

**2018 WEEKLY BULLETIN**  
**DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY**  
**EVANSTON, ILLINOIS**  
**February 4, 2019**

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

Tuesday February 5<sup>th</sup>:            *Faculty Lunch Seminar: Mike Wasielewski*  
Tech K140  
12:00-1:00pm

Friday February 8<sup>th</sup>:            *Department of Chemistry Colloquium:*  
*Ive Hermans, University of Wisconsin-Madison*  
Tech LR3  
4:00-5:00pm

**Announcements**

**Young Scientist Seminar Series:**

**February 5, 1:30 pm Ryan 4003:** Dr. Katlyn Meier, Stanford University  
*Spectroscopic characterization of unique iron and copper active sites in biology*

**February 6, 11:00 am Ryan 4003:** Dr. Amy Weeks, University of California, San Francisco  
*New chemoenzymatic tools for dissecting proteolytic signaling pathways*

**February 11, 1:30 pm Ryan 4003:** Dr. Weixin Tang, The Broad Institute and Harvard University  
*From peptide antibiotics to CRISPR-mediated synthetic memories: Tools from the microbial arsenal*

**February 14, 2:00 pm Ryan 4003:** Dr. Roel Tempelaar, Columbia University  
*How electron-vibrational coupling dominates natural and artificial light-harvesting*

**Resume/CV Workshop:** On February 6<sup>th</sup> Elysse Longiotti, Assistant Director of Career Management at NU will be available for walk-in advising hours specific to resume writing in K140 from 9-11am. This is open to all Chemistry Postdocs and Graduate Students.

**Arrivals**

Bryon Drown joined the Kelleher Group  
Suzanne Neidhart joined the Schatz Group

**BIP**

BIP every Friday at 10:00am in Tech K140

## Opportunities

**A Synthetic Organic Medicinal Chemistry Postdoctoral position** available in the Lapinsky lab (<http://www.duq.edu/academics/faculty/david-lapinsky>) in the Division of Pharmaceutical Sciences at Duquesne University in Pittsburgh, PA (<http://www.duq.edu/>). The position is open immediately, with start dates through late 2019 being given consideration.

The Postdoc will address the major theme in the lab of developing chemical probes for target identification of hit compounds originating from phenotypic screening campaigns.

What we do: Our recent activities are summarized on the website:  
<http://www.duq.edu/academics/faculty/david-lapinsky>

The interested candidate:

- must hold a Ph.D. in organic or medicinal chemistry, or a related field (e.g., chemical biology).
- must have strong expertise in organic synthesis, with a publication record demonstrating independence in research focus
- must have the ability to communicate clearly in writing, as well as verbally with a diverse set of collaborators
- must have a strong team spirit and excellent interpersonal skills
- must have excellent synthetic organic chemistry experience, literature search skills, and be able to derive the best routes for organic syntheses; additionally, the candidate should be knowledgeable in analytical methods of organic chemistry (e.g., NMR, MS, chromatography, etc.)

Eligibility: Completion of a Ph.D. is required by start date.

How to apply: Applications will be accepted immediately and candidates will be considered until the position is filled. To be considered, all applicants must submit a cover letter, CV, a one-page "Research Statement" describing research experience and how this aligns with the focus of the Lapinsky group, and the names/phone numbers of three references. A single PDF document should be sent to Dr. David Lapinsky ([lapinskyd@duq.edu](mailto:lapinskyd@duq.edu)).

Salary will be commensurate with accomplishment, fit, and experience.

The environment: Located in Pittsburgh, Duquesne University provides a rich intellectual environment and cutting-edge facilities for its researchers, who conduct studies at the forefront of basic biomedical science, drug discovery, and technology development.

**UES, Inc in Dayton, Ohio** has an opportunity available for a research scientist to join our team working with the 711th Human Performance Wing at Wright Patterson Air Force Base. This position will support research in the area of sensor development related to the selection of recognition elements (peptides and nucleic acids) using high throughput instrumentation and their integration in different sensor platforms. Experience in the synthesis and characterization of nanomaterials and their use in assay development is required, as well as experience with handling biomaterials (DNA, RNA, etc.). Knowledge of techniques to select DNA and peptides recognition elements is beneficial, but not essential. Some of the primary functions for this role will include:

- Conducting lab experiments related to selection of recognition elements
- Characterization of binding affinity and integration of binders and sensors

- Supporting collaborations with external partners
- Presentations of results at meetings and conferences

#### Requirements

- Ph.D. in chemistry, biochemistry, nanotechnology or a related discipline is required
- Proficiency with general chemistry and biochemistry laboratory techniques is required
- Experience with nucleic acid and peptides binding, synthesis, and characterization of nanomaterials is required
- Knowledge of sample preparation techniques for sensor systems is desired
- This position will require strong verbal and written communication skills and the ability to work in a multidisciplinary team environment
- This position is working within a government facility and requires U.S. Citizenship

#### Additional Information

UES, Inc. is an innovative science and technology company providing customers with superior research and development expertise since its inception in 1973. Our long-term success is a direct result of a strong commitment to the success of our employees. We look forward to reviewing your application.

UES is firmly committed to Equal Employment Opportunity (EEO) and prohibits employment discrimination for employees and applicants based on age, race, color, pregnancy, gender, gender identity, sexual orientation, national origin, religion, marital status, citizenship, or because he or she is an individual with a disability, protected veteran or other status protected by federal, state and local laws.

**Argonne National Laboratory/Solar Energy Conversion Group** is accepting applications for a postdoctoral appointee position. Under the guidance of a supervisor, conduct fundamental research on solar energy conversion in natural photosynthetic systems and design biohybrid complexes for solar-driven fuels production. Research includes protein bioinorganic and biochemistry techniques, the development of methods to augment native and modified photosynthetic protein frameworks with abiotic cofactors, and the characterization of structure-function relationships in hybrid assemblies using a range of spectroscopic techniques.

Participates in protein expression, isolation, and characterization. Develops bioinorganic methods for protein modification enabling the insertion of abiotic cofactors into photosynthetic protein frameworks. Characterizes the structure, electron transfer properties, and catalytic function of native protein-protein interactions and hybrid assemblies using a range of biophysical spectroscopic techniques. Analyzes data, prepares manuscripts for submission to peer-reviewed publications, and makes presentations at scientific meetings. Maintains comprehensive knowledge of pertinent literature. Develops new ideas, concepts, and/or research proposals.

#### Position Requirements:

Considerable knowledge of and experimental expertise in one or more of the following areas: Protein isolation, protein modification, protein function characterization, protein cofactor characterization, protein structure characterization.

Good interpersonal, verbal, and written communication skills. Good skill in data processing, evaluation, and interpretation. Good skill in working in an interdisciplinary research team setting.

Some knowledge of and experimental expertise in protein design and expression using recombinant DNA and microbial protein expression techniques, organic/inorganic chemistry, biophysics, optical and EPR spectroscopy.

This level of knowledge is typically achieved through a formal education in bioinorganic chemistry, biochemistry, or biophysical chemistry or related disciplines at the Ph.D. degree level with 0 to 3 years of

experience or equivalent in the scientific application of this knowledge and practical laboratory experience. <https://blogs.anl.gov/solar-energy/>

Please contact Supervisor Lisa M. Utschig directly for more information: [utschig@anl.gov](mailto:utschig@anl.gov)  
<https://www.anl.gov/profile/lisa-m-utschigjohnson>  
Position open immediately!

**Stepan Company** is accepting applications for a Research Chemist. Stepan is a \$2 Billion global manufacturer of specialty chemicals headquartered in Northfield, Illinois United States and located throughout North and South America, Europe and Asia. Founded in 1932, we provide innovative chemical solutions for a cleaner, healthier, more energy-efficient world.

The Research Chemist position (#02653) provides organic chemistry knowledge and synthesis expertise to the execution of both short and long term strategic projects for the company and based in the Chicago metropolitan area (Northfield). The Research Chemist will conduct synthesis, chemistry development, and preliminary process research to enable the evaluation of new products and new processes relevant to our Business Units and Corporate Strategies. The Research Chemist will develop initial business cases (white papers) for long term initiatives to help populate the innovation portfolio while collaborating between various functional groups to enable the project's success.

#### Qualifications

Proven track record of leadership across multiple teams and demonstrated independence to achieve results. Broad experience in the synthesis, purification, and analytical characterization of organic compounds. Experience in business development, material science, surfactant synthesis, and/or colloid-interfacial science is beneficial but not required.

#### REQUIRED LEVEL OF EDUCATION:

Ph.D or MS + >4-5 years, or BS Chemistry + >7-8 yrs.

Apply Here:

<https://stepan.taleo.net/careersection/2/jobdetail.ftl?job=02653&tz=GMT-06%3A00>

Or navigate to [Stepan.com/Careers](http://Stepan.com/Careers) then keyword search for 02653

**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)