

## 2020 Symposium of the Pacific Northwest Chapter of the AVS



**September 24-25, 2020**

**Virtual Meeting hosted by  
Environmental Molecular Sciences Laboratory at  
Pacific Northwest National Laboratory  
Richland WA, 99352**

Call for Student Presentation Abstracts  
Abstracts are due by August 31, 2020  
Free meeting registration opens: August 15, 2020

Contact: Zihua Zhu, PNWAVS Chair  
Email: [zihua.zhu@pnnl.gov](mailto:zihua.zhu@pnnl.gov)



The 31<sup>st</sup> Annual Symposium of the PNWAVS Science and Technology Society ([www.pnwavs.org](http://www.pnwavs.org)) will be a virtual meeting hosted by EMSL located at Pacific Northwest National Laboratory in Richland, WA. The meeting will consist of two days of invited talks, plenary speakers, and a student presentation competition.

The PNWAVS symposium has a long tradition of providing a stimulating interdisciplinary program in a relaxed, informal atmosphere. The meeting attracts a broad representation of government, corporate, and university researchers from throughout the Pacific Northwest, Western Canada and Alaska. The symposium provides an excellent opportunity for students and postdocs to sharpen their presentation skills. This tradition will continue as we adopt a virtual format for the 2020 Symposium due to the Coronavirus pandemic. We are focusing on student presentations and awards during this year's symposium.

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## Symposium Format

This virtual symposium will adopt a different format than our traditional meetings. All content will be streamed via Zoom, and a Discord channel will be available to facilitate real-time text chat between attendees. Registration is free (see below for details), but attendees must register in advance.

### Tentative agenda:

- **Invited speakers**
  - o David Ginger, Department of Chemistry, University of Washington, Seattle, WA
  - o Song Jin, Department of Chemistry, University of Wisconsin-Madison, WI
  - o David Harrington, Department of Chemistry, University of Victoria, BC
  - o Xin Zhang, Geochemistry, Pacific Northwest National Laboratory, Richland, WA
- **Plenary lecture, Thursday lunchtime**
  - o Kai-Mei Fu, Department of Physics, University of Washington, Seattle, WA
    - Topic: Quantum Computing
- **Plenary lecture, Friday lunchtime**
  - o Jeff Kissel, LIGO Hanford Observatory, Richland WA
    - Topic: The newest observations from LIGO
- **Student presentation competition**
  - o Thursday morning, Thursday afternoon, Friday morning, Friday afternoon (if needed)
  - o 15 minute time slots
  - o Undergraduate and graduate presentations judged separately
- **Presentation awards ceremony, Friday afternoon**
  - o Cash prizes to the top three graduate and undergraduate presentations

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## Call for Student Presentation Abstracts

Due to the Coronavirus issue, the only contributed talks will be student oral presentations at this meeting. Prepare one page abstracts (8 ½" x 11", with a 1" border using Times New Roman 12 font) suitable for reproduction with headings that include title (title case), authors' names (presenter underlined, note whether undergraduate or graduate), affiliations, and address in Microsoft Word. For your convenience, a template is available on our website, [www.pnwavs.org](http://www.pnwavs.org). **Submit abstracts by August 31, 2020, via email to the conference Chair, Zihua Zhu ([zihua.zhu@pnnl.gov](mailto:zihua.zhu@pnnl.gov)).**

Each student presentation will have a 15-minute time slot, with 10 minutes (strictly enforced) for the talk and 5 minutes for questions. Presenters will be expected to share their slides and audio from their computer/laptop over Zoom at their allotted presentation time. Streaming video of the presenter is optional but encouraged. We will hold a "dry run" on Tuesday, Sept. 22 to provide final details on the logistics of the virtual format and allow all presenters a chance to test their presentation setup. In addition, we ask that presenters email a copy of their presentation to the Conference chair ([zihua.zhu@pnnl.gov](mailto:zihua.zhu@pnnl.gov)) to serve as a backup.

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## Topics

Various vacuum tools have been widely used in many fields. As an interdisciplinary, professional Society, AVS supports professionals involved in a variety of disciplines - chemistry, physics, biology, mathematics, and all engineering disciplines, through common interests related to basic science, technology development, and commercialization of materials, interfaces, and processing. Examples include but are not limited to:

### Nanomaterials Preparation and Properties

- Synthesis (such as CVD, solution, vacuum)
- Electronic, magnetic, optical, thermal properties
- Quantum sciences
- Applications

### Thin Film Deposition and Characterization

- Metals, semiconductors, and insulators
- Electronic, magnetic, and multiferroic properties
- Epitaxial superlattices and interfaces
- Organic films and self-assembled monolayers
- Advanced thin film characterization techniques

### Biomaterials and Biological Systems

- Innovative surface analysis methods in bio-interfacial systems
- Materials in biological systems
- Protein-surface, cell-surface and microbial-surface interactions
- Biosensor, biossay and biotechnology interfaces
- Biology at the nanoscale and imaging modalities
- Colloidal, particle and biomembrane systems

### Environmental Science and Applications

- Environmental interfaces and ambient surfaces
- *In-operando* studies

### Surface Science and Catalysis

- Surface structure
- Surface reconstructions
- Interface chemistry
- Physisorption and chemisorption
- Catalytic processes

### Energy Materials

- Solar harvesting materials
- Hydrogen storage and generation
- Batteries and ultracapacitors
- Fuel Cells

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## Student Awards

There will be a student presentation competition for undergraduate and graduate students. If you wish to participate in the competition, please indicate the level (undergraduate or graduate) on your abstract and show it in the first presentation slide.

A cash award of \$500 plus \$500 towards expenses to attend the International AVS Symposium will be given to the winner of the graduate competition. A cash award of \$250 will be given to the winner of the undergraduate competition. Cash awards will also be given to the 2nd and 3rd place winners from both competitions.

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## Registration

Registration is free, but all attendees must register in advance. The online registration will be available at [www.pnwavs.org](http://www.pnwavs.org). If you have any questions about registration, please contact **Becky Ford** by email ( [becky.ford@pnnl.gov](mailto:becky.ford@pnnl.gov) ) or phone at 509-372-4977

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## Conference Committee

### Conference Chair

Zihua Zhu, Pacific Northwest National Lab, [Zihua.zhu@pnnl.gov](mailto:Zihua.zhu@pnnl.gov)

### Program Committee

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### Local Arrangements and Coordination of Virtual Meeting

Becky Ford, Pacific Northwest National Lab, [becky.ford@pnnl.gov](mailto:becky.ford@pnnl.gov)