

**2018 WEEKLY BULLETIN**  
**DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY**  
**EVANSTON, ILLINOIS**

January 7, 2019

*For full schedule, including Center events, please see the Department Calendar:*  
<http://www.chemistry.northwestern.edu/events/calendar.html>

Friday January 11<sup>th</sup>:

*Department of Chemistry Colloquium:*  
*Natalia Shustova, University of South Carolina*  
Tech LR3  
4:00-5:00pm

**Arrivals**

Julie Fenton joined the Dichtel Group  
Michael Mara joined the Chen Group  
Insub Jung joined the Odom Group  
Benjamin Partridge joined the Mirkin Group  
Shuo Wan joined the Mirkin Group

**BIP**

BIP every Friday at 10:00am in Tech K140

**Opportunities**

**The Johns Hopkins Applied Physics Laboratory (JHU/APL)**, a national leader in scientific research and development is seeking two Postdoctoral Fellows in the Asymmetric Operations Department.

Are you:

- ... interested in making critical contributions to critical challenges?
- ... passionate about applying your Chemistry knowledge and experience toward solving the country's toughest national security challenges?
- ... searching for an engaging career with an employer that prioritizes innovation and collaboration?

If so, we would like to hear from you. We are seeking a Postdoctoral Fellow with experience in developing tool, techniques, and methods for performing chemical detection and analysis (Requisition # 18830) and a Postdoctoral Fellow with experience in synthetic and reactive chemistry (Requisition #18923).

Be a part of a diverse team of scientists at The Johns Hopkins University Applied Physics Laboratory (APL). APL is a national leader in scientific research and development, and provides our nation with cutting-edge solutions to solve critical challenges of national importance.

Learn more and apply at [www.jhuapl.edu](http://www.jhuapl.edu)

**Pacific Northwest National Lab** is accepting applications for a Chemist. As a researcher in the Catalysis Science group, you will join a talented, multi-investigator team to explore the molecular-level basis for determining kinetic and thermodynamic parameters for chemical transformations important for the next generation of materials to store energy in chemical bonds. You will work closely with prominent researchers as you develop a line of experimental research, working to understand the physicochemical properties that control the uptake and release of hydrogen from materials ranging from physisorption to chemisorption. You will also help to develop novel experimental methods to better understand fundamental aspects of materials and catalyst design, synthesis, and utilization.

If you are a researcher ready to test your talents and training in the study of chemical transformations and hone your skills at a national laboratory widely recognized for its work in the physical sciences, we want to connect with you. Will conduct independent research and work on project team assignments, including the following responsibilities:

- Lead manuscript development and maintain a strong overall publication record in the peer-reviewed scientific literature.
- Interact, communicate, and problem solve with a diverse team of research staff within the Catalysis Science, PSD, and across PNNL.
- Present research at technical conferences and project/program review meetings.
- Participate in the development of research proposals.

#### Minimum Qualifications

BS/BA with 2 years of experience; MS/MS with 0 years of experience; PhD with 0 years of experience

#### Preferred Qualifications

- Ph.D. in Chemistry, Chemical Engineering, Materials Sciences or related field
- Training in and aptitude for thermodynamics and kinetics
- Strong verbal and written communications skills
- Knowledge of/experience with multi-method experimental and analytical characterization of liquids, solids or solid interfaces with aqueous solutions and solid interfaces with gases for the purpose of understanding chemical reactions, thermodynamics and kinetics
- Proficiency in wet chemical analytics, solution preparation and handling, design and execution of batch and/or mixed flow reactor experiments
- A background in one or more of the following techniques to determine both thermodynamic and kinetic parameters: solid state and solution phase nuclear magnetic resonance spectroscopy, X-ray diffraction, XAFS, Raman and/or IR vibrational spectroscopies, neutron scattering, reaction calorimetry, pressure-composition-temperature (PCT), or temperature-programmed desorption-mass spectroscopy
- A functional grasp of thermodynamic and kinetic concepts to determine mechanisms of chemical transformations
- The ability to adapt, refine, or innovate experimental tools as needed

#### Equal Employment Opportunity

Battelle Memorial Institute (BMI) at Pacific Northwest National Laboratory (PNNL) is an Affirmative Action/Equal Opportunity Employer and supports diversity in the workplace. All employment decisions are made without regard to race, color, religion, sex, national origin, age, disability, veteran status, marital or family status, sexual orientation, gender identity, or genetic information. All BMI staff must be able to demonstrate the legal right to work in the United States. BMI is an E-Verify employer. Learn more at [www.jobs.pnnl.gov](http://www.jobs.pnnl.gov)

**Cleveland Clinic** A postdoctoral fellowship position supported by the National Institutes of Health and the Prostate Cancer Foundation are available in the laboratory of Dr. Nima Sharifi at the Cleveland Clinic. Our laboratory is focused on metabolic and molecular mechanisms of androgen synthesis and androgen receptor (AR) gain-of-function that lead to resistance to hormonal therapy.

Specific areas include:

- 1) Metabolic and genetic changes required for hormone therapy resistance in prostate cancer and tumor progression
- 2) Clinical validation in patients and clinical trials utilizing innovative approaches
- 3) Animal models of advanced prostate cancer for translational and therapeutic studies
- 4) Identifying targets for the development of new pharmacologic therapies

We discovered the first example of a gain-of-function in a steroid-synthesizing enzyme that enables prostate cancer resistance to hormonal therapy (Chang, et al. *Cell*. 2013 154(5):1074-1084) and that we have shown in a predictive biomarker of poor outcomes after hormonal therapy (Hearn, et al. *Lancet Oncol*. 2016 17(10):1435-44; Hearn, et al. *JAMA Oncol*. 2018 Apr 1;4(4):558-562). We are current evaluating this biomarker in a clinical trial and are pursuing similar mechanisms and developing new treatment modalities based on these discoveries.

We recently also discovered that abiraterone works by conversion to a more active steroidal metabolite (Li, et al. *Nature*. 2015 523(7560):347-51), that metabolism is pharmacologically modifiable to optimize therapy (Li, et al. *Nature*. 2016 533(7604):547-51), that this is a class effect of steroidal androgen synthesis inhibitors (Alyamani, et al. *Cell Chemical Biology*. 2017 24, 1-8, July 20) and genetic determination of metabolite generation (Alyamani, et al. *J Clin Invest*. 2018 Aug 1;128(8):3333-3340).

The position will provide a unique and multidisciplinary exposure to tumor metabolism, molecular oncology, drug development and clinical trials. Further details are available at the following link:

<https://www.lerner.ccf.org/cancerbio/sharifi/#lab>

Candidates should hold a doctoral degree with a background in molecular biology, chemistry, metabolism or cancer biology. Candidates must have proficiency in verbal and written English. Candidates with an interest in the position should send their CV and contact information for 3 references to:

Nima Sharifi, M.D.

Kendrick Family Chair for Prostate Cancer Research

[casalek@ccf.org](mailto:casalek@ccf.org)

**The Department of Chemistry at the University of Wyoming** invites applications for an extended term Academic Professional Lecturer (APL) in analytical and physical chemistry. The successful candidate will have a 1+1 teaching load in general chemistry and will manage the undergraduate analytical and physical chemistry laboratories. The exact responsibilities for the two teaching laboratories will differ slightly but typically involve experiment development, purchasing supplies, weekly laboratory setup, managing teaching assistants including weekly meetings, composing and updating laboratory manuals, instrument maintenance, and general maintenance of the laboratory space. The successful applicant will also be required to contribute to services at the departmental, college and university levels, as well as participate in student advising and divisional meetings as needed.

Review of applications will begin January 15, 2019 and continue until suitable candidates are identified. The position will start Fall 2019 and will be filled at the Assistant APL level (6 year renewable terms via 9-month appointments).

The University of Wyoming invites diverse applicants to consider our employment opportunities. We are also especially interested in candidates who have experience working with diverse populations and/or diverse initiatives. Some of the teaching laboratories the successful candidate will be involved with are located in the recently completed state-of-the-art Enzi Undergraduate Laboratory Facility (<http://www.uwyo.edu/chemistry/building/>). In addition, we anticipate the chosen applicant to have new opportunities for modernizing the senior level analytical and physical teaching laboratories as part of the

Science Initiative program (<http://www.uwyo.edu/science-initiative/>) that is currently underway at the university.

*Minimum Qualifications:*

- Ph.D. or equivalent in chemistry or a closely related field of study
- Ability to maintain safe and clean teaching and instrumental laboratory environment
- Ability to effectively present information (both verbal and written) to students, university staff and faculty

*Desired Qualifications:*

- Teaching experience at the undergraduate level
- A strong understanding of principles relevant to quantitative chemical analysis, instrumental methods, quantum mechanics, thermodynamics and spectroscopy
- A strong background in practical laboratory operations relevant to an undergraduate analytical and physical teaching laboratory. This includes experience with operation, troubleshooting and basic repair of instrumentation such as spectrophotometer, electrochemical analyzer, ICP, GC, LASER, STM/AFM, EPR etc.

*Required Materials:*

Complete the online application and upload as one document: a cover letter, a CV listing relevant analytical/physical laboratory experience, graduate level analytical/physical coursework, any teaching experience and include a statement of teaching philosophy. Additionally, applicants should also arrange for three letters of recommendation to be submitted on their behalf to [chemistry@uwyo.edu](mailto:chemistry@uwyo.edu). The online application can be completed at

[https://uwyo.taleo.net/careersection/00\\_ex/jobdetail.ftl?job=18000017&tz=GMT-07%3A00](https://uwyo.taleo.net/careersection/00_ex/jobdetail.ftl?job=18000017&tz=GMT-07%3A00)