



# Workshop on Opportunities, Challenges, and Best Practices for Basic Plasma Science User Facilities



**Day 1: Science | May 20, 2019**

All sessions will be in Salon FG unless otherwise indicated.  
The workshop will be video-streamed, with remote participation available during discussions

7.30-8.30am	BREAKFAST - Foyer B
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8.30	Welcome (Howard Milchberg and Earl Scime)
8.40	Remarks from the Dean of the College of Computer, Mathematical, and Natural Sciences (Amitabh Varshney) and the Chair of the Department of Physics (Steve Rolston)
8.45	Workshop Goals and Deliverables (Denise Caldwell, Slava Lukin (NSF))

## Science Overview Talks (talk 15 min + 15 min moderated discussion w/panel of topic group members)

### Fundamental questions and challenges – (Chair H. Milchberg)

9.10	Quantum properties of dense plasmas (Sam Vinko, Rip Collins)
9.40	Plasma in super-critical fields (Alec Thomas, Stepan Bulanov)

10.10-10.30	BREAK – Foyer B
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### Fundamental questions and challenges – (Chair E. Scime)

10.30	Single component plasmas, dusty plasmas, matter-antimatter plasmas (Eve Stenson, Joel Fajans)
11.00	Laboratory astrophysics (Carolyn Kuranz, Petros Tzeferacos)
11.30	Relativistic laser- and beam-plasma interactions (Felicie Albert, Warren Mori)

12.00-1.30pm	LUNCH - Salon E
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### Fundamental questions and challenges – (Chair H. Milchberg)

1.30	Coherent structures and energy dissipation in plasmas (Jim Drake, Mike Brown)
2.00	Controlled production of chemical reactivity (Mark Kushner, Steve Shannon)

## Breakout Sessions on Science Themes

1-Salon E | 2 - Salon F | 3 - Salon G | 4 - Tubman Room | 5 - Key Room | 6 - Curry Room | 7 - Salon E

For each science topic area, groups will further refine their number of basic physics questions to preferably one but at most two—either plasma physics questions or general physics questions best addressed by a plasma experiment.

2.30-3.45	Breakout sessions: Seven science topic groups
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3.45-4.00	BREAK - Foyer B
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4.00-5.30	Moderated discussion on science themes, w/ panel of topic group leads – (Chair E. Scime)
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6.00-7.00	RECEPTION - Foyer B
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# Workshop on Opportunities, Challenges, and Best Practices for Basic Plasma Science User Facilities



**Day 2: Facilities**

**May 21, 2019**

**All sessions will be in Salon FG unless otherwise indicated.**  
The workshop will be video-streamed, with remote participation available during discussions

7.30-8.30am	<b>BREAKFAST - Foyer B</b>
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8.30	Overview of day's activities and goals (H. Milchberg)
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**Facility and user perspectives for best science (20 min + 10 min comments and questions)- (Chair E. Scime)**

8.40	Open facility: LLE-NLUF (Mingsheng Wei, LLE, Univ. Rochester)
9.10	Open facility: SLAC-LCLS (Emma McBride, SLAC)
9.40	Open facility: Green Bank Observatory (Karen O'Neil, Green Bank Site Director)
10.10	Collaborative facilities: UCLA-BaPSF and DIII-D (Troy Carter, UCLA)

10.40-10.50	<b>BREAK - Foyer B</b>
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10.50	Single/Few PI - Magnetized Dust Experiment (Ed Thomas, Auburn Univ.)
11.20	LaserNetUS network: Plans for best science outcomes (Cameron Geddes, LBNL)

11:50-12:30pm	Moderated discussion on best practices, Panel: facilities speakers – (Chair H. Milchberg)
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12.30-1.30	<b>LUNCH – Salon E</b>
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**Breakout sessions**

**1-Salon E | 2 - Salon F | 3 - Salon G | 4 - Tubman Room | 5 - Key Room | 6 - Curry Room | 7 - Salon E**

For each science topic area, groups will compose summary PowerPoint presentations that describe their important science question(s) and a user facility-based model for their study.

1.30-2.30	Breakout sessions: Seven science topic groups
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**Presentations from the science topic areas – (Chair E. Scime)**

2.30-4.15	Seven (10+5 min) presentations
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4.15-4.30	<b>BREAK - Foyer B</b>
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4.30	Moderated discussion on lessons learned from the Workshop, Panel: topic group leads (Chairs- H. Milchberg and E. Scime)
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5.00	Review of writing assignments for Workshop Report (15 min)– (H. Milchberg and E. Scime)
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