

**2015 WEEKLY BULLETIN**  
**DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY**  
**EVANSTON, ILLINOIS**  
**April 20, 2015**

Tuesday April 21<sup>st</sup>:                    *3<sup>rd</sup> Year Organic Seminar: Mary Upshur*  
Ryan 4003  
11:00am – 12:00pm

*Faculty Lunch Seminar: Rick Silverman*  
Tech K140  
12:00 – 1:00pm

Friday April 24<sup>th</sup>:                    *Chemistry Colloquium: Tobias Ritter*  
Tech LR3  
4:00 – 5:00pm

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

### **BIP**

Meets every Friday at 2:45pm in Tech K140

### **Arrivals**

Tianfu Liu joined the Hupp/Farha Group  
Bharat Somireddy Venkata joined the Marks Group

### **Announcements**

**Kevin Zhao**, an undergraduate student in the Silverman group, won a poster presentation award at this year's Chicago Area Undergraduate Research Symposium (CAURS).

**The Innovation and New Ventures Office (INVO)** is piloting a new opportunity to help startups based on Northwestern technologies succeed at winning SBIR/STTR awards. Our first pilot program will take place in June 2015 on the Chicago campus and is open to those companies submitting SBIR/STTR applications to NIH for the September 2015 deadline. INVO has contracted an SBIR expert to provide one hour consulting sessions to a select number of applicants.

To be considered for this opportunity, please complete the [application](#) and email it to [Jeff Coney](#) by May 10, 2015.

### **Opportunities**

**University of Cambridge** invites applications for a PhD studentship to start in October 2015 to work in the Reisner group's Christian Doppler Laboratory at the University of Cambridge. The project will focus on developing the basic science for a chemical process that captures and stores the energy from sunlight

in a chemical fuel by a process known as artificial photosynthesis. The student will work in a collaborative, international and multi-disciplinary research environment ranging from synthetic molecular and materials chemistry to spectroscopy, electrochemistry, photocatalysis and engineering. Further information about the work of the Reisner group and the Christian Doppler Laboratory is available at: [www.reisner.ch.cam.ac.uk/](http://www.reisner.ch.cam.ac.uk/)

Applicants should have (or expect to obtain) the equivalent of a UK first class honours degree (and preferably a Masters degree) in a scientific discipline that is relevant to the project. The studentship will cover tuition fees and an annual maintenance grant for EU nationals. Non-EU nationals will be considered only if they can cover the differential for overseas tuition fees.

Applications should include a cover letter, CV, detailed academic transcripts and the contact details for at least two academic referees, and should be sent by email to Mrs Inger Lomax, Reisner group administrator ([pa-reisner@ch.cam.ac.uk](mailto:pa-reisner@ch.cam.ac.uk)), to whom any informal enquiries can be addressed.

Please quote reference MA05730 in the subject line of your application and in any correspondence about this vacancy.

Closing date for this application: 5th May 2015

**University of Cambridge** Fixed-term: The funds for this post are available for 2 years in the first instance.

Applications are invited for a Postdoctoral Research Associate (PDRA) to work in the Reisner group's Christian Doppler Laboratory in the Department of Chemistry of the University of Cambridge. The project will focus on developing the basic science for a chemical process that captures and stores the energy from sunlight in a chemical fuel by a process known as artificial photosynthesis. The main task of the PDRA is to develop photo(electro)catalytic systems and to explore novel concepts for the solar conversion of CO<sub>2</sub> and H<sub>2</sub>O into fuels.

The PDRA should have strong experience in Catalysis, Synthetic Chemistry, Materials Chemistry, Electrochemistry, Photocatalysis and/or Device Engineering. The candidate should be ready to think outside of her/his formal field of training to fit in a creative, collaborative and dynamic research environment. A strong record of research productivity, as reflected in a substantial publication record in journals of high impact as well as excellent communication, management and English writing skills will be required. The successful candidate will also guide undergraduate and postgraduate students and oversee the research activity of the Christian Doppler Laboratory. More information about the Reisner group, including relevant publications, can be found at <http://www.reisner.ch.cam.ac.uk>

To apply online for this vacancy, please visit the University of Cambridge's Job Opportunities webpage on the following link: <http://www.jobs.cam.ac.uk/job/6623/>. Click on the 'Apply' button on the bottom of the page. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

Please ensure that you upload your Curriculum Vitae (CV), a covering letter and publications list in the Upload section of the online application. If you upload any additional documents that have not been requested, we will not be able to consider these as part of your application.

For queries regarding the post, please contact Mrs. Inger Lomax, administrator of the Reisner Group and the Christian Doppler Laboratory at [pa-reisner@ch.cam.ac.uk](mailto:pa-reisner@ch.cam.ac.uk)

Please quote reference MA05752 on your application and in any correspondence about this vacancy.

Closing date for this application: 5th May 2015

Salary: £28,695 --- £37,394

The Department holds an Athena SWAN bronze award for women in science, technology, engineering,

**The Naval Research Laboratory in Biomaterials and Bioengineering** is taking applications for the position of Postdoctoral Associate. The U.S. Naval Research Laboratory Bioenergy and Biofabrication Section is looking for a qualified Ph.D. candidate for a postdoctoral position in biomaterials and bioengineering. Qualified candidates need to hold a Ph.D. in bioengineering, materials science, chemistry, biology, physics or related field and be willing to work on interdisciplinary programs. Candidates with research experience in bioprinting, forming nanofiber polymers (including natural products and biopolymers), optics, laser processing, hydrogels for tissue scaffolding, micro- and nano-fabrication techniques for polymers/soft materials, or mammalian cell interfacing with materials will be given preference. Specific desired skills include 3D confocal microscopy, electrospinning, computer aided design (CAD)/computer aided manufacturing (CAM), biomaterial testing, 3D cell culture, stem cell differentiation, bioreactors and/or lab-on-a-chip cell culturing, microfluidics, laser system engineering as well as hydrogel formulation and synthesis.

NRL collaborates with the National Research Council (NRC) and the American Society of Engineering Education (ASEE) to place postdoctoral associates at the Lab. The starting salaries for these positions are approximately \$74,000/yr and require US citizenship or permanent resident status. Additional information about these opportunities can be found at:

<http://nrc58.nas.edu/RAPLab10/Opportunity/Opportunity.aspx?LabCode=64&ROPCD=641515&RONum=B5647>

AND

<http://nrl.asee.org/>

Please send CV's and interest letters to Dr. Brad Ringeisen (Head, Bioenergy and Biofabrication Section, NRL) at [Bradley.Ringeisen@nrl.navy.mil](mailto:Bradley.Ringeisen@nrl.navy.mil).

**The Chemistry Department at the Illinois Institute of Technology (IIT)** seeks candidates for a full-time lecturer position starting August 2015 (earlier start date is possible and negotiable). Applicants must have a Ph.D. in chemistry. The primary responsibilities include teaching undergraduate level courses especially general chemistry and organic chemistry. Additional responsibilities include oversight and maintenance of chemistry teaching laboratory and associated instruments. The initial appointment will be for one year with the possibility of a longer-term renewable contract based on performance and mutual satisfaction. Please visit <http://science.iit.edu/chemistry> for further information.

Applicants should send a cover letter, a curriculum vitae, a statement of teaching philosophy including experience with undergraduate lab oversight and instrument maintenance. All applications should be submitted electronically as a single pdf file to [chemistry\\_search@iit.edu](mailto:chemistry_search@iit.edu). Applicants should also arrange to have three letters of references submitted electronically to the same e-mail address or as a hard copy to: Professor Rong Wang, Department of Chemistry, Illinois Institute of Technology, Chicago, IL 60616.

Review of applications will begin immediately and will continue until the position is filled. IIT is an equal opportunity/affirmative action employer. Individuals from underrepresented groups in physical sciences are strongly encouraged to apply.

**Postdoctoral Fellow with the University of Missouri** Any candidate with experience in inorganic or organometallic chemistry would be considered, but candidates with backgrounds in *electrochemical catalysis* or *carbon dioxide activation* would be a plus. This position will likely be funded through a collaborative NSF funded Center for Carbon Capture and Conversions (C4) (<http://www.brown.edu/research/projects/capture-and-conversion-of-co2/>), though sufficient startup funds are available to continue the position even if this center doesn't get renewed in Phase II.

Professor Wesley Bernskoetter will be bringing a wonderful group of current personnel from Brown, but is looking to expand the program with talented new hires. The start date is flexible, but summer-early fall is preferred. Any candidates who might be interested in a position are encouraged to send a CV and cover letter to [wb36@brown.edu](mailto:wb36@brown.edu)

**Pfizer: Enzymologist/Biochemist, Oncology Research Unit (Non-PhD) La Jolla, California**

Visit [www.pfizercareers.com](http://www.pfizercareers.com) and apply to job ID 1008805

All over the world, Pfizer colleagues are working together to positively impact health for everyone, everywhere. Each position at Pfizer touches and contributes to the success of our business and our world. That's why, as one of the global leaders in the biopharmaceutical industry, Pfizer is committed to seeking out inspired new talent who share our core values and mission of making the world a healthier place.

**Role Description:**

Kinase signaling pathways regulate important cellular functions related to cancer tumorigenesis. The development of targeted kinase inhibitors has revolutionized the effective treatment of cancer patients. This Enzymologist/Biochemist will make important contributions to our molecular and biochemical understanding of these kinase signaling pathways through the development of robust, automated kinase activity assays and selectivity screens to drive the SAR (structure-activity relationship) of our kinase inhibitor projects. The scientist will provide high quality data that drives decisions on projects and seeks to better understand the kinase signaling pathways involved in cancer malignancies.

- Provides expertise to the development and implementation of robust, automated biochemical assays for enzyme targets, including kinase activity assays
- Generates high quality data and correlates in vitro and in vivo SAR for small molecule projects
- Develops and implements innovative biochemical selectivity screens for projects
- Works with CROs to effectively manage resources for project activities

**Qualifications**

- Bachelors of Science degree + 2-5 years of experience, or Masters of Science degree + 1-2 years of experience
- Biochemist with experience in kinase signaling and drug discovery. Must have strong technical abilities and skilled in performing biochemical analysis and the development of automated plate-based biochemical assays. Preference for candidates with pharmaceutical/biotech drug discovery experience in evaluating small-molecule inhibitors against enzyme targets, including protein kinases.

**Core Competencies:**

- Experienced in enzyme kinetics, enzyme assay development, good understanding of enzyme inhibition mechanisms and SAR for drug discovery. Preference for candidate with strong background in protein kinase drug discovery.
- Good track record for performing multiple robust, automated assays simultaneously
- Skilled in analysis of assay data and presenting data in written and oral reports

- Demonstrated ability to work and contribute to project teams in a collaborative environment
- Develop pathway analysis tools and methods to measure multiple cell metabolites simultaneously (LC-MS/MS, isotopes) and link enzymology (metabolic pathways, kinetics) & bioanalytical methods for molecular fingerprints (mass spectroscopy, kinetic studies, HPLC)
- Experienced in the design and development of robust, automated biochemical and functional assays. Strong biochemistry background, highly skilled in biochemical methods such as enzyme kinetics, protein characterization, tumor metabolism, and signal transduction with a good understanding of the link between cancer molecular targets, protein complexes, target modulation, and disease.
- Skilled in automated plate-based assay systems, liquid handling instruments, and detectors for various assay formats: spectrophotometric, fluorescence, radiometric. A demonstrated track record in the successful development and implementation of automated enzyme and biochemical assays for the screening of compounds, data analysis, and integrating of biochemical data into an understanding of the MOA of small molecule and biologic lead candidates.
- Established track record for the transfer and management of assays performed at CROs.

**Core Quantum Technologies** is seeking highly motivated PhD level engineers or scientists for a research scientist position in chemical and biomolecular engineering. CQT is a dynamic start-up focused on developing quantum dot nanoparticle reagents for liquid and solid tumor biopsy pathological imaging. CQT was founded in 2012 as an Ohio State University Technology Commercialization Company and is housed at the TechColumbus technology incubator in Columbus, OH. CQT was the winner of the 2012 Fisher Business School Business Plan Competition, participant in the NSF I-Corps Entrepreneurial Boot Camp, and recipient of Technology Validation Start-Up Funding from the Ohio Third Frontier Program. CQT has received funding from federal, state, and private equity sources.

The desired candidate should possess:

- A PhD or equivalent in Chemical Engineering, Biomedical Engineering, Chemistry or Physics
- Self-motivation and ability to work independently
- Quantum dot synthesis experience
- Experience with block-polymer self-assembly
- Experience with electrospray or electrospinning for high volume nanomanufacturing
- Experience with nanoparticle transfer from organic to aqueous phase
- Experience with nanoparticle physics and optical property characterization, i.e., absorbance, photoluminescence
- Experience with general nanoparticle characterization, i.e., transmission electron microscopy, dynamic light scattering, zeta potential measurement
- Experience with bioconjugation protocols for antibodies and avidin-biotin coupling
- Downstream processing experience for small volume products, including separation via centrifugation, dialysis, filtration
- Ability to establish GMP documentation and QC procedures for eventual FDA application

CQT is an equal opportunity employer and will not discriminate on the basis of race, color, sex, national origin, religion, disability, age, protected genetic information, sexual orientation or parental status. A compensation package of up to \$70K based on expertise, a healthcare allowance, and equity participation are available to qualified candidates. If interested, please contact Dr. Jessica Winter, [winter.63@osu.edu](mailto:winter.63@osu.edu). Core Quantum Technologies is located at 1275 Kinnear Road, Columbus, Ohio 43212

**The National Research Council of the National Academies** sponsors a number of awards for graduate, postdoctoral and senior researchers at [participating federal laboratories and affiliated institutions](#). These awards include generous stipends ranging from \$42,000 - \$80,000 per year for recent Ph.D. recipients, and higher for additional experience. [Graduate](#) entry level stipends begin at \$30,000. These awards provide the opportunity for recipients to do independent research in some of the best-equipped and staffed laboratories in the U.S. Research opportunities are open to U.S. citizens, permanent residents, and for some of the laboratories, foreign nationals.

Detailed program information, including online applications, instructions on [how to apply](#) and a [list of participating laboratories](#), is available on the NRC Research Associateship Programs [Website](#) (see link above).

Questions should be directed to the NRC at 202-334-2760 (phone) or [rap@nas.edu](mailto:rap@nas.edu). There are four annual review cycles.

Review Cycle: **February**; Opens December 1; Closes February 1

Review Cycle: **May**; Opens March 1; Closes May 1

Review Cycle: **August**; Opens June 1; Closes August 1

Review Cycle: **November**; Opens September 1; Closes November 1

Applicants should contact prospective Adviser(s) at the lab(s) prior to the application deadline to discuss their research interests and funding opportunities. More detailed information and an online application can be found at [www.nationalacademies.org/rap](http://www.nationalacademies.org/rap).