



Richland Section American Chemical Society

spring 2008

feature talk (double) feature talk



Dr. Jeffrey Zink
**Functional Molecular
Machines on
Nanostructured Materials**

When: March 11, 2008, at 6:00 PM
Where: Battelle Auditorium, Richland

About the Talk: In his groundbreaking 1959 nanotechnology lecture "There's Plenty of Room at the Bottom", physicist Richard Feynman offered a prize for the first person to develop an electric motor smaller than a 1/64 inch cube. It didn't take long before someone did it, but it was just a scaled-down version of a conventional motor. Dr. Jeffrey Zink will be discussing something different - exactly the type of "machines" that Feynman envisioned. Nanostructured silica thin films and nano-particles that serve as the frameworks for functional molecular machines are self-assembled using the sol-gel process. They are templated by surfactant molecules to give arrays of tubes arranged in a 2D-hexagonal pattern with a spacing between the pores of ~4 nm and tube diameters of ~2 nm. The first types of machines Dr. Zink will discuss are nano-impellers based on derivatized azobenzene molecules that move probe molecules through the pores of thin films and particles. In these studies the insides of the pore walls are derivatized with azobenzene molecules. Laser excitation of the azobenzene impellers causes them to move probe molecules out of the pores. The second type of machines are supra-molecular nanovalves that open and close the orifices to the pores in silica nanoparticles and release or trap molecules on demand. The moving part is a two-station rotaxane that controls the access to the pores. Operating the nanovalve involves three steps: (i) filling the container, (ii) closing the valve, and (iii) opening the valve to release the contents of the container on demand. Dr. Zink will also talk about applications using these machines, for example how these machines can be used to deliver drugs into living cells.

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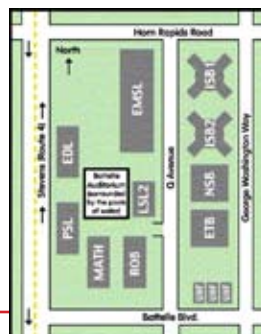


C. Alton Hassell
**Using Nuclear
Chemistry to Study
Antique Watermarks**

When: February 13, 2008 at 6:00 PM
Where: Battelle Auditorium, Richland

About the Talk: The watermarks in paper made by laying pulp on a bed of wire are unique to the papermaker. These watermarks are difficult to study and especially to compare. Beta-radiography is a method that produces permanent images of the watermarks. The watermarks can then be studied and easily compared. This talk will describe the method and discuss some of the results. The talk could also be titled "How Nuclear Chemistry Helped the English Professor".

About the Speaker: Dr. Hassell is a native Texan from the small town of Seagraves. He earned a B.S. in chemistry and physics from Baylor University (1969) and a Ph.D. in chemistry from Texas A&M University (1975). He taught at Texas A&M where he served as assistant director of the First Year Chemistry Program and as manager of the College of Science Learning Resources Center. At Baylor University, he taught mathematics and physics and is presently teaching chemistry and archaeology. Dr. Hassell has authored or co-authored papers in chemical research and chemical education, books on problem solving, and lab manuals. His latest titles are "Chemical Investigations for Changing Times" (11th Ed.) and the solutions manuals to "General Chemistry" by Hill and Petrucci, both by Prentice Hall, and a mystery novel for use in a chemistry class. Dr. Hassell's current research interests are chemical education, cleaning and restoration of metals, and the use of beta radiography to study watermarks in antique books.



Battelle Auditorium
Richland

SECTION BUDGET
inside

RICHLAND SECTION | 08 budget proposal

08 OFFICERS

Proposed 2008 Budget for the Richland Section and Actual Expenses for 2007		
	2008 Budget	2007 Actual
REVENUES		
(1) Annual ACS Allotment	6,800.00	6,862.00
(2) New member commissions	0.00	0.00
(3) Donations, contributions	0.00	0.00
(3a) Bequests and/or trusts		0.00
(4) Rebate from ACS for Councilor travel expenses	1,872.00	1,872.00
(5) Program revenue (includes newsletters, short courses, lecture series, national or regional meetings, etc.)	9,635.60	4,295.60
Regional Meeting (NORM) CC Event	7,635.60	
NORM	2,000.00	
(6) Local section dues, affiliate dues	1,800.00	1,801.36
(7) Interest, dividends	1,200.00	2,648.15
Checking interest (Banner)	0.00	43.02
Savings interest (Banner)	200.00	225.77
ACS Investment Pool	1,000.00	2,379.36
(8) Special events and activities	500.00	0.00
(9) Meals (include total meals in revenue)		0.00
(10) Other revenue (describe and itemize)		500.00
(11) TOTAL REVENUES	21,807.60	17,979.11
EXPENSES		
(12) Subsidies to subsections, topical groups, or affiliate groups	2,300.00	2,000.00
EOU Student Affiliates	2,300.00	2,000.00
Other	0.00	0.00
(13) Awards, scholarships, grants, etc.	500.00	799.93
Awards	200.00	499.93
TCTC Teacher Grants	300.00	300.00
(14) Administrative expenses (not including postage, printing, and shipping)	50.00	10.32
(15) Printing, publications, newsletters, meeting announcements, postage	1,650.00	1,219.71
Newsletter	1,300.00	1,219.71
Public relations	350.00	0.00
(16) Local Meetings (include speakers' expenses)	2,665.00	3,576.71
Speakers	1,200.00	1,500.00
ACS Picnic	200.00	175.29
ACS Annual social	350.00	552.80
Post-NORM celebration	0.00	705.18
Science Cafes	615.00	285.51
50-Year Celebration/National Award	300.00	357.93
(17) Meals	500.00	609.80
Arrangements	500.00	609.80
(18) Travel subsidies to Councilors	4,500.00	4,521.05
(19) Travel subsidy and fee for Local Section Leadership Conference	450.00	295.80
(20) Other expenses (describe and itemize)	9,680.60	5,998.41
Regional Meeting (NORM) CC Event	7,635.60	3,267.96
TCTC Dues	45.00	45.00
NCW, K-12 outreach	1,000.00	1,260.45
Olympiad	150.00	75.00
Science Fair	250.00	250.00
HS Teacher Endowment Fund	0.00	500.00
Mini-Symposium	0.00	0.00
Women and Minority Affairs Cmte	500.00	500.00
Project SEED	100.00	100.00
(21) TOTAL EXPENSES	22,295.60	19,031.73
(22) EXCESS (DEFICIT)	(488.00)	(552.62)

Listed below are the newly elected section officers. As their job is to make the section's activities of more value to you please contact them with your ideas!

CHAIR

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* Dennis Wester was elected Treasurer in last December's election, but will be leaving the area soon to pursue another job opportunity. Brian Rapko has graciously accepted the Chair's request to finish Dennis' term.

**08 BUDGET
VOTE
MARCH 11
AT SPEAKER MEETING**

A Conversation on Hanford's Past and Potential Futures

Roy Gephart

THURSDAY, FEBRUARY 21, 5:00PM
WSU-TC STUDENT LOUNGE

(WEST BUILDING, FIRST FLOOR, MAIN ENTRANCE)

Refreshments provided,
discussion expected!

Presented by

Pacific Northwest National Laboratory
Operated by Battelle for the U.S. Department of Energy

WASHINGTON STATE UNIVERSITY
TRI-CITIES

American Chemical Society

SIGMA XI
THE SCIENTIFIC RESEARCH SOCIETY

A science café is a casual meeting place, with plain language, and inclusive conversation that creates a welcoming and comfortable atmosphere for people with no science background. Each meeting is organized around an interesting topic of conversation.

The upcoming Café features Roy Gephart, a geologist at PNNL who has written extensively about Hanford (including two award winning books). For more info on Roy please see

http://emslbios.pnl.gov/id/gephart_re

You can leave a café meeting when you want, but you'll miss out if you show up late.



NEW CHAIR Novella Bridges

Greetings and Welcome Back!

I trust that everyone had a wonderful holiday season, and received some well deserved rest. I am delighted to begin my term as the Richland Section chair. I am looking forward to this year being productive and impactful. I would like to thank the past chair, Jeff Woodford for doing an excellent job.

This year marks the 60th Anniversary of the Richland Section. We are currently planning a wonderful celebration for this occasion. We have planned an exciting upcoming year. Our goal for this year is community outreach. There will be opportunities to participate in student interaction activities before and during National Chemistry Week. Also, the section will be assisting two of our local student affiliates to be reactivated. Also, we plan to increase our participation with Project SEED, see link below for more information.

Please mark your calendars for our first two events. The first activity is a Science Café hosted with Sigma Xi. The featured speaker will be Roy Gephart. The second activity is our first tour speaker of the year, Dr. C. Alton Hassell. We look forward to seeing you at both of these activities.

Regards,
Novella Bridges

Project SEED

http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_TRANSITIONMAIN&node_id=1588&use_sec=false&sec_url_var=region1

ZINK TALK cont'd from page 1

About the Speaker: Dr. Zink has been a Faculty member at UCLA in the Department of Chemistry and Biochemistry since 1970. He received his B.S. degree in Chemistry at the University of Wisconsin and his PhD degree from the University of Illinois under the direction of Russell Drago. He is a Distinguished Professor of Chemistry and a member of the California Nanosystems Institute. He has been an invited guest professor at the University of Paris VI and at the University of Amsterdam. He is an authority on triboluminescence, photochemistry and photophysics of metal-containing molecules, and on nanomachines, and has published almost 400 articles. His current research is focused on fundamental spectroscopic investigation of large metal-containing molecules and on design, operation and biological applications of functional nanomaterials including nanomachines such as valves and impellers.

CALL FOR PAPERS

JOINT
NORTHWEST/ROCKY MOUNTAIN
REGIONAL MEETING
OF THE AMERICAN
CHEMICAL SOCIETY

(NORM/RMRM 2008)

JUNE 15-18
PARK CITY, UTAH

The Central Utah Section of the American Chemical Society invites submission of papers for the Joint Northwest/Rocky Mountain Regional Meeting of the ACS at the meeting website, <http://www.chem.byu.edu/Site/2008normrmm>. The meeting will take place June 15-18, 2008 at the Park City Marriott in Park City, Utah.

The general technical/poster sessions include papers in analytical, inorganic, organic, and physical chemistry. Special symposia topics that are scheduled include: Nanoscale Materials, Materials and Surface Chemistry, Analytical Surface Science, Mass Spectrometry & Ion Chemistry, Atmospheric & Combustion Chemistry, Inhomogeneous Electrolytes, Synthetic Methodology, Bio-Organic Chemistry, Medicinal Chemistry, Biofuels & Biomaterials, Supramolecular Chemistry, and Chemical Education. A list of the invited symposia speakers can be found on the meeting website under the symposia

tab. Please submit abstracts to <http://acs.confex.com/acs/normrmm08/cfp.cgi> or access this site on the meeting webpage. If you have questions, contact one of the Program Chairs, Matt Peterson, at (801) 422-6843 or matt_peterson@byu.edu, Adam Woolley at (801) 422-1701 or awoolley@chem.byu.edu, or the General Chair, Steve Fleming, at (801) 422-4054 or steve_fleming@byu.edu.

NORM/RMRM 2008 will begin Sunday evening with an opening mixer and poster session. There will be an award banquet and a keynote speaker on Monday evening. We will recognize ACS award winners of the 2008 Regional Industrial Innovation Award, the 2008 Regional High School Teacher Award, and the 2008 ACS Regional Volunteer Award for both the Northwest and the Rocky Mountain Regions. To submit nominations for awards, go to the awards tab on the meeting website or go to <http://www.chem.byu.edu/acs/awards>

COMING EVENTS

- FEBRUARY 13 **C. ALTON HASSELL**, Baylor University, *Using Nuclear Chemistry to Study Antique Watermarks*
FEBRUARY 21 **SCIENCE CAFÉ**, Roy E. Gephart presents *A Conversation on Hanford's Past and Potential Futures*
MARCH 11 **JEFFERY I. ZINK**, UCLA, *Functional Molecular Machines on Nanostructured Materials*
APRIL 6 – 10 **NATIONAL ACS MEETING**, New Orleans, LA
JUNE 6 **ANNUAL START OF SUMMER PICNIC** with AlChE, date tentative
AUGUST 17-21 **NATIONAL ACS MEETING**, Philadelphia, PA
OCTOBER 15 **FRANKIE K. WOOD-BLACK**, ConocoPhillips, *Just where does gasoline come from? And what is octane?*
NOVEMBER 7 **60TH ANNIVERSARY OF RICHLAND SECTION CELEBRATION**, location TBD
NOVEMBER 12 **RALPH O. ALLEN**, U. of Virginia, *Forensic Science: Developing Analytical Techniques for Terrorism and the Courtroom*

Richland Section
Home Page

www.pnl.gov/acs/



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American Chemical Society
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Point to Ponder

If you think you are too small to be effective, you have never been in the dark with a mosquito.

– Author Unknown