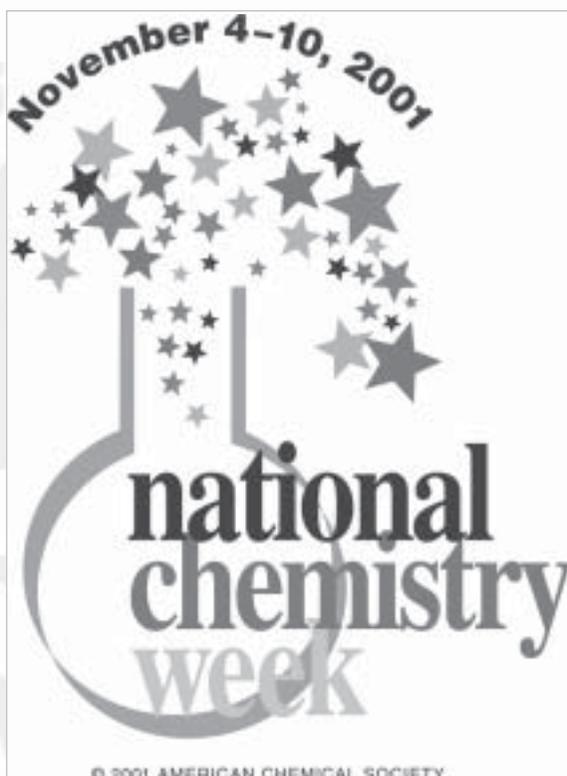


# Chesapeake chemist

*Maryland Section  
American Chemical  
Society*



## **Science of the Arts**

Dr. John Fortman  
College of Notre Dame  
Wednesday, November 7

## November Historical Events in Chemistry

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

- November 1, 1909 Hooker Electro Chemical Company was founded on this day.
- November 3, 1749 Birthday of Daniel Rutherford, who discovered nitrogen or 'noxious gas' in 1772. He was the first to distinguish between carbon dioxide and nitrogen, and he invented a maximum and minimum thermometer.
- November 7, 1888 Birthdate of Chandrasekhara V. Raman, discoverer of the Raman effect for which he received the Nobel Prize in 1930.
- November 9, 1994 Three atoms of element 110 were created at GSI in Darmstadt, Germany on this day.
- November 12, 1802 On this day, John Dalton announced the first example of the law of multiple proportions.
- November 14, 1807 Birthdate of Auguste Laurent, who discovered anthracene in 1832. In 1836, he obtained phthalic acid from naphthalene and showed that carbolic acid is phenol in 1841. He and Charles F. Gerhardt evolved the nucleus theory of organic radicals.
- November 15, 1193 St. Albertus Magnus discovered arsenic in 1250 and was the first to use affinity in the sense of chemical reactions. He died on this date.
- November 16, 1881 Birthdate of Joel H. Hildebrand, who was a researcher in solubility and introduced helium into deep sea diving. He lived to be 101.
- November 22, 1970 The Manned Spacecraft Center, Houston, announced that its scientists perfected a process to extract water and oxygen from moon soil on this date.
- November 24, 1833 Birthdate of Alexandre P. Borodin, who was a researcher on organofluorine compounds and the Borodin-Hunsdieker reaction and a composer of classical music.
- November 26, 1934 Beckman Instruments, Inc. was incorporated on this date.
- November 27, 1874 Birthdate of Chaim Weizmann, who discovered a method for synthesizing acetone in 1916 and served as the first president of Israel, 1948-1952.

---

## McCormick Mural

The Chemistry Group of McCormick & Company R&D has commissioned a novel wall mural. The mural is approximately 12 feet high x 15 feet long and is displayed in the instrument room of McCormick's Technical Center.

Painted by a local artist, the mural depicts the convolution of the natural origins of flavor from plants to processed essences to laboratory analysis.

A poster of the mural will be displayed at the November meeting of the ACS Maryland Section. The artist and McCormick chemists will be on hand for discussions about the work and the science it depicts.

**Chesapeake Chemist**

Editor: Cindy Kronman  
734 Benfield Road  
Severna Park, MD 21146  
410-729-0318  
cakvt@hotmail.com

Business Manager: Bruce L. Solnick  
3027 Parktown Blvd.  
Baltimore, MD 21234  
410-882-6819

**Section Officers**

Chair: Thomas Brewer  
410-762-1151

Chair-elect: Robert L. von Tersch  
202-647-4011

Secretary: Stephanie Scierka  
410-762-1141

Treasurer: Angela Sherman  
410-532-5713

**Councilors**

Merle I. Eiss 410-484-0521	Donald Jones 703-306-1625, ext. 6819
David Roswell 410-617-5547	Charles Rowell 410-647-9452

**Alternate Councilors**

Elwin Pensi	Shekar Munavalli
Joseph Topping	Linda Sweeting

**Members at Large**

Saeed Kahn	Mark Banash
Jan Kolakowski	Demetrius Michos
Walter Roy	

**Committee Chairs**

Remsen Award:  
Lev Ryzhkov, 410-704-3831

Maryland Chemist Award:  
Shekar Munavalli, 410-436-2819

Maryland Service Award:  
Shree Iyengar, 410-541-2266

**Student Awards:**

Carl Minnier, 410-780-6613  
cminnier@ccbc.cc.md.us

**Education:**

Shirish Shah, 410-532-5712

**National Chemistry Week: vacant****Chemistry Olympiad:**

Mike Zapf, 410-771-7471

**Kids and Chemistry:**

Shirish Shah

**High School Teachers: vacant****Archives:**

Ernest Silversmith, 443-885-3214

**Member Assistance:**

Merle Eiss, 410-484-0521

**House:**

Shirish Shah

**Public Relations:**

Shirish Shah

**Publicity:**

Donald Jones

**Finance:**

Jan Kolakowski

**Women Chemists: vacant****Long Range Planning:**

Shekar Munavalli

**Minorities:**

Alfred Amah, 410-383-5777

**Career Planning:**

Linh Cheong, 410-762-1159

**Government Relations:**

Shirish Shah

**Retired Chemists:**

Alvin Bober, 410-581-5321

**Young Chemists:**

Demetrius Michos, 410-531-4771

The Chesapeake Chemist is published monthly September through May by the Maryland Section of the American Chemical Society. Send submissions to the editor in electronic format. Send advertising inquiries to the business manager; advertising copy must be provided in electronic format. The Maryland Section is not responsible for opinions expressed herein. Editorials express the opinions only of the authors. The editor is responsible for all unsigned material.

## Biographical Information: Dr. John J. Fortman

John Fortman is professor and associate chair of chemistry at Wright State University, where he has taught all levels of freshman chemistry as well as senior inorganic chemistry for over 30 years. In 1998, he was appointed the Robert J. Kegerreis Distinguished Professor of Teaching.

Dr. Fortman received his B.S. from the University of Dayton in 1961 and his Ph.D. in physical inorganic chemistry from the University of Notre Dame in 1965, where he was a Shell Scholar for two years.

He had a part-time appointment at the Aerospace Research Labs at Wright-Patterson Air Force Base from 1966-1970 and was a visiting professor at Purdue in 1973-74.

Dr. Fortman is a two-time recipient of the outstanding teaching award of the College of Science and Mathematics, and the 1991 recipient of the WSU Presidential Award for Teaching. In 1993 he received the Dean's Award for Excellence in Teaching and in 1994 he shared the College's Collaborative Teaching Award for his work in developing a new multi-discipline science sequence for elementary education majors.

He is a 1998 recipient of the CMA "Responsible Care" Catalyst Award for standing educational interest including chemical demonstrations and teaching analogies. With Dan Ketcha he does at least fifteen chemical demonstration outreach programs per year, reaching more than 7,5000 high school or junior high students. With Rubin Battino he has produced three sets of videotapes that contain a total of ten hours of chemical demonstrations for use at middle schools through college levels, and he has done a variety of demonstration workshops for teachers.

He is author of a series of thirteen articles featuring pictorial analogies, which began appearing in the January 1993 issue of the *Journal of Chemical Education*. For nonscience majors, he has designed a one-year course in chemistry that organizes principles around occurrence and use and incorporates extensive use of videotapes and demonstrations. The course has been cited as a model in the AAAS report "The Liberal Art of Science" and is the subject of a feature article in the November 1990 issue of *The 2YC3 Distillate*.

Dr. Fortman was a member of the General Chemistry Task Force of the ACS Division of Chemical Education from 1991 to 1997. In the fall of 1992, he began teaching an experimental offering for science majors: an alternative general chemistry sequence containing the core material identified by the General Chemistry Task Force but organized on the framework of his successful course for nonscience students.

Dr. Fortman designed an applied science curriculum and served as a master teacher in the WSU Summer Upward Bound Program for disadvantaged high school students showing promise in science.

He also now teaches the chemistry component of a physical science sequence for elementary education majors, focusing on those topics appropriate for grade school children and modeling and hands-on activities.

He has been an ACS member since 1962 and is currently councilor for the Dayton Section and a member of the Local Section Activities Committee. He has given over 150 local section talks, visiting 133 of the 188 local sections and doing each of the 28 speaking tours at least once.

# November Monthly Meeting

Wednesday, November 7, 2001  
College of Notre Dame  
Doyle Dining Room/Knotts Science Center, Room 208

## Schedule

6:00-6:30 pm	Registration, Social & Display/Discussion of the Wall Mural from McCormick & Company
6:30-7:30 pm	Traditional Thanksgiving Dinner
7:45-8:45 pm	Keynote: Science of the Arts Dr. John J. Fortman Department of Chemistry Wright State University Dayton, OH 45435

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.

## Science of the Arts

John Fortman and Jim Cassidy

Stories, pictures, videos, and chemical demonstrations will be used to relate chemistry and physics to the fine arts. Areas illustrated will include color in pigments for paintings and light for stages; stone and metals for sculpturing and architecture; transmission of sound through air for music and speech; and science in literature, theater, movies, and television.

The **Science of the Arts** presentation will be repeated on Thursday, November 8 at 9:30 a.m. in the Knotts Science Center, room 208, for College of Notre Dame students.

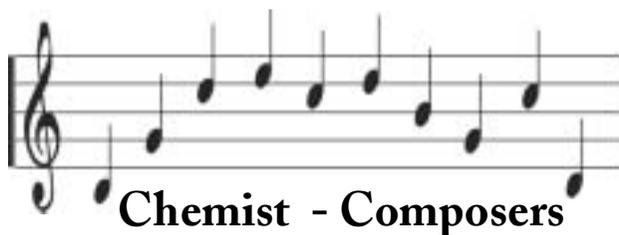
### Directions to College of Notre Dame:

The College of Notre Dame is located at the intersection of Charles St. and Homeland Ave. If you are coming from the south, follow Charles Street north, pass the Cold Spring Lane intersection; Homeland Ave. is approximately one mile north of the intersection. Turn right onto Homeland Ave., then make the first right, which will bring you into the parking lot of the College of Notre Dame.

If you are coming from the north, take exit 25 south (Charles Street) from the beltway (695). The college is located about five miles from the exit. You will need to go past the Stevenson Lane and Northern Parkway intersections. At Homeland Ave., you will turn left, then make the first right turn, which will bring you into the college parking lot.

---

**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.*



## Chemist - Composers

by Leopold May, *Chemist-Listener*, Catholic University

This year, the theme for the National Chemistry Week (November 4-10) is “Celebrating Chemistry and Art.” Chemistry contributes to the art of music by providing metals, lacquers, stains, and waxes for musical instruments. Some chemists, however, have contributed to the art of music through the composition of classical works—the chemist-composer. Prominent chemist-composers among the classical composers are Aleksandr P. Borodin, who was also a prominent organic chemist, and Sir Edward William Elgar, who was an amateur chemist.

**Aleksandr P. Borodin** (1833-1887) composed his first score, a polka in D minor entitled “Helene,” at the age of nine and dedicated to Elena. He was also attracted to chemistry and in his early teens had a complete laboratory at home using various corners of his “Auntie’s” apartment. His “Auntie” was his legal mother; he was the illegitimate son of the Prince of Imeretia, a district in southern Caucasus. He received a M.D. and did a dissertation in chemistry that was written and defended in Russian, rather than in Latin, for the first time in the history of the St. Petersburg Medical-Surgical Academy. He did research on organofluorine compounds and the Borodin-Hunsdieker reaction.

**Sir Edward William Elgar** (1857-1934), whose father was an organist and music dealer, pursued a musical career without formal training in composition. He was Birmingham University’s first professor of music from 1905 to 1908. He stimulated a renaissance in English music and aided younger composers. His best-known works are the five *Pomp and Circumstance* marches, many of which are played at graduation ceremonies. Elgar enjoyed chemistry as a hobby in a shed, which he called “The Ark,” in his garden.

**Emil Votoček** (1872- 1950) was a Czech organic chemist whose research was concerned with sugar chemistry. He introduced the concept of epimerism and compiled a six-language chemical dictionary, Czech-German-French-English-Italian-Latin. He was a co-founder of the chemical journal entitled *Collection of Czechoslovak Chemical Communications* and published *Musical Dictionary of Foreign Expressions and Phrases*. He composed 29 songs as well as 26 other compositions. His own favorite was the rhapsody *From Dawn to Dusk of Life*, composed in 1945.

**Lejaren A. Hiller, Jr.**, (1924-1994) was the son of a well-known artist-photographer who also combined art and science by illustrating the history of surgery. Hiller studied chemistry and music at Princeton University. By 1946, when he received his M.S. in chemistry, he had published four papers on cellulose chemistry and composed *Piano Sonata No. 4*. After he received his Ph.D. from Princeton and worked at DuPont, he continued his chemical studies and musical compositions at the University of Illinois. In 1957, he and Leonard M. Isaacson, a graduate student in chemistry, composed the first

*Continued on page 7*

## Presentations Celebrate Chemistry and the Arts

### Towson University

8000 York Road,  
Towson, Maryland

#### *ChemistryMAGIC*

Thursday, November 1, 4:00 p.m.  
Smith Hall, Room 556

### Loyola College of Maryland

4501 North Charles Street  
Baltimore, Maryland

#### *The Chemistry of Dyes:*

#### *A Ukrainian Easter Egg Workshop*

Dr. Kimberly Olsen  
Tuesday, November 6, 7:00 pm  
Donnelly Science Center, Room 377

#### *The Science of Art Conservation*

Meg Craft\*  
Conservator, the Walters Art Gallery  
Thursday, November 8, 7:00 pm  
Knott Hall, Room B01

#### *Chemistry and Photography*

Dr. Daniel Schlapbach  
Friday, November 9, 12:00 pm  
Donnelly Science Center, Room 075

\*Ms. Craft will be discussing chemical challenges from the new Walters exhibits

## Science Spotlight<sup>sm</sup> Web Service Connects Scientists to High Interest Research

A new web service from Chemical Abstracts Service reveals the most highly cited and requested chemistry-related research publications as reflected by the citations included in the CAS databases and the full-text documents requested by scientists through the ChemPort<sup>®</sup> Connection. CAS Science Spotlight will provide lists of highly cited and requested documents as well as the bibliographic and abstract information along with the full text, where available, all free of charge.

CAS Science Spotlight lists the documents most cited, for the last two publication years, in the patents, conference proceedings, Web preprints or one of the 8000 journals covered by CAS. Also identified are the scientific papers and chemistry-related patents for which researchers have most frequently requested the full text via the CAS ChemPort Connection. In its initial release Spotlight lists the "Most Requested" documents for a five-week period during the most recent quarter. Future updates will be offered quarterly.

CAS Science Spotlight can be found on the web at <http://www.cas.org/spotlight/>.

---

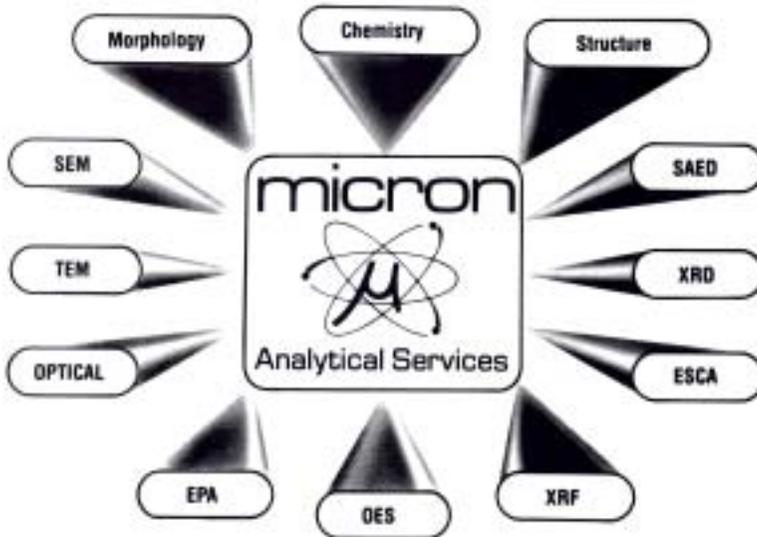
### Chemist-Composers continued

computer-generated musical score, *Illiac Suite for String Quartet*. After receiving a Master of Music from the University of Illinois, he became assistant professor of music and the founding director of the Experimental Music Studio at the university in 1958. In 1968, he became the Frederick B. Slee professor of composition at the State University of New York, Buffalo.

**Elaine L. Bearer** presently holds positions in both the music and medical schools at Brown University. Her four-movement work *The Nicholls Trio: A Musical Biography of a Scientist* was performed on the sixty-fifth birthday of her mentor, John Nicholls. The final movement was inspired by electrical patterns in the neurons of leeches, which Nicholls studied.

Nonprofit Org.  
U.S. Postage  
PAID  
Baltimore, MD  
Permit No. 2917

PLEASE DO NOT DELAY - DATED NOTICE INSIDE



3815 Lancaster Pike Wilmington, Delaware 19805  
(302) 998-1184

## OUTSTANDING PEOPLE

Lab Support is the leader in the scientific professional staffing industry. We specialize in placing qualified degreed scientists on short and long-term assignments in laboratories in over 50 major markets throughout the United States and Canada.

All of our Account Managers make "quality assignments" because they have a background similar to that of our clients and of our employees.

If your company is looking for outstanding lab personnel or if you're an outstanding scientist seeking a new career offering variety, opportunity and a great benefit package, call Lab Support today.

*On Assignment*

 **LAB SUPPORT\***  
Science Professionals On Assignment

410-821-3464

20651 West Agavea Road • Calabasas, CA 91302  
NATIONWIDE: 1-800-998-3352 • <http://www.labsupport.com>