

# The Alembic



Newsletter of the Central Wisconsin Section of the American Chemical Society

## Chair's Corner

This will be the final meeting for this academic year, and as usual we will be honoring our award winners at the annual Awards Banquet.

This year, we had three excellent finalists for the Outstanding High School Chemistry Teacher Award, which has been awarded to Mrs. Connie Farmer of Wausau East High School. She was nominated by a former student in response to an e-mail solicitation for nominees, and received a very strong seconding letter from her Principal. We are happy to add her name to the list of distinguished high school chemistry teachers who have won this award.

The Outstanding College Chemistry Student Award this year goes to Mr. Wayne Huberty of UW-Stevens Point. His nominators both spoke very highly of his academic record, and of his work in the research laboratory, which has included a presentation at the Argonne National

Laboratory's 2008 Undergraduate Research Symposium.

The Outstanding Service Award for service to the Central Wisconsin Section, and to chemistry, goes this year to Dr. Robin Tanke, of UW-Stevens Point, and seldom, in my opinion, has an award been more deserved. Robin has been a mainstay in almost all our outreach programs, including Chemists Celebrate Earth day and National Chemistry Week. More importantly, she has always been willing to shoulder whatever burden we ask her to take on. We need more members like her in this section!

The Central Wisconsin Section makes an award that is not given every year, and this is for Outstanding Contributions to Chemistry. This year, the award will be made, and it will go to Dr. James Brummer, of UW-Stevens Point.

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FOR IMPORTANT INFORMATION . . .

The ACS-CWS Web Page  
([www.uwsp.edu/chemistry/acscws/](http://www.uwsp.edu/chemistry/acscws/))  
contains up-to-date information about section activities including the Alembic and meeting notices.



Visit the ACS web site at:  
[portal.acs.org/portal/acs/corg/content](http://portal.acs.org/portal/acs/corg/content)



In a career spanning almost a quarter of a century at UW-Stevens Point, Jim has risen through the ranks to become Chair of the Department, and yet he still maintains an active research program, as well as his classroom teaching and administrative duties.

The Outstanding High School Chemistry Student Award, which is presented to the top scoring senior student in the National Chemistry Examination, this year goes to Chris Hastreiter, who is a senior at Marshfield Senior High School. His chemistry teacher is Susan Harrington, who was the winner of the section's Outstanding High School Chemistry Teacher Award in 2000.

This is an excellent group of award winners, and I hope that you can all join us at the dinner to honor them.

On a personal note (since I am Chair, and this is my message), I am looking forward to the two weeks after commencement at UW-Eau Claire because I will be traveling to Australia to attend Salisbury High School's golden jubilee (and, coincidentally, to see my daughter who is attending Adelaide University). While in Australia, I will be presenting seminars at Adelaide University and the University of Melbourne/Royal Australian Chemical Institute before returning early in June.

May all your finals go well, and may your summer be enjoyable and restful!

*David*

## This Month in Chemical History

*By Harold Goldwhite*

April (*actually, May! -editor*), like most months, is rich in anniversaries of scientists who made major contributions to chemical sciences. Among them are James Watson, Robert Woodward, Carl Lindemann, and Glen Seaborg. But I choose to discuss the career of a great physicist whose work made such an impact on our science that it changed the thinking and work of every chemist who followed him. I refer to Max Karl Ernst Ludvig Planck, born in Kiel, Germany, on April 23 (a birthday he shares with Shakespeare), 1858.

The Planck family had, in common with the family of J. Clerk Maxwell, a long history of public service as lawyers, scholars, and clergymen. Planck's father was a professor of law. The family moved from Kiel to the independent state of Bavaria when Max was 9 years old. He attended the Maximilian Gymnasium in Munich, where he chose an emphasis on physics over music (he remained an excellent pianist all his life), perhaps through the influence of his physics teacher H. Muller. His experience for his first 3 years at the University of Munich was less inspiring, and he transferred to Berlin, where he encountered two distinguished physicists as teachers. Kirchhoff, the collaborator of Bunsen in spectral analysis, apparently delivered his polished lectures in such a manner as to put many in his audience to sleep. Helmholtz, the great expert on electrical and

optical phenomena, was often unprepared and difficult to follow.

Planck read widely in physics and decided to specialize in thermodynamics, after reading some of Clausius's work. His doctoral thesis, which included a critique of Clausius's views on irreversibility, was successfully submitted to the University of Munich in May 1879. It is worth noting that some of Planck's results had already been published by J. Willard Gibbs in a very long article published in the somewhat obscure Transactions of the Connecticut Academy of Sciences, an article that was not brought to the attention of the European thermodynamicists for decades. On the strength of his thesis, Planck was appointed Privat-Dozent at Munich and then in 1885 was called to Kiel as Extraordinary Professor of Theoretical Physics.

In 1889, on the death of Kirchhoff, the prestigious University of Berlin asked Boltzmann to succeed him. Initially, he accepted, but then changed his mind. In his place, the somewhat unlikely choice was the young 34-year-old Planck, who was appointed Professor in 1892, becoming a colleague of the great Helmholtz. Planck remained at Berlin for the rest of his professional career, retiring in 1928. His successor was Schroedinger.

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Planck's work before he ascended to the Berlin Chair was collected in his important thermodynamics text, published in 1897, and included discussion of chemical potentials and their applicability to equilibrium constants; dissociation of real gases; and the thermodynamics of colligative properties, including freezing-point depression and osmotic pressure. These treatments of really fundamental chemical and physical problems led him to the forefront of classical thermodynamics.

At Berlin, he began to turn his attention to emissivity phenomena, the so-called black-body radiation. His predecessor, Kirchhoff, had provided theoretical backing for the observations that the distribution of radiant energy with wavelength (or frequency!) emitted from a heated enclosure did not depend on the material of the enclosure. It was therefore a quite general or universal result. In 1893, Wien had used experimental data to derive his displacement law, which connected the enclosure temperature with the frequency of maximum energy output. The efforts of some of the best physicists of the day, including Rayleigh and Jeans, were able to explain parts of the Wien law at low frequencies and high temperatures, but failed at other extremes. The field was open for Planck's efforts.

### **2009 ACS Chemistry in the Community Summer Workshops**

The ACS Education Division will offer three five-day residential workshops during the summer 2009 for teachers who use Chemistry in the Community, the ACS textbook for first-year high school chemistry. These workshops will be held at Woodlands Academy in Lake Forest, IL (June 21-26); Texas State University in San Marcos, TX (July 19-24); and at Greater Hartford Academy of Math and Science in Hartford, CT (August 2-7) Visit the Education Division Workshops at [www.acs.org/education](http://www.acs.org/education) > courses and workshops to learn more about these residential workshops and free-of-charge online training opportunities. For more information about the Chemistry in the Community project, please contact Michael Mury at [m\\_mury@acs.org](mailto:m_mury@acs.org)



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THE ACS-CWS ANNUAL AWARDS BANQUET MEETING

**Dinner will be held at Sweetwaters Restaurant (1104 Claremont Ave,  
WI) at 6:30 PM (Socializing at 6:00 PM) on Thursday, May 7th**

**The Awards Ceremony will immediately follow dinner**

**Dinner reservations can be made with Dave Lewis ([lewisd@uwec.edu](mailto:lewisd@uwec.edu),  
715-836-4744) by 9:00AM, Wednesday, May 6th, 2009**