

THE IOTAN

Iota Sigma Pi National Honor Society for Women in Chemistry

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Iota Sigma Pi Honors Outstanding Students

by Kathryn Thomasson, Director for Student Awards

Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research



Sondra Hellstrom, Stanford University

Sondra Hellstrom, an outstanding graduate student of Dr. Zhenan Bao of Stanford University, is developing and characterizing suitable materials for flexible transparent electrodes, which are critical for use in large-area flexible touch screens, solar cells, and flat panel displays. In addition to her many publications, she has one provisional patent, an indication of the importance of the work. Ms. Hellstrom writes about her work: "One approach to preparation of alternative transparent electrodes involves formation of a thin or porous film of material with ultrahigh conductivity. A promising candidate is the carbon nanotube (CNT) network. Carbon nanotubes have typical mean free paths of more than 1 micron, can be cast from solution onto flexible substrates, and have excellent mechanical properties. There are. however, at least two key challenges to using CNT networks for electrodes. The first is that transport through CNT network is dominated by large junction ----Continued on Page 2

Undergraduate Award for Excellence in Chemistry



Emma Yates Princeton University

Emma Yates, a senior at Princeton University, not only excels in Chemistry and coursework, but also excels in other areas, such as her leadership roles in campus organizations. She has a strong research interest in the development of novel classes of pharmaceuticals to be applied to important human diseases. Emma writes: "The overriding goals of my research career will be to elucidated the structural and mechanistic bases for how protein-protein interactions and protein aggregation processes occur inside of living cells, and to develop novel classes of small molecule therapeutics designed to selectively and locally redirect these biologically and clinically relevant interactions." She will have the opportunity to work in this field as a Churchill scholar at Cambridge in Professor Chris Dobson's Her nominator, Professor lab. Annabella Selloni, writes: "Despite the demands of senior coursework and responsibilities as the president of the ----Continued on Page 2

Gladys Anderson Emerson Scholarship



Christina M. Chang Princeton University

Christina M. Chang is an outstanding Chemistry major and Computer Science minor at Princeton University who has dedicated much of her undergraduate career toward diverse research experiences, ranging from computational genomics work to metabolomics research.

Currently, Christina is conducting bioinorganic chemistry research under the guidance of Professor John T. Groves in the Princeton Chemistry Department. Her senior thesis will focus on the catalytic generation of chlorine dioxide by bio-inspired

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Anna Louise Hoffman Award Sondra Hellstrom

Continued from Page 1 resistances between nanotubes. The second is that, in solution, strong van der Waals forces between CNTs drive aggregation into bundles, which are markedly less efficient conductors than single tubes. My aim has been to develop composite materials that address each of these challenges. To address the second, I have explored the of regioregular poly-3use hexylthiophine (rr-P3HT) as a nanotuble dispersing agent. rr-P3HT disperses carbon nanotubes at lower surfactant concentrations than more common CNT surfactants; it is also more conductive, especially when doped, making these composites promising for transparent electrodes." In a letter of support for Sondra, Dr. Michael D. McGehee writes that Sondra has been chosen to be the lead on a review article because of her writing skills superior and organizational ability. Furthermore, he goes on to say that Sondra is in the top 5% of PhD students at Stanford.

Undergraduate Award for Excellence in Chemistry Emma Yates

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University's Bioethics Forum (which includes organizing and overseeing the annual Princeton Bioethics Conference she initiated last year), this young scientist manages to devote an inordinate number of hours to her research."

Her research advisor at Princeton, Professor Erik J. Sorensen, writes: "I have never had an undergraduate research participant become so important to one of our research projects, and I have never seen anyone at her stage of development learn new concepts, methods, and techniques as quickly and thoroughly as Emma." He also writes: "Emma became integral to our ongoing effort to expand the depth and diversity of the "pleuromutilin" class of antibiotics through advances in de novo chemical synthesis."

GAE Scholarship Winner Christina M. Chang

Continued from Page 1 catalysts. She writes, "I hope to use chemistry to answer fundamental questions that are both scientifically interesting and relevant to today's societal problems. In this way, I will dedicate my life to contributing new knowledge and inspiring in others a similar scientific passion." In graduate school, Christina hopes to study and innovate artificial photosynthetic systems that may provide a renewable, storable energy resource.

Christina brings her personal enthusiasm to her community and the wider world through chemistry outreach and public engagement efforts. Christina encourages others to pursue, appreciate, and understand science in a variety of contexts, including designing and teaching a science curriculum for at-risk middle school students and creating a podcast about her dyesensitized solar cell research at the University of Edinburgh, Scotland. Christina has founded the Women in Colloquium to provide Science personal faculty mentoring relationships to students, and is also currently helping to found the Princeton University Chemistry Society, a Student Chapter of the American Chemical Society. Christina Chang is not only an accomplished scholar, but also she has all the makings of a distinguished scientist and professor the whole package -- intelligence, creativity, enthusiasm, and dedication. Christina Chang's nominator, Professor Annabella Selloni of the Princeton Chemistry Department, writes: "Christina's cheerful spirit, her ability to work well with people of all ages and backgrounds, her love of all things science, and her determination to make a difference in the world propel her onward and upward."

Got news? Let us know! Please send an e-mail to the National Editor (contact info on page 7).

Do you have materials for the Iota Sigma Pi Archives?

Anyone having material for the lota Sigma Pi Archives should mail the items to:

Susan S. Marine Dept of Chemistry & Biochemistry Miami University Middletown 4200 East University Blvd. Middletown, OH 513-727-3372 mariness@muohio.edu

If in doubt, contact Susan... or just send it!

Dr. Susan Kauzlarich Iota Sigma Pi 2011 National Honorary Member

By Sara Paisner, Director for Professional Awards



Susan Kauzlarich received her BS degree from the College of William and Mary and her PhD from Michigan State University. Following postdoctoral work with John Corbett at Iowa State University, she joined the faculty of the University of California-Davis, where she is now Professor of Chemistry. She is a world-renowned expert on Zintl phases and the synthesis and characterization of nano-materials, with interests ranging from magnetic resonance imaging to hydrogen storage to magnetic ordering. Prof. Kauzlarich is a Fellow of the American Association for the Advancement of Science and a recipient of the Mayer Distinguished Scholar Award from Argonne National Laboratory. She also received a NASA Tech Brief Award for her work on thermoelectric power generation. She has been very active in service to the profession: she currently serves as an Editor for Chemistry of Materials and on the Editorial Advisory Board for the Handbook on the Physics and Chemistry of the Rare Earths.

Previously she was an Associate Editor for the Journal of Solid State Chemistry, a member of the Editorial Board of Inorganic Chemistry, Chair of the ACS Division of Inorganic Chemistry, and the Review Board for Research Corporation. She has been recognized in many ways for her outstanding mentoring of disadvantaged students, including receiving from President Obama the 2008 Presidential Award for Excellence in Science, Math and Engineering Mentoring.

National Honorary Member is the highest honor that Iota Sigma Pi bestows on women chemists. The award is presented for exceptional and significant achievement in chemistry or an allied field of such nature as to merit international recognition. The award will be presented to Dr. Kauzlarich at the Iota Sigma Pi 2011 Triennial Convention in Cleveland where she will be presenting a summary of her work.

Dr. Gillian Eggleston 2011 Violet Diller Award for Professional Excellence

By Sara Paisner, Director of Professional Awards



Dr. Gillian Eggleston is a Lead Scientist and Research Chemist at the Southern Regional Research Center of the Agricultural Research Service of the United States Department of Agriculture in New Orleans. She was born and brought up in Blackburn, England and received a B.Sc. in Chemistry and Biochemistry from the University of Notttingham, UK in 1984, and Ph.D. in Carbohydrate Chemistry from Cranfield Institute of Technology UK in 1989. Dr. Eggleston's research contributions have mostly been in the areas of industrial sugarcane and sugar beet deterioration, juice clarification processes, industrial enzyme applications, measurement of industrial sucrose losses, and effects of extraneous sugarcane matter on processing. Dr. Eggleston's research has had significant scientific and commercial impact in the U.S. and worldwide sugar industry. Dr.

Eggleston has 213 publications, which include 67 refereed papers, 12 refereed book chapters, 46 symposia proceedings, technical bulletins, etc., and 88 abstracts.

Her sustained research excellence is evidenced by the 16 national and international awards she has received since 1999, not only for her research but also her technology transfer efforts. These awards have included the USDA-ARS-MSA Early Career Scientist, four International awards, a USDA-ARS Superior Technology Transfer Award, and two 2007 FLC National Awards for Excellence in Technology in two different areas of research. She has received numerous invitations to speak at scientific conferences or to companies in Brazil, Morocco, U.S., U.K., France, and South Africa, and serve on expert panels. She is an active member of the American Chemical Society (ACS) and has contributed to this organization by serving as an officer of the ACS Carbohydrate Chemistry Division (including Chair, Treasurer, and Chair of the strategic planning committee), organized four ACS symposia, and served as the senior editor of three symposia books. She has served as a reviewer for the International Society of Sugar Cane Technologists (ISSCT), and currently serves on the International Panel of Referees for the International Sugar Journal. She also serves as General Referee for Molasses for the International Commission for Uniform Methods in Sugar Analysis (ICUMSA).

Dr. Lauren Webb 2011 Agnes Fay Morgan Research Award

By Sara Paisner, Director of Professional Awards



Lauren Webb grew up in Salem, OR, and received her A.B in Chemistry (Music minor) from Bowdoin College in 2000. She entered graduate school at the California Institute of Technology as an NSF Graduate Research Fellow and earned her Ph.D. in Chemistry in 2005. She did her graduate work in the laboratory of Prof. Nathan Lewis, where she studied chemical and electronic properties of functionalized atomically flat silicon (111) surfaces. From 2005 – 2008 she was an NIH Postdoctoral Research Fellow in the Chemistry Department at Stanford University, working in the laboratory of Prof. Steven Boxer. Her research focused on quantifying electrostatic fields in proteins using vibrational Stark effect spectroscopy. As a postdoc she received the Burroughs Welcome Fund's Career Award at the Scientific Interface. Lauren joined the Department of Chemistry and Biochemistry at The University of Texas at Austin in the fall of 2008. Her research interests are centered around understanding and manipulating the mechanisms of interaction, organization,

and self-assembly of biological macromolecules that lead to the complex and emergent properties of living systems

Lisa N. Gentile 2011 Centennial Award for Excellence in Teaching

By Sara Paisner, Director of Professional Awards



Lisa was born and raised in New England. She attended Colgate University as an undergraduate where she majored in chemistry and was a collegiate swimmer. She completed her Ph.D. in biochemistry at Brown University and did postdoctoral work in biophysics, supported as a Jane Coffin Childs Postdoctoral Fellow, at the University of British Columbia in Vancouver, BC. Lisa is in her 13th year as a faculty member at a primarily undergraduate institution. Her scholarship focuses on the structure, dynamics, and regulation of proteins involved in disease. She has published 30 peerreviewed articles, many with undergraduate co-authors. In addition to mentoring undergraduates, Lisa and her group spend time working on independent research projects with local high school teachers and students. Her research program has been recently supported in excess of \$2.1 million by NSF-CAREER, RUI and MRI, NIH-AREA, and ACS-PRF.

Also, at the University of Richmond (UR), Lisa has been involved in an institutional HHMI Undergraduate Science Education award exceeding \$1.4 million. This latter grant funded the design, and implementation of IQS (integrated quantitative science: http://iqscience.richmond.edu/) I and II. This is a double course with lecture, lab, and workshop that allows first year students to spend half of their year exploring socially relevant topics (i.e., antibiotic resistance) through which they come to understand the fundamental concepts of traditional first semester courses in biology, chemistry, computer science, mathematics, and physics. It was designed and implemented in collaboration with 9 other faculty members from the 5 science / math disciplines. In 2010, Lisa received the American Society of Biochemistry and Molecular Biology (ASBMB) Award for Exemplary Contributions to Education.

Chapter News: Chlorine Chapter

Reported by Ann Taylor

Since Chlorine Chapter of Louisiana is a regional group, we have initiation at each of our luncheon meetings in different cities. We held an officers' planning meeting and three luncheon meetings throughout the year. The luncheons include a business meeting, but their main function is networking. They also allow the student members to be exposed to professional members.

We also engaged in outreach, including a National Chemistry Week program, an all-day Girl Scout program, and science fair judging. These activities make Iota Sigma Pi more visible to the public and reinforce the message that scientists can be women.

The Girl Scout Women in Chemistry event in Baton Rouge was a double event – a Brownie activity in the morning and a Junior activity in the afternoon. The event was funded by a grant from Iota Sigma Pi and another from the Louisiana American Association of University Women. There were 21 Brownies; who completed 7 activities to qualify for a Science Badge. Lunch was provided for both the volunteers and the girls and their leaders. The pizza (several varieties) and juice were enthusiastically consumed by all participants. Then the Juniors arrived and had lunch before their activities. The Juniors' session had 26 participants. Each completed a Science Badge with 8 activities. Volunteers consisted of 10 ISP members and one American Association of University Women member, the Louisiana President.





Iota Sigma Pi and American Association of University Women leaders for Brownies activities

The Chapter is delighted that Dr. Debra Dolliver of Southeastern Louisiana University is the recipient of the 2010 Centennial Award for Excellence in Undergraduate Teaching. Our members continue to invite friends and students to our meetings and most of the invites join. We initiated 10 new members this year. We also

have two new transfer members. We have asked professors at each of the universities in our area to be the ISP representative.



 $I\Sigma\Pi$ Member News

Professor Jayne Garno wins 2010 Presidential Early Career Award for Scientists and Engineers

by Anne Taylor



Iota Sigma Pi congratulates Chlorine Chapter Member Professor Jayne Garno who received two prestigious awards. Jayne recently visited New York City to participate in a symposium sponsored by the Dreyfus Foundation. It was previously announced the she received a Camille Dreyfus Teacher-Scholar Award for 2010. Additionally, President Obama named Jayne as a recipient of the Presidential Early Career Awards for Scientists and Engineers. She will be honored at a ceremony at the White House. The award was announced in The Advocate (11/7) and on WAFB TV (11/6). Here is the announcement web page:

http://www.whitehouse.gov/administration/eop/ostp/pressroom/11052010

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Sources of Iota Sigma Pi Supplies and Information

Supplies

For "Membership Information" and "National Awards" pamphlets, History, Constitution and Bylaws, Rituals of Iota Sigma Pi, Rules and Regulations, *The Iotan*, Speakers Bureau information, contact the Supplies Coordinator.

Initiation

For Membership Application and Summary of Applicants forms, contact the National Secretary.

Forming a Chapter

For procedural information and application forms, contact the National Vice President.

For Charter Certificate, contact the National Historian.

Financial Reports

For Financial Report forms, contact the National Treasurer.

Awards

For criteria and nomination forms: Agnes Fay Morgan Research Award, National Honorary Member, or the Violet Diller Award for Professional Excellence, contact the Director for Professional Awards.

Undergraduate Award for Excellence in Chemistry, Anna Louise Hoffman Graduate Research Achievement Award, Gladys Anderson Emerson Scholarship, contact the Director for Student Awards.

Dues

For dues statements and payments, contact the National Treasurer.

Chapter Operations

For changes in Chapter Officers list and forms for reporting local elected officers, contact the National Vice President.

Address Labels & Membership List For change of address and member death, contact the Records Chair.

Historical Information Contact: National Historian

See National Council listing for officers' names and addresses.

IOTA SIGMA PI - NATIONAL COUNCIL 2008-2011

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Wait!

News about you makes this publication interesting for other Iotans. Please take a few minutes to jot down what you are doing.

- 1) Speeches, papers, symposia, invited talks
- 2) Publications, patents, grants awarded
- 3) New positions, appointments, promotions, awards, honors, retirements, postdoctoral research
- 4) Offices held in professional societies
- 5) Avocational achievements, miscellaneous

Items for "Chapter News" or for general information are also solicited. Send a photo of your activity (electronic format preferred). Please include your chapter name.

Please send news and information to Ajitha Devarajan, Editor Ajitha.devarajan@gmail.com or contact by phone for fax information.