



ALI "QUOTES"

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THE NEWSLETTER OF THE PRINCETON ACS

Jan/Feb 2006

UPCOMING MONTHLY MEETINGS

Thursday, January 26, 2006

Dinner Meeting

Speaker: Dr. Eleanore T. Wurtzel,
Department of Biological Sciences,
Lehman College, The City University of
New York

Topic: "Plant Genomics: Molecular Solutions to
Global Vitamin A Deficiency."

Lecture: 6:00 pm, Frick Laboratory, room 124

Dinner: Immediately following, at Kalluri Corner

Abstract

The endosperms of cereal crops, such as maize, wheat, and rice serve as major food staples worldwide, though they are deficient in adequate levels of nutritionally essential carotenoids. In humans and animals, various carotenoids act against certain diseases, while other carotenoids are precursors to vitamin A and to retinoid compounds involved in development. Worldwide vitamin A deficiency is linked to diets deficient in pro-vitamin A carotenoids. One approach to alleviating vitamin A deficiency is to improve levels of pro-vitamin A carotenoids in food staples such as corn, wheat and rice by "metabolic engineering" either by marker-assisted breeding or by the use of transgenic approaches. Though pathway genes are available, there is insufficient knowledge of how the endogenous biosynthetic pathway is regulated in cereal endosperm tissue. Our present goal is to understand, at the molecular and biochemical level, how plants regulate the biosynthesis and accumulation of pro-vitamin A carotenoids in the seed endosperm tissue. Using comparative genomics and genetics, combined with gene expression studies, we are trying to identify those factors that contribute to endosperm accumulation of

carotenoids. To accomplish this basic research on the carotenoid biosynthetic pathway, we are carrying out studies in rice, which lacks endosperm carotenoids, and in maize, which does accumulate endosperm carotenoids. Use of a heterologous bacterial system has also been instrumental in testing metabolic engineering strategies, isolating new genes by complementation, and testing function of gene products. Our research will lead to better strategies for enhancing pro-vitamin A carotenoid accumulation in endosperm tissue as well as improved understanding needed to manipulate related biosynthetic pathways. The National Institutes of Health and The City University of New York currently fund this research.

Biography:

Dr. Wurtzel received her Ph.D. in Molecular Biology from SUNY Stony Brook in 1982. She was a National Science Foundation postdoctoral fellow in Plant Biology at Brookhaven National Laboratory from 1983-1986. She held a postdoctoral position at Cold Spring Harbor Laboratory until 1987 and then joined the CUNY Biology Program and Biochemistry Program. (see <http://maize.lehman.cuny.edu>)

Reservations:

Meeting will be held in room 124, Frick Laboratory, Princeton University (see www.princeton.edu/~pacs for more information.) Seminar is at 6 PM followed immediately by dinner at Kalluri Corner Restaurant, 235 Nassau St. Princeton, NJ. The seminar is free and open to the public. Reservations are required for dinner, which is \$25 for full members, \$15 for retirees and \$10 for students. . All reservations will be billed, for the section pays on the number of reservations, not the number of attendees. Please contact Denise D'Auria at (609) 258-5202 or denised@princeton.edu for reservations by January 19th.

**Wednesday, February 15, 2006
Dinner Meeting**

Speaker: Dr. Burton Singer
Princeton University,
Office of Population Studies

**“Polyparasitism in the Tropics - the
Potential of Metabonomics for Parallel
Diagnostics”**

Lecture: 6:00 pm, Frick Laboratory,
Room 120

Dinner: Immediately following,
at Prospect House

Biography

Dr. Singer is Professor of Demography and Public Affairs at Princeton University. He received his Ph.D. in Statistics from Stanford University, 1967. His interests include epidemiology of tropical diseases, demography and economics of aging, health and social consequences of economic development, the interrelationships between genetics and historical demography.

Recent Activities

Burt Singer continues as a member of the Scientific Advisory Board of the Santa Fe Institute, the Commission on Behavioral and Social Sciences and Education of the National Research Council, and the Advisory Board for the Fogarty International Center, NIH. He also continues to serve as coordinator of the Malaria Task Force, UN Millennium Project for the United Nations. He serves on the editorial boards of Springer-Verlags Frontiers of Primary Medicine and Series in Statistics.

Reservations

Meeting will be held in room 120, Kresge Auditorium, Frick Laboratory, Princeton University (see www.princeton.edu/~pacs for more information). Seminar is at 6 PM followed immediately by dinner at Prospect House. The seminar is free and open to the public. Reservations are required for dinner,

which is \$35 for full members, \$25 for retirees and \$15 for students.

All reservations will be billed, for the section pays on the number of reservations, not the number of attendees. Please contact Denise D'Auria at (609) 258-5202 or denised@princeton.edu by February 8th to make or cancel reservations.

Chemistry at Princeton Schools

On October 26 and November 18, Bill Barnard and Louise Lawter visited the Cambridge School in South Brunswick. They performed demonstrations on properties of liquid nitrogen to very interested 4th and 5th graders. Bill had previously visited the school on the 21st, giving presentations to three other classes. Two demonstration sessions were also held at the Princeton Public Library on December 28th as part of their "Snow Day".



Bill Barnard; photos by Louise Lawter

*"Search others for their virtues, thyself for thy vices."
- Benjamin Franklin*

CHAIRMAN'S CORNER

Hello – again!

Dear Friends, Colleagues, Chemists, and Chemists-in-Soul, let me send my greetings to you all. It happens that I am back again to be Chair of PACS in 2006, which is both an honor and a pleasure.

It is especially so, because our Section is run by a dedicated group of people, therefore the Chair's life is much easier. What will be a little more difficult is to follow Louise, who has done an outstanding job being our leader during 2005, guiding this Section through successful programs, enjoyable events, a very efficient outreach program, and much more -- always in a timely fashion yet in a very personable way. There were several others helping her in this activity that are too numerous to list here. Let me mention one person specifically, however, Jack Chiarello, who has served as out treasurer for two consecutive cycles and is now stepping down. He was most reliable, very thoughtful and careful with our expenses and finances, and has contributed a lion's share in our being in a stable position for some time. Thanks Jack, thanks a lot!

As far as the New Year is concerned, we'll have an attractive lineup of distinguished speakers; most of them have accepted our invitation already and we keep working on some more. We will continue with our successful outreach activities, will put specific efforts in recruiting more members and make our Section better known. There are many other things we have been involved in, and have been working on -- we just want to do them even better. Your suggestions and comments will always be welcome, too!

Istvan Pelczer,
Chair 2006

Three New Section Members

At the last PACS meeting on November 9th, the Executive Committee conferred honorary membership in the Princeton ACS section upon Alice Ann Fankhauser, Ilse Dimeglio and Denise D'Auria. As you all know, Denise has been ably taking care of arrangements for our meetings over the past few years and helping out in a number of other ways. Ilse and Alice Ann have done the same before her and we wanted to recognize these efforts in a special way. Each was presented with a certificate, ACS umbrella and gift card. Congratulations Alice Ann, Ilse and Denise!



"Appreciation is a wonderful thing: It makes what is excellent in others belong to us as well."

- Voltaire

Call for Nominations *for* Outstanding High School Chemistry Teacher

We are pleased to announce that the Princeton and Trenton Sections of the American Chemical Society will be jointly sponsoring a **2006 Outstanding High School Chemistry Teacher Award**. The purpose of this award is to recognize, encourage, and stimulate outstanding teachers of high school chemistry. Two outstanding teachers will be selected, one from schools in the Trenton ACS section and one from schools in the Princeton ACS section. The local winners will be eligible for the MARM Regional High School Teacher Award, to be presented at MARM 2006, June 4-7, at the Hershey Lodge and Convention Center, Hershey, PA (www.marm2006.org). The winning teacher will receive a plaque and a cash award of \$250.

Rules of Eligibility:

- Any individual, except a member of the award selection committee or currently enrolled student of the nominee, may submit one nomination or support form in any given year.
- The nominee must be actively engaged in the teaching of chemistry in a high school (grades 9-12).
- The high schools must be in the geographic area that is part of the Trenton or Princeton ACS sections.

- The nominee should clearly demonstrate as many of the following attributes as possible:
 - ❖ The quality of the nominee's teaching (unusually effective methods of presentation should be emphasized);
 - ❖ The nominee's ability to challenge and inspire students;
 - ❖ Extracurricular work in chemistry by the nominee, including science fairs, science clubs, and activities that stimulate the interest of young people in chemistry and related sciences;
 - ❖ A willingness to keep up-to-date in the field, as evidenced by pursuit of a higher degree in chemistry, enrollment in refresher courses and summer institutions, regular attendance at scientific meetings, membership in professional organizations, and other means of self-improvement; and
 - ❖ Evidence of leadership and/or active involvement within the profession.

We need your help in identifying award candidates. If you know of a teacher that fits the above description, we encourage you to nominate him or her. Please email L_lawter@hotmail.com or check our website at <http://www.princeton.edu/~pacs> for a nomination form.

Nomination process:

A completed nominator form with a recommendation of not more than 1,000 words evaluating the nominee's accomplishments is required. It can be mailed to: Princeton ACS, Department of Chemistry, Princeton University, Princeton, NJ 08544-1009, attention: Louise Lawter or emailed to L_lawter@hotmail.com. Submissions must be received prior to February 24, 2006.

NCW 2005 Report

activities related to the "Joy of Toys." (Some were veterans of more than one of our previous events.)

Guests made a variety of materials, from bouncing balls, slime, and gak to

putty, play dough and monster flesh. They also made bubble solution, doodled with magnets, exploded straws, examined love meters and fortune-telling fish, drew pictures with color-changing markers, and sculpted with magic sand. The toys available were as old as potato popguns and as new as thermochromic putty. Over 20 types of toys and toy-related activities were provided. A Marine honor guard was at the door to collect toys donated by guests to the Marine Toys for Tots Foundation.



by Kitty Wagner

The ACS Princeton LS and the Princeton University Chemistry Department held their sixth National Chemistry Week Open House at Frick Laboratory, Princeton University in Princeton, NJ, on October 21. Over 120 visitors ages 6 and up braved the



weather to watch demonstrations and do



This event would have been impossible without our 38 enthusiastic volunteers, many of whom were veterans of previous PLS National Chemistry Week events. This year's volunteers included local section members, scientists from local industries, Princeton students and staff, and members of the community. Our two youngest volunteers were 12 years old, and our oldest was—well, we won't tell, but he retired from a long career quite a few years ago!

Many thanks to Madelene, Sky, and Jenny Antane, for coming early to set up and then manning Gak and air rockets and exploding straws. Thanks to Bill Sachs for popping film canisters and to Frank Long for popping potatoes. Thanks to Bill Barnard, who worked magic with sand all night after spending all morning in a school with liquid nitrogen. Thanks to Thom Caggiano, who spent all night in a dark corner so that everyone could see things glow. Thanks to Louise Lawter for her efficiency with bubbles and her skills as a photographer. Thanks to Lynne Greenblatt for her tattoo artistry, her air rocketry and her dexterity with exploding straws. Thanks to Jerome Wu for experimenting with fortune fish and to Klaus Wagner for shrinking polymers. Thanks to Louise Vivona-Miller for supervising magnets and marbles, and to Brian Ventura and Jennifer

for supervising color-changing markers. Thanks to Derk Huibers for his help with materials, and thanks to Steve Miller for recording it all for posterity.

Thanks to the Princeton students who donated time in the midst of exams. Ying Yu lent both her toaster oven and her polymer-baking skills. Youngjung Kim and Daniel Posen did a great job with hand boilers. Kavita Raghavan helped Bill with pop rockets. Chris Yee-Chan and Stephanie



Malone braved Blaster Balls. Boris Russ, Tom Pickthorn, and Ron Weissbard supervised plastics and thermochromics. Courtney Smith, Monica Saumoy, Yuna Larrabee, Dave Rosen, and Carmen Drahl supervised materials manufacture. Michael Constantinides and Carol Yan volunteered for magic and then appeared where needed. Annie Liu helped to set up, and Sobenna

George and Xiaojing Huang helped to clean up. Very special thanks to Alistair Martin and Sally Rodriguez who were there from before the beginning till long after the end doing the least glamorous and most necessary jobs.

Very, very special

thanks to Ginny Sari for allowing us to invade her space in the middle of classes and for being such a good sport about it. (Gak may still be oozing out of the light fixtures!) Without Ginny, this event would be impossible.



Past-Chair's Column

As the year comes to a close, so does my tenure as Princeton Section (PACS) chair. It is a fitting time to reflect on what we have accomplished and to thank all those who contributed to the section. Starting first with our speakers, Dennis Kujawski from IFF, Dr Richard Strauss of Princeton University, Dr Martha Greenblatt from Rutgers University, Dr Philip Hamann of Wyeth Research, ACS Executive Director Madeleine Jacobs, Dr. John Siekierka from Johnson & Johnson, Representative Rush Holt, Dr. John Dunlop and Dr. Jerry Skotnicki from Wyeth Research, Andrea Mandel, CPP and Irving Fishman, J.D. I extend a special thank you to all of you for taking the time from your busy schedules to educate and entertain us.

We have been able to reach out to the community in a number of ways with the help of our members: Special recognition goes to Kitty Wagner for coordinating the chemistry activities for the Princeton University Science and Engineering Expo this past March and organizing the National Chemistry Week Open House this past October. Thanks to Kitty and the PACS volunteers who helped with these events. Thanks also to Sharon Sibilia for co-chairing Chemagination this past February and David Carrick, Jim DeNoble and Kevin Lehman for serving as contest judges. Thanks also to Bill Barnard for organizing our school outreach program and conducting chemistry demonstrations at various schools throughout the year and to Denise d'Auria for taking care of monthly meeting arrangements as well as organizing the Hubert Alyea Awards. Thanks to Jonathan Chun for doing such a great job on our website again this past year. And to Lynne Greenblatt who has among other things, made certain that the Aliquotes were emailed on time and meeting reminders sent.

The Chemistry Olympiad is a joint program of the Trenton and Princeton sections and I would like to thank Bruce Burnham of the Trenton section for taking full charge of this program for us.

A special recognition is due to Jack Chiarello who is stepping down as secretary-treasurer this year. Since 2003 he has kept our finances in good order, paid our bills and taken care of the various reports required by the ACS. Thank you Jack for all your hard work!

A special thank you goes to the entire executive committee for their support throughout this past year. Together we have been able to accomplish quite a lot. Thanks also to Wyeth Research for hosting our executive team meetings again this year and providing lunch as well!

Lastly, I want to say "thank you" to all of you who supported the section by attending the meetings, giving your input, volunteering for activities. We couldn't have done it without you!

I now pass the "gavel" to Istvan Pelczer who ably served as chair in 2004 and is now busy planning great things for 2006.

Happy New Year!

Louise Lawter

Past-Chair, Princeton ACS



MARM 2006 JUNE 4-7, 2006

"Chemistry in Chocolate Town," Hershey Lodge and Convention Center, Hershey, PA. Organized by the Southeastern Pennsylvania and Susquehanna Valley Sections in collaboration with MARM Sections. Help organize MARM 2006. GET INVOLVED! Contact general or program co-chairs; visit the MARM website (www.marm2006.org) Abstracts can be submitted to <http://acs.confex.com/acs/marm06/cfp.cgi>

2006 Calendar Of Events

Princeton Section

Monthly meetings are held at Princeton University, Frick Laboratory unless noted otherwise. Lecture is at 6PM. Contact Denise D'Auria at (609) 258-5202 or denised@princeton.edu for more information.

January 20: Executive Committee Meeting, Wyeth Research, Monmouth Junction, NJ. 11:45 AM to 1:30PM. Open to all interested members. Contact L_lawter@hotmail.com if you would like to attend.

January 26: Monthly meeting. Dr. Eleanore T. Wurtzel, Department of Biological Sciences, Lehman

College, The City University of New York will speak on "Plant Genomics: Molecular Solutions to Global Vitamin A Deficiency." Dinner to follow at Kalluri Corner Restaurant.

Princeton Section Calendar (Cont.)

February 15: Monthly meeting; speaker will be Prof. Burton Singer, Princeton University, Office of Population Studies. Topic TBA.

Mid-February: Chemagination contest, Princeton University. Email chemagination@yahoo.com or check our website for date, time and location.

March 23: Joint meeting with the Trenton ACS Section. Dr. Sarah Ralston, Rutgers University will be speaking about nutrition of horses, the Equine Industry in NJ, and some aspects of how horses could be models for human diabetes II.

Trenton Section

Monthly meetings of the Trenton section are held the second Tuesday of each month at Rider University. Dinner is at 6PM followed by the lecture at 7PM. For more information contact trentonacs@lycos.com

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