

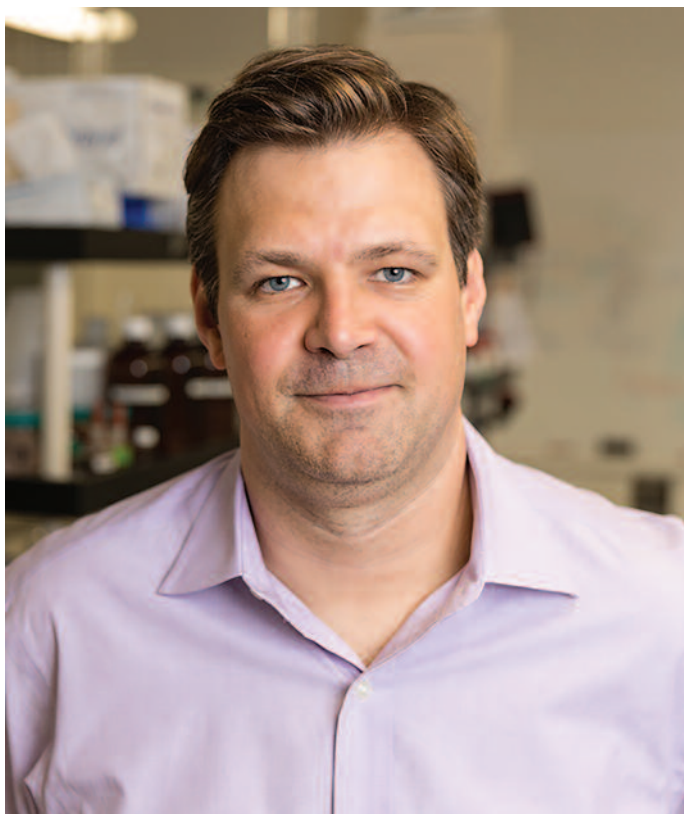
THE Indicator

NOVEMBER 2017

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2017 North Jersey Baekeland Awardee William R. Dichtel



See article on page 5 and program on page 6.

THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles • hgoldwh@calstatela.edu

By one of those coincidences that can enliven our lives, at the recent ACS meeting in Washington D.C. the Division of the History of Chemistry sponsored a symposium on chemists who should have won Nobel Prizes in chemistry but failed to do so. One session co-sponsored by the Women Chemists' Committee was "Ladies in Waiting for Nobel Prizes: Overlooked Accomplishments of Women Chemists". Among 175 chemists who have won Nobel Prizes there are only 4 women: Marie Curie; Irene Curie; Dorothy Hodgkin; and Ada Yonath. Symposium speakers made convincing cases for a dozen or so of the overlooked chemists. In continuation of my recent columns on women chemists I will present the career of one of the overlooked, Ida Tacke Noddack. You can make the call on whether she deserved a Nobel Prize.

Ida Tacke was born in Germany in 1896, studied chemistry at the Technical University of Berlin, and was one of the first women in Germany to earn a doctorate, which was granted by the Technical University in 1921 for work on anhydrides of fatty acids. She worked in industry for a time, the first woman Ph.D. to do so in Germany, and married another chemist, Walter Noddack, in 1926. She returned to an academic life and served at a number of institutions, usually in unpaid positions. The Noddacks worked as a team and focused on isolating two elements to fill gaps in the periodic table: numbers 43 and 75, now termed technetium and rhenium. In 1925 they claimed to have isolated these new elements. Their claim to rhenium was confirmed, but they had not isolated number 43, that they called masurium, as later studies by others showed.

In 1934 Enrico Fermi claimed that neutron bombardment of uranium produced trans-uranic elements, a claim that was part of the reason why Fermi was awarded a Nobel Prize in 1938. Ida Noddack was critical of Fermi's claims to have made element 93. She pointed out that Fermi had not excluded the possibility that the radio-activities he observed after the bombardment of uranium by neutrons were due to isotopes of lighter elements. She wrote: "it is conceivable that the nucleus breaks up into several large fragments, which would of course be isotopes of known elements but would not be neighbors of the irradiated element". In this statement she foresaw the possibility of nuclear fission, that was observed in 1938 by Hahn and Strassmann and interpreted by Meitner and Frisch, just as Ida Noddack had foreseen.

Later in their careers the Noddacks turned their attention to geochemistry, and to the occurrence of heavy metals in sea creatures. The Noddacks were nominated in all three times for Nobel Prizes in chemistry in 1933, 1935, and 1937. They did not win. Ida Noddack was awarded the Scheele Medal and the Liebig Medal by European chemical societies. She died in 1978 aged 82.



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The monthly newsletter of the New York & North Jersey Sections of the American Chemical Society. Published jointly by the two sections.

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Address advertising correspondence to Advertising Manager. Other correspondence to the Editor.

November Calendar

NEW YORK SECTION

Thursday, November 2, 2017
Chemical Marketing and Economics Group
See pages 7 and 8.

Friday, November 3, 2017
New York Nanoscience Discussion Group
See page 7.

Wednesday, November 8 and Thursday, November 16, 2017
Westchester Chemical Society
See pages 9-10.

Wednesday, November 8 and Monday, November 13, 2017
NY/NJ Society for Applied Spectroscopy
See pages 10-11.

Friday, November 17, 2017
New York Section Board Meeting
See page 7.

also

Friday, December 1, 2017, and TBD, 2018
NY/NJ Society for Applied Spectroscopy
See pages 10-11.

Tuesday, December 5, 2017
Westchester Chemical Society
See pages 11-12.

Tuesdays, January 30 and June 19, 2018
New York Nanoscience Discussion Group
See page 7.

NORTH JERSEY SECTION

Wednesday, November 8 and Monday, November 13, 2017,
NY/NJ Society for Applied Spectroscopy
See pages 12-13.

Monday, November 13, 2017
North Jersey Executive Meeting
See page 12.

Thursday, November 30, 2017,
Organic Topical Group
See page 13.

also

Friday, December 8, 2017
Baekeland Symposium and Award Celebration
See front cover and pages 5-6.



***The Indicator* is posted to the web
around the 15th
of the previous month at
www.TheIndicator.org**

**Deadline for items to be included in
the December 2017 issue of
The Indicator is**

October 28, 2017

2017 Baekeland Awardee

WILLIAM R. DICTEL

Covalent Organic Frameworks as a Platform for Molecular Assembly

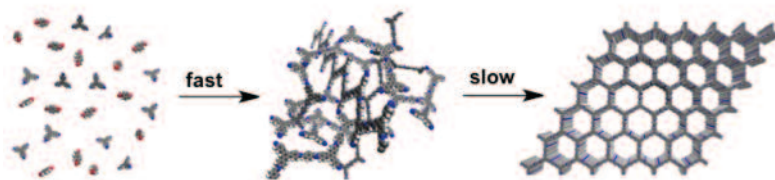


Figure. Imine-linked 2D COFs rapidly form an amorphous, crosslinked polymer, which eventually evolves into a crystalline 2D layered structure

Covalent organic frameworks (COFs) are two or three-dimensional polymer networks with designed topology and chemical functionality, permanent porosity, and high surface areas. These features are potentially useful for a broad range of applications, including catalysis, optoelectronics, and energy storage devices. But current COF syntheses offer poor control over the material's morphology and final form, generally providing insoluble and unprocessable microcrystalline powder aggregates. Homogenous polymerization conditions for boronate ester-linked, 2D COFs that provide stable colloidal nanoparticles will be described. These colloids can be grown into larger, single-crystalline particles through careful control of the reaction conditions. This structural control provides new opportunities for understanding COF formation and designing morphologies for device applications. Mechanistic studies of imine-linked 2D COFs will also be discussed. These studies have revealed new catalysts that are amenable to interfacial polymerizations and the formation of extremely thin films.

Will Dichtel was born in Houston, Texas and was raised in Roanoke, Virginia. He was an undergraduate student at MIT, where he majored in chemistry and was gained his first research experience working in the laboratory of Prof. Tim Swager. Will went to UC-Berkeley for graduate school, where he earned his Ph.D. for investigating light harvesting macromolecules under the supervision of Prof. Jean M. J. Fréchet. He next moved to Los Angeles for a joint postdoctoral appointment with 2016 Nobel Laureate Fraser Stoddart, then at UCLA, and Prof. Jim Heath, then at Caltech. There his research focused on developing efficient strategies for the synthesis of mechanically interlocked compounds and incorporating these molecules onto surfaces and into solid-state devices. Prof. Dichtel began his independent career in the Department of Chemistry and Chemical Biology at Cornell University in 2008 and was promoted to the rank of Associate Professor in 2014. He was a visiting Miller Professor at UC-Berkeley in 2016, after which he moved to Northwestern University as the Robert L. Letsinger Professor of Chemistry.

In addition to the 2017 Baekeland Award, Will has been recognized with a number of national awards, including a MacArthur Fellowship in 2015, the National Fresenius Award from the Phi Lambda Upsilon National Chemistry Honor Society, the Polymer International – IUPAC Award for Creativity in Applied Polymer Science, the Camille Dreyfus Teacher-Scholar Award, an Arthur C. Cope Scholar Award from the American Chemical Society, a Cottrell Scholar Award from the Research Corporation for Science Advancement, the Sloan Research Fellowship, and a Beckman Young Investigator Award from the Arnold and Mabel Beckman Foundation. The Dichtel Research Group may be found at <http://sites.northwestern.edu/dichtel/>

American Chemical Society North Jersey Section 2017 Baekeland Award Symposium

Friday December 8, 2017 12:00 noon – 5:00 PM

Rutgers University Inn & Conference Center
178 Ryders Lane New Brunswick, NJ 08901-8556



The North Jersey Section of the American Chemical Society established the Baekeland Award in 1944 to commemorate the technical and industrial achievements as well as the creativeness of Leo Hendrik Baekeland and to encourage younger chemists to emulate his example. The award is presented biannually to a United States-based chemist under 40 years of age in recognition of accomplishments in pure or industrial chemistry, as characterized by the initiative, creativeness, leadership, and perseverance of the individual and indicated by published or unpublished evidence.

Agenda

12:00	Registration / Snacks
12:30	Welcome Address Dr. Miriam Gulotta, Baekeland Symposium Chair
12:40	Dr. Christopher A. Alabi <i>Coupling Molecular Design to Structure and Activity of Sequence-Defined Macromolecules</i>
1:20	Dr. Natalia Shustova <i>Fulleretic Materials for Directional Energy Transfer</i>
2:00	Dr. Jeffrey S. Moore <i>Organic Chemistry at the Interface of Materials and Mechanics</i>
2:40	Break / Refreshments
3:20	Dr. Timothy M. Swager <i>Dynamically-Reconfigurable Complex Emulsions</i>
4:00	Baekeland Award Presentation Dr. Landon Greene, NJ-ACS Section Chair
4:10	Keynote: Dr. William Dichtel <i>Covalent Organic Frameworks as a Platform for Molecular Assembly</i>
4:50	Closing Remarks Dr. Les McGuire, NJ-ACS Awards Chair
5:00	Reception

Speakers



William R. Dichtel, PhD
Northwestern University
Keynote Speaker / 2017 Baekeland Award Winner



Timothy M. Swager, PhD
MIT



Jeffrey S. Moore, PhD
University of Illinois at Urbana-Champaign



Natalia Shustova, PhD
University of South Carolina



Christopher A. Alabi, PhD
Cornell University

Registration Fee: \$15 professionals, \$5 students, retirees, unemployed. Please see www.njacs.org/Baekeland for online registration and additional symposium/speaker details

Questions? Contact Dr. Miriam Gulotta mgulotta@njacs.org Chair of the Baekeland Symposium

New York Meetings

www.newyorkacs.org

NEW YORK SECTION BOARD MEETING DATES FOR 2017

The dates for the Board Meetings of the ACS New York Section for 2017 have been selected and approved. The meetings are open to all – everybody is welcome. All non-board members who would like to attend any of the meetings should inform the New York Section office by emailing Mrs. Marilyn Jespersen at njesper1@optonline.net or by calling the Section office at (516) 883-7510.

All 2017 Board Meetings will be held at The Graduate Center, Science Center, Room 4102, 365 Fifth Avenue, New York, NY 10016, except for the January 21 Section-wide Conference and March 24 Nichols Symposium. Prof. Brian Gibney will chair all meetings. Refreshments will be available starting at 6:00 PM while the actual meeting will start at exactly 6:30 PM.

The board meetings dates for 2017 will be

Friday, November 17, 2017

More information will be posted in future monthly issues of The Indicator and on the New York website at

<http://www.NewYorkACS.org>.



CHEMICAL MARKETING AND ECONOMICS GROUP

M&A Lessons from Private Equity

Date: Thursday, November 2, 2017

Times: Registration and Networking – 11:15 AM - 12:00 Noon

Luncheon — 12:00 - 1:00 PM
Talk/Webcast — 1:00 - 2:00 PM

Place: Penn Club
36 West 44th Street
New York, NY

For complete program, see flyer on page 8.



NY NANOSCIENCE DISCUSSION GROUP

2017-2018 Sessions

*Hosted by the New York University
Department of Chemistry*

Speakers to be announced.

The NYNDG is an ACS Topical Group that meets in the New York University Department of Chemistry. Sessions feature three 30-minute presentations on nanoscience, one each with strong orientation in biology, chemistry, and physics/applied mathematics. Presentations will be focused on discussion of recent work, although speakers will place the work in a context understandable to a broad audience.

Mark your Calendars:

Dates: Friday, November 3, 2017
Tuesday, January 30, 2018
Tuesday, June 19, 2018

Times: Refreshments — 7:00 PM
Science — 7:30 PM

Place: New York University
Dept. of Chemistry, Room 1003
(10th Floor) Silver Center
31 Washington Place (between
Washington Sq. East & Green St.)
New York, NY

For more information, contact: James
Canary (james.canary@nyu.edu)



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M&A LESSONS FROM PRIVATE EQUITY

CME ACS NY Luncheon/Webcast • November 2, 2017 • Penn Club

Abstract

M&A is key to strategic growth. Deals in the chemicals sector or conducted by chemicals companies exceeded \$100B in 2015 and even though 2016 shows a lower deal value, several large deals are expected to be completed in 2017.

A robust M&A strategy should strengthen existing businesses and, or, reduce the company's earnings volatility whilst trading off other capital investments. High multiples for top companies and high investor expectations further increase the pressure on realizing value from M&A. There are some important lessons that can be learned from leading Private Equity firms who have hit upon a formula for value creation to generate large returns.

This presentation will discuss the market reaction to chemicals M&A deals. It will cover how the best acquirers approach their M&A strategy as an extension of the growth strategy, then pressure-test the thesis about value creation, focus on integration and demonstrate better operations to the acquired firm.

Two highly successful advisors will discuss key disciplines that companies could implement with a PE approach to create operating value: identifying and delivering the full potential of the company, accelerating performance, focusing relentlessly on outcomes, harnessing of talent and, ultimately, making equity sweat by embedding a results-oriented culture and mindset.

Join us for a discussion on chemicals M&A and on how you can take the lessons from PE firms to derive Monday-morning actions to realize operating value.



BAIN & COMPANY

Speaker: Tom Shannon is a partner in Bain's Chicago office and leads Bain's Global Industrial Goods & Services practice. Tom is the founder of Bain's Global Chemicals practice, and is also a senior leader in Bain's Private Equity practice. Over the past 30 years, Tom led over 100 assignments in the chemicals industry in over 30 different chemical categories. He has also worked in petrochemical process technologies and chemical distribution. Tom has deep experience with all aspects of portfolio and transformational growth strategies. He has supported private equity and corporate buyers on the diligence of more than 200 businesses.



BAIN & COMPANY

Speaker: Jason McLinn is a partner in Bain's Chicago office and leads Bain's Chemicals practice in North America. Jason also is a senior member in the firm's Commercial Excellence and M&A practices. Over the last 20 years Jason has developed deep experience across a wide range of chemicals categories in polymers, plastics, specialty chemicals, chemical transportation, and chemical distribution. Jason mostly focused on corporate growth strategy, commercial excellence including sales and marketing effectiveness, acquisitions and post-merger integration, cost reduction, and direct and indirect procurement.



Event Schedule

Location:
Penn Club
30 W 44th Street, NYC
Event Times: (ET)
11:15 am - 12:00 noon
Registration and
Networking
12 noon - 1 pm Luncheon
1 pm - 2 pm Talk - Webcast
Luncheon Fees
\$120 for non-members
\$90 for members
Check for Early-bird savings
Webcast : \$30. Free webcast
recording for ACS members



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WESTCHESTER CHEMICAL SOCIETY

Special Seminar – “Ligand-Guided Selection (LIGS): A SELEX Variant to Identify Specific Aptamers Against Cell-surface Markers”

Speaker: Prabodhika Mallikaratchy, PhD
Assistant Professor of Chemistry
New Science Hall
Office S-4404/Lab S-4401
City University of New York-
Lehman College
250 Bedford Park Blvd. West
Bronx, NY 10468

Abstract:

Nucleic Acid Aptamers (NAAs) are a class of molecules with significant potential in developing molecular tools in biomedical applications. Aptamers are selected using a screening method called Systematic Evolution Ligands by EXponential enrichment (SELEX). Recently, a number of SELEX approaches utilizing whole cells to evolve aptamers against cell-surface membrane proteins were introduced. To this end, we reported on a new variant of SELEX termed Ligand-Guided-Selection (LIGS) to identify highly specific aptamers against a predetermined epitope of a cell-surface target. Hallmark of LIGS is rooted in the ability to exploit the evolutionary selection step in SELEX as a strategy to evolve highly specific aptamers. The iterative process in conventional SELEX is designed to outcompete low-affinity binders through a competitive process whereby high affinity binders move on through the selection process. By introducing a naturally occurring stronger, highly specific bivalent binder, for example, an antibody (Ab) interacting with its cognate epitope, LIGS out-competes specific aptamers from a partially enriched SELEX pool against cells expressing the same epitope. Utilizing LIGS we have selected aptamers against membrane bound IgM (mIgM) expressed on B-cells and Cluster of differentiation 3 (CD3) expressed on T-cells. Based on the detailed validation studies conducted using one of the aptamers selected using LIGS, we will show that aptamers identified using LIGS can be optimized into higher affinity variants. In addition, we will show that LIGS generated aptamers show similar specificities to that of the secondary ligand utilized to out-compete the aptamers. Presentation will conclude with a short discussion on ongoing projects aimed at selecting DNA aptamers against CD3 molecule

expressed on human T-cells at physiological temperatures.

Biography:

Dr. Mallikaratchy obtained her undergraduate degree in chemistry from The Institute of Chemistry, Colombo, Sri Lanka in 2000, her M.S. in organic chemistry from the University of Louisiana, Monroe, LA in 2003, and her Ph.D in analytical biochemistry from the Center for Bio-Nano Interface, The University of Florida, Gainesville, FL in 2008. From 2008 to 2012, she was a research fellow at The Memorial Sloan-Kettering Cancer Center, in New York, NY. In 2012, she was appointed as Assistant Professor in the Department of Chemistry, PhD program in Chemistry and Biochemistry, at the Graduate Center of the City University of New York. There, she has worked to lay the groundwork to establish a new method for aptamer selection, resulting in a patent application and two peer-reviewed publications. Concurrently, she established her lab in the Department of Chemistry at Lehman College (CUNY). She has an extensive background in aptamer selection and manipulation of aptamers to develop molecular tools for disease detection and therapy. A number of aptamer selection methods have become available to select aptamers against cell-surface proteins; however, none of these methods has successfully identified aptamers specific to an antigen of a cell-surface receptor at its endogenous level and native conformation. Such precise targeting of known proteins will determine the success of molecular tools used for disease detection and therapy. Therefore, to select aptamers against the predetermined site of a cell-surface receptor in its native state, her group, for the first time, introduced a simple method called Ligand-guided Selection (LIGS), the subject of the current talk. She has received several awards (the 2008 Crow Stasch Awards for excellence in publications, University of Florida Recipient, the 2009 Lauri Strauss Leukemia Research Fellow award, the 2010-12 Lymphoma Research Foundation Research Fellow award, and the 2017 Junior Faculty Research Award-runner-up at CUNY). She is also a member of several professional associations.

Date: Wednesday, November 8, 2017

Times: Refreshments – 5:30 PM

Lecture – 6:00 PM

(continued on page 10)

WESTCHESTER CHEMICAL SOCIETY

(continued from page 9)

Place: Westchester Community College
75 Grasslands Road
Valhalla, NY 10595
Gateway Building Room 110
Cost: Free and Opened to the Public

For further information: contact Paul Dillon
E-Mail PaulWDillon2@hotmail.com
Phone 1-914-393-6940

SPECIAL MEETING AND BREWERY TOUR

NovemberFest – The Science and Art of Brewing

Speaker: Kasey LaMothe
Head of Quality Control,
Head of Microbiology, and
Brewer
Broken Bow Brewery
173 Marbledale Avenue
Tuckahoe, NY 10707
(914) 268-0900

To say Broken Bow Brewery is a “family affair” is an understatement. The LaMothe family has created a winning formula at Broken Bow Brewery in Tuckahoe. Launched in 2013 by all 5 family members, Broken Bow has become the beer of choice for thousands of craft beer aficionados. Even the name Broken Bow has a familial meaning...it’s the small town in Nebraska where Kasey’s mom grew up.

Broken Bow’s team includes her dad, Lyle who is in charge of sales, her older sister Kristen, who is the event and marketing guru, her mom, Kathy, who is head of HR, does accounting & generally keeps the place running smoothly, her brother Mike, the head brewer, and Kasey, who is head of quality control and a brewer.

When Kasey was studying at Carnegie Mellon, earning a B.S. in Biological Sciences, a minor in Biomedical Engineering, and a concentration in Neuroscience, she was still deciding on her career path. By the time she graduated in 2013, the family hobby of brewing beer was turning into a business. Each family member had a specific role to fill, and Kasey’s science background landed her perfectly into quality control.

Kasey takes her role in the brewery very seriously. Not long after Broken Bow opened, Kasey attended the World Brewing Academy/Siebel Institute in Chicago, earning an associate degree in Advanced Brewing. Kasey is also a Certified Beer Server, the first of four levels of certification to become an Advanced Cicerone, which in the beer world is equivalent to a wine sommelier.

Tonight we will be able to tour Broken Bow’s facilities and will hear some of the ins and out of craft brewing. Of course, sampling of various beers will be done (please 21+ only). Note that there is room for only 40 attendees. RSVPs are needed.

Date: Thursday, November 16, 2017

Times: Tasting Begins: 5:15 PM

Lecture and Tour: 5:30-7:00 PM

Place: Broken Bow Brewery (see above)

Open: To the public, but adults only.
Limited to 40 attendees.

Cost: \$30.00 per person (includes two beers)

For RSVPs and further information:
contact Paul Dillon
E-Mail PaulWDillon2@hotmail.com
Phone (914) 393-6940



NEW YORK/NEW JERSEY SOCIETY FOR APPLIED SPECTROSCOPY

CALENDAR 2017

“Why use the Norris Regression - the Derivative Quotient Math in Regression?”

Speaker: David Hopkins

Date: Wednesday, November 8, 2017

Place: Horiba

Eastern Analytical Symposium: Gold Medal Award to Prof. Richard Van Duyne

“Nanoscale Chemical Imaging with Tip-Enhanced Raman Spectroscopy”

Speaker: Prof. Richard Van Duyne

“Translating SERS into a Robust Detection Platform for Uranium in Complex Matrices”

Speaker: Amanda J. Haes
University of Iowa

“Polymer-Enabled Analytical SERS Sensing”

Speaker: Christy L. Haynes
University of Minnesota

“Imaging Mass Spectrometry on the Nanoscale with Cluster Ion Beams”

Speaker: Nicholas Winograd
Pennsylvania State University

Date: Monday, November 13, 2017

* * * * *

“Materials testing at the Met: What display, shipping, and storage materials should or shouldn't be near the art.”

Speaker: Eric Breitung

Date: Friday, December 1, 2017
Place: Metropolitan Museum of Art

CALENDAR 2018

“Vibrational spectroscopy applications understanding protein secondary structure or application in protein production using NIR”

Speaker: John Wasyluk

Date: to be determined
Place: BMS

For more information, visit our website at www.NYSAS.org.



EMPLOYMENT AND PROFESSIONAL RELATIONS COMMITTEE OF THE NEW YORK SECTION

To Human Resources Departments in Industry and Academia

The Employment and Professional Relations Committee maintains a roster of candidates who are ACS members seeking a position in the New York metropolitan area. If you have job openings and would like qualified candidates to contact you, please send a brief job description and educational/experience background required to hessytaft@hotmail.com.

Candidates from our roster who meet the requirements you describe will be asked to contact you.

WESTCHESTER CHEMICAL SOCIETY

FUTURE MEETINGS

Special Seminar – “FTIR Microscopy and Imaging – When You Need It and How To Use It”

Speaker: Linda Kidder Yarlott, PhD
Product Manager – Molecular Spectroscopy
Shimadzu Scientific Instruments, Inc.
7102 Riverwood Drive
Columbia, MD 21046

FTIR Microscopy and Imaging – the Hows and Whys of “Seeing Infrared”

What do the FGM-148 Javelin anti-tank missile and laboratory-based FTIR imaging systems have in common? Both use infrared sensitive focal plane arrays – albeit with different goals in mind. The Javelin uses the IR detector (64 x 64 pixel MCT) to create thermal images of targets for “locking-on” purposes, and ultimate destruction of the intended target. Laboratory-based FTIR imaging systems have an entirely different goal, incorporating a wavelength filter (interferometer) to create images based on IR functional groups that enable the spatial distribution of sample components to be characterized. I will explore various technologies that enabled the development of IR microscopy and imaging, from single point micro-spectroscopy to mapping and imaging. I will also discuss applications of spatially resolved IR spectroscopy, from materials characterization to pathology, as the ultimate value in developing novel analytical instrumentation is to add tools to our analytical toolbox.

Biography:

Dr. Linda Kidder graduated from Williams College with a B.A. in Chemistry and received her Ph.D. in physical chemistry from the Johns Hopkins University, where she was the recipient of the Sonneborn and Ernest Marks Fellowships. During her post-doc in the Laboratory of Chemical Physics at NIH, she developed a deep appreciation for molecular spectroscopy: developing, deploying, and characterizing Raman and Fourier transform infrared hyperspectral imaging systems. Since then, her career has focused on the development and commercialization of novel analytical instrumenta-

(continued on page 12)

WESTCHESTER CHEMICAL SOCIETY

(continued from page 11)

tion: as co-founder of Spectral Dimensions, Senior Scientist at Malvern Instruments as part of the Bioscience Development Initiative, Vice President of Market Development at BrightSpec, and currently as Strategic Product Leader at Shimadzu Scientific Instrumentation. She is a long-standing member of the Society for Applied Spectroscopy, the Coblenz Society, and the American Chemical Society, and has contributed to ASTM on both E13.10 and E55 committees. She has also worked on outreach for vibrational spectroscopy, as program coordinator at the FACSS (now SciX) and EAS meetings, as well as organizing the SAS Tour Speakers program in 2011 and upcoming in 2018. In her "spare time" she and her husband are raising two active boys (11 and 9), and looking after a flock of pets including 2 Australian shepherds, 3 hamsters, a rabbit, a guinea pig and a parakeet.

Date: Tuesday, December 5, 2017

Times, Place, Cost and Further Information: See November announcement on pages 9 and 10.



NOMINATING COMMITTEE FOR THE 2018 ELECTIONS MEETS IN DECEMBER

The Nominating Committee of the New York Section will meet in December to select candidates for the 2018 elections.

Positions available are:

Chair-elect for 2019

Secretary for 2019 - 2020

Directors-at-Large for 2019

Councilors and Alternate Councilors for 2019 – 2021

If a member of the New York Section wishes to run for office or to suggest a member for consideration by the Nominating Committee, please write to the American Chemical Society, New York Section, Inc., St. John's University, Department of Chemistry, 8000 Utopia Parkway, Jamaica, NY 11439 or send an e-mail to the New York Section office at njesper1@optonline.net by November 30.

DR. DEBRA ROLISON OF THE U.S. NAVAL RESEARCH LABORATORY IS THE WILLIAM H. NICHOLS MEDALIST FOR 2018

The New York Section is pleased to announce that the Nichols Award Jury has chosen Dr. Debra Rolison to be the William H. Nichols Medalist for 2018. Dr. Rolison heads the Advanced Electrochemical Section Surface Chemistry Branch at the U.S. Naval Research Laboratory in Washington, DC. Dr. Rolison is being honored for "pioneering energy relevant 3D nanoarchitectures."

The Nichols Distinguished Symposium and Medal Award Dinner are planned for Friday, April 13, 2018 at the Crowne Plaza Hotel, 66 Hale Avenue, White Plains, NY. The symposium is titled "The Future of Energy Science ... Without Chemists? Unachievable!" It will feature four internationally known chemists – Dr. Hector D. Abruña of Cornell University, Dr. Stephanie L. Brock of Wayne State University, Dr. Jillian L. Dempsey of the University of North Carolina – Chapel Hill and Dr. Rolison, Nichols Medalist. Dr. Henry S. White of the University of Utah will introduce Prof. Rolison at the Nichols Award Dinner.

The entire program and reservation form will be published in the Jan., Feb. and Mar. *Indicators* and on the New York Section website at <http://www.NewYorkACS.org>

North Jersey Meetings

<http://www.njacs.org>

NORTH JERSEY EXECUTIVE COMMITTEE MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meeting to discuss topics of importance to running the section and representing the membership. **All ACS members are welcome** to attend this meeting and to become more involved in section activities.

Date: Monday, November 13, 2017

Time: 6:30 PM

Place: Location TBD & Teleconference (See www.njacs.org for details)



CAREERS IN TRANSITION MEETINGS

There will be no Careers in Transition Meetings until further notice.

**NEW YORK/NEW JERSEY
SOCIETY FOR APPLIED
SPECTROSCOPY**



NoJ ORGANIC TOPICAL GROUP

CALENDAR 2017

“Why use the Norris Regression - the Derivative Quotient Math in Regression?”

Speaker: David Hopkins

Date: Wednesday, November 8, 2017

Place: Horiba

* * * * *

Eastern Analytical Symposium: Gold Medal Award to Prof. Richard Van Duyne

“Nanoscale Chemical Imaging with Tip-Enhanced Raman Spectroscopy”

Speaker: Prof. Richard Van Duyne

“Translating SERS into a Robust Detection Platform for Uranium in Complex Matrices”

Speaker: Amanda J. Haes
University of Iowa

“Polymer-Enabled Analytical SERS Sensing”

Speaker: Christy L. Haynes
University of Minnesota

“Imaging Mass Spectrometry on the Nanoscale with Cluster Ion Beams”

Speaker: Nicholas Winograd
Pennsylvania State University

Date: Monday, November 13, 2017

* * * * *

“Materials testing at the Met: What display, shipping, and storage materials should or shouldn't be near the art.”

Speaker: Eric Breitung

Date: Friday, December 1, 2017

Place: Metropolitan Museum of Art

CALENDAR 2018

“Vibrational spectroscopy applications understanding protein secondary structure or application in protein production using NIR”

Speaker: John Wasyluk

Date: to be determined

Place: BMS

For more information, visit our website at www.NYSAS.org.

NJACS-OTG Early Career Symposium

Presentations

Synthesis and Study of Unusual Lipids

Speaker: Prof. Noah Burns
Stanford

Design and Development of the Commercial Process for a Tyk2 Inhibitor

Speaker: Dr. Ke Chen
Bristol-Myers Squibb

Iron(III)-Catalyzed Carbonyl-Olefin Metathesis

Speaker: Professor Corinna Schindler
University of Michigan

Using Enzymes as Catalysts for Non-Natural Free Radical Reactions

Speaker: Professor Todd Hyster
Princeton

Remote Functionalization of C–H Bonds of Aliphatic Amines via Decatungstate Photocatalysis

Speaker: Dr. Dani Schultz
Merck

Catalytic Synthetic Methods Based on P(III) ⇌ P(V) Redox Cycling

Speaker: Professor Alex Radosevich
MIT

Organizing Committee

Ken Fraunhoffer (Chair, BMS)
Steve Silverman (Merck)
Michael Smith (BMS)
Yalan Xing, (William Paterson University)
Michael Zacuto (Celgene)
Sue Zultanski (Merck)

Date: Thursday, November 30, 2017

Time: Check-in & breakfast at 8:00 AM
Symposium begins at 9:20 AM

Place: The Palace at Somerset Park
333 Davidson Ave,
Somerset, NJ 08873

Cost: Registration fee is \$120.00
(which includes symposium and lunch). Students: \$45 (limited number of seats)

Deadline for registration and payment:
November 20, 2017.

For further details, see our website.

Others

FALL 2017 SEMINAR SERIES AT NJIT

Dates: Mondays

Time: 2:45 PM

Place: Cullimore Lecture Hall 3
New Jersey Institute of Technology
University Heights, Newark, NJ

First Speaker: Professor Craig Arnold
Princeton University,
MAE and PRISM

Date: Monday, September 11, 2017

Seminar schedule:

<http://chemicaleng.njit.edu/news/seminars.php>

For more information contact the seminar coordinator, Dr. Gennady Gor (973) 596-2944, gor@njit.edu <http://chemicaleng.njit.edu/people/gor.php> Jebrown@infionline.net

Call for Nominations

COMMITTEE ON THE HISTORY OF THE NEW YORK SECTION

Over the past twenty-three years the New York Section has participated in the designation of seven National Historic Chemical Landmarks and four New York Section Historic Chemical Landmarks. A brief description of these National and local section landmarks may be found on the NY Section Home Page at newyorkacs.org under the Committee on the History of the NY Section. These landmark programs recognize achievements in the chemical sciences and related areas, in order to enhance public appreciation for the contributions of the chemical sciences to modern life.

Please consider making a nomination for an historic chemical landmark. The Committee on the History of the NY Section will consider all nominations. In addition to a particular achievement, an historic library, building or association may be worthy of this distinction.

Please send your nomination, with supporting documentation, to the Chair of the Committee, Dr. Neil Jespersen, at jespersn@stjohns.edu



WESTCHESTER CHEMICAL SOCIETY DISTINGUISHED SCIENTIST AWARD 2018

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2018". Scientists who live or work in Westchester or the Bronx qualify. The awardee is expected to attend the Awards Dinner (April/May time-frame) and to present aspects of his or her work. Self-nominations are acceptable. Nominations are not carried over from previous years. New and possibly updated nominations should be submitted. Please send a cover letter stating why your nominee should receive the award along with the nominee's resume by January 31, 2018 to:

Dr. Paul Dillon at PaulWDillon@hotmail.com or 67 Matthes Road, Briarcliff Manor, NY 10510

or to:

Dr. Peter Corfield at pwrc@earthlink.com.



NY SECTION — SOCIETY FOR APPLIED SPECTROSCOPY

2018 GOLD MEDAL AWARD

Nominations are being sought for the 2018 Gold Medal Award of the New York Section of the Society for Applied Spectroscopy. This coveted award was established in 1952 to recognize outstanding contributions to the field of Applied Spectroscopy. The Gold Medal will be presented at a special award symposium, arranged in honor of the awardee, at the 2018 Eastern Analytical Symposium. A nominating letter describing the nominee's specific accomplishments should be submitted along with a biographical sketch and list of publications by January 10th, 2018. Please email all materials to Kathrynalee@hotmail.com.

SURPRISE

our editor by calling and saying you appreciate the quality and content of our newsletter. Our editor works hard to maintain a publication of interest to our membership. Oh, and by the way, you could also give credit to our advertisers who financially support us.

Call for Nominations

2018 BLAVATNIK NATIONAL AWARDS NOMINATE LEADING FACULTY CANDIDATES



 LIFE SCIENCES  PHYSICAL SCIENCES & ENGINEERING  CHEMISTRY

ONE LAUREATE IN EACH CATEGORY AWARDED **\$250,000**

Nominations open on **SEPTEMBER 27TH, 2017**

NOMINATIONS CLOSE ON NOVEMBER 15TH, 2017

Nominate at www.blavatnikawards.org


Letters of support must be submitted by **NOVEMBER 29TH, 2017**

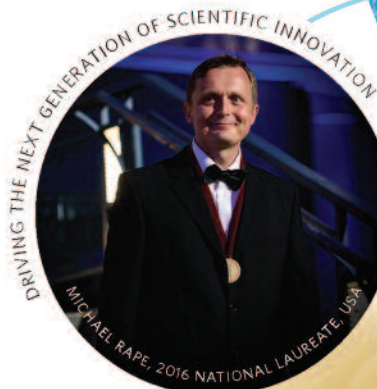
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 Blavatnik Awards
Young Scientists



Call for Nominations

2018 BLAVATNIK NATIONAL AWARDS



Program: Blavatnik National Awards for Young Scientists



Mission: Recognize America's most promising faculty-rank researchers



Categories: Life Sciences, Physical Sciences & Engineering, and Chemistry



Awards: Three Laureates, \$250,000 each in unrestricted funds, paid directly to Laureate, one in each category

ELIGIBILITY

The nominee must:

- Have been born in or after 1976.
- Hold a doctoral degree (PhD, DPhil, MD, DDS, DVM, etc.).
- Currently hold a faculty position at an invited institution in the United States.
- Currently conduct research as a principal investigator in one of the disciplinary categories in Life Sciences, Physical Sciences & Engineering, or Chemistry.
- The Blavatnik Awards welcomes candidates from underrepresented groups in science and engineering.

LIMITED SUBMISSION

- Candidates must be nominated by their institution. Self-nominations are not allowed.
- Each institution may submit up to **three nominations**, one in each disciplinary category of Life Sciences, Physical Sciences & Engineering, and Chemistry
- Nominations must be submitted using the online nomination system.

NOMINATION MATERIALS

- Nominator's **Rationale for Nomination** (200 words).
- Nominee's **Curriculum Vitae** (4 pages).
- Nominee's **Research Summary** (1,000 words).
- **Full-text publications and/or patents** representing the nominee's work (up to 4).
- Names and email addresses for two letter writers.

EVALUATION CRITERIA

Nominees and their work as independent investigators will be evaluated according to the following criteria:

- **Quality:** The extent to which the work is reliable, valid, credible, and scientifically rigorous.
- **Impact:** The extent to which the work addresses an important problem and is influential in the nominee's field.
- **Novelty:** The extent to which the work challenges existing paradigms, employs new methodologies or concepts, and/or pursues an original question.
- **Promise:** Future prospects in the nominee's field and potential for further significant contributions to science.

QUESTIONS

This is a summary of the Blavatnik National Awards. Please read the 2018 Blavatnik National Awards Guidelines for complete details. For general questions about rules and eligibility, please consult the Frequently Asked Questions on the Blavatnik Awards website.

For all other inquiries, please contact the Blavatnik Awards team at blavatnikawards@nyas.org or 212.298.8624.

Nominate at:
www.blavatnikawards.org

Nominations Open:
September 27th —
November 15th, 2017

Letters of Support Due:
November 29th, 2017



Blavatnik Awards
Young Scientists

BLAVATNIK
FAMILY FOUNDATION



The New York
Academy of Sciences

PLEASE VISIT WWW.BLAVATNIKAWARDS.ORG FOR MORE INFORMATION

Students 2 Science

About Us

Students 2 Science, Inc. is a 501(c)(3) model program in New Jersey that bridges the needs of the public and private sectors. Our mission is to inspire, motivate, and educate elementary, middle and high school students to pursue careers in science, technology, engineering and math (STEM subjects). We do so by providing an authentic, state-of-the-art laboratory experience complete with modern instrumentation and professional scientists. Additionally, we offer a remote, web-based virtual STEM experience that eliminates geographic and language constraints and broadens our reach to serve a wider audience. Teams of students, working collaboratively with scientific professionals who serve as role models, solve real life problems while being introduced to a wide variety of 21st century STEM career opportunities.

Take a look at our About Us Video:
<https://students2science.wistia.com/medias/hbxylzpw5o>.

We are very proud of the extraordinary growth and accomplishments of Students 2 Science and the support and recognition we have received from state, municipal and district leaders, teachers and administrators,

corporate partners, and many others.

With the help and generosity of our partners, S2S has:

- Been recognized as a national model in authentic STEM education.
- Increased our V-Lab program to 335 sessions during the 2016 - 2017 academic year.
- Launched a new web-site, bringing much needed resources to educators and administrators.
- Continued to provide solutions to districts aligning them to the Next Generation Science Standards and 21st century skills for students.
- Continued to encourage the development of STEM Ecosystems by working with diverse leaders including innovators and visionaries from academia, non-profit, public policy, grass root membership and corporations.
- Created an exciting culture of passion around science where the public and private sectors are working together to close the gap in STEM education.

To request a downloadable pdf of our annual report "2016-2017: A Year in Review" please call Cyndi Robeson at (973) 947-4880 ext. 516.

S2S is grateful for the support of ACS, and looks forward to another great year of partnership and collaboration.

STUDENTS 2 SCIENCE



2016 – 2017: A YEAR IN REVIEW

Call for Volunteers

OPPORTUNITY FOR ACS MEMBERS TO AID STUDENTS 2 SCIENCE IN A HYBRID VIRTUAL LAB PROGRAM

Can you spare a few hours of your time? Do you like working with students and would you like the opportunity to share your science knowledge in a classroom? Students 2Science (S2S) is seeking volunteers to support its V-Lab program. S2S has a series of elementary, middle, and high school experiments that run in various schools across New Jersey. Members are especially needed to mentor students in participating schools to help with experiments. It's great fun, a wonderful way to give back, and only requires 1-2 hours of your time. Experiments include CO₂ to the Rescue, Curious Crystals, Mystery of M&Ms, Thermochemistry: *Exothermic and Endothermic Chemical Reactions*, and *Glow it Up: The Chemistry of Luminol*. All are age-appropriate and volunteers are provided with instructions on how to support in the classroom prior to your scheduled volunteer day.

For more information, contact Cyndi Roberson, Director of Corporate Relations, at (973) 947-4880 ext. 516 or visit the website to register for the upcoming school year: www.students2science.org.



SEMINAR SPEAKERS WANTED

The New York Section of the ACS is in search of speakers that we can add to our Speakers Bureau database of interested local area speakers who are available for Section-wide seminars and symposia. If you have an area of research or interest that would provide an interesting talk appropriate for our Section members, and would like to be included in our Speakers Bureau, please contact the New York Section Office at (516) 883-7510 or send an email to njesper1@optonline.net with the following information that will be posted on the Section's website: your name, affiliation, a title, and 5-6 words briefly summarizing your area of specialty. We look forward to hearing from you about topics that you wish to share with our other members!

Call for Applications

FREDDIE AND ADA BROWN AWARD

This Award recognizes and encourages high achieving middle- and high-school students, of African American and Native American heritage, to further develop their academic skills, with views on careers in the chemical sciences.

Award Amounts

Middle School \$100.00 Check and \$50.00 gift certificate : High School \$200.00 Check and \$100.00 gift certificate.

Who is Eligible

Middle School students enrolled in a science class : High School students who have completed a chemistry course

Grades

Middle School B Average or better in Science, B Average overall : High School B Average in Chemistry, B Average overall

Letter of Recommendation

Math or Science/Chemistry Teachers or Guidance Counselor

Statement

Middle School "Why I Like Science" : High School "Why I Like Chemistry"

Selection Criteria

Applicants must be African American (Black) or Native American (including Pacific Islander) or of mixed race.

Transcript

Official transcript required.

Financial Need

Not Required.

Applications available on the web:

www.njacs.org/freddieadabrown

or from your school guidance office.

Return Application To

Freddie and Ada Brown Award, NJACS Section Office, 49 Pippens Way, Morristown, NJ 07960

Due Date

Completed Applications must be post-marked no later than March 31 Annually

Questions: Contact Jeannette Brown Jebrown@infionline.net or (908) 239-1515

Call for Applications

OPEN-NJ Scholarship Program Department of Chemistry and Biochemistry



MONTCLAIR STATE UNIVERSITY

Receive one of the scholarships (\$10,000/year for 2 or 3 years) to enter one of the following programs at Montclair State University

- *Masters in Pharmaceutical Biochemistry*
- *Masters in Chemistry*
- *Masters in Chemistry with a Concentration in Biochemistry*

This program is open for the following majors: Biochemistry, Chemistry, Physics, Molecular Biology, Biology, Environmental Sciences, and related degrees (B.A., B.S.).

Summer Research Stipends available for highly qualified students.

Information: <https://www.montclair.edu/csam/open-nj/>

<https://www.montclair.edu/graduate/news/article.php?ArticleID=16127>

Requirements for Program

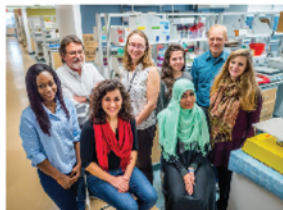
- Minimum overall 3.0 GPA (B.S. or B.A. degree)
- Completed General Chemistry I (with lab), General Chemistry II (with lab), Organic Chemistry I (with lab), Organic Chemistry II, Calculus I and II and a year of Physics.
- US citizen, national, admitted refugee or permanent resident
- Enrolling full time in an MSU Department of Chemistry and Biochemistry M.S. program
- Financial aid eligible as determined by the Office of Financial Aid.
- Committed to participating in all OPEN-NJ meetings including networking events.

Apply

Apply to the Graduate Program at Montclair State University (<http://www.montclair.edu/graduate/>) AND email Dr. Nina Goodey (goodeyn@mail.montclair.edu) to indicate interest in the OPEN-NJ Scholarship Program. The OPEN-NJ Selection Committee will use your graduate school application.

Questions?

Please, email Dr. Nina Goodey (goodeyn@mail.montclair.edu).



In the News

IU DISCOVERY COULD REDUCE NUCLEAR WASTE

Indiana University scientists report new, highly accurate method to predict effectiveness of molecules that extract toxic elements from the environment

September 14, 2017

BLOOMINGTON, Ind. — A discovery by Indiana University researchers could advance the long-term storage of nuclear waste, an increasingly burdensome and costly task for the public and private agencies that protect people from these harmful chemicals.

In a study published today, the scientists report they have developed a new chemical principle with the potential to revolutionize the creation of specially engineered molecules that extract radioactive elements from nuclear waste, significantly reducing the volume of these dangerous materials. The method is also applicable to molecules created to extract chemical pollutants from water and soil.

"This work represents a major step forward in the effort to engineer specially designed nanostructures by providing a new, highly accurate method to predict how these molecules will behave in solution," said lead author Amar Flood, a professor in the IU Bloomington College of Arts and Sciences' Department of Chemistry.

The breakthrough is reported in a cover article in the journal *CHEM*.

Flood said the study addresses the fact that it is nearly impossible to predict how efficiently an engineered molecule will perform in the real world. This is because chemists can currently only design molecules to function in isolation, despite the fact that molecules exist in combination — or "in solution" — with other molecules. Salt water, for example, is a solution of salt in water.

The primary researcher responsible for the method is Yun Liu, a Ph.D. student in Flood's lab.

Additional authors on the paper were professor Krishnan Raghavachari and Ph.D. student Arkajyoti Sengupta, both in the IU Bloomington Department of Chemistry, who were responsible for the study's computa-

tional component.

This research was supported by the U.S. Department of Energy.

National

This message is sent on behalf of Greg Milligan, Chair of the Subcommittee on Grants and Awards of the Committee on Local Section Activities (LSAC) and Jason Ritchie, LSAC Chair.

Dear Local Section Officer and/or Councilor, LSAC is offering a new grant opportunity for local sections this Fall. This grant program, "Local Section Members Engaging Through Technology, or simply "METT", broadens the aims of last fall's pilot "Virtual Event Participation Grant" beyond a single event. METT's purpose is to assist local sections to harness technology to further engage members to fulfill section's goals and activities, and to improve member recruitment efforts.

METT Funding Guidelines & Procedures

Local Sections can request funding of up to \$2,000 per application. Only one application is permitted per local section. Reviewers are looking for specificity in budgets. You can use these linked sample budgets (A and B) as models for how to craft your project's budget. The focus of this grant is technology, and LSAC is expecting requests to purchase and utilize tools such as software, hardware, or subscriptions, etc. We encourage local sections to limit food expenses within 25% and venue rental costs within 15% of the total amount requested from LSAC.

The submission deadline is 11:59 pm Eastern time on **October 15, 2017**

Learn more and apply now.

If you have any questions about METT, please contact lsac@acs.org.

Sincerely,
Greg Milligan and Jason Ritchie
American Chemical Society
1155 Sixteenth Street, NW
Washington, DC 20036

Professional/Product Directory



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- Companies for laboratory and management positions
- Universities & Colleges for teaching positions and laboratory personnel
- Hospitals for technical and research personnel

There are several web sites that may help you search for these open positions.

- www.mboservices.net
- <http://newyorkacs.org/jobs.html>
- <http://njacs.org/jobs.html>

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