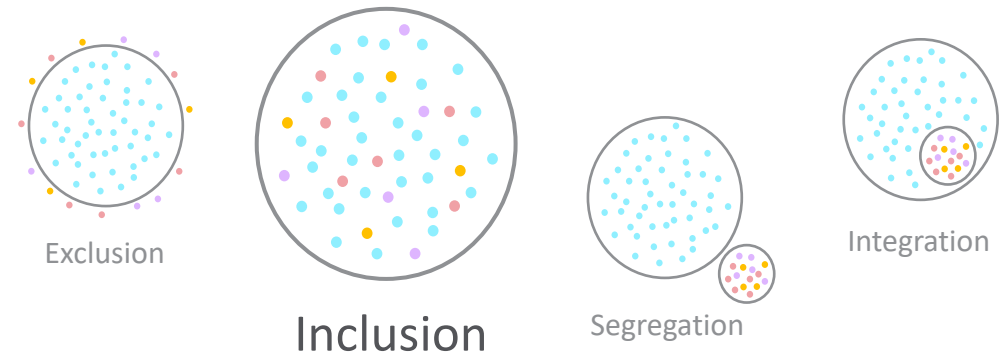
The latest edition of **PSC DEI Quarterly E-News** was released on April 1, 2021

## DEI Cross-Council Collaborative Learning Club – March 31<sup>st</sup>

**IMPROVING  
PSYCHOLOGICAL  
SAFETY WITHIN  
YOUR TEAMS**

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

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



**“The Voice of PSC”:** every 3<sup>rd</sup> Thursday of the month

Safe and open forum to share videos, thoughts, ideas and concerns.

Last Topics for April’ : Intellectual humility, respect for the individual and “brotherly love”

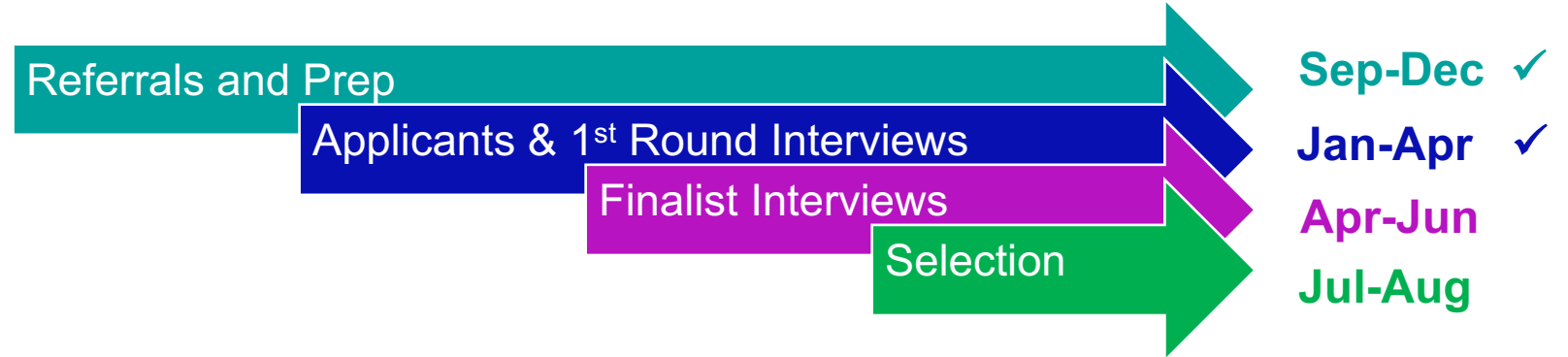
**Pulse Survey:** DEI council will be assisting ALI to conduct focus groups within each PSC division.

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



# PSC ALD SEARCH UPDATE: MOVING TO FINALIST PHASE

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



- Search process is on track.
- 12 candidates were interviewed by the search committee in the first round
  - Slate was highly-qualified, internal and external, national and international institutions, diverse
- Next step: Organize interviews for 6 finalists
  - Candidates being notified regarding their status

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](mailto:PSCALDSearch@anl.gov).

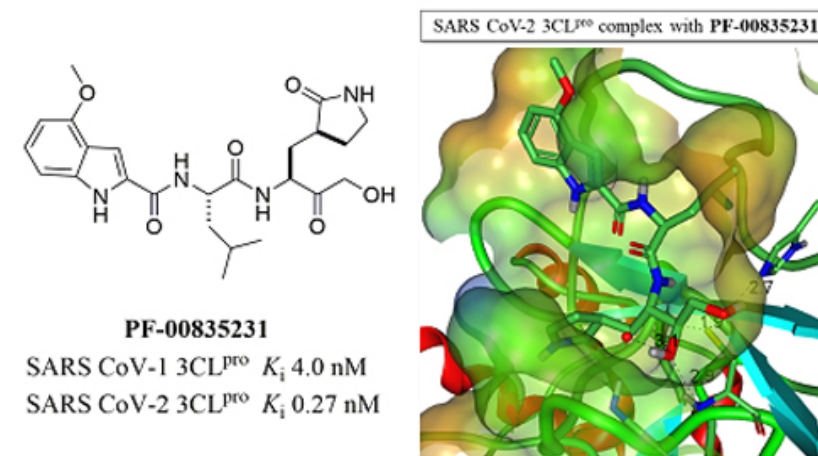
# DISCOVERIES FROM FIRST SARS OUTBREAK JUMP-START COVID-19 TREATMENT DEVELOPMENT

## Scientific Achievement

Researchers from Pfizer and the Southern Research Institute using the IMCA-CAT 17-ID beamline solved the structure of PF-00835231, a particularly promising SARS-CoV-1 protease inhibitor, in complex with the 3CL<sup>PRO</sup> cysteine protease of SARS-CoV-1, on the path to determining if PF-00835231 can also inhibit the SARS-CoV-2 protease.

## Significance and Impact

Evaluation of PF-00835231 against SARS-CoV-2 3CL<sup>PRO</sup> shows that it is a very potent inhibitor with selectivity for coronavirus enzymes among a panel of other viral and human proteases; preclinical evaluation showed that it displays potent anti-viral inhibition of SARS CoV-2 and led to development of phosphate prodrug PF-07304814 that is in clinical trials as a potential treatment for COVID-19.

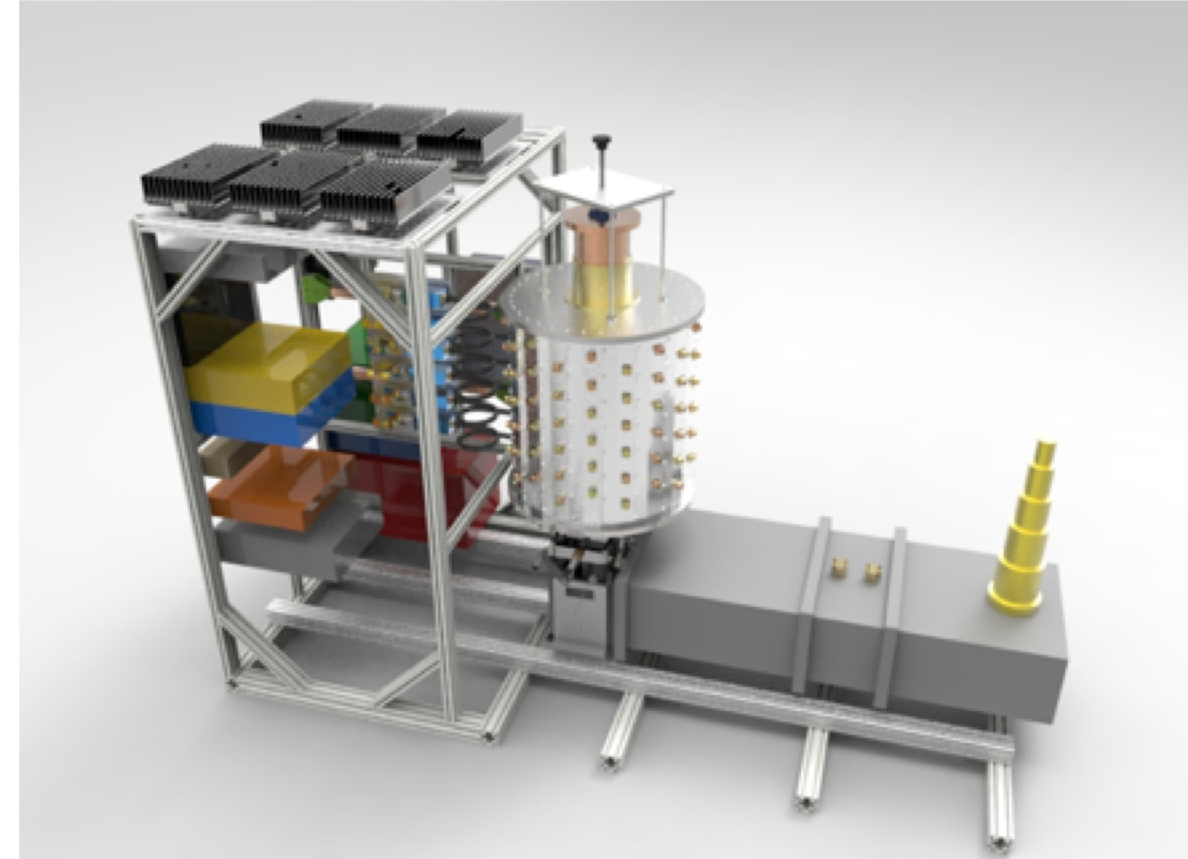
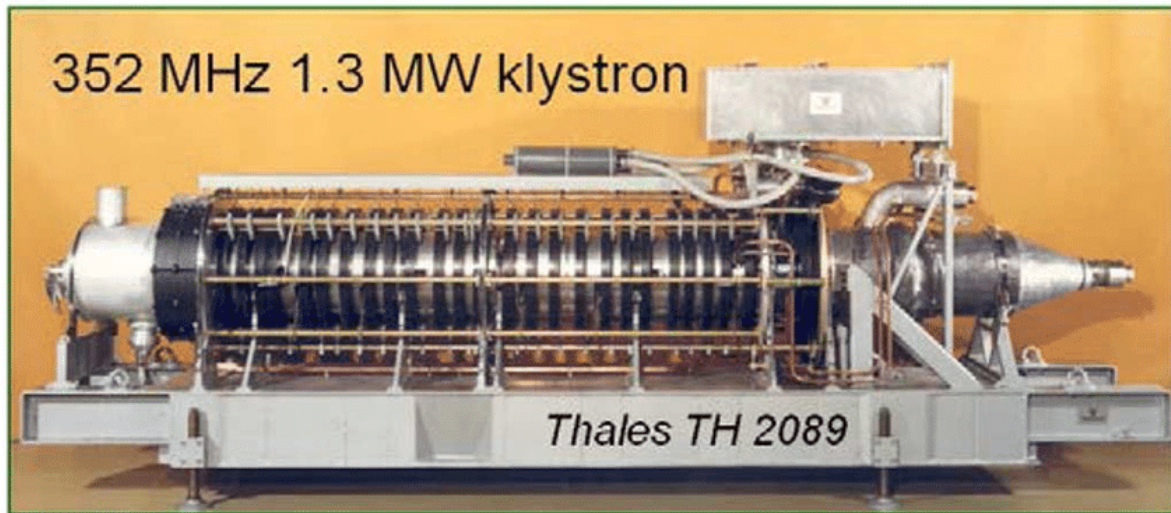


PF-00835231, a protease inhibitor that is a potential treatment for COVID-19, alone and in complex with the active site of the SARS-CoV-2 3CL protease.

R.L. Hoffman, R.S. Kania, M.A. Brothers, J.F. Davies, R.A. Ferre, K.S. Gajiwala, M. He, R.J. Hogan, K. Kozminski, L.Y. Li, J.W. Lockner, J. Lou, M.T. Marra, L.J. Mitchell, Jr.<sup>1</sup>, B.W. Murray, J.A. Nieman, S. Noell, S.P. Planken, T. Rowe, K. Ryan, G.J. Smith II<sup>1</sup>, J.E. Solowiej, C.M. Steppan, Barbara Taggart, "Discovery of Ketone-Based Covalent Inhibitors of Coronavirus 3CL Proteases for the Potential Therapeutic Treatment of COVID-19," *J. Med. Chem.* **63**(21), 12725 (2020). DOI: 10.1021/acs.jmedchem.0c01063

# FROM TUBES TO TRANSISTORS: CONVERTING 2 MW APS STORAGE RING RF SYSTEM TO SOLID-STATE

- The first 200 kW commercial procurement is awaiting DOE approval
- Each unit expected to cost ~\$10/Watt.
- First unit will be tested in APS post-upgrade



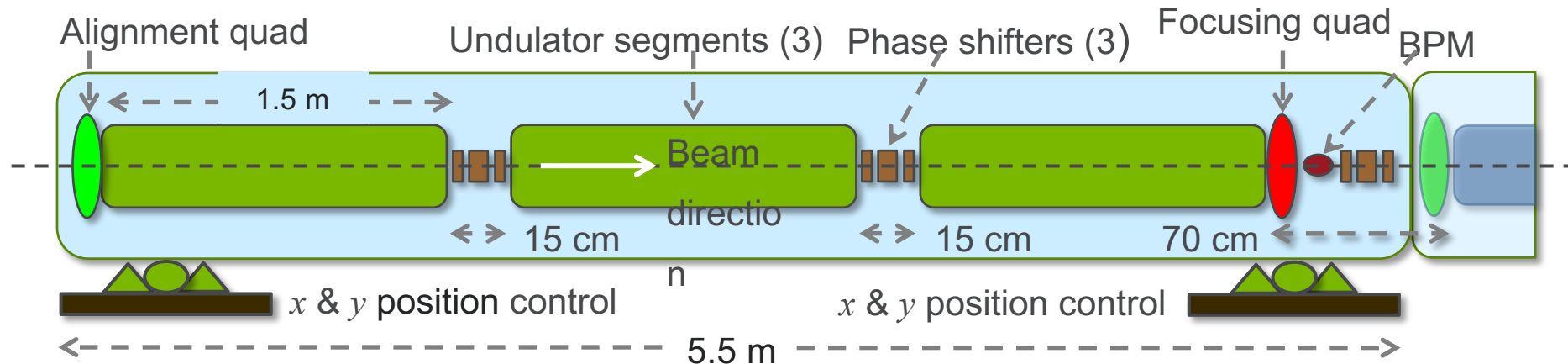
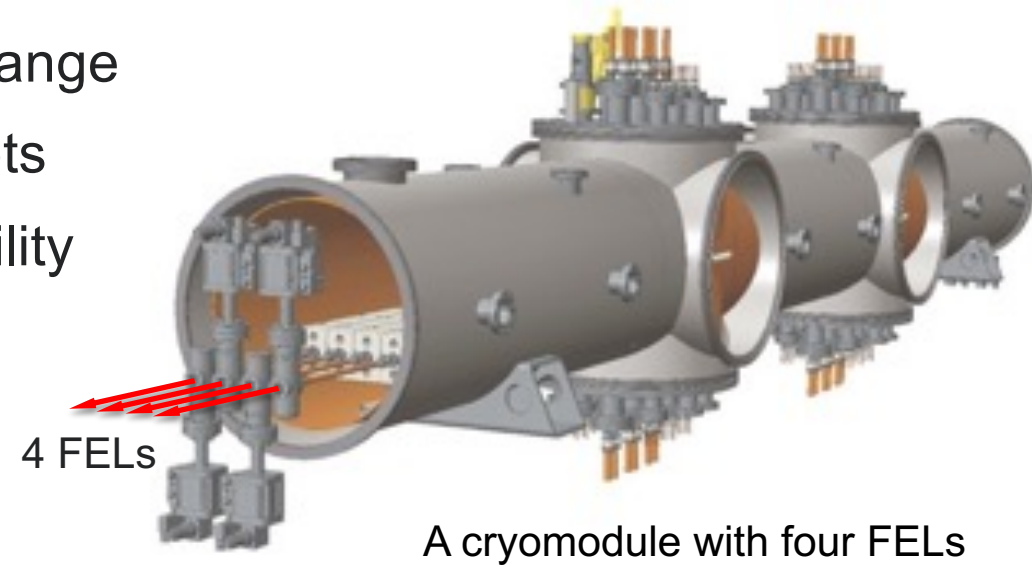
ASD RF Group SSPA concept using combiner cavity



# SUPERCONDUCTING UNDULATORS FOR FELS

Tremendous potential for larger photon energy tuning range and much smaller package

- Higher SCU magnetic field allows for broader tuning range
- Much more radiation resistant than permanent magnets
- Small transverse SCU cross section allows for possibility of multiple undulators in one cryostat, allowing for simultaneous multi-user capability
- A joint ANL-SLAC proposal for an SCU FEL demo has been submitted to DOE-BES



FEL SCU cryomodule concept

Courtesy of J. Fuerst, APS

# APS REMOTE ACCESS

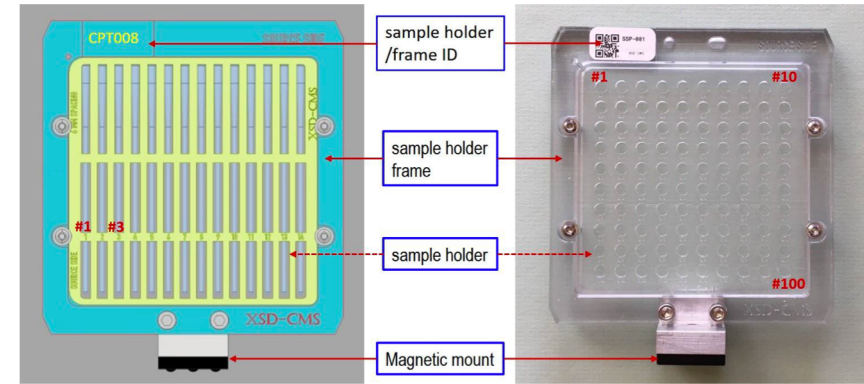
## Selected past-year developments

- Remote and high-throughput mail-in SAXS at 12-ID-B

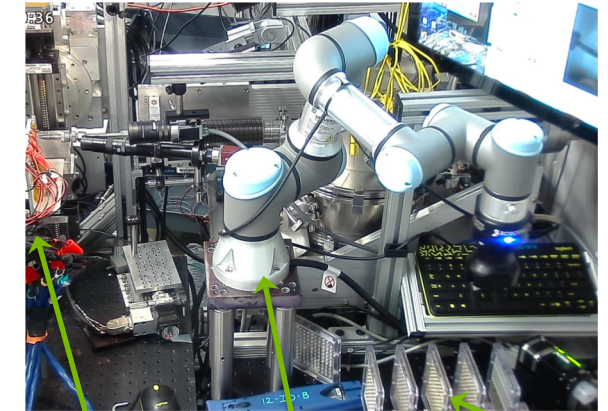
(CMS group led by Byeongdu Lee)

- Database application developed for managing sample mail-in process
- Family of standard sample frames engineered to support different measurement modalities
- UR3e cobot implemented for sample loading and loading

Sample holder being loaded at 12-ID-B



3-D printed sample holders (supplied to users)



Sample measurement area      Cobot      Sample rack



# ARGONNE SAFE RETURN PLAN

- Cross Directorate Team developing; expect more details at Lab All Hands meeting
- Safe Return Plan includes the following sub-teams:

Sub-Team	Lab lead(s)	Scope summaries
Population Transition and Phasing	Mike Dunn	Criteria, timing, and phasing of Argonne population returning to campus.
Returning People Safely	Mike Edelen	COVID controls change and adjustment process as restrictions ease with return to campus. Safety reorientation for long-time telecommuters.
Hybrid Teleworking	Stu Hannay/Pam Gruzka	Policies, procedures, guides and implementation of anticipated increase in telecommuting employee base as restrictions ease.
Events and Travel	Holly Shearer	Updated travel and event guidance as restrictions on travel and in-person gatherings ease.
Communications	Leslie Krohn	Ongoing communications effort for all Lab transition subjects.
Amenities	Dena Reetz	Planning and preparation for eventual reopening of the Argonne Guest House, food service, fitness center, credit union, as conditions permit.

- Safe Return Plan expected to be finalized by the end of May

# ARGONNE SAFE RETURN PLAN

- **State will likely move before Argonne, due to our status as a Federal facility**
  - DOE removal of max telework stance is expected key triggering event; however, we are simply unsure if COVID controls such as face masks may still be required when that happens
  - People that wish to return at that time should be able to do so
  - For those that need more time, establishing a reasonable time period as a “heads up”
- **Don't expect a single day where everything restores at once – stepwise approach**

# USER OFFICE NEWS

## REAL ID IMPLEMENTATION AT ARGONNE NATIONAL LABORATORY

- Effective **October 1<sup>st</sup>**, people 18 years and older must have a REAL ID in order to enter the Lab
- Argonne is committed to the security of its people, property and research. The REAL ID Act, passed by the United States Congress in 2005, establishes minimum security standards for visitors to federal facilities
- You may find additional information on Laboratory site access requirements here: <https://www.anl.gov/site-entry-requirements>

# FIRST FULLY VIRTUAL APS/CNM USERS MEETING MAY 3-7 AND MAY 10-14, 2021



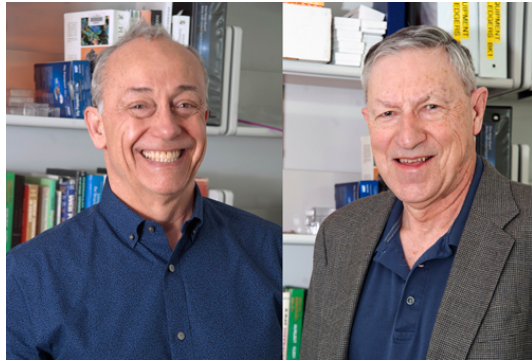
- 985 registrants (as of 4/26/21)
- Linda Horton (*Basic Energy Sciences*) will present -- *The DOE Perspective*
- Giulia Galli (*The University of Chicago*) keynote address -- *Combined Plenary Session*
- 11 workshops and training courses and one CNM short course
- Special Session: APS Upgrade Q&A
- Virtual poster session with ~100 posters
- 29 exhibitor companies

# MEDSI2020 REGISTRATION IS OPEN



- **11<sup>th</sup> International Conference on Mechanical Engineering Design of Synchrotron Radiation Equipment and Instrumentation**
- **July 26-29, 2021 Virtual Event Hosted by the Advanced Photon Source**
- MEDSI2020 will be held in virtual format from July 26-29, 2021.
- The conference topics include insertion devices, magnets, storage rings, front ends, beamlines, optics, end station instrumentation, and core technology development in vacuum, cryogenic, optics, and precision mechanics.
- The MEDSI2020 program will include invited and contributed talks, poster presentation sessions, as well as virtual industrial exhibitions. All properly presented contributions will be edited and published as JACoW Proceedings.

# AWARDS AND HONORS



The Advanced Photon Source Users Organization announces that **Mark Rivers** and **Stephen Sutton (GSECARS)** are the winners of the 2021 APSUO Arthur H. Compton Award, which recognizes an important scientific or technical accomplishment at the APS.

**Daniel Haskel (XSD)** is one of the 151 Outstanding Referees selected by the American Physical Society for 2021 who “...have demonstrated exceptional work in the assessment of manuscripts published in the *Physical Review* journals.”



**Elina Kasman (XSD)** is a participant in the second cohort of PSE Next Generation of Leaders (NextGen Leaders), which provides the next generation of leaders with the tools and skills needed to coordinate research activities across Argonne’s multidisciplinary directorates and to build strategic programs.



# AWARDS AND HONORS

Three APS users are recipients of prestigious Protein Society of America awards for 2021.

**Petra Fromme (Arizona State U.)** is recipient of the 2021 Christian B. Anfinsen Award, which recognizes technological achievement or significant methodological advances in the field of protein science.



**Janet Smith (U. Michigan and GM/CA-XSD)** is the recipient of the 2021 Dorothy Crowfoot Hodgkin Award in recognition of contributions in protein science that profoundly influence our understanding of biology.



**Amy Rosenzweig (Northwestern U.)** is co-recipient of the 2021 Hans Neurath Award, which honors individuals who have made a recent contribution of exceptional merit to basic protein research.



# AWARDS AND HONORS



**Stephen Streiffer (PSC)** was 1 of a group of 5 recognized as part of the National Virtual Biotechnology Laboratory Team, which received a Secretary of Energy's Achievement Award, for its pivotal role in supporting the national response to COVID-19.

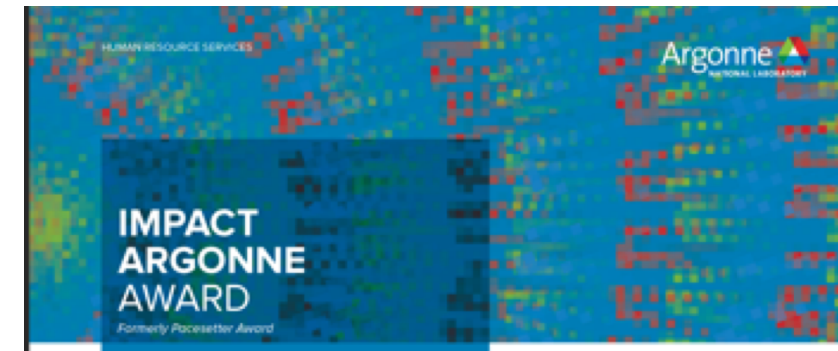


**Erica Ollmann Saphire**, a long-time user of the APS, has been appointed President and CEO of **La Jolla Institute for Immunology**. Dr. Saphire will become La Jolla Institute's fifth president when she formally begins her term on September 1, 2021.



**Scott Williams**, deputy chief of the National Institute of Environmental Health Sciences Genome Integrity and Structural Biology Laboratory, received the **Southeast Regional Collaborative Access Team Outstanding Science Award**.

# IMPACT ARGONNE AWARD RECIPIENTS



## Extraordinary Effort

- **Brenda Davis (AES)**
- **Josh Downey (PSC)**
- **Maofei Qian (ASD), Roger Dejus (PSC), Yinghu Piao (PSC)**
- **Ron Moore, Ed Russell (both FAC)**
- **Richard Fenner (PSC)**

## Innovation

- **Joseph Gagliano, III (ASD), John Grimmer (ASD), Erik McCarthy (ASD), John TerHaar (ASD), Melike Abliz (PSC)**
- **Arvind Ramanathan (AES), Yu Huang (AES), Xuli Wu (AES), Daniel Ambrecht (BIS), Kirsten Czech (BIS), Justin Garlinsky (BIS), Ross Pallan (BIS), Alexander Tosa (BIS), Kevin Maranto (HRS), Haritha Siddabathuni Som (LCF), David Eckstein (NST), Marcia Wood (NST), Lisa Escalante (PMO), Connie Vanni (PSC), Susan White De Pace (PSC), Kaitlyn Mason (STE), Rosemary Stanton (STE)**

## Significant Cost Reduction

- **Lisa Gades (XSD)**

# 25+ YEARS SERVICE AWARDS

## 25 years

**Rand Flood (ASD), Thomas Meier (ASD), Kevin Beyer (XSD), Jonathan Lang (XSD)**

## 30 years

**Michael Borland (ASD), Anthony Pietryla (ASD), James Stevens (ASD), Michelle Leighton (PSC), Mark Engbretson (XSD), Christopher Piatak (XSD), John Weizeorick (XSD), Shenglan Xu (XSD)**

## 35 Years

**Grace Lynch (ASD)**

## 40 Years

**Debra Curry (AES)**