

2019 WEEKLY BULLETIN
DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS

April 22, 2019

For full schedule, including Center events, please see the Department Calendar:

<http://www.chemistry.northwestern.edu/events/calendar.html>

Tuesday April 23rd: *Faculty Lunch Seminar: Teri Odom*
Tech K140
12:00-1:00pm

Friday April 26th: *Department of Chemistry Colloquium:*
Professor Douglas Stephan, University of Toronto
Tech LR3
4:00-5:00pm

Arrivals

We did not have any new arrivals

BIP

BIP every Friday at 10:00 am in Tech K140

Opportunities

Pacific Northwest National Laboratory (PNNL) is a world-class research institution powered by a highly educated, diverse workforce committed to collaboration and work–life balance. Every year, scores of dynamic, driven postdocs come to PNNL to work with renowned researchers on meaningful science, innovations and outcomes for the U.S. Department of Energy and other sponsors; here is your chance to be one of them!

Contribute to PNNL's goals in catalysis as part of the Lab's Physical Sciences Division (PSD). As an experimental postdoctoral researcher in the Catalysis Science group, you will join a multi-investigator team to explore the design, synthesis, characterization, and mechanistic studies of molecular catalysts for the hydrogenation of CO₂, carboxylic acids, and related species. You will be mentored by prominent researchers, including Morris Bullock and Aaron Appel, as you develop your experimental research, seeking to understand design concepts for molecular catalysts, often in close collaboration with heterogeneous catalysis colleagues.

The Ideal Candidate

If you are interested in becoming a postdoctoral researcher in catalysis at a national laboratory widely recognized for its work in catalysis, we want to connect with you. Details are below; you do not need to meet all of the preferred qualifications to be considered.

What you will do:

- Conduct independent research and work on team assignments
- Lead manuscript development and maintain a strong overall publication record in the peer-reviewed scientific literature
- Interact, communicate, and solve problems with a diverse team of co-workers in the Catalysis Science group, PSD and across PNNL
- Present research at technical conferences and project review meetings

- Participate in the development of research proposals

PNNL is committed to diversity and inclusion; applications from women, minorities, individuals with disabilities, and veterans are strongly encouraged.

Email PNNL Recruiter Fred Bond at Fred.Bond@pnnl.gov for details, or share this opportunity with someone you know today.

About PNNL

At PNNL, you will find an exciting research environment and excellent benefits including health insurance, flexible work schedules and telework options. PNNL is located in eastern Washington State—the dry side of Washington known for its stellar outdoor recreation and affordable cost of living. The Lab’s campus is only a 45-minute flight (or ~3 hour drive) from Seattle or Portland, and is serviced by the convenient PSC airport, connected to 8 major hubs.

Minimum Qualifications

Candidates must have received a PhD within the past five years (60 months) or within the next 8 months from an accredited college or university.

Preferred Qualifications

Minimum Qualifications:

- Ph.D. in Chemistry
- Experience in experimental catalysis research

Preferred Qualifications:

- Strong verbal and written communications skills
- Synthetic and mechanistic organic/inorganic chemistry
- Synthesis and manipulation of air-sensitive materials (drybox and Schlenk techniques)
- Proficiency with a range of spectroscopic techniques, particularly NMR spectroscopy
- Functional knowledge of thermodynamic and kinetic concepts

Woodberry Forest School announces a search for a compelling, passionate and innovative Upper School Chemistry Instructor, to begin teaching in August of 2019. The preferred candidate has meaningful teaching experience in the chemistry classroom, and an advanced degree in Chemistry or related field in the sciences or engineering. The ability to teach an additional course in Biology, Physics, or Environmental Science is a plus, but is certainly not required. This person will be joining an already talented and stable science department and will be tasked with infusing the science department with expertise and excellence in chemistry. Creating opportunities to make chemistry exciting for the boys is paramount.

Woodberry Forest is a “physics-first” school. Students begin the science curriculum with Conceptual Physics, a required course for third formers (freshmen.) For students entering Woodberry in the third-form year, the normal sequence of courses is to take Conceptual Physics in the third form, Chemistry in the fourth form, and Biology in the fifth form — completing the required sequence. Sixth formers looking to enhance their science experience can take on Biology Research or Physics Research courses, or electives in engineering or environmental science. Boys who come to Woodberry in their fourth-form year, and who have taken biology in a previous school, will normally take chemistry as fourth formers and physics as fifth formers.

The Manning Family Science Building, opened in the Fall of 2012, was designed largely by Woodberry Forest Science Teachers. The building is one of the school’s more prominent buildings on campus, rising three stories above ground. It blends the school’s traditional red-brick-and-column style with modern glass expanses. Among the exterior instructional details are two greenhouses on the southern side of the building, one attached to each biology lab.

Woodberry’s physics first science curriculum inspired the arrangement of the classrooms and labs. The carpeted top floor hosts third formers learning about physics, the study of chemistry is housed one floor down, and then biology on the ground floor. The second floor of the building holds two chemistry classroom/laboratories, and other collaborative areas. Some of the collaborative spaces are enclosed and outfitted with mini-labs, conference tables, and white boards.

The Chemistry Instructor will teach three sections of chemistry and be comfortable with leading laboratory work. The school's weekly schedule offers a 3-course teaching load; one 45-minute class and two 90 min. blocks/week (for a total of 225 min./week). The school is contemplating a "3 course Plus" model to create collaborative teaching opportunities for faculty to work together on a science research course or an elective course. The 90 min. blocks taught across the department allow ample time to engage in hands-on classroom and laboratory activities. A familiarity with a Modeling teaching approach is attractive, but not required. The Science department has plentiful funding to promote the development of lab-centered inquiry and activities. The ideal candidate will be eager to contribute to an academically vibrant science department and school community.

All teachers at Woodberry Forest School are asked to advise 6-8 students. Teachers in their first year at the school are generally asked to advise 3-4 students. Other responsibilities will include dormitory duty, as almost all faculty reside on campus, which requires "on-duty" dormitory and study hall supervision one out of every nine days. Association and participation in the afternoon program, including coaching two of three seasons, and/or leading the Science Olympiad program, Debate or other extracurricular clubs/activities at the school, will be expected. As an all-boarding community, that embraces the power of meaningful relationships, the school holds three community seated dinners/week and an all school chapel service on Monday evenings.

Woodberry Forest School is an equal opportunity employer.

To Apply

If interested, please email a letter of interest and updated resume to Mr. Todd Gochman, Placement Associate, tgochman@carneysandoe.com or Ms. Seliat Dairo, Placement Counselor, seliat.dairo@carneysandoe.com

Please include "Woodberry Forest School- Chemistry Instructor" in the subject of your email. Please feel free and call (617) 933-3452 with any questions.

Oak Ridge National Laboratory, Coordination Chemist

Overview: We are seeking a research chemist with a strong background in coordination chemistry to investigate and apply principles of molecular-recognition and supramolecular chemistry to problems in separations for energy applications. The successful candidate will focus on fundamental questions related to thermodynamics and solution structure as also applied to the recovery and recycle of critical materials, desalination, carbon capture, environmental remediation, recycle of used nuclear fuel, treatment of waste, and sensing of trace contaminants. You'll also be deeply involved in developing new and exciting ideas for proposals and participating in the planning and execution of experimental chemistry within the context of a multidisciplinary ecosystem including specialists in theory and computations, organic synthesis, separations, thermodynamics, spectroscopy, X-ray and neutron scattering, and materials characterization. This position resides in the Chemical Separations Group in the Chemical Sciences Division, Physical Sciences Directorate at Oak Ridge National Laboratory (ORNL).

Major Duties/Responsibilities:

- Work with a diverse team of scientists seeking to advance the scientific understanding of coordination and supramolecular chemistry to achieve chemical recognition by design and to put this understanding to use in real-world applications
- Perform experiments to elucidate the thermodynamic and structural basis of molecular recognition manifested in crystallization, solvent extraction, ion exchange, membranes, and other methods to meet fundamental and applied project goals
- Take responsibility for operation of a separations laboratory and associated equilibration devices and analytical instrumentation
- Independently formulate research problems and design research strategies, working with computational chemists and experimentalists to guide the design of new receptors and characterize their separation properties

- Develop and lead new research directions and contribute to research proposals to compete for internal and external funding
- Train group postdocs, students, and visiting scholars in thermodynamic, solution-structure, and separations methodologies developed in the group
- Present and report research results and publish scientific results in peer-reviewed journals in a timely manner
- Ensure compliance with environment, safety, health and quality program requirements
- Maintain strong dedication to the implementation and perpetuation of values and ethics

Basic Qualifications:

A PhD in Chemistry or a closely related science discipline

Preferred Qualifications:

- A solid foundation in inorganic, physical, and analytical chemistry and in the principles of thermodynamics, solution structure, kinetics, and mechanism
- Expertise in coordination chemistry
- Experience in using at least one of the following techniques: solvent extraction, ion exchange, adsorption, membranes, or crystallization
- Working knowledge of basic instrumental techniques such as ICP-AES, ion chromatography, potentiometric titrimetry, and radiometric methods, as well as NMR, FTIR, and UV-vis spectroscopies
- Experience in X-ray spectroscopy (EXAFS), small-angle X-ray scattering (SAXS), or neutron scattering (SANS)
- Expertise in the chemistry of actinides, lanthanides, and fission products
- Excellent record of productive and creative research as demonstrated by publications in peer-reviewed journals
- Experience in proposal development and leading research projects
- Excellent written and oral communication skills and the ability to communicate to an international, scientific audience
- Motivated self-starter with the ability to work independently and to participate creatively in collaborative teams across the laboratory
- Ability to set priorities to accomplish multiple tasks within deadlines, and adapt to changing project needs

Special Requirement:

Please provide a list of publications when applying for this position. Three letters of reference are required and can be uploaded to your profile or emailed directly to PSDrecruit@ornl.gov. Please include the title of the position in the subject line.

Benefits at ORNL: UT-Battelle offers a quality benefits package, including a matching 401(k), contributory pension plan, paid vacation, and medical/dental plan options. Onsite amenities include a credit union, medical clinic, cafeteria, coffee stands, and fitness facilities.

Relocation: Moving can be overwhelming and expensive. UT-Battelle offers a generous relocation package to ease the transition process. Domestic and international relocation assistance is available for certain positions. If invited to interview, be sure to ask your Recruiter (Talent Acquisition Partner) for details.

For more information about our benefits, working here, and living here, visit the “About” tab at www.jobs.ornl.gov

This position will remain open for a minimum of 5 days after which it will close when a qualified candidate is identified and/or hired.

We accept Word (.doc, .docx), Adobe (unsecured .pdf), Rich Text Format (.rtf), and HTML (.htm, .html) up to 5MB in size. Resumes from third party vendors will not be accepted; these resumes will be deleted and the candidates submitted will not be considered for employment.

If you have trouble applying for a position, please email ORNLRecruiting@ornl.gov.

ORNL is an equal opportunity employer. All qualified applicants, including individuals with disabilities and protected veterans, are encouraged to apply. UT-Battelle is an E-Verify employer.

<https://career4.successfactors.com/sfcareer/jobreqcareer?jobId=883&company=utbattelleP&username=>

Lewis University invites applications for a full-time, tenure-track position at the Assistant or Associate professor level starting in August 2019. We seek candidates with expertise in Bio-inorganic Chemistry, with preference given to those with experience teaching at the undergraduate level. Minimum qualifications include a Ph.D. in Biochemistry or Chemistry with emphasis in bioinorganic chemistry by the time of the appointment.

Candidates for the position will be expected to teach at least 12 credit hours per semester while also pursuing and maintaining scholarly interests in the biochemical field within the undergraduate and masters level research focus of the department. Specific teaching assignments may include teaching general chemistry lecture/laboratory, inorganic chemistry sequence, biochemistry lecture and lab courses, and research area specific graduate courses as the department sees fit. The successful candidate must be committed to excellence and innovation in undergraduate and graduate teaching as well as active to department recruitment and community outreach initiatives. It is also expected that the candidate will develop a thriving research program with MS level and undergraduate students.

Lewis University

Located in the greater Chicago region, Lewis University is a comprehensive, Catholic university, where the traditions of liberal learning, values and preparation for professional work come together with a synergy that gives the university its educational identity and focus. Founded in 1932, Lewis is a dynamic, coeducational university offering more than 80 undergraduate majors and programs of study, 35 graduate programs, and two doctoral programs. Lewis is one of many schools sponsored by the De La Salle Christian Brothers, an international Roman Catholic teaching order.

Salary is negotiable and commensurate with skills and experience. Your total compensation goes beyond the number on your paycheck. Lewis University provides tuition benefits, health plans and retirement benefits that add to your bottom line. For additional information on Lewis as an institution, please see our website at <http://www.lewisu.edu>.

Minimum Qualifications PhD in Biochemistry or Chemistry with an emphasis in bio-inorganic chemistry by the time of appointment. The successful candidate must be committed to excellence and innovation in undergraduate and graduate teaching as well as active to department recruitment and community outreach initiatives.

Application Process To apply, please submit a cover letter, curriculum vitae, statement of teaching philosophy, proposed research plan, and three letters of reference (sent directly by your referees). The proposed research plan may be submitted under the "Other Documents" category. All materials should be submitted electronically via the application site. Review of applications will begin immediately and continue until the position is filled. For full consideration, interested applicants can view a full description of this position and apply online at <http://jobs.lewisu.edu/postings/4192>

Inspired by the University's Mission values of Wisdom, Knowledge, Justice, Fidelity and Association, the Lewis Community declares that we are a Sanctified Zone where people are committed to working to end racism, bias and prejudice by valuing diversity in a safe and nurturing environment. Lewis University,

sponsored by the De La Salle Christian Brothers, serves a diverse community and is committed to promoting diversity and inclusion on our campus as an equal opportunity employer.

We invite applications from individuals that embody a commitment to diversity. All qualified applicants will receive consideration for employment without regard to race, color, religion, gender, gender identity or expression, sexual orientation, national origin, genetics, disability, age, or veteran status and other protected status as required by applicable law. We are fully dedicated to providing opportunities for development of the whole person. To demonstrate this commitment, Loyola University wishes to build a culturally diverse workforce which strongly encourages applications from women, minorities, individuals with disabilities and veterans

Loyola University Chicago, Lecturer in Organic and Biological Chemistry (Department of Chemistry and Biochemistry) Loyola University Chicago (LUC), College of Arts and Sciences, Department of Chemistry and Biochemistry invites applications for a non-tenure-track position at the Lecturer rank in organic chemistry, beginning in Fall 2019. The Department offers Ph.D., M.S., and ACS-approved BS degrees. For more details about the department, visit <http://www.luc.edu/chemistry>.

The position involves instructing laboratory sections of Organic Chemistry in both semesters of the academic year, and Biochemistry in one semester. Candidates also will be required to supervise graduate student teaching assistants. Candidates for the position must demonstrate the potential for distinguished teaching and student mentorship or possess a record of such accomplishments.

Qualifications

Candidates holding a M.S. degree or higher in chemistry or in a closely related field are highly preferred. Candidates should have experience teaching undergraduate chemistry laboratories for students majoring in Chemistry, Biochemistry and Biology, and others who aspire to careers in the health sciences, and the ability to teach lecture courses in General Chemistry. The successful candidate will have a strong commitment to excellence in teaching. In addition, candidates also must be willing to support the mission of LUC and the goals of a Jesuit Catholic Education.

Candidates should submit a current Curriculum Vitae, a teaching statement, and a cover letter to www.careers.luc.edu. They also must provide the names and email addresses of three individuals prepared to speak to their professional qualifications for this position. Referees will not be contacted immediately but might be at subsequent points in the review process. Candidates may forward samples of materials related to teaching excellence to:

Chair of the Search Committee
Department of Chemistry and Biochemistry
Loyola University Chicago
1068 W. Sheridan Road
Chicago, Illinois 60660

Review of applications will begin in early spring 2019 and continue until the position is filled.
<https://www.careers.luc.edu/postings/10295>

The Science Team at the Illinois Mathematics and Science Academy® (IMSA) is seeking a full-time Chemistry instructor. The Science team delivers a program through which students develop collaborative inquiry skills, apply integrative critical thinking and engage in active research. We encourage individuals who enjoy making a difference in the lives of talented students to apply.

Successful candidates will have a master's or doctorate degree in Chemistry or related field and a record of demonstrated successful teaching. Preference will be given to those candidates with broad experience in Chemistry with a focus in Material Science.

This position fulfills the requirement for DFI (Diversifying Higher Education Faculty in Illinois) Fellows following completion of their academic program.

The internationally recognized Illinois Mathematics and Science Academy (IMSA) develops creative, ethical leaders in science, technology, engineering, and mathematics. As a teaching and learning laboratory created by the State of Illinois, IMSA enrolls academically talented Illinois students (grades 10-12) in its advanced, residential college preparatory program. It also serves thousands of educators and students in Illinois and beyond through innovative instructional programs that foster imagination and inquiry.

The successful candidate will be responsible for, but not limited to:

- Teaching a range of Chemistry and other science courses
- Guiding and tutoring students outside of class
- Participating in the department's curriculum and assessment development work
- Close collaboration with colleagues when teaching the same course and when working on departmental priorities
- Participating in all department and faculty meetings, faculty development programs, and community development days
 - Participating in non-teaching activities that support the department's and Academy's programs
- Participating in external professional organizations

The Required Qualifications For This Position Include

- A minimum of a Master's degree in Chemistry, or a related field
- Effective communication with students, staff, and parents
- Active participation in a collaborative team environment
- Engagement in reflective professional practice
- Excellent interpersonal skills for working in a team environment with the ability to function diplomatically and communicate effectively with colleagues, administrators, students, parents, and the public
 - An appreciation and understanding of working with diverse populations

Preferred Qualifications

- Demonstrated application of engineering principles in teaching
- Experience in curriculum design
- Demonstrated application of computational analysis, modeling or problem solving in teaching
- High school equivalent teaching experience

Salary And Benefits

Salary and benefits are commensurate with training and experience expected at this level of employment. The Illinois Mathematics and Science Academy offers an excellent comprehensive benefits package including health and retirement benefits. The State Universities Retirement System (SURS) is reciprocal with other Illinois public retirement systems such as the Teachers' Retirement Systems of Illinois (TRS) and the Illinois Municipal Retirement Fund (IMRF).

Application Process Applicants must submit a letter of interest, complete and current resume/CV, a statement of teaching philosophy, salary history, and three current professional references. Applications will be accepted and reviewed as received until the position is filled. We are seeking a diverse applicant pool. The Illinois Mathematics and Science Academy is an Equal Employment Opportunity Employer providing equal employment opportunities without regard to race, color, sex, age, religion or national

origin. This policy also includes the handicapped and all disabled Vietnam era veterans. IMSA utilizes only job-related criteria in making decisions concerning applicants and employees
More information can be found at www.imsa.edu

At Novartis, we are committed to training the next generation of scientific leaders. The Novartis Innovation Postdoctoral Fellowship offers aspiring drug hunters a unique opportunity to join our teams at the Novartis Institutes for BioMedical Research (NIBR), the innovation engine of Novartis. Mentored by NIBR scientific leaders, Innovation Fellows will gain first-hand experience in the design and development of breakthrough therapies and innovative technologies. We are looking for Innovation Fellows who will bring their scientific creativity and natural curiosity to tackle important therapeutic challenges. Join us as we reimagine medicine together.

Program highlights

- Program duration: 2-3 years
- Boot camp: Innovation Fellows will attend a fully immersive boot camp covering the fundamentals of drug discovery and development
- Mentorship & access to technology: Innovation Fellows will have access to NIBR state-of-the-art technology platforms and be mentored by selected NIBR scientific leaders
- Rotations: Innovation Fellows will benefit from a tailored rotation schedule in both scientific and business-related disciplines
- Fireside chats with local leaders in academia and industry
- Community: Innovation Fellows will join Discovery Fellows in our vibrant postdoctoral community with dedicated events, including our annual Research Day Symposium

Who are the Innovation Fellows?

- Early-career scientists, within 3 years of receiving their MD and/or PhD (students in their last 4 months of graduation are eligible to apply)
- All scientific and technical disciplines welcome (e.g. biology, biophysics, chemical biology, chemistry, computational and data sciences, engineering, and more)
- Strong publication track record or other scientific achievements
- Entrepreneurial mindset and boundless curiosity
- Dedicated to translating scientific discoveries into medicines that improve human health

How to Apply

- Please submit your CV and cover letter by May 1, 2019 for consideration. Include a potential area of unmet medical need where you believe you could make an impact.
- All applications will be evaluated by a review team comprised of discipline experts and drug hunters from NIBR.
- Candidates selected as finalists will be invited to our Cambridge, MA campus for an all-day interview in June 2019. New Innovation Fellows will start in September 2019 at our Cambridge site.

Apply (<https://www.novartis.com/careers/career-search/job-details/262871BR>)

If you have any questions, please contact us at nibr.postdoc@novartis.com.

Earli is currently seeking high-caliber non-viral nucleic acid Delivery Scientist / Bioengineer candidates.

Earli Inc. has a large mission: to detect and then cure cancer at its earliest stages, effortlessly and painlessly. In other words, we aim to make cancer a benign experience. Our science is based on a new method of detecting, localizing and then treating cancer, developed by Dr. Sam Gambhir, who runs

Stanford's Canary Center for Early Cancer Detection. Earli is starting what we believe will be a new era of "synthetic biomarkers." Rather than relying on hard-to-detect natural biomarkers in blood samples, Earli's technology *forces* cancer cells, if they exist, to produce non-human molecules they otherwise would not naturally make. As a result, such synthetic biomarkers are readily detectable and are easily quantified. The same platform can be used to localization and treatment. Other diseases beyond cancer, are potentially also diagnosable and treatable with this novel approach. Earli is financed by some of the best venture capital firms in Silicon Valley and China. We are currently based in the West Coast's prime biotech hub in South San Francisco at Johnson & Johnson's JLABS. More information can be found at www.earli.com

Who You Are

- You share our same sense of dedication, scientific passion and entrepreneurial spirit.
- You are technically gifted, with great hands on experience.
- You work well in a fast-paced and extremely focused startup environment.
- You are not only smart, but clever and constantly think outside the box.
- You are able to make logical decisions in an instant when there is little time to evaluate.
- You are a natural communicator and relationship builder.
- You stay calm under high pressure and stress.
- You have the ability to multi-task in a serious way, with an extreme attention to detail.
- You become a representative of the core DNA of the company through who you are.

Your Primary Responsibilities

The overarching mission of the Delivery Bioengineer is to solve one of the fundamental roadblocks to non-viral gene delivery: the development of novel synthetic materials that can deliver DNA to a broad range of human cells *in vivo* in a safe and efficacious manner. This is a challenging goal and requires a unique individual with an exceptionally strong and broad skillset in Biomaterials and Drug Delivery.

- Be a core contributor to Earli's internal efforts in developing multiple strategies for non-viral DNA delivery.
- Systematically design and use synthetic organic and polymer chemistry to create large, diverse libraries of polymer, dendrimer, and/or lipid materials with precise control over structure, molecular weight distributions, biodegradability, and biocompatibility.
- Perform purification and characterization of these synthetic components by GPC, HPLC, ESI-MS, MALDITOF MS, NMR as necessary.
- Develop strategies to surface-engineer nanoparticles\
- Formulate DNA nanoparticles and characterize complexation efficiency, particle size, surface charge, and ionization potential.
- With other Earli personnel, test the nanoparticles *in vitro* for cellular uptake, intra-cellular localization, and transfection efficiency across many disease-relevant cell types, including cancer cells, normal primary cells, and immune cells such as macrophages; and *in vivo* across a range of relevant mouse models.

Your Required Experience, Knowledge and Skills

- PhD Degree in Chemical Engineering, Bioengineering, Materials Science, or a closely related field, with at least 2 years of post-doctoral research experience
- 4-6 years or more of relevant experience in developing non-viral gene delivery materials, as evidenced by a strong publication record in high-impact journals.
- Development of polymeric and/or lipid-based drug delivery systems. A candidate with a strong background in synthetic chemistry is preferred.
- Physical characterization of formulated complexes including charge, size, encapsulation efficiency, stability etc.
- Must have experience with formulation of nucleic acids (either DNA, mRNA, or structured RNA).

- Ability to assess efficacy of formulated complexes in *in vitro* tissue culture models and/or *in vivo* tissues is essential.
- Strong verbal and written communication skills with the ability to present your results succinctly but precisely in team meetings and formal reports
- Managerial experience a plus but not required.

The LinkedIn post can be found here <https://www.linkedin.com/jobs/cap/view/1180098463/>. Candidates also email Dr. David Suhy, Chief Science Officer at Earli, here: david@earli.com.