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**New Haven Section**  
VOLUME 20, NUMBER 3, September 2003

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September 29, 2003 – NEW HAVEN SECTION MEETING

**Dr. Michael Cann**

will present

**"Pollution Prevention: A Paradigm Addressed Through Green Chemistry"**

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October 23, 2003 – NEW HAVEN SECTION MEETING

**Dr. Judith Herzfeld**

will present

**"Crowding Induced Order: From Liquid Crystals To Cell Biology"**

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*Section News and Announcements*

- *Call for Nominations*
- *National Chemistry Week*
- *Employment Aids*
- *New ACS Websites*
- *Hermann Kolbe Biography*

## September Section Meeting

### Jesse Camille's Restaurant

Monday September 29, 2003

Michael Cann

will present

**"Pollution Prevention:**

**A Paradigm Addressed Through Green Chemistry"**

Jesse Camille's Restaurant  
615 North Church Street  
Naugatuck, CT 06770  
(203) 723-2275

Social Hour: 6:00 p.m.  
Dinner: 7:00 p.m.  
Lecture: 8:00 p.m.

**Abstract:** This presentation begins with a conversation on the flawed practice of controlling the risk due to toxic substances by controlling our exposure to these chemicals. Attention is then turned to controlling the same risk by preventing the use and production of hazardous substances, which is at the heart of green chemistry. The Twelve Principles of Green Chemistry are introduced and specific examples of green chemistry and their environmental benefits are discussed.



**Brief Biographical Sketch:** Michael Cann was born and raised in the Saratoga region of upstate NY and attended Marist College where he earned his BA in chemistry in 1969. Mike received his MA and PhD in organic chemistry from SUNY Stony Brook in 1972 and 1973. He was a post-doctoral fellow at the University of Utah (1973-74), and a lecturer at the University of Colorado-Denver (1974-75). Since 1975 he has been a

faculty member at the University of Scranton. He is also the co-director of the environmental science program and the director of medical technology. His areas of interest encompass nitrogen ions, nitrogen heterocycles and green chemistry. His interests in green chemistry consist of microwave assisted organic reactions, room temperature ionic liquids, and green chemistry education. He has taught a number of courses including general chemistry, organic chemistry, environmental chemistry, chemical literature and writing, chemistry seminar, topics in environmental science, internship in environmental science and graduate courses in mechanistic and structural organic chemistry.

### Directions to Jesse Camille's Restaurant

**FROM New Haven:** Whalley Av (Rt 63) north through Woodbridge and Bethany (Amity Rd). Continue through Naugatuck on Rt 63. The restaurant is on the right about ¾ mile past the intersection with Rt 68.

**FROM Meriden and Hartford:** I-91 or I-691 to I-84 West. Exit I-84 at Exit 17 – Naugatuck. Left at stoplight onto Rt 63 south. Restaurant is approximately 2 miles south, on the left.

**FROM Danbury/Southbury:** I-84 East to Exit 17 – Naugatuck. Right at exit onto Rt 63 south. Restaurant is approximately 1.5 miles south, on the left.

#### Jesse Camille's Restaurant -Monday September 29, 2003

All entrees include a fresh garden salad, penne pasta with marinara sauce, gourmet ice cream dessert, and coffee or tea.

Entree Choices:	Veal medallions Marsala with mushrooms	\$23.00
	Baked stuffed shrimp	\$23.00
	Eggplant Rollatine over pasta	\$23.00
	Chicken Cordon Bleu	\$23.00

Prices include tax and tip

Please make your reservation by contacting **Dr. Michael Gelbin by Friday, September 26, 2003**, at (203) 573-2646 or email to: [michael\\_gelbin@cromptoncorp.com](mailto:michael_gelbin@cromptoncorp.com). **High school and elementary school teachers (K-12), retired or unemployed chemists and students will be charged only \$19 for the dinner.** Please leave your name, telephone number, choice of entree, and number of reservations. Cancellations must be made 24 hours prior to the meeting or you may be charged for dinner.

You may also attend the lecture without the dinner. Please notify Dr. Gelbin so he can keep the count of number of attendees, and arrive at the restaurant by 8:00 PM. when the lecture normally begins.

### Call for Nominations

It is once again time to elect new officers for the 2004 calendar year. Any member in good standing in the New Haven Section is eligible to run for any vacant position. The positions open for 2004 are: Chair-elect, Councilor and Secretary. The Chair-elect sets up the schedule of meetings for the year and becomes the Chair the following year. A Councilor is the liaison between national headquarters and the Section and attends Council meetings held at National Meetings (Travel expenses are reimbursed by ACS.). The Secretary keeps minutes of Executive Committee meetings and handles Section correspondence. All are members of the Section Executive Committee, which determines the course your Local Section takes in the near future.

If you are interested in running for an office or know of someone who might be interested, please contact Dr. Gerald Putterman at 203 573-3073 or send an e-mail to him at [gerry\\_putterman@cromptoncorp.com](mailto:gerry_putterman@cromptoncorp.com). Committee positions are also available.

## October Section Meeting

### 95 Gathering Place

Thursday October 23, 2003

#### Dr. Judith Herzfeld

will present

#### *Crowding Induced Order: From Liquid Crystals to Cell Biology*

95 Gathering Place  
865 No. Colony Road  
Wallingford, CT 06492  
(203) 265-1552

Social Hour: 6:00 p.m.  
Dinner: 7:00 p.m.  
Lecture: 8:00 p.m.

**Abstract:** Solution non-ideality is more commonly regarded as an unpleasant fact of life than as a source of interesting phenomenology. Usually represented by simple activity coefficients overlaid on ideal descriptions, non-ideality is generally seen as quantitatively important but qualitatively insignificant. This seminar will take the opposite point of view, focusing on novel structural features and physical properties that arise from simple steric interactions between solutes in systems ranging from simple binary solutions to complex biological solutions. In the latter, the bundling of cytoskeletal proteins is shown to be driven simply by their excluded volume and the roles of cross-linking and capping proteins are necessarily reassessed.



**Brief Biographical Sketch:** Judith Herzfeld is Professor of Biophysical Chemistry at Brandeis University. Her research group uses solid state NMR to study microbial proteins involved in light-driven ion-transport and gas vesicle formation, and statistical thermodynamics to study spontaneous order in crowded solutions including self-assembling systems found in biological cells. Professor Herzfeld is also interested in the social implications of neuro-determinism and in methods for improving chemical education. Initially attracted to science by the post-Sputnik science programs of the New York City public schools, Professor Herzfeld received her A.B. in chemistry from Barnard College, her Ph.D. in chemical physics from MIT, and her M.P.P. from the Kennedy School of Government. She is a fellow of the American Association for the Advancement of Science and the American Physical Society. She is also a recipient of the National Science Foundation Faculty Award for Women Scientists and Engineers.

### Directions to 95 Gathering Place

**Merritt Pkwy:** Exit 66 – Take a left off Parkway. Go about 1.5 miles. It is on the right across from Wallingford Toyota.

**91 North/South:** Exit 13, take a right at end of ramp. Travel 5-6 miles. After you reach Super Kmart, it is 1/8 mile on left (across from Wallingford Toyota).

**From Waterbury:** Take I-84 to I691 to Rte 15 south (Merritt Parkway). Follow Parkway instructions.

#### 95 Gathering Place -Thursday October 23, 2003

All entrees include pasta or soup of the day, 95 Gathering salad, garlic bread, baked potato and vegetables, ice cream fudge and coffee or tea. Cheese & crackers and fresh vegetables with dip will also be available.

Entree choices: Sirloin steak dinner – with certified Angus beef	\$23.00
Baked stuffed sole with seafood stuffing	\$23.00
Boneless stuffed chicken with sausage stuffing	\$23.00

Prices include tax and tip.

Please make your reservation by contacting **Dr. Michael Gelbin** by **Tuesday, October 21, 2003**, at (203) 573-2646 or email to: [michael\\_gelbin@cromptoncorp.com](mailto:michael_gelbin@cromptoncorp.com). **High school and elementary school teachers (K-12), retired or unemployed chemists and students will be charged only \$19 for the dinner.** Please leave your name, telephone number, choice of entree, and number of reservations. Cancellations must be made 24 hours prior to the meeting or you may be charged for dinner.

You may also attend the lecture without the dinner. Please notify Dr. Gelbin so he can keep the count of number of attendees, and arrive at the restaurant by 8:00 PM when the lecture normally begins.

### Situations Wanted

**POLYMER CHEMIST**, PhD, with 22 years experience and awards in industrial and electronic coatings (including 15 years at IBM Research). Willing to start at BS level salary (or contract) to prove my worth. Please contact John, 203-575-9170 or [JLL11@aol.com](mailto:JLL11@aol.com).

The Ad Guidelines are as follows: Situations-wanted by New Haven Section member - **No Charge**. Non-members **\$20 for four lines**. Want Ads are **\$40 for a 4-line ad** or **\$75 for a full-page (4 x 8 inch)**.

### Employment Help Available from ACS Website

Although unemployment among chemists is lower than among the general public, chemist unemployment is still at an all time high. The ACS can help job hunters in several ways. C&EN Chemjobs at <http://www.cen-chemjobs.org> continues to post resumes and job listings along with articles to help chemists find new employment.. A variety of brochures and even individual help is available on the ACS Department of Career Services (DCS) website. Check it out at <http://www.chemistry.org/portal/a/c/s/1/home.html>.

## This Month in Chemical History

Prepared for SCALACS, the journal of the Southern California, Orange County, and San Gorgonio Sections of the ACS, Harold Goldwhite, California State University, Los Angeles  
This month I will give a short summary of the career of the German organic chemist, Hermann Kolbe, who was born near Goettingen on September 27, 1818.

Kolbe was the first of fifteen children of a Lutheran minister. He started his studies with Woehler in 1838, six years after Liebig and Woehler's seminal paper on the benzoin radical had appeared; this was one of the first demonstrations that particular groupings of atoms -- the radicals -- could maintain their integrity in the course of a set of organic reactions. Liebig and Woehler speculated that radicals were to organic chemistry as elements were to inorganic. Kolbe moved to Marburg as Bunsen's assistant in 1842, and then to London in 1845 where he worked with Lyon Playfair in the Museum of Economic Geology analyzing gases that might be involved in mine explosions. Another of Playfair's assistants was Edward Frankland, father of organometallic chemistry and of the concept of valency; Kolbe and Frankland became lifelong friends. In 1845 Kolbe, accompanied by Frankland, returned to Marburg where Frankland initiated his work on organozinc compounds, which he continued on his return to England. Kolbe succeeded Bunsen in the Chair at Marburg in 1851. After 14 years there he was called to Leipzig after Liebig's death; the university built a large new laboratory for him and his students. Kolbe excelled as a teacher and author. In addition to his own textbooks he contributed to Liebig and Woehler's comprehensive (10 volume) textbook of pure and applied chemistry. From 1870 he was editor of the influential Journal fuer Praktische Chemie.

Kolbe had strong views on the place of theory in chemistry. Following Berzelius he viewed organic compounds as derived from carbon dioxide by substitution, coupling, and other processes. Connections between compounds were purely formal and he regarded all efforts to describe the relative positions of atoms either in terms of connectivity or, worse, in terms of spatial relationships as hopeless and fundamentally unsound. This inevitably put Kolbe on a collision course with developing new chemical theories. I will return to this topic later, but first some comments on Kolbe's triumphs. In the course of work on chlorinated ethanes Kolbe effected the first complete synthesis of an organic compound, acetic acid, from inorganic precursors. His carbon source was carbon disulfide, chlorination of which gave carbon tetrachloride. This was pyrolyzed to yield tetrachloroethylene, aqueous chlorination of which gave trichloroacetic acid. This was reduced to acetic acid in an electrolytic cell. Kolbe went on to use electrolysis to produce what he originally regarded as hydrocarbon radicals (we now recognize them as dimers) from carboxylic acids -- one of the Kolbe reactions. In collaboration with Frankland he worked out the general homologation reaction in which an alkyl halide is converted to a nitrile and then to a carboxylic acid. Another Kolbe reaction is the production of salicylic acid, a useful disinfectant, from phenol and carbon dioxide..

To return to Kolbe as author and critic, and here I quote from Vol. IV of Partington's magisterial History of Chemistry: " He was straightforward and fearless and quite unawed by authority .... his criticisms of the work and ideas of his contemporaries (particularly Kekule, Baeyer, and Emil Fischer) were more forcibly expressed than is now customary." I will close with the most famous example of Kolbe's rhetoric. When van't Hoff published his "Chemistry in Space" as a short book in 1876 it included a preface by Wislicenus. Kolbe rushed into print: "I would have ignored this work ... had not a significant chemist [Wislicenus] ...recommended it ... A Dr. J. H. van't Hoff, employed at the School of Veterinary Medicine at Utrecht finds ... exact chemical research not to his taste. He has thought it more convenient to mount Pegasus (borrowed, no doubt, from the Veterinary School) and to proclaim ... how on his daring flight to the chemical Parnassus the atoms appeared to be arranged in space ... To criticize this paper in any detail is impossible because the play of imagination completely forsakes the solid ground of fact and is quite incomprehensible to the sober chemist."

Hermann Kolbe, a sober chemist and a great experimentalist, died near Leipzig on November 25, 1884.

## 50-Year Members to be Honored

Ten members of the New Haven Section have reached their 50-year milestone as ACS members. They will be honored at an upcoming Section meeting. Congratulations to the following:

Robert L. Bergen	Harry E. Hill
Michael Bolger	Lawrence Kenausis
William Andrew Chupka	John E. Lawson
William P. Colman	Benjamin Lipka
John D. Domijan	David McCartney

## National Chemistry Week – October 19-25, 2003

*"Earth's Atmosphere and Beyond!"* is the theme of this year's National Chemistry Week (NCW) celebration. The NCW unifying event is the honoring of innovators and pioneers in aviation and atmospheric chemistry.

The New Haven Section is again sponsoring a contest for grade school and high school students. Contestants are given a problem related to the theme. Solutions are submitted through the teachers to the Section's NCW Committee who will use their expertise to select the best and/or most innovative solutions (with respect to student grade level). The winners will be honored at a Section meeting held in the spring.

In addition Section members will be assisting in demonstrations of chemistry and its relationship to the world we live in at various locations in the area. .

## ACS Budget & Finances

Ever wonder where your ACS dues go? Well, now you can check from desk. The Budget and Finance (B&F) website has been launched!

Members of the Society Committee on Budget and Finance (B&F) are pleased to announce the Budget and Finance website. This site provides easy-to-understand information about the finances of the ACS and is updated regularly with information that is important for every member to know. Highlights of the site include:

- The latest B&F report to Council
- The Society's 2002 Consolidated Financial Statements
- Financial overview
- Details of the Society's reserves
- The Sources and Uses of Society Funds

The B&F website can be found at: [www.chemistry.org/committees/budget](http://www.chemistry.org/committees/budget).

Please email your questions and suggestions about the kind of information you would like to see on the B&F website to [help@acs.org](mailto:help@acs.org).

## Career Services at ACS Regional Meetings

The Career Resource Center offers a wealth of professional development programs and services to enhance your career potential, including resume reviews and a variety of professional development workshops. Regional Employment Clearinghouses (RECH) may also be featured at these meetings.

**35th Central Regional Meeting**  
**55th Southeast Regional Meeting**

October 19-22, Pittsburgh, PA  
November 16-19, Atlanta, GA

New Haven Section Bulletin  
William H Harned, Editor  
199 Benson Road  
Middlebury, CT 06749

Words from Your Editor ...

Please note the guidelines for 'want ads' and 'situations wanted' to be put into the New Haven Section Bulletin. Celebrate National Chemistry Week October 19-25.  
William Harned, Newsletter Editor

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*The Bulletin is also posted on the Section's **web site** at  
<http://membership.acs.org/N/NewHaven>*

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