

The Chemical Record

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Columbus Section of the American Chemical Society, Inc.

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Mechanisms of ICRF Chemtherapeutics

Come to our April meeting and listen to Prof. Rosemary Marusak who will provide an overview of ICRF drugs in both chemotherapy and anthracycline cardioprotection, while highlighting some of the work performed by undergraduates of Kenyon College.

AND, come see a presentation of the

Outstanding College Senior and Junior Awards

(see page 2 to see who won!)

The meeting will be at Denison University on Thursday, April 19.

For reservations, try our automated service online at <http://www.acscolumbus.org>.

Full details on page 4.

Columbus Technical Awards Banquet

submitted by Lucile Decker

The Columbus Technical Council (CTC) Awards Banquet will be held at the Clintonville Women's Club, 3951 N. High Street, Columbus, on Wednesday, April 25. The Social hour starts at 6pm and dinner is at 6:30pm followed by the awards program. Dinner price is \$15 and the choices are: beef, chicken, vegetarian. Please make your reservation before April 13. Respond to Al Ehlert, CTC Vice-President, either by phone at (614) 486-4329, ext. 114, or by email ehlerta@squared.com with your name, affiliation and choice of entree.

Section News

A Message from the Chair...

March was a very busy and exciting month. The President of the American Chemical Society was in attendance for our presentation of the Outstanding High School Teacher Award. We had our kick-off event for the Younger Chemists Group. We enjoyed learning about Professor Olesik's "Wonders of the World" project for elementary school science education. April promises as many good things and I encourage all of our members to consider attending at least one of these events. They will broaden your perspectives on the role and value of the Society, and you might even have fun!!

This month brings Professor Rosemary Marusak to tell us about work that her undergraduate researchers have carried out on understanding the mechanisms of cancer chemotherapeutic ICRF drugs. Also, we present the Outstanding College Junior and Senior awards. April 25th brings the Columbus Technical Council Banquet and presentation of the Technical Person of the Year award. The State Science Fair will be held on April 28th, and in early May we continue with our series of special meetings. On May 2nd Tom Weeks will tell us about his Fulbright Year in the Middle East.

Our aims in bringing our members such a diverse program are several fold. Among these we clearly hope that they inform and instruct. However, they also provide opportunities to for members to spend time together and bond, or just plain networking. We want to serve our members as best we can, but that will require some guidance and feedback from you. If you have ideas for programmatic items, or general comments, please let me know of them

Again we have a full month ahead of us. Participate and enjoy!!

Jimmy Cowan, Chair (March 2001)

CHEMISTRY STUDENTS EARN RECOGNITION FROM SCIENTISTS

Chemistry Professors at Central Ohio Colleges and Universities have named Outstanding Junior and Senior Chemistry Majors to receive awards from the Columbus Section of the American Chemical Society (ACS).

Students selected have demonstrated consistently high quality in their course work and on research projects throughout their College years. The awards are to be presented at the Section's meeting on Thursday, April 19, 2001 at Denison University*. The celebrations start at 5:30 p.m. with a reception, followed by dinner and the presentation will take place at 7:00 pm.

The awards consist of a certificate, a monetary award, and one year membership to ACS as student affiliates.

The honorees are:

Otterbein College:

Senior: Lena M. Bockrath

Junior: Robert B. Lettan, II

Kenyon College:

Senior Aaron C. Hamilton

Junior Allison E. Ogilvie

Mount Vernon Nazarene College:

Senior: Kathy Jo Krabill

Junior: Lindsay Mueller

Ohio Wesleyan University:

Senior: Adam Van Wynsberghe

Junior: Alison Bates

Ohio Dominican College

Senior: Jeff Richmond

Junior: Jason Herr

(continued on next page)

Section News

(from page 2)

Ohio State University:

Senior: Joshua Elliott Goldberger

Junior: Karin Michelle Wohlever

Denison University:

Senior: John Walter Eschelbach

Junior: Nicole Marie Dunn

Muskingum College:

Senior: Jonathan Enlow

Junior: Robert Beight

Capital University:

Senior: Linda K. Graf

Junior: Michelle L. Stephens



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FOCUS ON SCIENCE EDUCATION

The months of March and April showcase the activities that are the core of the American Chemical Society. ACS members will be pleased to know that our resources are reaching all levels of learning and our interactions with Educators continue to improve. Here is how:

1. **COSI ACADEMY** - We shared sponsorship for four high-school students to attend this enrichment program. The "Far Out Expedition" in the summer of 2000 provided the direct level of exposure to science and learning that students will take with them into their college years and beyond. Based on the COSI Academy report, the Section has renewed the scholarship for the current year.

2. **HIGH SCHOOL CHEMISTRY TEACHER OF THE YEAR** - We recognized Jeff Bracken of Westerville North High School at the March 21 meeting. Prof. Bruce Bursten, Chair of the Chemistry Department at OSU described for us the outstanding qualities of Jeff as a creative educator and mentor.

The summer workshop for teachers that Jeff organizes is proof of his ability to maximize resources, including chemistry teachers, Prof. Bursten as faculty, and the Columbus Section as together with other organizations, as sponsor.

The evening was further enhanced by the presence of Dr. Attila Pavlath, President of ACS. In regards to Education initiatives, Dr. Pavlath mentioned the appointment of a Science Education Task Force that will gather successful programs from Local Sections for further support by ACS and to share with other sections.

Dr. Pavlath's presentation of Alternative
(continued on page 6)

Meeting #769, Thursday, April 19

Denison University
100 South Road
Granville, Ohio 43023
740-587-6686

5:30 pm: Reception: fruit punch, fruit tray, pretzels.

6:00 pm Dinner: Caesar salad. Buffet entrees to include sliced top round of beef, backed cod italienne and oriental vegetable stir fry, with parsley potatoes and savory green beans. Carrot cake. Rolls and refreshments.

7:00 pm Presentation:

Outstanding College Junior and Senior Awards

7:15 pm Lecture:

Studies of the mechanisms of cancer chemotherapeutic
ICRF drugs: contributions by undergraduate
researchers to the field
Professor Rosemary Marusak
Kenyon College

Cost: \$16.00. Emeritus members, unemployed members \$14, and students are \$5. (The cost covers the price of dinner. If you cannot attend the dinner, please feel free to attend the program at 7:00 pm).

Reservations: Please phone Marcella Gibbs at 447-3600 x2721 or email mgibbs@cas.org or reserve online at www.acscolumbus.org by 3:00 pm Friday, April 13th. Please indicate retired/unemployed/spouse/student status and affiliation when making reservations. Also please indicate your entree choice. To cancel a reservation, please call Marcella by 11:00 am Monday, April 16th. No cancellations can be accepted after that time. Uncancelled reservations must be paid. Early reservations are appreciated.

Executive Meeting: A business meeting will be held at 4:30 pm on April 19th, in Room 101 of Ebaugh Labs, Denison University. Any section member is welcome to attend the business meeting.

Directions: To get to Denison University, take I-71 SOUTH to the I-70 EAST exit (#107), on the left towards Wheeling. Merge onto I-70 EAST. Take the OH-37 exit (#126), towards Granville/ Lancaster. Turn LEFT onto OH-37. Stay straight to go onto OH-37/OH-661. Stay straight to go onto OH-661. Turn LEFT onto W. Broadway Street.

About the Topic

The bisdioxopiperazine, dexrazoxane (ICRF-187, Cardioxane,™ Zinecard,™), is clinically approved in Europe and North America as a cardioprotective agent against doxorubicin-induced cardiotoxicity in patients with metastatic breast cancer.

In the 1970's, razoxane (ICRF-159), the racemic form of dexrazoxane, was used as a clinical treatment for acute leukemia, non-Hodgkin's lymphoma, and breast cancer. Reports of secondary toxicities during treatment of psoriasis in the 1980's, however, prevented razoxane from entering Phase III clinical trials for its use as a standalone anti-cancer agent.

Interest in ICRF drugs was revived in the 1990's when the S(+) enantiomer of razoxane, dexrazoxane, proved to be an effective cardioprotective agent in anthracycline chemotherapy. Furthermore, recent studies focusing on the potential use of ICRF drugs in combination therapy have launched a re-examination into their chemotherapeutic value.

The mechanisms of ICRF action during chemotherapy and cardioprotection are, at present, thought to be independent: the former involving ICRF inhibition of DNA-Topoisomerase II, and the latter involving iron chelation by ICRF metabolites.

Iron-ICRF complexes, formed during cardioprotection, exhibit oxidative reactivity under physiological conditions and therefore may be implicated in secondary toxicities during ICRF therapy.

For the past few years, our lab has been investigating the solution chemistry of iron-ICRF complexes and their reactivity with biological molecules. This work has led to the design and partial syntheses of new ICRF drugs that may ultimately prove to have higher effectiveness as cardioprotecting agents. This

talk will provide an overview of ICRF drugs in both chemotherapy and anthracycline cardioprotection and will highlight some of the work contributed to the ICRF field by undergraduates at Kenyon College.

About the Speaker

Rosemary Marusak received her bachelors degree in Chemistry and Biology in 1986 from Providence College (Providence, RI). She then went on to get her PhD in mechanistic inorganic chemistry (1990) at the University of Notre Dame (Notre Dame, IN) under the direction of A. Graham Lappin; her doctoral dissertation work investigated stereoselectivity in outer- and inner-sphere electron transfer reactions involving metal coordination complexes.

As a National Institutes of Health Post-doctoral Fellow (1990-1993) she worked on the mechanism of protein cleavage by metal complexes at the University of California (Davis, CA) with Claude Meares before moving on to her present position at Kenyon College where she is an Associate Professor of Chemistry.

At Kenyon she teaches inorganic and bioinorganic chemistry. She has supervised 20 students in her research lab, 9 of which have received Honors for defense of their theses. Her students routinely present their work at local and national conferences and 3 have become co-authors on publications. Ten of her research students have gone on to obtain their PhDs in chemistry/biochemistry and 3 have enrolled in medical school.

Her work at Kenyon has been supported by both the Research Corporation and the American Cancer Society, Ohio Division. She has 15 scientific publications and has given over 20 presentations at universities and colleges throughout the U.S. and at national and international conferences. In 1997 she received a Jr. Faculty Trustee Teaching Award and has twice received the Robert J. Tomsich Award for Excellence in Science (1995, 2000) at Kenyon for her teaching and research efforts.

(continued from page 3)

Energy Solutions challenged the audience to face the realities of dependence on fossil fuels, the need to develop alternative strategies, and the importance of engaging legislators and government officials in development of viable Energy policies.

3. THE WONDERS OF OUR WORLD (W.O.W) SCIENCE PROGRAM - We sponsored a gathering of educators, parents and community members at CAS to learn about this exciting outreach project of the Chemistry Department at OSU. The program as implemented at Chapman Elementary in Dublin and Gables Elementary in Columbus, has a "leading scientist", an OSU professor who works with teachers in developing projects that bring hands-on experiments and demonstrations that are taken to each classroom by volunteer scientists and college students after a training session. Parents also volunteer as helpers. The results are "sure to work" activities that engage the students and provide continuing education and professional development for teachers. For further information, contact Prof. Susan Olesik, Phone 614-292-0733; olesik.1@osu.edu.

Upcoming activities, stay tuned for news on:

4. THE CHEMISTRY OLYMPIAD - We continue to sponsor the Olympiad. At press time, High School students throughout Central Ohio are competing for a spot to take the national test. The top scores at the first and second year levels will be recognized at the time of the National Test, on April 20.

5. THE OUTSTANDING COLLEGE JUNIOR AND SENIOR AWARDS - We sponsor Affiliate memberships to ACS and cash awards to the top Junior and Senior students. They will be recognized at the April 19 meeting.

6. THE OUTSTANDING HIGH SCHOOL STUDENT AT COLUMBUS TECHNICAL COUNCIL AWARDS BANQUET - Mr. Shaun Bradley Fagrell, Bloom-Carroll High School, to be presented April 25, 2001.

7. THE ACS AWARDS AT THE STATE SCIENCE FAIR. The ACS Columbus Section will again sponsor awards at the 7-9 and 10-12 grade levels, that is Middle and High School Students from throughout the state. The awards will be selected from over 80 projects by ACS members that participate as Judges on State Science Day, Saturday, April 28.

Science Day Judges Needed

submitted by Stephen A. Renner

The annual State Science Day, sponsored by the Ohio Academy of Science, will be Saturday, April 28th. Once again, we are looking for individuals who would enjoy the opportunity in meeting with students (grades 7-12) and discussing/ evaluating their science projects. If this interests you, please contact Stephen Renner at CAS (srenner@cas.org, or 447-3600, x2449)



Section News

The Columbus Section would like to welcome the following new members:

Lea Allen	Chung Kim	Joseph Sachleben
Raymond Alsko	Young Kim	John Sawyer
Angela Anderson	Robert Kristovich	Kevin Schaefer
Bryan Baker	Jeff Ku	Holly Sennhenn
Jesse Boyer	Shirley Lee	Sharon Short
Rudolf Brits	Bruce Lerner	Jessica Smith
David Brunner	Jing Li	Liqing Sun
Elizabeth Bullock	Qi Liu	Mylene Talabardon
Keith Burnfield	Jacob MacZuga	Paul Taylor
Rhodamae Cartwright	Victor Magar	Eric Tippmann
Nicole Carwright	Robert Massie	David Vanderziel
Xiangling Chen	Timothy Mathews	Yael Vodovotz
Chin Min Cheng	Kristy McIntire	Yiqing Wang
Kimberly Chilcote	Brett McMillen	Carlton Weaver
David Curran	Kathleen Meeker	Charles Weeks
Brian Dinkelmeyer	Daniel Merkoziaj	Penny Wenger
Markus Doerr	Robert Morgan	Eric Werwa
David Dunlevy	Tracey Murray	Steven Whitman
Brad Eckenrode	Brice Nelson	Shaun Williams
Allison Edsall	Olufunke Oloyede	Chad Wissinger
Greg Escue	Jon Olsen	Lori Witherup
Denise Fiacco	Ralph Overman	Yubing Xie
Nadia Filliat	Suzanne Patterson	Hye Won Yeom
Srinivasan Ganesan	Khamphee Phomphrai	Jeremiah Young
Amy Gran	James Poole	Yaqiu Zhao
Robert Herold	Sarah Quatman	Ancheng Zhou
Nicholas Hill	Wayne Robbins	Ying Zhu
John Hofferberth	Eric Robirds	
Charles Hull	Michael Roche	
Milan Jovanovic	Jennifer Rochold	
	Mark Ruegsegger	

So that we can get to know our new members better, we would like to extend an invitation to these people to attend one of our dinner meetings. This will be at no cost to you for your initial meeting only. If you have not already received one, a letter will be sent to you soon with the details of this offer.

You can contact Ron Haney (Membership Chairman) at 764-6551 to make a reservation (also Marcella Gibbs at 447-3600 xt 2721) at least one week prior to the meeting.

The next scheduled meeting is April 19 at 6 PM. This will be the last regularly scheduled meeting until September. However, if this meeting does not fit your schedule, please call so that we can reserve you a place at one of our future meetings.

Again, Welcome!

Section News

2001 Patterson-Crane Award
Tuesday, May 8th, 2001

Virginia Kettering Dining Room
University of Dayton
Dayton, Ohio

5:30 pm: Reception.

6:30 pm: Dinner. (Details soon; watch our web site!)

7:30 pm: Patterson-Crane Award Presentation and Lecture:

“Nomenclature on the Web”

Dr. Gerry P. Moss
Queen Mary and Westfield College
London, E1 4NS, UK

Traditionally IUPAC chemical nomenclature has been developed by a group of experts and eventually published in *Pure and Applied Chemistry*. The advent of the web opens up a new approach to publicising recommendations with the ability to reach a far wider audience.

Almost all IUPAC organic chemical and biochemical nomenclature recommendations¹ and IUBMB nomenclature recommendations² are available from the web in a pair of interlinked web sites. Bibliographic data is available not only on the various nomenclature publications of IUPAC and IUBMB in English but also of all translations identified. Within the limitations of html the web presentation of documents is as close as possible to the published form but with the added advantage that all corrections have been applied. A list of errors is provided for those who wish to correct their paper copy. The search facility enables rapid location of relevant documents. Currently users from 151 countries have been recorded. This has enabled a much wider dissemination of the recommendations than conventional printed versions.

The presentation will consider this nomenclature database and other web based nomenclature of possible interest to chemists. It will describe how the site was created and some future developments. Some conclusions are drawn from the detailed statistics maintained on the use of individual documents. Also of significance is the range of users implied from correspondence.

1. <http://www.chem.qmw.ac.uk/iupac/>

2. <http://www.chem.qmw.ac.uk/iubmb/>

Mini-Meeting

Wednesday, May 2nd, 2001

Chemical Abstracts Service,
2540 Olentangy River Road,
Columbus, 43202
(614) 447 3600

5:00pm Reception - coffee, soda, cookies.

5:30pm Presentation -

"A Fulbright Year in Qatar"
Dr. Tom Weeks, Denison Univerisy

About the Topic: Dr. Tom Weeks will describe his year in Qatar where he was on the faculty of the chemistry department of Qatar University and his wife was a volunteer college advisor at the U.S. Embassy. Tom worked at the University, the Qatar Environmental Department, and the local industries on addressing various environmental needs in the country. The talk will include slides, an overview of the culture (education system, role of women, Islam, safety, etc.), and environmental issues.

Directions: To get to Chemical Abstracts Service, take Route 315 to Lane Ave. exit. Go E to Olentangy River Rd. Turn L (N) and go past the Fawcett Center to Burnbrae St. (just before Ackerman/Dodridge). Turn R and park in lot. Please enter building through the N entrance and sign in at the security desk.

Scenes from Columbus ACS



(YCC meeting at TOSOH)



(Prof. William Zoller at our
February meeting)

(cont'd from page 9)



(Jeff Bracken, center, Outstanding Chemistry Teacher)

(cont'd from page 8)

Patterson-Crane Award Speaker

Gerry Moss is a retired senior lecturer in organic chemistry at Queen Mary and Westfield College, University of London (UK). His research interests center on natural product synthesis and structure determination and have been mainly concerned with polyenes such as carotenoids and vitamin A analogues, but his research has also strayed into related areas such as the conducting polymers formed from polymerisation of conjugated diacetylenes. He has been involved on the publication of two dictionaries of natural products.

He received his first degree from Imperial College, London (1959), and his Ph.D. from Cambridge University (1962). Apart from a year at Columbia, NY and three back at Imperial College, he has spent his career at QMW.

He has been actively involved during the last quarter century with most of the international chemical nomenclature documents published by the Commission on Nomenclature of Organic Chemistry, the Joint Commission on Biochemical Nomenclature, and the Nomenclature Committee of the International Union of Biochemistry and Molecular Biology. His work in disseminating this information through the World Wide Web is particularly impressive. The official nomenclature Web site (<http://www.chem.qmw.ac.uk/iupac/>), developed and maintained by Dr. Moss, now includes almost all of the organic and biochemical documents and attracted over a third of a million users during the past year.

Other significant accomplishments include his revision and systematization of Austin Patterson's fused

and bridged fused ring nomenclature, his service on numerous nomenclature commissions, and the published nomenclature recommendations with which he has been involved.

Outside chemistry, he is much involved in the archaeology, local history and industrial archaeology of Surrey (the county south west of London stretching from the Thames to half way to the coast).

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The Chemical Record

Email news, announcements, letters, opinions, etc. to srenner@cas.org.

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Calendar

April: 19th; Presentation of Outstanding College Junior and Senior Awards.; a talk by Dr. Rosemary Marusak. (Title of talk coming soon!)

25th; Columbus Technical Council Banquet; Technical Person of the Year.

28th; State Science Day.

May: 2nd; "A Fulbright Year in Qatar", Dr. Tom Weeks.

8th; Patterson-Crane Award. Dayton, Ohio

September:

12th; "Decoding the Stradivariouss The Materials, the Sound, and the Mystique", Dr. Joseph Nagyvary.

October: 4th; ACS President-Elect to visit.

November:

4-10th; National Chemistry Week.

14th; "Applications of Biopolymers", Dr James N. BeMiller.



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CHEMICAL RECORD
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