2014 WEEKLY BULLETIN
DEPARTMENT OF CHEMISTRY, NORTHWESTERN UNIVERSITY
EVANSTON, ILLINOIS
January 20, 2014

Tuesday, January 21: *Faculty Lunch Seminar: Chad Mirkin*
Tech K140
12:00-1:00pm

3rd Year Organic Seminar: Stefan Kathman (Statsyuk Group)
Ryan Hall 4003
11:00am – 12:00pm

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

BIP
Meets every Friday at 3:00pm in Tech K140

Arrivals

There were not any new arrivals last week

Opportunities

The Leiden Institute of Chemistry (LIC), Theoretical Chemistry group, is recruiting for a:
Tenure Track Position in Theoretical Chemistry
Duties and responsibilities
Theoretical reaction dynamics and electronic structure theory form a broad area of intense, competitive research activities and rapid scientific developments. Electronic structure theory has developed to the extent that very accurate potential energy surfaces can be computed for systems of small molecules interacting with one another, while accurate results can also be obtained for, for instance, reactions of molecules with metal surfaces. Developments in the methodology of quantum dynamics and ab initio molecular dynamics are rapidly pushing up the size of systems for which accurate reaction probabilities or rates can be obtained. A topic of intense research at the cross roads of these methods is to what extent reactions of molecules with metal surfaces are affected by electronically non-adiabatic effects. Another topic of intense research is the energetics and dynamics of surface electrochemical reactions and the extent to which they are affected by the solvent.
The selected candidate will perform research on one of the above two topics, or on a related topic. Additionally, the selected candidate will contribute to the teaching programme of the LIC, and will actively raise funds for his or her own research.

Requirements
This position is open to energetic scientists who have shown their talent and scientific potential, 'out-of-the-box' thinkers with a clear view on a challenging research program.

- You have a Ph.D. degree in chemistry or physics and several years of experience at the postdoctoral level.
- In parallel with your research, you are expected to be successful in raising research funds, teaching undergraduate (and graduate) chemistry courses, and to provide an administrative contribution.
- We are particularly interested in candidates with research interests in:

- Energetics and dynamics of reactions at the liquid-solid interface;
- Electronically non-adiabatic dynamics in reactions at surfaces.

Candidates with research interests in other fast developing areas are also encouraged to apply.

What we offer
Our tenure track program provides a well-supported career path aimed at growth towards a full professor appointment for successful academics. The track consists of a temporary appointment for a period of six years maximum with a detailed agreement about tenure track conditions such as how to meet research and educational targets, awarded research facilities, evaluation moments etc. and is expected to lead to a promotion to a position as an associate professor.
A promotion to a position as full professor can be expected within the next 3 to 5 years.
The gross monthly salary at assistant professor level is between € 3,259 and € 5,0701, depending on your level of experience. An appointment with Leiden University includes a pension build-up and other benefits; these include an annual holiday premium of 8% and an end-of-year premium of 8.3%.
Candidates from outside the Netherlands may be eligible for a substantial tax break.

More information
For more information on this position, please contact:
Prof. G.J. Kroes (g.j.kroes@chem.leidenuniv.nl, phone +31-71-5274396
or the Scientific Director of the LIC:
Prof. J. Brouwer (brouwer@chem.leidenuniv.nl, phone +31-71-5274755
General information about the research at the Chemistry Department at Leiden University can be found atwww.chem.leidenuniv.nl/licmain/Engels/Onderzoek/Frameset.htm.
More information on working at the University can be found on:www.personeel.leidenuniv.nl/ (Dutch site only)

How to apply
Written applications using the vacancy number and including a brief description of a research plan, a full vitae, a list of publications, as well as the names and addresses of at least four persons that can be contacted for references (who have agreed to be contacted), should be submitted (preferably by email) before **1 March 2014** to:
Leiden University
Faculty of Science / LIC
Attn. Prof. G.J. Kroes: g.j.kroes@chem.leidenuniv.nl
Gorlaeus Laboratories
P.O. Box 9502
2300 RA Leiden
The Netherlands

NSF REU site for Polymer Science and Polymer Engineering at The University of Akron is currently accepting applications for the summer of 2014. This year's stipend amount is $7,000 and the deadline for applications is February 14, 2014. The attached brochure is primarily for undergraduate students who are currently sophomores or juniors, although we have had a few freshmen. The application and more information can be found on our website: http://www.uakron.edu/cpspe/academics/reu-summer-internships.dot. If you have any questions please contact me at 330-972-7667, or by email at polymerreu@uakron.edu.

Request for Applications Center for Cancer Nanotechnology Excellence (NU-CCNE) Pilot Research Projects The Northwestern University Center for Cancer Nanotechnology Excellence (NU-CCNE) invites applications for pilot research projects that integrate the basic and clinical sciences in efforts to develop and apply nanotechnology to cancer research and accelerate the application of this science to the clinic.

Application due date: February 7, 2014
For more information and application documents contact: Kathleen Cook (k-cook@northwestern.edu)

I. Research Objectives
Nanotechnology has the potential for widespread applications in cancer research and treatment, and this initiative will support the development of nanomaterials and nanoscale devices for molecular imaging and early detection, *in vivo* imaging, reporters of efficacy, multifunctional therapeutics, prevention and control, and

research enablers. The intent of this RFA is to establish pilot projects in new and emerging areas that have potential to significantly advance the NU-CCNE research agenda.
The over-arching goals of the NU-CCNE initiative are to design and test nanomaterials and nanodevices and to translate their use into clinical research, resulting ultimately in the introduction of novel diagnostic tools and techniques to modulate and overcome cancer processes.

II. Background

The NU-CCNE is a unique collaboration between the Robert H. Lurie Comprehensive Cancer Center (RHLCCC) and the International Institute for Nanotechnology (IIN) and was established by a grant from the NIH National Cancer Institute in late 2005 and received funding for an additional five years in Phase 2 of the Alliance Program. The Center brings together a highly multidisciplinary group of nano-scientists, cancer biologists, engineers, and clinicians with the primary research goal of designing and testing nanomaterials and nanodevices for their translational application into the clinic, thereby ultimately developing novel and innovative nanoscale technologies for targeting cancer detection, diagnosis and treatment. Research addresses four thematic/programmatic areas identified by the Nano Alliance for applying nanotechnology approaches in combating cancer: (1) molecular imaging and early detection of cancer; (2) *in vivo* imaging; (3) multifunctional therapeutics; and (4) research enablers. Research is organized into four highly multidisciplinary research teams. Each of these projects addresses an important cancer problem, and has a distinct focus to promote development of a nanotechnology platform for ultimate application in the clinic. Please visit the NU-CCNE website for more information www.ccne.northwestern.edu.

In addition to the four research teams, the structure of the NU-CCNE includes funding for pilot projects. This mechanism allows the Center to provide seed funding for new and emerging areas that could potentially develop into new and novel nanoplatforms.

III. Progress Reviews – Milestones and Evaluations

The progress of the pilot projects will be reviewed bi-annually by the NU-CCNE and the NCI to assure that satisfactory progress is being made in achieving the project objectives.
All applications must include a specific section labeled "Milestones." Milestones should be well-described, quantitative, and scientifically justified and not simply a restatement of the specific aims. Rather, the milestones should offer a timeline and a "pathway" for the development of the proposed technology. These milestones will be used to judge the success of the proposed research.
The project chosen will be responsible for submitting NCI required progress reports and updated milestones on-time as requested.

IV. Award Information

The NU-CCNE will commit $52,500 total (in direct costs) to fund one pilot project each year. All applications will be reviewed by the NU-CCNE Executive Committee. Final determinations will be forwarded to the NCI for confirmation prior to the release of funds.

Pilot Projects should be short term (12 months) with a possibility of extension based on progress evaluation. Potentially, pilot projects may lead to larger research activities through seeking of separate funding in their later stages.

Although the financial plans of the NU-CCNE provide support for one pilot project each year, awards pursuant to this funding opportunity are contingent upon the availability of funds and the receipt of a sufficient number of meritorious applications.

PLEASE NOTE all awarded funds must be expended by the end of the period or they will be revoked.
Although the budget period start date for this award is 2/1/2014, this award includes funds for 12 months of support. Allowable preaward costs may be charged to this award, in accordance with the conditions outlined in the NIH Grants Policy Statement, (December 2003).

V. Application and Submission Information

Applications must be prepared in Arial 11 pt font using the attached research grant application and are limited to a maximum of ten total pages allocated as follows:

1. Face page (not to exceed 1 page)
2. Project description (not to exceed 3 pages including project specific milestones)
3. Budget (not to exceed 1 page)
4. Biographical Sketch for PI (not to exceed 4 pages)

Applications must be submitted electronically to Kathleen Cook (k-cook@northwestern.edu).

Reaxys PhD Prize 2014 The Reaxys PhD Prize is awarded for original and innovative research in organic, organometallic and inorganic chemistry, which demonstrates excellence in methodology and approach by a candidate currently studying for a PhD or having completed a PhD after January 1, 2013. Each year submissions are reviewed by leading experts in their fields to select 45 finalists. From these, 3 winners are then chosen to receive the main prize.

- **$2000 prize money** for each of the 3 Prize Winners
- Invitation to the **2014 Reaxys Inspiring Chemistry Conference** for the Winners and Finalists (includes free registration, 4* hotel accommodation and travel bursaries)
- Membership of the prestigious **Reaxys Prize Club** for winners and finalists only

Now in its 5th year, the Reaxys PhD Prize has already become the world's most important prize for Chemistry PhD Students. To-date, over 1700 applications have been received from well over 400 universities from across the globe.

SUBMISSIONS WILL BE ACCEPTED FROM DECEMBER 16, 2013 UNTIL FEBRUARY 14, 2014
The review and decision process is managed by six coordinators :

Prof A. G. M. Barrett, Imperial College London
Prof M. Jansen, Max Planck Institute for Solid State Research
Prof E. Nakamura, University of Tokyo
Prof G. Parkin, Columbia University
Prof B. M. Trost, Stanford University
Prof H. N. C. Wong, Chinese University of Hong Kong

Requirements, details and submission form are available on : Inspiringchemistry.reaxys.com/phdprize
facebook.com/ReaxysInspiringChemistry

Department of Preventive Medicine, Feinberg School of Medicine, Northwestern University We seek a highly motivated individual with mass spectrometry experience to fill a funded postdoctoral fellowship position in the Department of Preventive Medicine at Northwestern University. The position requires very strong analytical skills and experience with database searching, laboratory instrument operating systems, and statistical analysis. A preference will be given to candidates with expertise in LC-QqQ, OrbiTrap, and FT-ICR mass spectrometry. The position will involve development and application of novel targeted and discovery based biomarker approaches for investigating environmental risk factors for chronic diseases and cancers. To apply for this position please email CV and cover letter to Dr. William E. Funk (w-funk@northwestern.edu).

The Institute of Chemistry of the National Autonomous University of México (UNAM: Universidad Nacional Autónoma de México): www.iquimica.unam.mx

We are in the process of expanding our research areas and would like to contact researchers who are interested in developing an academic career in México. We are the largest University in Latin-America and one of the most prestigious ones. Our institute also has considerable infrastructure, comparable with that of Universities in the U.S. and in Europe.

We are specifically considering expanding our research program into areas that include catalysis, structural biochemistry, metabolomics, supramolecular chemistry, functional molecular materials, molecular sensors and photo-induced molecular processes. We will be hiring several researchers for academic positions at the Institute of Chemistry starting in 2014. Candidates should have a PhD degree in chemistry, postdoctoral experience and a strong commitment to excellence.

These positions are similar to a tenure-track professorship and will require the development of an independent research program, teaching a single three hour/week course per semester at UNAM and participating in our graduate programs (MSc. and PhD).

Candidates should contact : Dr. Jorge Peón, Academic Secretary, Instituto de Química UNAM, Circuito Exterior, Ciudad Universitaria, D. F. México +52 55 5622 4457 or via e-mail at jpeon@unam.mx sending a CV and a three page description of a proposed research program.

National Institute of Standards and Technology We are seeking post-doctoral researchers to study electronic structure and ultrafast interfacial dynamics at organic heterojunctions. One focus is the use of time-resolved two-photon photoelectron spectroscopy (TR-2PPE) to follow exciton and charge dynamics at the donor-acceptor interfaces. In conjunction with this effort we also apply scanning tunneling microscopy and spectroscopy (STM, STS) to measure interfacial molecular structure, nanoscale phase separation, and local electronic structure. We are also interested in new methods to follow charge transfer and photovoltage at interfaces with nanosecond to picosecond resolution. Finally, we also have interests in the application and further development of THz measurement techniques. Experience with ultrafast laser systems, UHV techniques, photoelectron spectroscopy, and/or STM is desirable but not a requisite. We welcome inquiries from applicants with interests in any of these areas. Positions will be funded through the National Research Council postdoctoral program. *For further information contact:* Dr. Steven Robey Steven.robey@nist.gov or Dr. Edwin Heilweil Edwin.heilweil@nist.gov

Sigma-Aldrich in Milwaukee, Wisconsin is seeking a Product Manager-Materials Science. Manage Alternative Energy and Micro/Nanoelectronics product lines within the Aldrich Materials Science initiative. These product lines comprise a broad range of application-specific materials and tools for synthesis as well as device fabrication, addressing both research and commercial markets. The Alternative Energy product line consists of materials for energy applications including lithium ion batteries, fuel cells, hydrogen storage, lighting, thermoelectrics etc. The Micro/Nanoelectronics product line includes precursors for thin film deposition and synthesis of nanomaterials along with electronic and semiconductor grade materials for electronics and semiconductor markets. The successful candidate will manage the product portfolio, perform market analysis, promote awareness of the product lines, maintain the products and optimize pricing in order to meet revenue objectives for the product lines and for the Materials Science Initiative. Additionally, the candidate is expected to support team efforts as assigned in order to meet department, business unit, and company objectives. **Education:** PhD in Materials Chemistry, Materials Science, Engineering, or Chemistry; or B.S. in Chemistry with M.B.A. and 5 (five) years of product management and business development experience directly related to alternative energy and micro/nanoelectronics product line(s). Postdoctoral experience preferred.

For further job description information and/or to apply please visit the company's website at http://bit.ly/18NmXue. Sigma Aldrich is an Equal Opportunity employer

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.
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.