

2018 WEEKLY BULLETIN
DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS
November 19, 2018

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

Arrivals

Lizhen Huang joined the Facchetti Group

BIP

BIP every Friday at 10:00am in Tech K140

Opportunities

X-ray Crystallography Facility at the University of California, San Diego has opening for one (possibly two) postdoc positions. The position is for a full-time crystallography associate who will integrate into the day-to-day operations of the facility. The duties of the position will ultimately include:

- 1) Data acquisition and structure solution on a range of single-crystal and powder samples from academic and industrial partners.
- 2) Training, support and oversight of UC San Diego students and postdocs for data acquisition and structure solution.
- 3) Routine and advanced maintenance of single-crystal and powder X-ray diffraction instrumentation and computing facilities.
- 4) Crystal-growth experiments for organic, inorganic and pharmaceutical compounds.

The X-ray Crystallography Facility at UC San Diego is a state-of-the art instrumentation facility with full-time technical staff and faculty oversight. The facility currently features nine X-ray diffraction instruments for high-throughput analysis of small-molecule, macro-molecule and powder samples. Diffraction capabilities are derived from a combination of Mo, Cu and Ga sealed-tube, rotating-anode and metal-jet sources, as well as cutting-edge X-ray detectors. The facility also maintains a robust user-focused training program for UC San Diego students and postdocs, and visitors from domestic and international institutions.

The ideal candidates should have experience with single-crystal and/or powder diffraction data acquisition and structure solution. Experience with the maintenance of scientific/research instrumentation, and/or proficiency in the upkeep and manipulation of advanced electronics, is also highly desirable. Experience with Rietveld or Multipole refinement is a plus. We intend for this opportunity to be especially appealing to individuals who desire to become crystallography facility directors as a career path.

Interested candidates should forward a cover letter, CV and the names of at least two professional references via email to Prof. Joshua Figueroa (jsfig@ucsd.edu). Female candidates and individuals with under-represented persons status are especially encouraged to apply. Applications will be reviewed as they are received

The University of Delaware is seeking applications for several open rank tenure-track professorships as part of a multiyear hiring effort in the area of biopharmaceutical discovery. Applicants must have a doctoral or equivalent degree, documented evidence of high quality research productivity, and a strong commitment to both research and teaching. Applicants with research interests broadly relevant to biopharmaceutical discovery that span chemistry (e.g. chemoproteomics, molecular probes for biological imaging, metabolomics); biology (e.g. diseases of immune or tissue dysfunction) and engineering (e.g. synthetic biology, protein design, metabolic engineering) will be considered. Successful applicants could have faculty appointments in one or more of several departments, including Chemistry and Biochemistry, Biological Sciences, Chemical and Biomolecular Engineering, and Psychological and Brain Sciences.

Successful candidates are expected to: 1) develop and maintain a nationally recognized, externally funded interdisciplinary research program; 2) train BS, MS and PhD students; and 3) teach undergraduate and graduate level courses. Successful candidates may synergize with current university research efforts in immunology, chemical biology, protein engineering, synthetic biology, neuroscience, molecular mechanisms underlying human disease, genomics/metagenomics, microbiology, cellular and developmental biology, cancer biology, chemoproteomics, soft materials, cardiovascular biology, ophthalmology, musculoskeletal biology, and/or tissue engineering. Faculty will be provided with a competitive, 'hard-funded' salary and start-up package.

The University of Delaware, which is centrally located on the I-95 corridor between NYC/Philadelphia and Baltimore/Washington DC, has outstanding facilities and support, including a vibrant collaborative research and teaching community. The research environment is further strengthened by NIH-funded INBRE and Center for Translational Research Awards as well as several NIH-funded COBRE awards, including one focused on chemical biology (<https://sites.udel.edu/cobrediscovery/>). The University of Delaware administers several graduate programs with emphases in these areas including Chemical and Biomolecular Engineering, Chemistry and Biochemistry, Biological Sciences, Biomechanics and Movement Science, Materials Science, and Psychological and Brain Sciences. UD also hosts one of the longest running Chemistry-Biology Interface T32 training grants in the nation, which trains students in applying chemical approaches to life sciences research questions. The University offers a highly interactive multidisciplinary scientific environment with state-of-the-art core facilities in bioimaging, fMRI, genomics, bioinformatics, proteomics, mass spectrometry, nanofabrication, materials characterization, NMR, and small molecule X-ray crystallography (<http://corefacilities.dbi.udel.edu/>). UD also maintains robust clinical partnerships with Nemours/Al duPont Hospital for Children, which just built a clinical and research PET imaging facility, and The Helen F. Graham Cancer Center and Research Institute at Christiana Care. UD is also the host institution for the US Department of Commerce funded National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL; <https://niimbl.org/index.php>).

Using the Interfolio® online system at UD, <http://apply.interfolio.com/54714>, applicant should submit a) a cover letter; b) a statement of current and long-term research plans; c) a statement of teaching philosophy; d) a curriculum vitae; and e) three contact references. Any questions can be directed to Susan Cheadle (scheadle@udel.edu) or to Dr. Joseph Fox (jmfox@udel.edu), Chair, Faculty Search Committee, Biopharmaceutical Discovery Cluster Hire University of Delaware, Newark, DE 19716. Review of applications will begin on receipt and continue until November 7, 2018 for full consideration. Positions will remain open until filled.

Ball State University Department of Chemistry is accepting applications for a tenure-track Assistant Professor of Chemistry (Biochemistry)

We are a department that has a long history of focusing our efforts on giving our undergraduate and graduate students a high-quality learning experience in both the classroom and the laboratory settings. We incorporate problem-solving sessions into many courses, have faculty supervision in all laboratories,

encourage cooperative learning, and provide numerous opportunities for both formal and informal student-faculty interactions. We take great pride in our faculty-student interactions.

Benefits and Community

<https://cms.bsu.edu/About/AdministrativeOffices/HumanResources/Jobs/Benefits-and-Community/Faculty>

\ Ball State University Department of Chemistry is seeking applications for a full-time tenure-track faculty position available August 16, 2019 in areas of biochemistry including but not limited to bioorganic, bioinorganic, biophysics and chemical biology. Major responsibilities include teaching undergraduate and graduate classes in the area of biochemistry as well as introductory chemistry courses. The faculty member will also develop an active research program in the area of biochemistry which complements the department's existing research programs and can be externally funded.

Minimum Qualifications: PhD in chemistry, biochemistry or closely related area from an accredited college or university; at least one month of postdoctoral research experience, including but not limited to academic, government or industrial research at time of application; evidence of potential for excellence in teaching and in research demonstrated by at least one semester of part-time or full-time college teaching or teaching assistant experience gained concurrently or at any time, and at least two refereed publications either in print or accepted for publication.

Preferred Qualifications : Additional teaching & postdoctoral experience; demonstrated potential for excellence in teaching and research; research interests that focus on an area which enhances the department's existing research programs.

<https://bsu.peopleadmin.com/postings/15379>

Ball State University Department of Chemistry is accepting applications for a tenure-track Assistant Professor of Chemistry (Organic)

Additional Information

We are a department that has a long history of focusing our efforts on giving our undergraduate and graduate students a high-quality learning experience in both the classroom and the laboratory settings. We incorporate problem-solving sessions into many courses, have faculty supervision in all laboratories, encourage cooperative learning, and provide numerous opportunities for both formal and informal student-faculty interactions. We take great pride in our faculty-student interactions.

Benefits and Community

<https://cms.bsu.edu/About/AdministrativeOffices/HumanResources/Jobs/Benefits-and-Community/Faculty>

Description

Ball State University Department of Chemistry is seeking applications for a full-time tenure-track faculty position available August 16, 2019 in areas of organic, including but not limited to synthetic organic, physical organic, bioorganic, organometallic and polymers. The faculty member will teach undergraduate and graduate classes in the area of organic chemistry as well as introductory chemistry courses. The faculty member will also develop an active research program in the area of organic chemistry which compliments the department's existing research programs and can be externally funded.

Minimum Qualifications: PhD in chemistry or closely related area from an accredited college or university; at least one month of postdoctoral research experience, including but not limited to academic, government or industrial research at time of application; evidence of potential for excellence in teaching and research demonstrated by at least one semester of part-time or full-time college teaching or teaching assistant experience gained concurrently or at any time, and at least two refereed publications either in print or accepted for publication.

Preferred Qualifications: Additional teaching & postdoctoral experience, demonstrated potential for excellence in teaching and research; research interests that focus on an area which enhances the department's existing research programs.

<https://bsu.peopleadmin.com/postings/15368>

The Northwestern University Quantitative Bioelement Imaging Center (QBIC) invites applications for a senior scientist position who lead the center into its next phase of growth and development as a national resource for bio-element imaging and analysis. Ph.D. level and other applicants with an experience and expertise in ICP-MS and managing core facilities are encouraged to apply. Appointment will be commensurate with education and training and experience. A research faculty appointment is available for Ph.D. level candidates.

The QBIC core facility is located in Silverman Hall on Northwestern University's Evanston campus. QBIC focused on the development and application of novel tools, methods, and instrumentation for the analysis and mapping of inorganic elements in biological samples. QBIC operates under the direction of Dr. Thomas O'Halloran, Morrison Professor of Chemistry, and is the only facility in the greater Chicago area with multiple ICP systems (quadrupole ICP-MS, ICP-OES, and high resolution ICP-MS) dedicated to the analysis of biological and materials samples. Additionally, this core facility offers the only laser ablation system dedicated to mapping biological samples in the Chicago area. QBIC partners with NUAnce (Northwestern University Atomic and Nanoscale Characterization Experimental Center), to provide access to STEM-EDS measurements of elements at the ultrastructural level. The core facility is one of eight cores overseen by Northwestern's Chemistry of Life Processes Institute (CLP), and is supported by CLP's experienced business and marketing staff.

This position requires strong organizational and technical skills, an ability to work with a diverse range of scientists and a keen interest in collaboration. The responsibilities of the Associate Director include operation and routine maintenance of facility instruments, training and supervising student users, supervision of technical staff, grant writing and advising faculty on experimental design and data analyses.

Applicants should submit a letter of application, curriculum vita, and three letters of reference to Dr. Sheila Judge (s-judge@northwestern.edu), Senior Director for Research, Education and Administration, Chemistry of Life Processes Institute; <http://clp.northwestern.edu>.

The Surface Chemistry Group in the Materials Science Division at Argonne National Laboratory is in search of a postdoctoral appointee. The successful candidate will enable high efficiency solar-to-fuels conversion through precise few-atom cluster synthesis and chemically precise bridges across unconventional semiconductors. The appointee will advance the basic science of precision gas-phase surface synthesis (atomic layer deposition) and in situ and ex situ chemical and materials characterization. This will be interdisciplinary and highly collaborative work (part of an Energy Frontier Research Center) that includes surface synthesis, physical and optoelectronic characterization, and electrochemical assessment. Must have demonstrated outstanding promise as a research scientist. Strong applicants will exhibit strong basic science understanding, motivation, and an ability to originate, carry out, and publish significant original research. Strong written and verbal skills are required. Previous experience with atomic layer deposition, inorganic chemistry, surface characterization (ellipsometry, AFM, STM, FTIR), electrochemistry, and solar energy conversion are desirable but not required. A Ph.D. in Chemistry, Materials Science, Physics, or a related field received within the last three years is required.

Interested candidates should send a detailed CV, along with a list of publications, to Alex Martinson martinson@anl.gov. Argonne is a U.S. Department of Energy laboratory managed by UChicago Argonne, LLC. Argonne is an equal opportunity employer, and we value diversity in our workforce.

Wolfe Laboratories LLC., a subsidiary of Pace Analytical Life Sciences, is a premier Contract Research and Development Organization located in Woburn, MA, providing pharmaceutical development services for small molecules, biologics, oligonucleotide therapeutics, and other biopharmaceutical drug candidates.

We are currently seeking Scientists to support the rapid growth of our organization. As key members of the Pharmaceutical Development team these roles will require high-performing individuals who can design and execute studies supporting the pharmaceutical development of small molecule drugs. We are looking for individuals with a solid understanding of the analysis and/or formulation of pharmaceutical products as well a good working knowledge of the drug development process. These positions are critical in the operations of the organization and for the management of client drug development projects.

DUTIES AND RESPONSIBILITIES:

An ideal candidate would specialize and possess the skills to work in one or more of the following areas:

Analytical Chemistry:

- Develop methods to characterize and understand the pharmaceutical properties (physicochemical and biopharmaceutical) of drug substances and formulations.
- In-depth understanding of HPLC and other chromatographic separations including the ability develop separation methodologies and understanding of method validation following FDA/ICH guidance
- Understanding of physical characterization of small molecule drugs, including particle size analysis, DSC, TGA and XRPD.
- Experience in a variety of other analytical and spectroscopic techniques including Karl Fischer titration, UV-Vis, IR/NIR, fluorescence, capillary electrophoresis, and dissolution
- Working knowledge of mass spectroscopy including TOF and LC-MS is a plus

Formulation Development:

- Design and conduct pre-formulation and formulation studies for the development of efficacious and stable parenteral, solid oral, ophthalmic, and other dosage forms
- Understanding of drug degradation processes and formulation approaches to prevent product degradation
- Experience with formulation processes including milling, preparation of solutions/suspensions, spray drying, lyophilization, tableting/coating, and capsule filling.

General Responsibilities:

Will work as a member of cross-functional teams, with a large degree of independence representing own area of expertise. Execute and oversee specialized analytical testing and generation of technical documents. Assess and report data with a clear understanding of its reliability, interpret findings, and draw authoritative conclusions and recommendations so that their significance can be appreciated. Interface with clients to develop an in depth understanding of client objectives and define solutions to meet their program requirements by writing persuasive proposals for the projects. Regularly interact with clients to keep them abreast of project progress. Will present information for discussion at project teams. Will be expected to influence colleagues/clients in other areas/functions and/or in external groups. Write and review interim and final reports.

Maintain a strong awareness of FDA and other regulatory requirements in the area of pharmaceutical product development. Stay up to date with current scientific literature, particularly in the area of drug substance and drug product characterization, and actively apply new concepts as appropriate. Apply technical knowledge to the company improvement projects and the evaluation of new technology/processes. Collaborate with specialist scientific and/or technology teams.

REQUIRED BACKGROUND AND EXPERIENCE:

Ph.D. in Pharmacy, pharmaceuticals, pharmaceutical chemistry, organic chemistry, biochemistry, biophysics, chemical engineering or closely related discipline. Scientist-level candidates will require at least 2 years of post-doctoral or industrial experience.

Understanding of drug development from the post discovery phase to the initial clinical trials phase. A demonstrated drive to apply technical knowledge to developing drug delivery systems and formulations.

Established track record of significant contributions as an individual technical expert as well as the ability to thrive in a multi-disciplinary team environment.

Outstanding written and oral communication skills as well as polished and persuasive client presentation skills.

Flexibility and outstanding time management skills to provide the full range of pharmaceutical support (including project representation) across many projects.

Pace Analytical is an Equal Opportunity Employer and will not discriminate against any applicant for employment on the basis of race, age, religion, sex, veterans, individuals with disabilities, sexual orientation, or gender identity. <https://www.pacelifesciences.com/>

Wolfe Laboratories LLC., a subsidiary of Pace Analytical Life Sciences, is a premier Contract Research and Development Organization located in Woburn, MA, providing pharmaceutical development services for small molecules, biologics, oligonucleotide therapeutics, and other biopharmaceutical drug candidates.

We are currently seeking Scientists and Associate Scientists to support the rapid growth of our organization. As key members of the Pharmaceutical Development team these roles will require high-performing individuals who can design and execute studies to aid in the development of small molecules, biologics, oligonucleotide therapeutics, and other biopharmaceutical drug candidates. We are looking for individuals with a solid understanding of the analysis and/or formulation of pharmaceutical products as well as a good working knowledge of the drug development process. These positions are critical in the operations of the organization and for the management of client drug development projects.

DUTIES AND RESPONSIBILITIES:

An Ideal Candidate would specialize and possess the skills to work in one or more of the following areas:

Analytical Chemistry:

- Develop methods to characterize and understand the pharmaceutical properties (physicochemical and biopharmaceutical) of drug substances and formulations.
- In depth understanding of LC including the ability to develop HPLC and UPLC separation methodologies.
- Experience in a variety of analytical and spectroscopic techniques including UV-Vis, fluorescence, CD, CE, DLS, DSC, TGA, SEC-MALS.
- Working knowledge of LC-MS including quantitative analysis of small molecules in biorelevant fluids and biotherapeutic characterization.

Biopharmaceutical Development:

- Evaluate the chemical, physical, and biophysical properties of molecules including peptides, proteins, bioconjugates relevant to biopharmaceutical drug development.

- Develop analytical and biophysical methods to characterize product variants.
- Design and perform experiments to determine the stability in prototype formulations, to detect and identify the decomposition products, and to achieve formulations with acceptable shelf-life.

Nucleic acids/Oligonucleotides:

- Develop and execute analytical methods for content and purity including IP-RP-LC, AEX-LC, LC-MS, CE, UV-Vis, fluorescence, etc. to characterize oligonucleotide therapeutics.
- Develop stabilizing formulations for the efficient delivery of oligonucleotide drug candidates (siRNA, RNA, DNA, etc.).
- Experience with formulation and characterization of lipid nanoparticles and other polymeric and lipid delivery systems is a plus.

General Responsibilities:

Execute and oversee specialized analytical testing and generation of technical documents

Collect, assess and report data with a clear understanding of its reliability, interpret findings, and draw authoritative conclusions and recommendations so that their significance can be appreciated.

Regularly interact with clients to keep them abreast of project progress

Interface with clients to develop an in-depth understanding of client objectives and define solutions to meet their program requirements by writing persuasive proposals for projects.

Write and review interim and final reports.

Maintain a strong awareness of current scientific literature, particularly in the area of drug substance and drug product characterization, and actively apply new concepts as appropriate.

Apply technical knowledge to the company improvement projects and the evaluation of new technology/processes. Collaborate with specialist scientific and/or technology teams.

Will work as a member of cross-functional teams, with a large degree of independence representing own area of expertise.

REQUIRED BACKGROUND AND EXPERIENCE:

Ph.D. in pharmaceutical chemistry, chemical biology, organic chemistry, biochemistry, biophysics, chemical engineering or closely related discipline.

Understanding of drug development from the post discovery phase to the initial clinical trials phase.

A demonstrated drive to apply technical knowledge to developing drug delivery systems and formulations.

Established track record of significant contributions as an individual technical expert as well as the ability to thrive in a multi-disciplinary team environment.

Outstanding written and oral communication skills as well as polished and persuasive presentation skills.

Flexibility and outstanding time management skills to provide the full range of pharmaceutical support (including project representation) across multiple projects.

Background using HPLC, LC-MS, UV-Vis, fluorescence, CD, CE, DLS and other analytical techniques.

Pace Analytical is an Equal Opportunity Employer and will not discriminate against any applicant for employment on the basis of race, age, religion, sex, veterans, individuals with disabilities, sexual orientation, or gender identity. <https://www.pacelifesciences.com/>

Beloit College invites applications for a Visiting Assistant Professor of Chemistry appointment to begin in January 2019. The successful candidate will hold a Ph.D. (A.B.D. or Ph.D. candidates will receive full consideration) in chemistry or a related field and will teach an upper-division undergraduate physical chemistry course on thermodynamics and kinetics and one section of an introductory chemistry course. This full-time position offers a one-semester appointment with the possibility of reappointment contingent on performance and funding and is an excellent opportunity to gain teaching experience in a

department that is known nationally for innovative pedagogy. Over the last 20 years, multiple visiting faculty members in the chemistry department have secured tenure-track positions at colleges and universities.

Because equity and inclusion are central to our students' liberal education and vital to the thriving of all members of our residential learning community, Beloit College aspires to be an actively anti-racist institution. We recognize our aspiration as ongoing and institution-wide, involving collective commitment and accountability. We welcome employees who are committed to and will actively contribute to our efforts to celebrate our cultural and intellectual richness and be resolute in advancing inclusion and equity. We encourage all interested individuals meeting the criteria of the described position to apply.

Located in a diverse community close to Madison, Milwaukee, and Chicago, Beloit is a selective undergraduate liberal arts college that attracts students from across the United States and the world. The college emphasizes excellence in teaching, learning beyond the traditional classroom, international perspectives, and collaborative research among students and faculty. It is recognized as one of the Colleges That Change Lives and in 2014 was recognized among the Great Colleges to Work For. Inquiries may be addressed to Theodore Gries, Chemistry Department Chair at griest@beloit.edu. Interested individuals may submit a letter of interest, curriculum vitae, unofficial scans of undergraduate and graduate transcripts, and the contact information for three references to the Sanger Center for the Sciences Administrative Assistant, Taylor Ajamian, at ChemistrySearch2018@beloit.edu. Review of applications will begin immediately and continue until the position is filled.
AA/EEO Employer