



# THE IOTAN

February, 2001 No. 80

## Iota Sigma Pi Honors Three Outstanding Students

by Lily Ng, (F) Director for Student Awards

### **Gladys Anderson Emerson Scholarship**

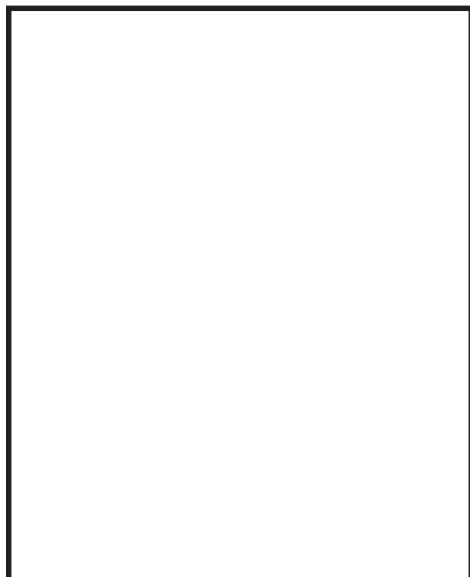
Veronika Gagovic  
North Central College

### **Undergraduate Award**

Angel Chan  
Western Illinois University

### **Anna Louise Hoffman Award**

Laura Kaufman  
University of California-Berkeley



**Veronika Gagovic**, a junior at North Central College, Naperville IL, was selected as the recipient of the **2000 Gladys Anderson Emerson Scholarship**. Her nominator, Dr. Anne Sherren, wrote that Veronika is an A student!

“Veronika is the kind of student who enjoys learning. It is exciting to see her grapple with a concept and then say ‘This is fascinating, it explains so many observations.’” To her professors, Veronika is an active learner who enriches their classes every term. She often asks the appropriate “why question” to challenge both herself and her professors.

Dr. Nancy Peterson, Veronika’s research advisor commented that she is an excellent student with a perfect GPA. But what her grades do not show is that she is a very inquisitive student. She does not simply “sponge” up the information in the classroom. “Rather, she actively puts the information into the big picture and is able to integrate material learned from various courses.” Veronika’s research involved the investigation of salamander secretions for neurotoxicity and this experience maybe one of the reasons for her to consider seriously a career that involves research as well as medicine. Another reason may be because of her father, an M.D. who was abducted and killed in Bosnia when she was 13.

Veronika’s curiosity and admiration for chemistry started when as an 11 year-old she was introduced to the periodic chart. But after the death of her father, as she described it: “Chemistry was a world into which I escaped when the pressure around me started to take over. The molecules were the perfect reality,

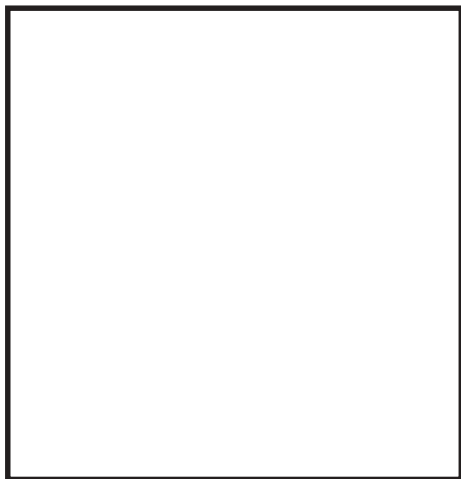
where everything had a cause and place, where bad things did not just happen, where unreactive elements did not randomly destroy the rest.” To support her family, Veronika worked as a translator with the NATO forces. Through this position, she came to the United States and North Central. In college, chemistry becomes the language that Veronika shares with her classmates and the means through which she builds her true friendship.

In her college career, Veronika integrates leadership, ethics and teamwork into everyday reality. She serves as the Vice President of the Pre-health Organization and she is the Student Representative on the Liaison Committee with the North Central College Board of Trustees. She also volunteers at Rush Copley and Shriners Children Hospitals.

Veronika’s goal for the future is to help people. Currently her plans include finishing her biochemistry major at North Central College. Then she is interested in pursuing advanced study and possibly a program that leads to a dual Ph.D./M.D. Degree.

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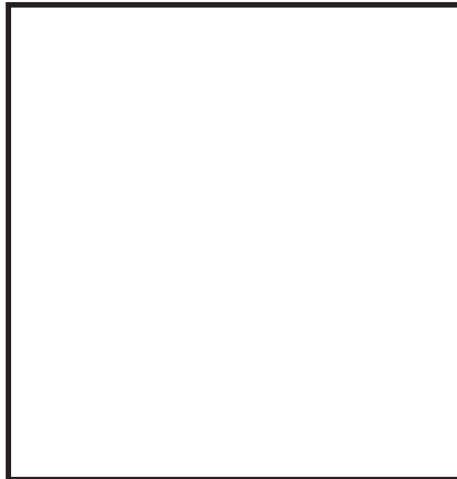
The **2000 Iota Sigma Pi Undergraduate Award for Excellence in Chemistry** was awarded to **Angel Chan**, a senior in Chemistry and Microbiology at Western Illinois University. Her nominator and research advisor, Professor Lisa Wen, stated that Angel is a self starter. "She has a clear understanding of the objective of the project and the detailed protocols. She is quick in learning new techniques. She is thorough, very well organized and highly motivated." Another of her recommenders, Dr. Ronald Terry, ranked Angel as "one of the top 5 brightest students to go through our program during the last 12 years that I have been here". Dr. T. K. Vinod called her a remarkable student, 'one of the best I have ever taught'. He ranked her in the top 1-2 % of all the undergraduate students (nearly 700) he has taught.

Angel has been involved with several research projects of faculty members. One of her honors projects was associated with site-directed mutagenesis of proteins from pumpkin seeds (*Cucurbita maxima Trypsin Inhibitor V*), which is widely known as a specific inhibitor of human blood coagulation factor XII (Hageman factor). Her second project involved designing and synthesizing of *m*-terphenyl based molecular sieve. She has synthesized the building blocks of the molecular sieve, and the assembly and characterization are under progress. Angel has presented her research at the annual Student Research Conference held on the campus of Northeastern Illinois University and at the ACS Midwest Regional Meeting.

She has also presented at the Joint Meeting of American Society for Biochemistry and Molecular Biology and the American Society for Pharmacology and Experimental Therapeutics.

Angel has been on the Dean's list of outstanding students from her very first semester at WIU. She has received numerous awards/honors for her academic achievements at Western, including, Outstanding Freshman in Chemistry, Outstanding Sophomore in Chemistry, the ACS Polymer Science Award for an outstanding organic chemistry student, Outstanding Junior in Chemistry, Dr. Harbin Scholarship in Chemistry, Outstanding senior in Chemistry, an honor's research grant from the University Honors Program, a scholarship from WIU Foundation and a minority achievement book award.

For the future, Angel's goal is to obtain an M.D.-Ph.D. degree specializing in biological chemistry because she feels that biochemistry is essential for understanding the chemical basis of life.



**Laura Kaufman**, a third year graduate student at University of California, Berkeley, is the recipient of the **2000 Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research**. Laura's thesis project concerns the development of multidimensional spectroscopies, specifically two-dimensional Raman spectroscopy and two-dimensional photon echo spectroscopy for the study of dynamics and structure in complex systems. Dr. Graham Fleming,

Laura's nominator commented that "in looking back over 21 years of advising graduate students at the University of Chicago and the University of California, Berkeley, Laura stands out as being exceptional. She is a rare combination of a remarkable intellectual and a determined and resourceful experimentalist."

Laura joined the Fleming group at the time when researchers at Berkeley, in Japan and the Netherlands realized that the multidimensional Raman experiment they were carrying out was fatally compromised by an interfering signal. Working with postdoc David Blank, Laura developed a formal strategy to select the desired signal and discriminate against the much stronger interfering signals, carried through the excruciatingly complex calculations to define the required experimental configuration, found it and set up the experiment. Working together, they got a preliminary data set that gave the first real 2D Raman signals. Then working alone, Laura confirmed the new result and went on to collect a full set of all the tensor components of the 2D signal over the Christmas period! Laura also independently carried out the first 2-D fifth-order photon echo measurements for dye molecules in solution. Dr. Fleming stated that he has very few if any students or postdocs who could have done the experiment at Laura's stage despite the fact that his former students and postdocs are now on the faculties of Cornell, Harvard, MIT, University of Chicago, and at least ten other major US universities.

According to her teaching supervisor, Dr. Robert Harris, Laura is also a superb TA. She was able to clearly explicate the material covered in the graduate quantum mechanics course to the class of students with unusually varied backgrounds. Often, she presented derivations and analyses which differed from Dr. Harris' and also suggested excellent problems for the problem sets and the exam which were adopted by Dr. Harris.


Laura has published her research in journals like the Journal of Chemical Physics and in presentations at the American Physical Society.


# Planning the Centennial Celebration for Berkeley, July 12-16, 2002



21, 2000,

Interim Council Meeting, July 21, 2000 in Berkeley. Left side, front to back: Sara Gaucher, Rick Hermann, Christine Hermann, Sharon Vercellotti, Susan Marine, Lily Ng, Pat Fish, Amy Micheels. Right side, front to back: Linda Brazdil, Donna Nelson, Amy Prieto, Kathryn Thomasson, Ryoko Kita, Janet Clark, Kathryn Louie.


  
**Iota Sigma Pi**  
**Alumni Social Hour**  
**Wyndham Emerald Plaza**  
**Emerald**  
**6 to 7:30 PM**  
**Monday, April 2, 2001**  
**at the**  
**221st National American Chemical Society Meeting**  
**San Diego CA**



## Early Professional Women Chemists

Ellen Swallow Richards.....1842-1911  
 Rachel Lloyd.....1839-1900  
 Laura Linton.....1853-1915  
 Ida Freund.....1863-1914  
 Yulya Lermontova.....1846-1919  
 Vera Bogdanovskaia.....1868-1897

Read more about them in **Women in Chemistry Their Changing Roles from Alchemical Times to the Mid-Twentieth Century** by Marelene & Geoffrey Rayner-Canham, American Chemical Society and the Chemical Heritage Foundation (1998)

## Sources of Iota Sigma Pi Supplies and Information

### Supplies

The publicity pamphlets: "Membership Information" and "National Awards". History, Constitution and Bylaws, Rituals of Iota Sigma Pi, Rules and Regulations, *The Iotan*, Speakers Bureau

Supplies Coordinator  
 Jeanne M. Buccigross  
 3891 Stillwell Rd.  
 Hamilton, OH 45013

### Initiation

Membership Application  
 Report of Initiation Forms  
 National Secretary

### Forming a Chapter

Procedural information and application forms  
 National Vice President

Charter Certificates  
 National Historian

### Financial Reports

Financial Report Forms  
 National Treasurer

### Awards

Awards criteria and nominations forms  
 Director for Professional Awards  
*Agnes Fay Morgan Research Award*  
*National Honorary Member*  
*Award for Professional Excellence*

Director for Student Awards  
*National Undergraduate Award for Excellence in Chemistry*  
*Anna Louise Hoffman Graduate Research Achievement Award*  
*Gladys Anderson Emerson Scholarship*

### Dues

Dues statements and payments  
 National Treasurer

### Chapter Operations

Changes in the Chapter Officers list  
 Forms for reporting local elected officers  
 National Vice President

Address Labels and Membership List  
 Change of address and member death  
 Records Chair

Historical Information  
 National Historian

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See National Council listings elsewhere in *The Iotan* for officers' names and addresses.



•**Gunda Georg (K)**, university distinguished professor in medicinal chemistry at Kansas University, Lawrence, KS, coordinated a proposal that has led to a Center of Biomedical Research Excellence (COBRE) grant from the National Institutes of Health. The five-year, \$9.9 million grant will bring together researchers from KU, the University of Kansas Medical Center, Kansas State University and Emporia State University to establish a Center for Cancer Experimental Therapeutics. The researchers also will receive matching funds from KU and the Kansas Technology Enterprise Corporation. The grant was submitted by KU's Higuchi Biosciences Center, which will administer the money.

Nineteen scientists from the Kansas schools will pursue research on cancer through five different projects. The scientists also will work with researchers at the University of Costa Rica, who will provide natural products and extracts that may lead to the development of anticancer agents. As the principal investigator of the grant, Georg discovered that many of the scientists at the various Kansas institutions had research that could benefit through collaboration. She also realized that many of the younger researchers could benefit immensely from a mentoring program with senior researchers.

“There is a tremendous interest in collaborative work among the researchers in Kansas,” Georg said. “When this opportunity came along, we had already formed the Experimental Therapeutics Program in the Kansas Cancer

Institute. We had a goal - we knew where we wanted to go.” Specifically, the grant will fund experimental cancer research by junior faculty members. Along with jump-starting their projects, the grant also will connect them with some of the most experienced researchers in the area through a mentoring program.

•**Linda C. Brazdil (AUI)** presented a hands-on demonstration entitled “Carbon Dioxide Chemistry” at SciTech, the Science and Technology Interactive Center. SciTech is located in Aurora (about 40 miles west of Chicago). Her presentation was one of a series entitled “Marvels of Science Demonstration Series.” About 15 students attended. They generated CO<sub>2</sub> balloons, watched soap bubbles float on a layer of CO<sub>2</sub>, raced to get Alka Seltzer to dissolve, and watched as CO<sub>2</sub> put out candles. Everyone had a great time.

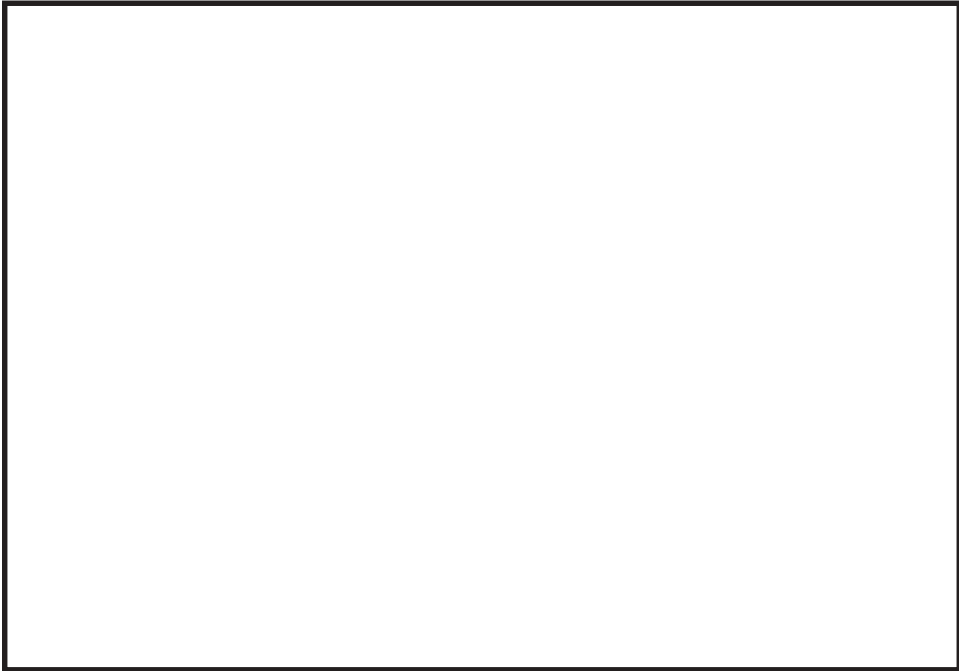
Linda also has been appointed as the Illinois Mathematics and Science Academy's (IMSA) representative to the Illinois State Board of Education's (ISBE) Scientific Literacy Advisory Board. They meet twice a year to help set guidelines for the state's competitive grant program to improve mathematics and science education throughout the state.

•**Sharon Vercellotti (CI)** has been invited to serve as a member of the National Visiting Committee (NVC) for the National Science Foundation (NSF) grant “Project to Support Chemistry-based Technician Education” awarded to the American Chemical Society. The

three year, \$1.1 million project started September 1, 2000. At the initial NCV meeting in Washington DC in November, 2000, Sharon represented small chemical businesses, as Chair Elect of the ACS Division of Small Chemical Businesses. This project will build upon existing chemistry-based education activities at the American Chemical Society, communicate other chemistry-based technician education activities, and establish a foundation upon which new activities that support excellence in two-year college chemistry education can be developed.

Each National Visiting Committee consists of six to eight national leaders in the fields of science, mathematics, engineering, technology, evaluation and education. As members of National Visiting Committees, these national leaders assist NSF and NSF-funded projects fulfill their goals and objectives in achieving excellence in undergraduate education. Projects are selected for funding in NSF programs based on their high potential for making significant improvements in undergraduate education. NVC members have a particularly important role in assisting these highly visible projects and NSF programs achieve their full potential.

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on your browser!  
The Iota Sigma Pi web site has  
a new address.  
[http://chem-faculty.ucsd.edu/  
sawrey/Iota\\_Sigma\\_Pi/](http://chem-faculty.ucsd.edu/sawrey/Iota_Sigma_Pi/)  
Get application forms for  
membership  
scholarships  
awards



Participants in the symposium "True Stories of (Women in) Small Chemical Businesses" at the 219th National American Chemical Society Meeting in Washington DC, August, 2000, are pictured, left to right: Annette Comer, Rita Boggs, Sheila DeWitt, Debra Saez, Darlene Brezinski, Lidia Vallarino - ISP member Ag, Anne Taylor - ISP member CI, Gianna Julian-Arnold, Donna Cole, Sharon Vercellotti - ISP member CI. Missing - Sara Risch, Ruth Hathaway

## "True Stories of (Women in) Small Chemical Businesses"

by Sharon Vercellotti, (CI) Editor

Women owners of small chemical businesses are a rapidly growing segment of the chemical economy. Between 1982 and 1992, the number of women owned small chemical businesses increased 275%, according to the most recent figures available from the US Census Bureau's Women's Economic Survey. The number of firms increased from 243 to 911. During that time the number of paid employees in these businesses increased 2860%. This growth was accompanied by a 4250% increase in sales. This growth rate far exceeds the rate of increase of all women owned small businesses. Still, in 1992 women owned small chemical businesses represented only 7.6% of all chemical busi-

nesses, compared to women owned businesses in manufacturing at 22.5% of all manufacturing.

Over this same time period, 1982-92, the number of employees in the whole

chemical industry (Standard Industrial Code [SIC] 28) increased by 3.4%, and from 1992 to 1999 the number of employees decreased by 3.1%

At the 220th National Meeting of the American Chemical Society held in Washington DC August 22, 2000 the Division of Small Chemical Businesses held a symposium entitled "True Stories of (Women in) Small Chemical Businesses". Twelve women from across the country participated. with businesses varying from consultants, chemical writers, analytical laboratories, bulk chemical distributor, custom synthesis facility, to environmental regulatory chemists. Iota Sigma Pi members presenting their stories were Lidia Vallarino (Ag), Anne Taylor (CI) and Sharon Vercellotti (CI). Sharon is Chair Elect of the Division and helped organized this symposium.

Three women from the symposium were featured in the November 13, 2000, issue of **Chemical & Engineering News**. Debra Saez, Donna Cole and Sharon Vercellotti were selected to be included in the 2001 Entrepreneurs section of the publication.

### *The Iotan*

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Manuscripts for publication in *The Iotan* may be submitted to the Editor at the address listed elsewhere in this newsletter. Suggestions for articles for the Special Editors are appreciated. Feature articles and book reviews are acceptable. Documents should be on floppy disk, or emailed, typed, double spaced, and no longer than one page.

Deadlines for consideration for the November, February, and May issues, respectively, are September 15, December 15 and March 15. Manuscripts will not be returned and are subject to editing. Publication is based on editorial assessment of reader interest and space available.

Letters to the Editor are encouraged and may be published. Letters should be no longer than 250 words.



## Get your $\Sigma\Pi$ T-Shirt!

The Chlorine Chapter has Iota Sigma Pi T-shirts for sale! The white T-shirt has a large front emblem of our key with the words "Iota Sigma Pi" above the key and "National Honor Society for Women in Chemistry" below the key. The key is dark green-colored with gold-colored text outlined in green. On the back is the 1996 Triennial Convention theme, "Share The Vision" in green. Shirts sized M, L, XL are available for \$10 and XXL are available for \$11. Please add \$3 for shipping.

Send order with checks payable to Iota Sigma Pi - Chlorine Chapter to Janet Clark, 10324 Springdale, Baton Rouge, LA 70810. Contact Janet at jrclark@erenj.com or 225-977-8551 if you have questions. Proceeds will help the chapter fund their outreach projects. ■

## Order Your $\Sigma\Pi$ Graduation Braids

Honor the Iota Sigma Pi graduate with an  $\Sigma\Pi$  braid for their graduation ceremony. The attractive braids are worn over the shoulder or around the neck of the graduation gown. The braids consist of three ropes about 5 feet long with tassels at the ends; each rope is an  $\Sigma\Pi$  color: green, gold, and white. It can be worn braided or unbraided. The price is \$10. Checks should be made payable to Iota Sigma Pi.

Look at the  $\Sigma\Pi$  web page for a color photo of a graduate with the braid: [http://chem-faculty.ucsd.edu/sawrey/Iota\\_Sigma\\_Pi/](http://chem-faculty.ucsd.edu/sawrey/Iota_Sigma_Pi/) Orders can be sent to

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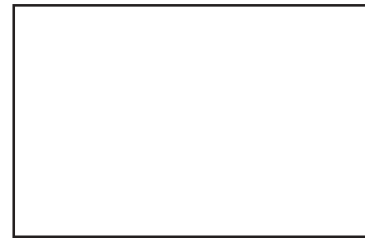
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***Wait!***

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

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 or to one of our feature editors  
 listed in the masthead

Items for “Resources” or “Chapter News” are also solicited. Send a photo of your activity. Please include your chapter name.

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