CINTACS

Newsletter of the Cincinnati Section of the American Chemical Society

April, 2003
Vol. 40, No. 8

Calendar

New online registration!

Wednesday, April 9	Mr. Frederick Wallace at NKU
Friday, May 16	Party Night! Robert Mondavi Montgomery Inn Banquet Center

In this issue

From Paint Brush To Microscope: Science In The Hands Of Art Conservation

Frederick Wallace
Chief Conservator, Cincinnati Art Museum

Abstract

As the trade of art restoration evolved into the profession of art conservation, repair and beautification no longer was the primary goal when treating art and cultural artifacts. Rather, the preservation of these materials became of utmost importance. And science, it was realized, would be the key toward successfully implementing this new ideology. How science and its tools have been incorporated into the study and conservation of art will be discussed by Wallace during this presentation.

About the Speaker

Frederick Wallace attained a Bachelor Of Arts Degree in Art History from Virginia Commonwealth University in Richmond, Virginia. He later attended the State University College at Buffalo, New York, earning a Masters Degree In Art Conservation. Over the past 15 years he has worked for a number of museums and art conservation firms across the United States, and has been part of the conservation department of the Cincinnati Art Museum since 1991. He was made head of the department in 2001.

Ellen Chow, Meredith Stargel-Harden and Sharon Edwards Named Teachers of the Year!

See page 4 for stories.

THE CINTACS NEWSLETTER

Vol. 40, No. 8 April, 2003

Editor.....Bruce S. Ault
Advertising.....….…..Ed Hunter

CINTACS is published nine times a year (September through May) by the Cincinnati Section of the American Chemical Society. The submission deadline will be approximately March 28 for the May, 2003 issue. Electronic submission is strongly preferred, except for original photos. All materials should be sent to:

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from the Chair

The April meeting will be held at Northern Kentucky University and is being sponsored by Procter and Gamble. I would like to thank Jim Niewahner for his help making all the arrangements at NKU and Ron Webb of P&G for their generosity in sponsoring this meeting. The April meeting is very special because we get to recognize outstanding achievements in grades K-12.

John Williams, who has done a great job with this program for a large number of years, will be presenting awards to outstanding local high school students as part of the Oesper Award and the Chemistry Olympiad. Unfortunately, at the time of this writing, the students have not been chosen yet, in fact they have not even taken the tests, so I cannot give you their names.

The Awards Committee, chaired by Jim Hershberger, whom I would again like to thank for a great job, has chosen the three teacher awards from a large group of very deserving individuals. The award winners are Ellen Chow from Walnut Hills High School as High School Teacher of the Year, Meredith Stargel-Harden from Hays/Porter/Washburn and Peoples Middle School as Middle School Teacher of the Year, and Sharon Edwards from Environmental Mobile Unit as Elementary School Teacher of the Year. I would like to congratulate these three excellent teachers for all they have done to improve education in the greater Cincinnati area. Their hard work and dedication is greatly appreciated by those of us who are parents and/or college teachers.

The after-dinner speaker will be Mr. Frederick Wallace, Chief Conservator of the Cincinnati Art Museum. If you would like some background for this talk, I strongly urge you to find issue number 8 of *Accounts of Chemical Research* for 2002. This issue contains a large number of very interesting articles about the relationship between chemistry and art. To quote a sentence from one of the articles: "Chemistry has been involved in the study of works of art and archeological objects since the 18th century, when renowned scientists puzzled over how to solve a variety of restoration and conservation problems." Mr. Wallace will be discussing how science is involved in the conservation of art.

This is the last regular meeting of the year. The May meeting will be party night, at which time we will learn about the chemistry of wine and what makes wine taste like wine.

Allan Pinhas
allan.pinhas@uc.edu

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April Meeting
Wednesday, April 9, 2003

University Center
Northern Kentucky University

Sponsored by Procter and Gamble

K-12 Students and Teachers Night

Program

5:30	Registration: University Center, Second Floor Lobby Area
5:30	Organic Discussion Group: University Center 108 (see page 5 for details) Professor Jeffrey N. Johnston, Indiana University *The Development of Free Radical-Mediated Aryl and Vinyl Amination and their Use in Alkaloid Synthesis*
6:30	Banquet, University Center Ballroom, $14.00 (half-price for students, emeritus, unemployed and new members): Sliced Top Round of Beef, Baked Cod Italienne, Spinach and Cheese Quiche, Oven Browned Potatoes, Sauteed Zucchini, Pasta Salad, Caesar Salad, NY Cheese Cake, Strawberry Shortcake, Rolls and Beverage
7:30	Presentation of Teacher and Student Awards
8:00	Keynote Speaker: Mr. Frederick Wallace, Chief. Conservator, Cincinnati Art Museum *From Paint Brush To Microscope: Science In The Hands Of Art Conservation* University Center, Otto M. Budig Theater

Registration: New! A meeting resevation form is now online at: http://www.che.uc.edu/acs/cinacs.html. This is the best and easiest way to register. As a lesser alternative, you may send your reservations by email to Kim.Carey@uc.edu. If absolutely impossible to make reservations via the internet, telephone 513-556-0293. Deadline for reservations is 12:00 noon on Friday, April 4, 2003. Include your name, affiliation, and state if you're in one of the 1/2 price categories. As a reminder, if you decide you must miss a meeting after you have made reservations, please call to cancel. If you do not cancel, the Section will have to charge you because it will have been charged by the university.

Directions: From Downtown, or Cincinnati and northern Kentucky suburbs, take I-71 or I-75 or I-275 to I-471 South. Approximately six miles from the Downtown Cincinnati, I-471 ends as it merges with US27. At the second stop light turn right onto Nunn Drive, the entrance to Northern Kentucky University. From Nunn Drive turn left at the first traffic light. Go past the parking garage and turn right at the next stop sign. The University Center is the second building on the right. Guests may park in any unreserved parking space. (Do not park in Lot N as it is all reserved). Guests must have a handicapped parking sticker in order to park in a space for the handicapped.

2003 High School Teacher of the Year

The awards committee is pleased to announce that Ellen Chow has been selected as the ACS Cincinnati Section's High School Chemistry Teacher of the Year 2003. She teaches Chemistry I and Chemistry I AA at Walnut Hills High School, and has taught there since 1987. Her ability to motivate students to high interest and achievement in chemistry was very clear in the numerous student letters of support for her nomination. It is also evidenced by the number of her students who place in the top 10 in the Oesper level 1 competition each year; last year, 7 out of the top 10 students on this exam came from her classes at Walnut Hills. Ellen also served as the initial tutor for Daniel Cissell, winner of a gold medal at the 2002 International Chemistry Olympiad. Not only does Ellen motivate those with an interest in science to pursue chemistry, but she also has been very successful in inspiring those without an interest in science to learn and appreciate the role of chemistry in society. Congratulations to Ellen Chow on this award!

2003 Middle School Teacher of the Year

Meredith Stargel-Harden, currently part of the teaching staff of Hays/Porter/Washburn, Cincinnati Public Schools, has been named by the Cincinnati Section of the American Chemical Society as the Middle School Teacher of the Year.

Meredith's teaching philosophy can be summed up in two statements. She believes that you must 'lead by example' and 'not just teach the subject matter, but decorum, good manners and a love of learning.'

Her primary interest has been to expose her students to as many additional science and mathematics opportunities as possible. Toward that endeavor, she was awarded two Learning Links Grants from the Greater Cincinnati Foundation. One grant provided funds so that the entire student population (600 students) participated in exhibits and hands-on activities presented by COSI (Center of Science And Industry, Columbus, Ohio). The second grant provided funds to purchase binoculars and a telescope for the school Science Department.

Teaching is a family tradition for Meredith. Her father, Will Stargel, taught and coached at Walnut Hills High School for many years (Stargel Stadium was named in his honor). He was not only her father but her teacher as well.

Elementary School Teacher of the Year

Sharon Edwards is afraid that she isn't a "*real* elementary school teacher", but she is delighted to be so honored. She is a natural history interpreter and educator serving preschool-adult student populations, but most of her efforts are directed at grades K-6. She began her interpreter training as a Junior Naturalist at Hueston Woods State Park and as a repeat camper at Glen Helen Outdoor Education Center Eco-Camps. Later, she lead camps and/or interned at Camp Camp-

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bell Gard, Glen Helen, The Cincinnati Zoo, and the Harris Center for Conservation Education. During this period she earned graduate degrees from the School of Natural Resources (Ann Arbor, MI) and the Harris Center (Hancock, New Hampshire). Nine years ago she collaborated with others in the Oxford area to found EMU, the Environmental Mobile Unit, a non-profit organization dedicated to providing environmental science programs to complement schools' existing science, social studies, and health curricula.

With the input of teachers and students and the financial support of hundreds of individuals, schools, and charitable foundations, Sharon Edwards and EMU offer more than 85 separate programs on topics that grab students' attention and nurture their natural curiosity about our environment. In the 2001-02 school year alone Sharon presented 475 programs to more than 3000 students in six public school districts, a day care center, summer camps, Earth Days, and one private and one parochial school. Students were treated to experiences ranging from meeting stream critters, building bird houses, and testing water quality to re-enacting the biographies of stars and designing model solar houses. Sharon enjoys receiving mounds of letters from children every year. Jeff, a 4th grader, sums up her approach nicely: "I really enjoyed your program. I really know what your point is. Other people that do this type of stuff are boaring (Jeff's spelling), but you're funny and make it fun. Thanks".

Organic Discussion Group

The Development of Free Radical-Mediated Aryl and Vinyl Amination and their Use in Alkaloid Synthesis

Professor Jeffrey N. Johnston
Indiana University

Professor Johnston was born and raised in Cincinnati, Ohio, where he attended Xavier University (XU). After completing a senior thesis with Robert Johnson at XU and graduating in 1992 with a B.S. Chemistry degree (Honors), he moved to The Ohio State University for doctoral studies. The mentorship of Leo Paquette guided his studies in reaction development (oxonium ion-initiated pinacol rearrangement) and total synthesis (polycavernoside A, taxol). In 1997, he received his PhD and moved to Harvard University as an NIH postdoctoral fellow with David Evans. Jeff contributed to the development of the first catalytic enantioselective Mukaiyama-Michael reaction by elucidating the details pertaining to asymmetric induction and catalysis. He began at Indiana University in 1999, and in the following year was named the 2000 Boehringer-Ingelheim Young Investigator.

The research interests of the Johnston group begin with organic synthesis and end at a variety of points, including asymmetric catalysis, new reaction development, mechanistic organic chemistry, natural products total synthesis, and organometallic and bioorganic chemistry.

Chemical Educators' Discussion Group

It is time to plan next year's four meetings of the chemical educators' discussion group. Linda Ford needs meeting sites and hosts as well as program ideas. Please step up and say, "YES!" to hosting and "WOW! Here's a hot program idea". Linda awaits your response via e-mail at Linda.ford@7hills.org. The good news is that Mike Geyer has invited us to Deer Park High School in the early fall to share holiday demonstration and activity ideas. Do you do something special in class for Halloween or prior to winter break? What happens in the lab on Valentine's Day? Do your flames turn green on St. Patrick's Day? Come to share and to build your repertoire.

ChemEd 2003 happens at Auburn University from July 27th through 31st. You can register on line at www.ChemEd.auburn.edu. An early bird discount is available until April 25th. You cannot find a more valuable conference to enrich your chemistry curriculum, and it will come wrapped in Southern hospitality.

Cincinnati ACS is pleased to offer this widely acclaimed 3-day course this coming Spring…

Experimental Design for Productivity and Quality in R&D

Stanley N. Deming, Stephen L. Morgan, Instructors

Tues through Thurs, May 13-15, 2003

Holiday Inn I-275 North, 3855 Hauck Road

Cincinnati (Sharonville), Ohio 45241

The course that teaches the proper way to design experiments for improved research quality!

Who Should Attend

Chemical scientists, engineers, R&D managers, and others who need to learn proven methods for designing quality into products and processes. The course assumes no previous knowledge of statistics and is aimed at both beginning and experienced R&D workers. Each participant should bring a hand-held calculator to the course.

Key Topics You'll Learn About: Basic concepts of experimental design, Strengths and limitations of popular experimental design techniques, Applicability of common designs, Determining which experimental designs are appropriate or inappropriate for particular situations

How You'll Benefit from This Course: Get solutions to your experimental design problems from seasoned experts; Learn how to significantly improve R&D quality and efficiency; Become more efficient by learning how to save resources by eliminating unnecessary experimentation; Learn how to match appropriate experimental designs to real-world problems; Gain an improved understanding of statistical process control and statistical quality control; Understand statistical terminology and be able to communicate more easily with statisticians; Develop a firm foundation for understanding advanced design techniques; Receive a brief introduction to Taguchi methods; Learn about commercial software packages for data treatment; Improve your skills in communicating research strategies to co-workers

About the Instructors

Stanley N. Deming is Professor Emeritus of Chemistry at the University of Houston, Texas. He is also the President of Statistical Designs, a firm that offers short courses and consulting in methods development, process optimization, statistical experimental design, and the statistical analysis of laboratory data. Dr. Deming is the author or co-author of more than 90 publications in the areas of analytical chemistry and related disciplines. He is co-author (with Dr. Morgan) of the Elsevier text, Experimental Design: A Chemometric Approach, 2nd edition (1992).

Stephen L. Morgan is Professor of Chemistry at the University of South Carolina. His current research interests include optimization and experimental design in chemistry, pattern recognition on chemical information, and data preprocessing strategies. Additional research in his laboratory involves the application of computers in chemistry, experimental design, and multivariate statistics. Dr. Morgan is the author of more than 100 publications in the field of analytical chemistry and analytical biochemistry. He and Dr. Deming have co-authored (with F. H. Walters and L. R. Parker, Jr.) , Sequential Simplex Optimization (CRC Press, 1991).

Fees will depend on the number of participants, but are guaranteed to be significantly less than what you would pay at a National meeting or Pittcon ($1,345 ACS members, $1,445 non-members). Course seating will be limited, so indicate your interest now and be among the first to receive the final announcment, fees and registration details. Send an e-mail with your name, company, and telephone to white.dr.2@pg.com.

Reading someone else's copy and not an ACS member? Join ACS now (www.chemistry.org) and save $100 off the course fee.

Chemical Information Update

Overcoming the Tower of Babel

Edlyn Simmons
Chair, Chemical Information Discussion Group

Most of us remember a language requirement for undergraduate chemistry majors – a demonstrated reading knowledge of one of the languages important to the chemical literature: German, French or Russian. You could satisfy the requirement by taking an exam, passing a university course, or relying on your high school transcript. In theory, you were then prepared to read the world's chemical literature in the original language. In most cases, American chemistry majors were only prepared to stumble through text in one language other than English, gratefully relying on the similarities of chemical nomenclature in the various languages.

Today's English-speaking chemists have even more to be grateful for. English has become the dominant language of chemical publications; international meetings are often conducted in English, and much of the information on the Internet is written in English. But not all. For people whose first language is not English, the situation is both an incentive to master the intricacies of English and a major frustration.

Information is no less valuable if it's written in a language you don't read well, so it's often essential to get a translation of the document you want to read. If you've ever priced translation services, you know that the cost of a full translation by a human being (especially one with a good chemical vocabulary) is out of range for most research budgets. How else can you get the information you need? You may have a colleague who can give you an informal translation. Patents often have English language counterparts that can serve as translations. There may be an English language abstract in a database like Chemical Abstracts, and that may be enough to meet your needs. You can get an bilingual dictionary and wade through the document yourself. Or, if the foreign language text is in electronic format, you can use a machine translation website to give you a rough translation of the document or excerpts from it.

There are several sources of free machine translations on the Internet. They don't promise that the translation will be entirely accurate, and they don't provide help or technical support. Their chemical vocabularies generally leave much to be desired. Some sites provide a link to professional translators, who will provide a full or partial translation if the machine translation was inadequate or if you need one for legal purposes. The following are some of the websites that offer machine translations.

The Japan Patent Office has a database of Japanese language patents published since 1993, the Industrial Property Digital Library, http://www.ipdl.jpo.go.jp/homepg_e.ipdl. The website also includes the English language abstracts from Patent Abstracts of Japan. You can search the English language documents and if you have a Japanese patent number, you can display the document. Clicking on the DETAIL button on the document or abstract display kicks you into a machine translation program that gives the sections of the patent in English. Some of the translations seem to be excellent, with untranslatable terms shown as asterisks. Others are less successful, some because the translation is incorrect and others because the most important terms are represented by asterisks.

The Intellectual Property Office of Singapore has a patent search portal, SurfIP, http://www.surfip.com:/sip/site/sip_home.htm, that accesses patents from China, Taiwan and Korea, as well as the US, UK, European Patent Office and Patent Cooperation Treaty, Canada and Singapore. It has links to two translation engines, which it claims can convert English documents into Chinese, Japanese, Korean and European languages. One of the linked services, T-MINT, says it can translate from Korean, Japanese and Russian to English as well as among languages that use the Roman alphabet.

The best known machine translation site is probably Babblefish, http://www.babblefish.com/babblefish/. Babblefish is more than a machine translation site. It is a portal that links to sites ranging from

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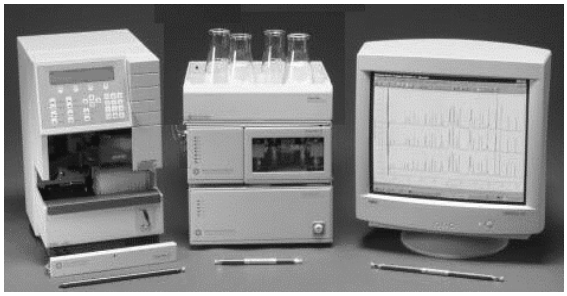
Algerian to Yiddish. The translation window is from FreeTranslation.com, and handles conversions among European languages. You can enter short blocks of text for a translation, or you can enter the URL of a website you'd like translated, and the system will translate the entire website. Like most machine translators, this system ignores words that are not in its bilingual lexicon and translates names literally. A hyperlink below the window takes you to another translation site, WorldLingo.com

WorldLingo.com's translation site, http://www.worldlingo.com/wl/pages/T1/G0/UP46167/P1/l/products_services/worldlingo_translator.html , is far more versatile than the others. It allows you to enter text or a URL and to select a document type, including "abstract," "parts list" and "prose." You can select source and target languages from lists that include two kinds of Chinese, Korean, Japanese, Greek and Brazilian Portugese, as well as the common European languages. There is a Special Characters window that allows you to enter accented vowels and a few other common characters, but not Greek or Oriental characters. Most interesting is that you can select a subject. One would assume that the translation engine uses a different vocabulary for Chemistry than the one it uses for Mathematics or Colloquial, but the fairly simple chemical paragraph I entered in French was not translated into proper English chemical terminology. Words that were not in the translator's French-English lexicon were left in the original French.

To quote a machine translation from a German article by Ernst Meyer (Simplicity Meyer in the translation), "the Sprachbarrieren often troublesome otherwise proved to be comparatively harmless." In other words, using a machine translation probably won't eliminate the language barrier, but it can't hurt.

Footnote:

This year, the Chemical Information Discussion Group is offering hints and updates on chemical information resources available to most chemists and techniques for using them. Feedback, contributions, and requests for information you'd like to see in future columns are welcome. If you have any comments, suggestions, or contributions, please email them to simmons.es@pg.com



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NCW News!

Plan on attending the April 9th section meeting at NKU to help celebrate our NCW 2002 poster contest winners (see the Feb. CINTACS for the winners announcement). Bring your NCW tee-shirts, if you have them! Join the Fun!!

NCW 2003: Earth's Atmosphere and Beyond!

NCW 2003 is not that far away (October 19 - 26, 2003). I'm inviting all interested members to join the volunteer team. We provide "chemonstrations" at the Cincinnati Museum Center, local libraries and schools. If you aren't comfortable on stage, consider joining as a "roadie" or be a member of the planning committee. Fresh ideas are always welcome. The team would really appreciate ideas for chemistry demos (targeted to 4-6th grade level) about atmospheric studies - pollution, weather, etc.. Contact Gloria Story, NCW chair, at story.gm@pg.com, or snail mail: Gloria Story (box 29), Miami Valley Labs, PO Box 538707, Cincinnati, OH 45253-8707. THANK YOU!!

Technical Uses for Excel

A Short Course
Sponsored by AIChE, Ohio Valley Section

The Ohio Valley Section of the American Institute of Chemical Engineers is offering a three day short course on technical uses for Excel in solving problems of interest to Chemists and Chemical Engineers. This will be a course of three sessions at Cincinnati State College, beginning at 9:00 a.m. April 26, and running for 3 hours on each of three consecutive Saturdays.

The instructor will be Don Ulrich, P.E., Adjunct Professor at Cincinnati State and several other colleges and universities in the area. He has taught this subject as part of several courses in Thermodynamics at the University of Cincinnati, and in courses at Ivy Tech State College. Topics include graphing, solving linear and non linear sets of equations (such as are found in reaction studies), using Microsoft "Solver" for solutions to several types of equations, and practical problems relating to scientific fields.

Cost of the course is $500, payable to the Ohio Valley Section, AIChE. Members of ACS and AIChE receive a 10% discount (registration fee $450). If three or more enroll from the same company an ad-

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Visit the
Section's Home Page

http://www.che.uc.edu/acs

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ditional 10% discount is offered. The registration fee includes text and all supporting material. Registration must be completed and paid for by April 14 to ensure that text books are on hand at the beginning of the course.

To indicate interest or for more details concerning registration procedures, please contact Ihor Mehlnik, <imelnyk@keramida.com>, or telephone (513) 769-9057

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