

Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 26 No. 3

April Dinner Meeting

Mad Cow Disease and the Chemistry of Rogue Proteins

Dr. Mike Baldwin, UCSF

Abstract

Recently, mad cow disease or bovine spongiform encephalopathy has been in the news. However, the isolated cases occurring in the US and Canada are minor compared with the widespread epidemic in the UK. This has not only resulted in the slaughter of hundreds of thousands of cattle but also caused a new variant of Creutzfeldt-Jakob disease (CJD) in



humans that has been responsible for approximate 150 deaths to date. CJD is one of a small group of fatal transmissible diseases caused by misfolding of a protein, the prion protein (PrP). This was identified in the mid-1980's at UCSF by Professor Stanley Prusiner, for which he received the 1997 Nobel Prize in Medicine. Many questions concerning

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March Dinner Meeting Reminder

On Thursday, March 18th, please join us for our joint dinner meeting with the California ACS Section, the Northern California AChE, and the ANS. The dinner meeting will be held at another new location, the Basque Cultural Center in South San Francisco (599 Railroad Avenue). Registration and social hour begins at 6:00 PM, dinner will start at 6:45 PM, and the presentation will begin at shortly after 8:00 PM and should last for about an hour. The menu will be your choice of entrée (Salmon, Chicken, or Pasta), soup, salad, bread, coffee, and dessert. The cost of dinner will be \$25 per person and will be half-off for emeritus members or in special cases, like

unemployed members. There is no cost to attend to the presentation.

For reservations, please visit our website at www.scvacs.org by the close of business on Friday, March 12th. If you are unable to honor your reservation and do not make your cancellation by March 15th, you will be invoiced for the reservation.

April Dinner Meeting

Date: Thursday, April 22, 2004

Time: 6:00 PM Social Hour

7:00 PM Dinner

8:00 PM Lecture

Location: Palo Alto Elks Lodge
4249 El Camino Real
Palo Alto, CA 94306
650-493-4249

Speaker: Dr. Mike Baldwin
UCSF, Institute of Neurodegenerative Diseases

Cost: \$15.00 for dinner, salad, coffee, and dessert.
No host bar available.

Reservations: www.scvacs.org
Shirley Radding
408-246-2564
408-296-8625 Fax

Reservations should be made by April 19th, stating your name, address, company affiliation, and number in party. If you are unable to honor your reservation and do not cancel by April 20th, you will be invoiced following the dinner meeting.

Calling all Running Chemists!

Are you running in the 2004 Bay to Breakers? Thinking about running? Do you want to run in the company of other chemists? We're getting together a group of chemists to run. This year's Bay to Breakers will be held on May 16th. See www.baytobreakers.com for more information. If you're interested, email Ean Warren at ewarren@scvacs.org.

PrP can be addressed by chemical methods (e.g., is the misfolding associated with a chemical or post-translational modification?). A wide variety of topics in protein chemistry and biology can now be addressed effectively using mass spectrometric techniques. These include protein identification in complex mixtures extracted from cells or tissues; confirmation of the identity and purity of recombinant proteins; quantitation of up- or down-regulation of protein expression; primary structural analysis including the identification of amino acid differences and posttranslational or xenobiotic modifications; studies of higher order structure including the identification of binding partners and their stoichiometries; and the determination of kinetics of folding/unfolding/binding by H/D exchange. This lecture will summarize extensive studies on PrP, including mass spectrometric

analyses that seek to understand the processes that lead to disease.

Biography

Michael A. Baldwin is British and grew up in the south of England. He received his Ph.D. in physical-organic aspects of mass spectrometry from University College London, then undertook post-doctoral study as a Fulbright Scholar at Cornell University with Professor Fred McLafferty. He returned to the University of London where in 1976 he became a Lecturer in the School of Pharmacy and Director of the University of London High Resolution Mass Spectrometry Service. Fifteen years ago following a sabbatical leave spent at the University of California, San Francisco, he relocated permanently to San Francisco, initially to dedicate himself to research into chemical aspects of neurodegenerative diseases caused by prions. He is currently Adjunct Professor of Chemistry

and Pharmaceutical Chemistry in the School of Pharmacy, Deputy Director of the UCSF Mass Spectrometry Facility, and he has joint appointments in the Department of Neurology and the Institute for Degenerative Diseases, School of Medicine. Whilst at UCSF, he has maintained his long term interests in mass spectrometric analysis and instrumentation and has directed much of his research activity towards peptide and protein analysis, now concentrating on a number of proteins associated with various diseases. He has published more than 120 original papers. In 1989, he was awarded the Doctor of Science degree by the University of London. Dr. Baldwin is a Fellow of the Royal Society of Chemistry, and during the 1980s he spent a combined period of six years as Secretary of the British Mass Spectrometry Society and then as Vice-Chairman.

National Inventors Hall of Fame 2004 Inducted Inventors

Howard Peters

On February 11, 2004 in Washington, D.C., the National Inventors Hall of Fame of Akron Ohio recognized the next group of innovators who will be inducted into its ranks.

This year's class of inventors represents accomplishments in medicine, engineering, computing, and more. From the discovery and identification of HIV to the advent of GPS technology, and from accessible cataract eye surgery to advanced electronics, these inventors have truly bettered everyday lives through their work.

The 2004 class of inductees include:

- *Frederick Banting, Charles Best, James Collip (posthumous): insulin for diabetics*
- *Vannevar Bush (posthumous): Differential Analyzer*
- *Harry Coover: Superglue*
- *Wallace Coulter (posthumous): Blood counter*
- *Ray Dolby: Noise reduction systems*

- *Edith Flanigen: Molecular filters for petroleum processing*
- *Robert Gallo, Luc Montagnier: HIV isolation and diagnosis*
- *Ivan Getting (posthumous), Bradford Parkinson: Global Positioning System—GPS*
- *John Gibbon (posthumous): Heart-lung machine*
- *Lloyd Hall (posthumous): Food preservation techniques*
- *Elias Howe (posthumous): Sewing machine*
- *Charles Kelman: Cataract eye surgery*
- *Bernard Oliver, Claude Shannon (posthumous): Pulse Code Modulation*
- *Norbert Rillieux (posthumous): Modern sugar refining*
- *John Roebling (posthumous): Modern suspension bridge*

Every year, the National Inventors Hall of Fame honors through induction

the men and women whose work has changed society and improved the way we live. Their vision, hard work, and creative drive have led to powerful new tools that shape the future while celebrating invention. The 2004 class will be inducted this year on May 1st at the annual induction ceremony held in Akron, Ohio.

These inventors are named on many U.S. patents. The NIHF press release did not yet identify the specific patent for which the NIHF inductions will be made. This information will be provided at a later date.

For more information, including image access, visit the National Inventors Hall of Fame web site at www.invent.org/2004induction for downloads. For further questions, including inventor interview inquiries, please contact Rini Paiva, National Inventors Hall of Fame, at (330) 388-6160 or rpaiva@invent.org.



Chair's Message

Chocolate takes on new meaning when hearing Howard Peters talks about his passion—the food of the gods. I hope that all who came in February to our new dinner meeting venue at the Palo Alto Elks Lodge for dinner and/or to hear Howard and Sally talk about C Ho Co La Te had an enjoyable time.

Be sure to attend our March meeting on March 18 at the Basque Cultural Center in South San Francisco. This will be a joint meeting with the California Section of ACS, the NorCal Section of AIChE, and the American Nuclear Society. See the meeting reminder in this newsletter and check out the notice on our website:

www.scvacs.org. George Scangos' topic—How to Survive in Biotech—should be a fascinating talk and contain useful and vital information for many of our mutual members.

With the recent incidence of mad cow disease here in North America, Dr. Mike Baldwin's talk at the April 22nd meeting couldn't be timelier. Dr. Baldwin will be discussing Mad Cow Disease and the Chemistry of Rogue Proteins (Prions). Plan to attend this important meeting. It will be held back at the Palo Alto Elks Lodge. See the meeting notice on Page 1.

An area of concern about being a chemist these days is having and maintaining an interesting and challenging career, namely a job. Unfortunately, many of our chemist and chemical engineering friends and associates are currently un- and under-employed. If you know someone who has one of these dilemmas or someone in recruiting at your company, refer them to our ChemPloyment ads in this newsletter and on our website as well. Employment ads can be placed for a nominal charge the newsletters and on the website. Contact Shirley Radding (see last page) for more information.

Stay tuned for a new proposed feature in our newsletter—occasional articles about YOU, yes, you, possibly the person reading this right now.

Individual members will be selected at random from our current member list. The concept is to contact the member, conduct a brief interview about the member and his or her work, take a suitable photograph and present a brief article about you in the news-letter. Participation will be voluntary and the purpose is to find out how you and the Society are doing and what can be done to better serve each other. Let me know what you think about this.

One last thing—REMEMBER that April 22 is EARTH DAY. The national theme for Earth Day 2003 is "Water for Life" and we are encouraged to accept a call to action for stewardship in our communities. Earth Day, of course, is every day. Find out how you can get involved and make a

difference in your home, community and classroom. To help with this, the American Chemical Society (ACS) will observe Earth Day with the "Chemists Celebrate Earth Day" program. Members of the "Chemists Celebrate Earth Day" Working Group selected "What do you know about H₂O" as the theme for the 2004 celebration. Check out the ACS website: (<http://www.chemistry.org/portal/a/c/s/1/acdisplay.html?DOC=oca\earthday\index.html>) and learn how to test rainwater and find out more about the water around us. Additionally, hands-on activities have been developed for Earth Day celebrations, and it is hoped that ACS members, chemical educators and chemistry enthusiasts will utilize them to illustrate the positive role that chemistry plays in the world.

George Lechner

Help Out with the 2004 Chemistry Olympiad

Kiel, Germany will be the site of the International Chemistry Olympiad in July. The ACS will be sending a team of four high school students to participate in the challenge. Those four students will be selected from a pool of 20 excellent students from across the United States. The selection process begins right here in our local section! The top 16 students from the Santa Clara Valley will participate in written exams and a lab exercise to determine their placement at the national level.

Our students will be chosen from their results after taking an ACS standardized test at their high school. The local section encourages the high schools to participate and provides the testing materials.

Would you like to help in this process? Encourage your local chemistry teachers to have their advanced placement and honors classes participate in the testing process. We will be sending out hardcopy letters to over 400 high schools in the section's area giving the teachers the Olympiad information and encouraging them to participate.

We will need a few local section members to be test proctors on April 24th at Los Positas Community College in Livermore, where we will join with the California section and administer the regional tests. This is a good chance to volunteer if you live in the southeast section of the Bay Area and have a Saturday to devote to a good cause! We even provide lunch!

Each student participant receives an ACS certificate. If you have access to a good color printer and/or have access to a scanner/printer and could help with the final printing would be very useful! There should be about 75 to 100 certificates that will need personalized.

So, here is your chance to help with the 2004 International Chemistry Olympiad – encourage the teachers to participate (maybe offer to help them grade the exams!) and volunteer to be a proctor or help print certificates. If you need more information, please contact me.

Sally Peters

Chair of the Santa Clara Valley ChemOlympiad Committee

Career Consultants Ready to Lend Assistance

Bruce Millar

Seeking career direction? One of the most popular services offered to ACS members by the Department of Career Services is the Career Consulting Program. This one-on-one consultation assists chemists at all career stages from the young professional beginning a career to the mature career chemist entering "retirement" but wanting to remain active.

Established in 1989 by the Committee on Professional Relations, the program has served more than 4,000 ACS members year-round since its inception. In 2003 alone, the program assisted 422 members, up from 363 cases the year before.

The 16 percent increase in career-consultant cases can be attributed to the 3.5 percent jobless rate for chemists in 2003 - the highest in more than 30 years - and a heavy need for assistance in finding employment. Counseling in this area includes resume reviews, mock interviews, and techniques to build networking skills.

The career consultants are a group of more than 70 experienced chemists ready and eager to assist you. They are a carefully chosen corps of volunteers committed to your professional development.

The consultants are chemists practicing in industry, academia, and government, or self-employed entrepreneurs. They are representatives of many chemical specialties including organic, biochemistry, pharmaceutical chemistry, analytical chemistry, agricultural and food chemistry, polymer science, chemical engineering, and many more specialty fields.

This select group of chemists receives ongoing annual training to keep abreast of employment trends in the chemical sciences and ACS members' career-development needs.

Among the numerous issues consultants are prepared to discuss with you are:

- *How to find employment in industry, academia, government or anywhere else;*
- *Presenting your qualifications*

effectively in a resume or curriculum vitae and when to use each;

- *Launching a professional career;*
- *Making a career change from academia to industry or vice versa;*
- *Identifying transferable skills in order to change careers at mid-career;*
- *Deciding whether to pursue a higher degree;*
- *Interviewing successfully and using productive interview follow-up procedures;*
- *Starting a freelance or private consulting business;*
- *Getting re-employed after termination, layoff, separation, or voluntary leave;*
- *Implementing techniques for professional advancement.*

To be paired with a career consultant, e-mail your membership number, resume and a cover letter stating your career needs to ccp@acs.org.

You will receive a letter (usually by e-mail) with your consultant's name, phone number, and e-mail address. Your request and resume will be forwarded to the assigned consultant. It's that simple.

As the program continues to grow in popularity, ACS is looking to technology to provide a more rapid response to your request and direct contact with consultants.

Coming soon to your Career Services site will be an online career consultant request tool. Members will review consultants' profiles and select the best fit for their needs, all-online. Consultants will personally review requests and will soon be on the phone talking to you. This new online service eliminates the manual steps of the past and puts you in control. Keep watching <http://www.chemistry.org/careers> and select your consultant when the need arises.

This article first appeared on January 20, 2004 on the ACS website.

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Why IQ Is Not Enough Secrets to Realizing Your Full Career Potential

Sponsored by Women Chemist Committee

This workshop introduces the concept of Emotional Intelligence and explores the crucial link between Emotional Intelligence skills and career success. It provides practical advice for those who easily get "triggered", and for those who feel like they have to "walk on eggshells" around certain people. Participants will learn the biochemistry behind getting "emotionally hijacked", and specific techniques to help "cool" down emotions. The course is designed to provide tools to female scientists that will enhance leadership skills and maximize career potential.

Where: ACS National Meeting, Anaheim, CA

When: Monday, March 29, 2004, 9:00 am – 4:00 pm

Cost: \$199 per participant (lunch included)

How to Register: Print the registration form from the WCC website at <http://membership.acs.org/w/wcc/> and mail to: Dr. Amber Hinkle, Bayer Corporation, 8500 West Bay Road, MS 18, Baytown, TX 77520-9730.

Apply Now for 2004! Leadership Development Workshops

Two YCC Leadership Development Workshops will be held at ACS regional meetings in 2004: the Southwestern Regional Meeting in Fort Worth, Texas (September 29 to October 2) and the Northeastern Regional Meeting in Rochester, NY (October 31 to November 3).

ACS members, who would like to apply for an YCC Leadership Development Award in order to attend one of these workshops, should submit their applications to the Younger Chemists Committee, c/o Stephanie Allen, American Chemical Society, 1155 16th Street, NW, Washington, DC 20036 by April 1, 2004. Applications in both electronic and printable formats, are available online at www.chemistry.org/ycc.

Since participation is limited, YCC will be extending invitations for each workshop only to 15 interested ACS members who have external support. ACS members who would like to attend one of the workshops with the support of their employers or ACS local sections, divisions or committees, should contact Stephanie Allen at s_allen@acs.org.

Editor's Corner

Chemists in the News

Our own Howard and Sally Peters were in the San Jose Mercury News for their talk on Chocolate! You can check the article written by S.L. Wykes on the Mercury News website: <http://www.mercurynews.com/mld/mercurynews/news/columnists/onpen/7954328.htm>.

St. Patrick's Day

Employment Help in Other Areas of California

The following are names and addresses of contacts in other California Sections. You may write to them or call to find out how to receive their job listings or how to place a job listing with them. Do not send self-addressed envelopes unless requested to do so.

California Section: Mrs. Nancy Gephart, American Chemical Society, California Section 49 Quail Court, Walnut Creek, CA 94596 925-287-8055 e-mail: office@calacs.org

California Los Padres Section: Dr. Sandra Lamb, Chemistry Dept., UC Santa Barbara Santa Barbara, CA 93106-9510 e-mail: lamb@chem.ucsb.edu

Mojave Desert Section: Dr. Peter Zarras, NAWCWD, Code 4T4220D 760-939-1396 1 Administration Circle, China Lake, CA 93555 e-mail: zarrasp@navair.navy.mil

Orange County Section: Ron Denedour, 23731 Coronel Drive, Mission Viejo, CA 92691, Geoff Anderson, Hycor Biomedical, 78272 Chapman Avenue, Garden Grove, CA 92641 714-895-9558

Sacramento Section: John R. Bingham, 809 W. Stadium Lane, Sacramento, CA 95209 916-927-7088 916-927-7006 FAX

San Diego Section: Renate Valois 619-260-4513 619-260-2211 FAX e-mail: pascal@acusd.edu

Southern California Section: Send a self-addressed, 55-cent-stamped, business envelope to: ACS job listing, 14934 South Figueroa Street, Gardena, CA 90248 310-327-1216 e-mail: office@scalacs.org www.scalacs.org/employ.html

CHEMEMPLOYMENT ABSTRACTS MARCH 2004

CHEMEMPLOYMENT ABSTRACT 3730

Positive Title: Group Leader, Analytical Lab. Operations

Job Description: Responsible for management of analytical lab operations including scheduling of work and review of results; staff training, preparation of reports and installation, calibration and maintenance of lab equipment.

QUALIFICATIONS DESIRED

Education: Must have a bachelors in Chemistry or related field.

Experience: minimum of 6-10 years exp in the pharmaceutical industry with a strong emphasis on chromatographic methods and stability; a strong background in cGMP requirements for anal lab operations; & a proven track record including exp supervising laboratory staff.

LOCATION, SALARY, MAIL ADDRESS

Location: Petaluma

Description: Dow Pharmaceutical Sciences is a dynamic & growing independent contract drug development & consulting company, specializing in dermatologic, ophthalmic and other topical products. We provide individual or integrated services to clients including formulation development, analytical and stability services, clinical trial materials, and regulatory and clinical affairs.

Application Instructions: Located in Sonoma County, we offer a rewarding and friendly working environment and excellent benefits. Resumes may be emailed to hr@dowpharmsci.com or fax (707) 793-2615, Attn: HR EOE

CHEMEMPLOYMENT ABSTRACT 3731

Position Title: Sr. IT Specialist: Validation, Pharmaceutical and Chemical Analysis BF4-126

Job Description: Perform business analysis of the scientific user community to develop user and functional requirements for software selection, configuration and validation. Develop and document validation plans; functional and design specifications; installation, operational and performance qualification test scripts; acceptance criteria; SOPs, user manuals and validation reports.

QUALIFICATIONS DESIRED

Required Skills: Exp. in server maintenance, software application management, validation life cycle change and risk management required. Exp. in Part 11 compliance implementation is desired.

Education: BS or advanced degree in Life Sciences/Computer Science or equiv.

Experience: 2+ years' exp. in a quality control lab & 4+ years' exp. in information tech. and/or computer system validation.

LOCATION, SALARY, MAIL ADDRESS

Location: Foster City, CA

Description of Employer: Gilead Sciences is a biopharmaceutical company that discovers, develops & commercializes therapeutics to advance the care of patients suffering from life-threatening diseases worldwide.

Application Instructions: We're an equal opportunity employer. Apply online today at www.gilead.com

CHEMEMPLOYMENT ABSTRACT 3732

Position Title: Laboratory Assistant

Job Description: Responsible for day to day management and safe operation of laboratory; setting up experiments and associated instrumentation; recording data and observations; scheduling of work; reporting of results in writing and verbally; installation, calibration, and operation of equipment and instrumentation; provide support to others.

QUALIFICATIONS DESIRED

Education: B.S. Chemistry, Chemical Engineering, Materials Engineering or closely related field
Experience: Prior lab experience is desirable; working knowledge of electrochemistry is necessary; knowledge of or willingness to adopt laboratory safety rules and procedures is a must; familiarity with electrochemical instrumentation and analytic techniques is a big plus.

LOCATION, SALARY, MAIL ADDRESS

Location: Santa Clara

Salary: 31K to 36K depending on experience

Employer Description: EXTi is in the ground and industrial water decontamination business. Patented technol provides a unique method for contamination removal. Performing studies for some of the most contaminated sites in the US.

Application Instructions: Email resume Lee@EXTi.Biz
Fax resume 408-971-4357





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Director: **Shirley B. Radding** 408-246-2564 sradding@att.net

FUTURE MEETINGS

- Mar 18** SCV Dinner Meeting
How to Survive in the World
of Biotech
South San Francisco, CA
- Mar 28
to Apr 1** ACS National Meeting
Anaheim, CA
- Apr 22** SCV Dinner Meeting
Chemistry of Prions and Prion
Diseases
Mike Baldwin, UCSF
- Apr 25-27** ACS Prospectus
Pharmaceutical Authentication
and Forensic Analysis
Tampa, FL
- Jun 6-9** BIO 2004
San Francisco, CA

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