

# Chesapeake Chemist

*Maryland Section  
American Chemical  
Society*



# October Historical Events in Chemistry

by Leopold May, The Catholic University of America, Washington, D.C.

- October 1, 1867      Birthday of Wilder D. Bancroft, a researcher in electrochemistry, a founder and editor of the *Journal of Physical Chemistry*. He served as editor from 1896 to 1932, and as president of the ACS in 1910. He made the first systematic study of oxidation cells.
- October 2, 1791      Birthday of Alexis T. Petit, who studied specific heats of solids and co-discovered the product of specific heat and atomic weight is constant for all elements (DuLong-Petit Law).
- October 4, 1918      Birthday of Kenichi Fukui, who developed the frontier orbital theory of reactivity. He shared the Nobel Prize with Roald Hoffmann in 1981 “for their theories, developed independently, concerning the course of chemical reactions.”
- October 5, 1861      The Chemical Society of Union College, the precursor of the American Chemical Society, was founded on this day.
- October 9, 1852      Birthday of Emil H. Fischer. He synthesized sugars, caffeine, uric acid, and many other chemicals. He received the Nobel Prize in 1902 “in recognition of the extraordinary services he has rendered by his work on sugar and purine syntheses.” He introduced projection formulas for spatial arrangements of group around chiral carbon atoms, which are known as Fischer projections.
- October 14, 1840      Birthday of Friederich W.G. Kohlrausch, a researcher on electrical conductivity, dilution of strong electrolytes and conductivity (Kohlrausch’s equation).
- October 17, 1873      Birthday of Lev A. Chugaev, who developed complexing agents for analysis, studied inorganic chemistry of metal complexes, and xanthate pyrolysis.
- October 21, 1660      Birthday of Georg E. Stahl, who did research on oxidation and reduction, prepared glacial acetic acid, and was responsible for theory of phlogiston with Johann J. Becher.
- October 23, any year      Mole Day, 6:02 a.m. through 6:02 p.m. (Mole time); Mole Moment: 50.453 s after 6:42 p.m.
- October 30, 1895      Birthday of Gerhard Domagk. He discovered the properties of prontosil, range-red dye containing sulfanilamide. He refused the Nobel Prize in 1939 on instructions from the German government. He also reported that isoniazid had anti-tubercular properties, 1952, which opened the age of chemotherapy.

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*Correction: The Chesapeake Chemist regrets prematurely promoting Dr. von Tersch to the position of chairman. Our apologies are extended to Dr. Brewer, the current chairman of the Maryland Section.*

**Chesapeake Chemist**

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## The Nominating Committee reports the following slate of officers and councilors for 2002:

Chair:	Robert von Tersch	_____
Vice Chair:	Walter Roy	_____
Chair-Elect:	Roslyn Powers	_____
Secretary:	Stephanie Scierka	_____
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	Merle Eiss	_____
Members at large:	Saeed Khan	_____
	Mark Banash	_____
	Demetrius Michos	_____
	Jan Kolakowski	_____
	Sandra Young	_____

Please make selections and send ballot to Dr. Shirish Shah, Department of Chemistry, College of Notre Dame, 4701 North Charles Street, Baltimore, MD 21210.




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# October Monthly Meeting

Thursday, October 18, 2001  
Anne Arundel Community College  
Student Services Building (SSVC, Cafeteria)

## Schedule

6:00-7:00 pm	Registration & Social
7:00-7:55 pm	Dinner
7:55-8:00 pm	Local Section announcements
8:00-9:00 pm	Keynote: Rocket Science, A Chemist's View Mr. Charles E. Haff, Jr. Naval Surface Warfare Center Indian Head, Md.

Cost: Members, \$20.00; Retired members, nonmembers, and spouses, \$18.00; Students, \$10.00  
For reservations, call Shirish Shah, 410-532-5712, or e-mail him at sshah@ndm.edu.

Mr. Haff has a B.S. in chemistry from the Arizona State College and master's in instrumental methods of analytical chemistry from Arizona State University. He began working as a chemist at the Naval Surface Warfare Center, Indian Head Division, in 1981. Previously, he had been employed at Talley Defense Systems Inc., in Mesa, Arizona.

While at Indian Head, Mr. Haff has been involved in the design, development and production of rocket motors, as well as the design and development of explosive charges and anti-personnel mine clearing systems. He has also provided technical support for rocket motor design and development. He has designed and developed propellants and anti-mine munitions.

## Directions to Anne Arundel Community College:

From Baltimore: From interstate 695, take exit 2, route 10 toward Severna Park. Stay on route 10 until it ends at route 2 (Governor Ritchie Highway). Follow route 2 south approximately 5 miles. Turn left onto College Parkway. Take the first right turn into the college entrance and continue on that road past the tennis courts on your left, and construction work (on your left) and park in Parking Lot A.

From Washington or Annapolis: Take route 50 east to exit 27, route 2 north toward Baltimore. Stay on route 2 for about 3 miles and turn right onto College Parkway. Take the first right turn into the college entrance and continue on that road past the tennis courts on your left, and construction work (on your left) and park in Parking Lot A. For clarification on directions, call the Science Office at 410-777-2600.

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## Reminders.

- The deadline for nominations for the 2002 Esselen Award is October 15, 2001.
- The next meeting of the Maryland Section of the ACS will be held on Wednesday, November 7, at the College of Notre Dame. The meeting will begin at 6:00 p.m.

# The Johns Hopkins University

## 2001 Fall Chemistry Colloquium Schedule

Remsen Hall, room 233, Tuesdays, 4:15 p.m.

For more information contact Rosalie Elder, 410-516-7432

- October 16 Professor Jeffrey Roberts, University of Minnesota  
Chemistry at the Surfaces of Laboratory Surrogates for Tropospheric  
Cloud Particles
- October 23 Professor Paul Rablen, Swarthmore College  
How Come Vinegar is Sour, but Wine is Not? Resonance and  
Electrostatic Stabilization of the Acetate Anion
- October 30 Professor Michael (Seungju) Yu, Johns Hopkins University  
Materials Science  
Materials Science Inspired by Biology: From Genetically Engineered  
Rod-like Polymers to Synthetic Amphiphiles
- November 6 Professor Brooks H. Pate, University of Virginia  
Shake, Rattle, and Roll: Rotational Spectroscopy of Isomerizing  
Molecules
- November 12 Professor Joan Broderick, Michigan State University  
(Monday) Radical Roles for Iron-Sulfur Clusters
- November 20 Professor Daniel Stack, Stanford University  
Insights into Metalloenzyme Oxidation Mechanisms through Model  
Systems
- November 27 Professor Mattanjah DeVries, University of California, Santa Barbara  
Shedding Light on Life's Building Blocks, One by One
- December 4 Professor Nadrian C. Seeman, New York University  
DNA Nanotechnology

### Section members volunteer at state science fairs

by Mike Zapf

The Maryland Section thanks all of the members who have volunteered for the science fairs held last spring. Their input is appreciated in support of our efforts to contribute to the local educational events. At the Morgan State University Math, Science and Engineering Fair, the following members judged on behalf of the section in the Junior and Senior Divisions: Sarah Pope, Austin Swift, Michael Kerwin, George Hasslemann, and Chen-Yu Yen. For the Baltimore Science Fair, held at Towson University, the team judging in Divisions I & II were Alex Nikon, Charles Tumosa, Corrine Bonneville, Walter Roy and Donald Bansleben.

## Studies on the Human Genome

Dr. Mark Adams

Vice President, Celera Genomics

(<http://celera.com/index.cfm>)

Date: November 1, 2001  
Reception: 6:00 pm to 7:00 pm  
Lecture: 7:00 pm to 8:00 pm  
Location: UU Chesapeake Room I

If you would like to attend, please call Dr. Shirish Shah, 410-532-5712, or e-mail him at [sshah@ndm.edu](mailto:sshah@ndm.edu) by October 20, 2001.

### Abstract

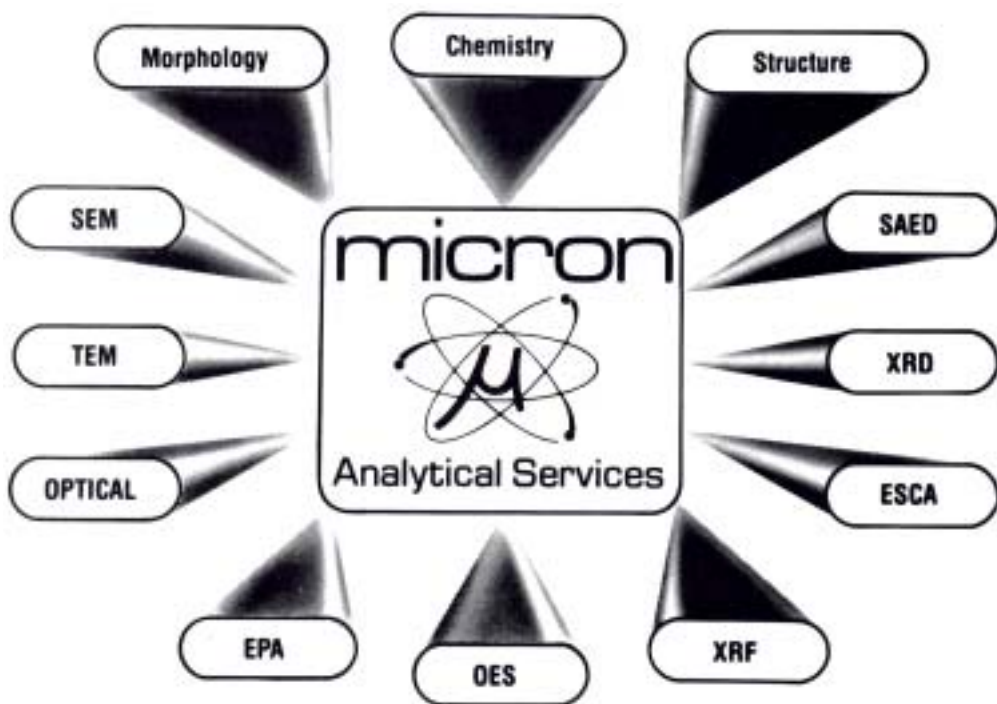
Decoding of the DNA that comprises the human genome has been widely anticipated for the contribution it will make toward understanding human evolution, the causation of disease and the interplay between the environment and heredity in defining the human condition. The nearly complete sequence of the euchromatic portion of the human genome has now been completed using a whole-genome random shotgun sequencing approach and a draft sequence of the mouse genome has been completed by the same method. Analysis of the human genome sequence revealed 26,588 protein-encoding transcripts for which there was strong corroborating evidence and an additional ~12,000 computationally derived genes with weak supporting evidence. Comparison of the mouse and human genomes has revealed large regions of conserved gene order between the species and substantial conserved sequence outside of genes that may serve a regulatory function. Genes exist largely in islands or clusters separated by large deserts millions of base pairs in length that have few or no genes. Only 1.1% of each genome codes for protein, with the remainder comprising introns and intergenic DNA. A random pair of human chromosomes differed at a rate of one per 1,250 bp on average, but there was marked heterogeneity in the level of polymorphism across the genome. Less than 1% of all SNPs resulted in variation in proteins, but the task of determining which SNPs have functional consequences remains an open challenge. Complete sequencing of microbial genomes has transformed the way in which basic microbiology is performed. A similar change is now happening in human genetics, with increased emphasis on whole-genome analyses, comparative genomics, and use of the mouse as a model for human disease.

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**A note from the editor:** *Many members of the ACS Maryland Section have expressed a desire to receive an electronic, rather than a paper, version of the Chesapeake Chemist. The Chesapeake Chemist is now created in Pagemaker software. The Pagemaker document can be converted to a PDF file, which can be opened using Adobe Acrobat. If you would like to receive an electronic copy of the newsletter as a PDF file please email the editor.*

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