CINTACS



May, 2009 Vol. 46, No. 8

May Monthly		Meeting Calendar	I
Friday, May 1		Party Night at the Cincinnati Zoo	May 15
Party Nig @ the Cincinn		h-	
Ċ		In this Issue	
Sponsored by Dr. Mi	1	ng Announcement	May Meetin
	2	hair	From the C
Come explore the Wild Side v Party Night at th	3-5	ng Venue ation & Directions	May Meetii Informa
	5	60-year members	ACS 50- &
We have scheduled the Cinc Plaza for Party Night on Frida	6-7	ce & Engineering Tinners	2009 Scien Expo W
to 9:30 pm. This is an after-h	8-9	nformation Update	-
Saving Species with	9	Science with DC	Speak for S legislato
What is CREW? The Carl H. I ter for Conservation and Researce	10	national Symposium allamics	2009 Intern On Meta
life (CREW) was the first of it	11	S 2009 in Cleveland	CERMACS
research facility dedicated to sa and animals from extinction. C	12	Meeting Sponsors	2008-2009
jects, for which it is international Endangered Plants, Rhino			

Aeeting 5, 2009

t ti Zoo

ton Orchin

ith Cincinnati ACS Zoo!

nnati Zoo CREW y May 15 from 5:30 ours, private event.

Science®

ndner Jr. Family Cenh of Endangered Wildkind, state-of-the-art ing endangered plants REW's Signature Proly recognized, include: and Small Cats.



(Continued on page 3)

THE CINTACS NEWSLETTER

Vol. 46, No. 8 May, 2009

Editor.....Kevin Ashley Advertising.....Ed Hunter

CINTACS is published eight times a year (September through May) by the Cincinnati Section of the American Chemical Society. The submission deadline will be approximately August 10 for the September 2009 issue. Electronic submission is strongly preferred. All materials should be sent to:

Dr. Kevin Ashley CDC/NIOSH, Mail Stop R-7 4676 Columbia Parkway Cincinnati, OH 45226-1998

Tel.:(513) 841-4402Fax:(513) 458-7189E-mail:KAshley@cdc.gov

Cincinnati Section

<u>Chair:</u> Roger Parker 513-771-3613 parker.r@fuse.net

<u>1st Vice Chair & Chair-Elect:</u> Susan Hershberger 513-727-3438 hershbss@muohio.edu

2nd Vice Chair: Jeanette Krause 513-556-9226 jeanette.krause@uc.edu

Secretary: Rich Mullins 513-745-3361 mullins@xavier.edu

<u>Treasurer:</u> Ramona Quintanilla 513-627-8411 quintanilla.r@pg.com

<u>Trustee (Chair):</u> Emel Yakali 513-745-5686 emel.yakali@uc.edu

From the Chair

I hope you were able to attend the Awards Night meeting April 15th at NKU. Thanks again to Girindus America, Inc. for their sponsorship and to Stefan Paula of NKU for making the arrangements. Also thanks to Pamela Addison, John Williams, Susan Hershberger, George Rizzi, Jeff Seeley, Jamie Heimkreiter and everyone else who carried the ball.

On Friday, May 15th, come explore the Wild Side with Cincinnati ACS Party Night at the Cincinnati Zoo (5:30-9:30). Bring your family to the dinner meeting at the Zoo with a tour of the famous CREW (Endangered Wildlife) Program. Special thanks to Dr. Milton Orchin, our May meeting sponsor.

The short course, "Dispersion in Liquids: Suspensions, Emulsions, and Foams" (Ian Morrison, Instructor), is scheduled for April 30-May 1at the P&G Mason Business Center (513.622.1624: Rick White).

I'd like to thank all of you who helped this year. Special thanks go to John Janusz, Beth Reno, Kevin Ashley, Matt Gardlik, Ted Logan, Susan and Jim Hershberger, Dan McLaughlin, Bruce Ault, Kathy Gibboney, Edlyn Simmons, Bill Oliver, Jeff, John, Jeanette, Rick, Ramona, Emel, Ray, Linda Ford, Gloria Story, Keith Walters, Heather Bullen, Kim Carey, Heather Trenary, Donna Wiedemann, Rolanda Johnson, Rick White, Tina Engel, Ralph Damico, Judson Haynes, Nyote Oliver, Pat Limbach, Phil Christenson, Suri Iyer, and Alan Yeates. (We must have a party!).

Special thanks to our monthly meeting sponsors whose generosity is so important to the section: Chemistry Department University of Cincinnati, Xavier University Chemistry Department, Givaudan Fragrances, Procter & Gamble Company, Advanced Testing Laboratory, Girindus America, Inc., and Milton Orchin.

The activities and reach of the Cincinnati Local Section are impressive. The speakers and discussion groups at our monthly meetings covered a diverse range of topics and encouraged participation by other technical societies such as National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, American Institute of Chemical Engineers, Iota Sigma Pi, and the Dayton Section. We recognized the accomplishments of K-12 teachers, students, and chemists, we participated in National Chemistry Week, Earth Day, the Science Fair Expo, and the Oesper Symposium. We provided support for Project SEED, Women Chemists and Younger Chemists activities and we got Chemistry out to the community throughout the year.

Susan Hershberger will be stepping in as Chair for the next program year. I wish Susan well for a successful and enjoyable year for the Cincinnati Section.

-Roger Parker

(Continued from first page)

Friday, May 15th Party night meeting (5:30-9:30 PM) at the Cincinnati Zoo



Directions to the zoo are on pages 4-5

Please park in the Safari Lot near the CREW Plaza.

Member costs are \$30, with children, students, K-12 teachers, emeritus and unemployed members at \$15.

Please Register Online at <u>www.acscincinnati.org</u>. Alternatively, you may email the webmaster at <u>web-master@acscincinnati.org</u> to register, or call Roger Parker at 513.771.3613. *The deadline for reservations is Tuesday, May 12.*

Tours of the CREW facilities will be available for us to learn more about their research efforts in saving species with science. A CREW scientist will guide groups of 15-20 on a 20-minute tour throughout most of the evening, with tours starting at 5:30.

The Zoo's indoor exhibits will be open for your viewing, as well as any outdoor exhibits that have animals out at night.

The Lodge will be our back-up facility in case of rain.

Dinner will be at 6:30 PM on the plaza. Dinner is an Italian Buffet: Classic Tossed salad, with Ranch and Balsamic Vinaigrette dressings Bow-tie or Rotini pasta with 3 sauces - Marinara, Pesto, or Spinach-Onion Cream Chicken, Mild Italian sausage or a Spinach, Tomato, Artichoke vegetarian choice Sautéed peppers and mushrooms, steamed broccoli and baby carrots Parmesan cheese, garlic bread, and marinated olives Coffee, tea, and Cash Bar

Signs will be posted to direct attendees to ACS EVENT at CREW Location.

 \rightarrow Inform Gate Attendant that you are with Cincinnati ACS to receive ticket.

(Continued on next page)

(Continued from previous page)

Directions to the Cincinnati Zoo:

From I-74 (From Indiana, Harrison, West Side, etc):

Go East to I-75 North Take I-75 North to Mitchell Avenue exit #6 Turn right onto Mitchell Avenue Turn right onto Vine Street Turn left onto Forest Avenue Turn right onto Dury Avenue The Auto Entrance is on the right

From I-75 Northbound (From Kentucky, Downtown Cincinnati, etc)

Take Mitchell Avenue exit #6 Turn right onto Mitchell Avenue Turn right onto Vine Street Turn left onto Forest Avenue Turn right onto Dury Avenue The Auto Entrance is on the right

From I-75 Southbound (From Dayton, Fairfield, Norwood, etc)

Take Mitchell Avenue exit #6 Turn left onto Mitchell Avenue Turn right onto Vine Street Turn left onto Forest Avenue Turn right onto Dury Avenue The Auto Entrance is on the right



From I-71 Northbound (From Kentucky, Downtown Cincinnati, etc)

Take the Dana Avenue exit At exit ramp light, turn left onto Duck Creek At 2nd light, turn left onto Dana Avenue Turn left onto Victory Parkway At 2nd street on right, turn right onto Rockdale Avenue Follow Rockdale as it changes names to Forest Avenue Turn left onto Dury Avenue The Auto Entrance is on the right

From I-71 Southbound (From Columbus, Mason, etc)

Take the Dana Avenue exit Turn right onto Dana Avenue Turn left onto Victory Parkway At 2nd street on right, turn right onto Rockdale Avenue Follow Rockdale as it changes names to Forest Avenue Turn left onto Dury Avenue The Auto Entrance is on right

[See Zoo map on page 5]

Visit the ACS Cincinnati Section On-line:

www.acscincinnati.org

The Cincinnati Section Recognizes its 50- and 60-Year Members

The following individuals have been members of the American Chemical Society for 50 or 60 years. A certificate of recognition will be presented or mailed to each of these long-standing ACS members.

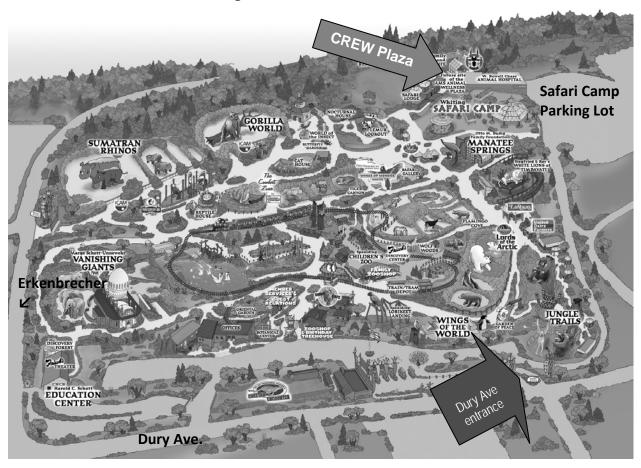
50-Year Members:

Mr. Richard D. Barnes Dr. Daniel F. Bender Dr. Joseph E. Dolfini Dr. Fred E. Freeberg Dr. Richard W. Goetz Dr. George P. Rizzi Dr. Rudolf G.K. Strobel Dr. John S. Thayer

60-Year Members:

Mr. Harold Hugh Hornbeck
Mr. Ralph F. Hoffer Duane K. Chapman
Mr. Donald W. Pugh L.J. Winchester
Mr. George Galanes
Dr. John B. Martin
Mr. Robert Kinnaird
Dr. Hubert Joseph Keily
Dr. Harold L Dimond

Map of the Cincinnati Zoo



2009 Science and Engineering Expo (SEE) Winners

Reported by George Rizzi

The annual SEE was held at UC on March 14, 2009. The following science fair exhibits were selected from approximately 30 "chemistry" entries to be awarded \$100 cash prizes from our Section. Prizes were presented to the winners at an Awards ceremony at UC on March 14th.

Does the Color of a Candle Affect How Fast It Burns

Sarah Clark and Lauren Leesman, Grade 7, Lady of Lourdes School

The purpose of our experiment was to find out if the color in non-scented candles affects the amount of time it takes to burn. So when we buy candles, we know which candles will last the longest and will save us money. Our hypothesis was that the white candles would burn the fastest. We thought since the colored candles have more chemicals/dyes in them, it would lengthen the burning time. During our experiment we used different colors of the same brand candles. First we measured all the candles and cut the wicks to make sure they were all the same. Then we marked the candles and spaced all the candles evenly apart. Then we burned them in a controlled environment for mm and then another 76mm. We observed and recorded the results six times. From our test we learned that when the candles burned the first three inches

the white candle was in the lead. But after the next 76mm, the red candle continued to drip a lot while the other candles did not. After the testing was completed, we were questioning why the red candle dripped and decided to call Candlelite Company. We found out the red candles were defective. Though we learned the more the candles dripped, the faster they burned. By excluding the red candles our hypothesis was right. The red candles burned the fastest then the lightest to the darkest candles.

Effect of Water Temperature on the Rate an Antacid

Emma Wright, Grade 8, St. Louis School

The problem in this experiment involved testing how fast an antacid tablet could make gas. The hypothesis that was made said that the reactant in the antacid tablet would produce carbon dioxide gas faster in warmer water. The materials and equipment needed for the experiment was a clear, wide mouth, 12 ounce or larger plastic bottle, 50cm of aquarium tubing, at least 12 antacid tablets, a drill, a drill bit, a stopwatch, a thermometer, measuring cups, masking tape, a 60mL syringe, hot and cold tap water, and ice. In this experiment, measure the reaction rate for the production of carbon dioxide gas from a single antacid tablet. Measure the volume of gas produced in ten second intervals after the reaction begins. To run this experiment, drill a hole in the center of the bottle cap and insert the clear tube through the hole.

(Continued on next page)

(Continued from previous page)

Then connect the other end of the tube to the end of the syringe. In order to measure the reaction, begin by filling the measuring cup with one cup of water and then record the temperature of the water. Proceed to pour the water into the bottle. Prepare the helper to start the stopwatch when the antacid tablet is dropped into the water, and record the amount of carbon dioxide gas made in each temperature of water. Based on observations, the hypothesis was proven that antacid tablets react faster in warmer water.

The Separation of Color Through Paper Chromatography

Matthew Cahall, Grade 8, Lady of Lourdes School

The purpose of my experiment is to separate, identify and measure color components of colored markers, black, brown, green, orange and purple, by using filter paper and solvents through paper chromatography. I will find out which color components are most attracted to the solvents. The same concepts were used to separate color components in M&M candy.

HYPOTHESIS: I think that all the secondary colored markers will contain multiple component colors. Using different solvents will affect the chromatograms; black will have the most color components.

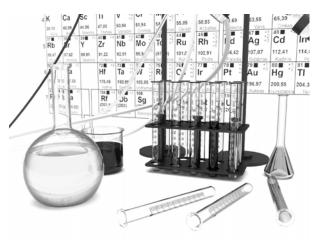
EXPERIMENT: Place strips of paper with ink marks into glass containers containing small amounts of solvent and remove after 20 minutes. Record separation of colors, measurements and observations of color components most attracted to the solvent.

ANALYSIS: The secondary colors chromatograms showed a range of color components, but most included a primary color. Color component blue appeared the most. Chromatograms changed as different solvent was used. Color separation of the m&m candies was not as well defined as the markers.

CONCLUSION: Color separation occurred as solvents moved through the filter paper allowing different ink molecules to spread out at different speeds. The primary color, blue, appeared the most and color dyes in the candy can be tested using the principles of paper chromatography.

Note: George Rizzi served as a judge at the SEE science fair.

Thank you very much for your service George!



Chemical Information Update: Institutional Repositories, Publication Delays, and New Publishing Options

Reported by Meghan Gamsby Science Librarian, Brill Science Library Miami University

Like many other institutions, Miami University has established an institutional repository (IR) for electronic publication of work done by faculty and students. I was assigned to a group that is charged with recruiting more faculty members to contribute research to our institutional repository. I was the likely candidate, not because I am an expert on the subject, but because I am new and I can be the Science Library representative. My first task as a member of this group was to send out emails to all of the science and engineering faculty to see if we could get any faculty members who would like to contribute their research. There were a couple of professors who were interested, and many who had questions.

Most of the questions had to do with copyright but one was different. A chemistry professor wanted to know "If I post research on [the IR] could it be used as proof that we were the first ones to do the research?" After speaking with the professor I found out that he is frustrated with the delay between submitting research and having it published.

I sent the question out to CHMINF-L, the chemical information mailing list, to get other librarians' opinions. The responses I got back included several recommendations that the professor should speak with the university's intellectual properties lawyers, AND that yes, it would be considered as proof.

On the surface publishing research in an IR seems to solve this professor's problem, but actually it creates a new set of problems. The USPTO¹ clearly explains that anything published in an online database is considered as prior art. The USPTO views online publication of your work the same way it views other forms of publication and therefore you would need to file a patent application for your research within one year to receive a United States patent.* You also run into journals that consider your work as already published. Most journals in chemistry will not accept work that has already been published in any format. Physics and Mathematics seem to have overcome this mindset and publishing in arXiv.org, a preprint server, is prevalent.

Although publishing research on an institutional repository may allow you to prove that you discovered something earlier than publishing in a traditional journal, it probably isn't the best solution. Unfortunately we can't change the peerreview process overnight to decrease review times. So what can a researcher do? You can check a journal's policy on prior publication to see if publishing a preprint is allowed. The ACS provides easy access to all of their journals' policies.² You can also browse through journal issues to see publication times of new articles.

Another option would be to consider journals with new publishing models. Take a look at publishing in Chemistry Central.³ ChemistryCentral is an open access publisher of peer-reviewed journals operated by BioMed Central. Once an article is accepted (*Chemistry Central Journal* tries to have a decision on acceptance made within 5 weeks) a provisional pdf is made available online with the final pdf being made available after peer review. BioMed Central has been very successful in the fields of biology and medicine. These BMC journals are well respected; many of them are indexed in ISI's Science Citation Index and have very respectable Impact Factors.

In speaking with faculty and doing my research for this column, it is clear that many people like the idea of providing their research to a broader

(Continued on next page)

(Continued from previous page)

community through open access. IRs allow researchers to publish their work in traditional journals, since this is necessary for the tenure process, and still get their research out to people for free. Unfortunately IRs do not solve all of the problems that come with publishing your research.

References:

- United States Patent and Trademark Office. 2128 "Printed Publications" as Prior Art [R-5] – 2100 Patentability. <u>http://www.uspto.gov/web/offices/pac/mpep/</u> <u>documents/2100_2128.htm#sect2128</u>
- 2. ACS Journals Policy Summaries on Prior Publication. <u>http://pubs.acs.org/page/</u> <u>policy/prior/index.html</u>
- 3. Home Chemistry Central. <u>http://</u> <u>www.chemistrycentral.com/</u>

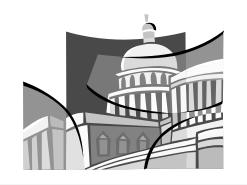
SPEAK FOR SCIENCE: VISIT YOUR LEGISLATOR'S CAPITOL HILL OFFICE

The American Chemical Society, in conjunction with its fall 2009 National Meeting in Washington, D.C., is inviting ACS members to schedule meetings with their legislator's Capitol Hill office on August 17 or 18. The focus of the meetings will be supporting science funding in this year's congressional spending bills. ACS staff will provide the talking points and leave-behind materials for these visits.

If you will be attending the fall ACS meeting in Washington and are interested in visiting your congressman's and/or senators' offices to support science funding, contact Joel Shulman, joel.shulman@uc.edu, by July 31. If you have never made this kind of visit before, you will paired with someone who has. It's a great opportunity to see democracy in action and show that chemists can become involved in the political process.

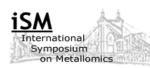
In the meantime, go to <u>www.acs.org/policy</u> and click on the link to the "Speaking for Science" video to learn techniques for meeting a legislator and go to <u>act4chemistry.org</u> to learn about the latest science policy news and information.

-Joel Shulman University of Cincinnati



^{*} Note from E. S. Simmons - In countries other than the United States, any publication before a patent application is filed is a bar to patentability. The best way to preserve your right to a patent is to file the patent application first and post it to the institutional repository or submit it to a journal afterward.

The Chemical Information Discussion Group continues to offer 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 Edlyn Simmons at <u>edlyns@earthlink.net</u>.



Metallomics is the study of metals and metal species, their interactions, transformations, and functions in biological systems. While traditional approaches have focused on the role and interactions of a single (or few) metals in a protein or enzyme system, 2009 International Symposium on Metallomics Cincinnati/ Northern Kentucky USA



metallomics purports to study global relationships and multielement interactions. As such, the challenges for chemical and bio-chemical characterization are significant. The **2009 International Symposium on Metallomics** will be held on **June 7 - 10**, **2009** in Cincinnati/Northern Kentucky USA, which immediately follows the American Society for Mass Spectrometry Meeting in Philadelphia. ISM '09 builds on the outstanding meeting held in Nagoya, Japan in 2007, <u>http://www.ism2007.org/</u>, and will bring together scientists from the biological, chemical, environmental, clinical and measurement sciences to effect a greater understanding of the role of metals and metal compounds impacting these disciplines. The conference will be both intellectually stimulating *and* socially rewarding. For complete detail and registration information, see our website www.uc.edu/plasmachem/iswm/index.htm or contact: joseph.caruso@uc.edu

An Exceptional Group of Symposia

Metallomics Tech Human Metallomics Microbial Metallomics General Sessions

Metallomics Tech

to develop a full Metallomics picture

including instrumentation, metal tags, imaging

Group of Symposia Biogeo Metallomics Phyto Metallomics Environmental Metallomics



Join us in June for this excellent

science and social experience. We will

have senior scientists, as well as students and postdocs participating, providing an atmosphere that is highly interactive and sure to spark new ideas and metallomics research, as we build bridges to cross the multiple metallomics disciplines.











An Exceptional Group of Invited Mike Adams Speakers U. Geor

Sabine Becker Jörg Bettmer J. Luis Gomez-Ariza Meike Hamester Hiroki Haraguchi Norbert Jakubowski Naoki Furuta Ryszard Lobinski Wolfgang Maret **Claude Meares** Himadri Pakrasi Andreas Prange Alvaro Puga Steve Ray David Salt Alfredo Sanz-Medel B. 'Amu' Sarkar

Rudi Grimm

Joanna Szpunar Scott Tanner Kasia Wrobel Yasumitsu Ogra Jeff Zaleski

U. Georgia Agilent Technol. Analytical Research Center, Jülich U. Oviedo U. Huelva ThermoFisher Nagoya U. ISAS Dortmund Chuo U. **CNRS** Pau U. Texas U.C. Davis Washington U. **GKSS Hamburg** U. Cincinnati Indiana U. Purdue U. U. Oviedo Toronto, Hospital for Sick Children CNRS Pau U. Toronto U. Guanajuato Chiba U.

Indiana U.





2009 Central Regional Meeting of the ACS

The Cleveland Section of the American Chemical Society invites you to the 2009 Central Regional Meeting of the American Chemical Society, CERMACS 2009, at the historic Renaissance Cleveland Hotel, Cleveland, Ohio, May 20-23, 2009. This event is being co-sponsored by the Electrochemical Society, the Society for Applied Spectroscopy, the American Vacuum Society, the Yeager Center for Electrochemical Sciences, and Case Western Reserve University.

The theme for CERMACS 2009 is *Meeting Energy & Environmental Challenges Through Functional Materials.* In addition to the traditional symposia on Analytical, Inorganic, Organic, and Physical Chemistry, the meeting organizers are planning symposia on:

- Energy Storage and Energy Conversion
- Functional Materials
- General Catalysis
- Women in Electrochemistry
- Chemical Education
- Chemical Biology
- Medicinal Chemistry
- Art and Science
- Forensic Science
- Computational Chemistry
- Environmental Chemistry
- Health Impact of Nanomaterials
- Lunar Regolith and Simulants
- 100 Years of Chemistry in Cleveland



CERMACS 2009 is pleased to announce three keynote speakers for the technical program, Professor Charles M. Lieber of Harvard University, Professor Daniel G. Nocera of the Massachusetts Institute of Technology, and Dr. Linda Abraham-Silver of the Great Lakes Science Center. The Cleveland Section will continue four decades of tradition by presenting the Morley Medal for 2009 at the Morley Award Symposium. The Morley Medal recognizes significant contributions to chemistry through achievements in research, teaching, engineering, research administration and public service, outstanding service to humanity or to industrial progress. Workshops and short courses are planned. The undergraduate program will include an undergraduate research poster session as well as networking opportunities. Contact information for symposia chairs and details regarding this event can be found at the CERMACS 2009 website, <u>www.cermacs2009.org</u>.

MONTHLY MEETING SPONSORS FOR THE ACS CINCINNATI SEC-TION IN THE 2008-2009 PROGRAM YEAR

Each of these individuals, universities, companies, and departments listed below have agreed to sponsor one monthly meeting with a donation of \$1000 in cash or IN KIND services or facilities to defray the costs of holding a meeting:

September:

(no sponsor sought)

October:

Chemistry Department University of Cincinnati

November:

(no meeting)

December:

Xavier University Chemistry Department

January:

Givaudan Flavors (with additional contribution from Iota Sigma Pi)

February: Procter & Gamble Company

March: Advanced Testing Laboratory

April: Girindus America, Inc.

May: Dr. Milton Orchin The Cincinnati Section and its members are extremely grateful to these individuals and companies and recognize that the quality of our programs is improved by this financial support.

More important perhaps than the more than \$8,000 in financial and in-kind contributions of these sponsors is their continued support and belief in strengthening the section's programs. Their dedication and contributions are invaluable to attracting new members to an improved long-term effort. New participants and volunteers are the future of the section, and we are most appreciative of the sponsorships provided.

Ted J. Logan, Chair Committee on Solicitations and Sponsorships tjlogancin@aol.com



Whatman Is Filtration And Much More!

Whatman leads the industry in sample preparation and analytical lab products. As a GE Healthcare company Whatman continues to offer the best products at an excellent price.

♦Cellulose Filters	♦TLC Plates
*Glass Microfiber Filters	♦Silica Gel
Syringe Filters	*Solid Phase Devices
Syringeless Filters	*Membrane Filters
Mobile Phase Filters	♦pH Strips
Inline Filters	*Extraction Thimbles
*Capsule Filters	*Weighing Papers
♦HPLC Columns	*Benchcoat Lab Safety

For product information contact Marshall Beeber, your Whatman "Technical Sales Representative" at 1-800-WHATMAN ext 8450, or email Marshall.Beeber@Whatman.com



Whatman is now part of GE Healthcare! Creating a centre of excellence in separation technology

www.whatman.com



VWR International, Inc. 8008 Kimbee Drive Cincinnati, OH 45244 www.vwr.com Timothy J. Meirose Sales Representative Cincinnati

office: 513.624.7373 fax: 513.624.7372 voice mail: 800.431.4132 x.6136 customer service: 800.932.5000 email: tim_meirose@vwr.com





Micron Analytical Services

 COMPLETE MATERIALS CHARACTERIZATION

 MORPHOLOGY
 CHEMISTRY
 STRUCTURE

SEM/EDXA, TEM/SAED, EPA/WDXA, XRD, XRF, ESCA, AUGER, FTIR, DSC/TGA 3815 Lancaster Pike Wilmington DE. 19805 Voice 302-998-1184, Fax 302-998-1836 E-Mail micronanalytical@ compuserve.com Web Page: www.micronanalytical.com



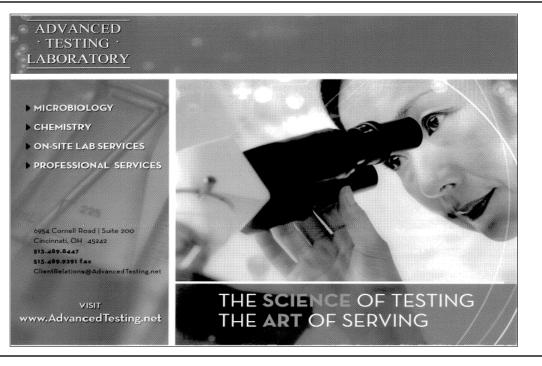
Robertson Microlit Laboratories

Where speed and accuracy are elemental

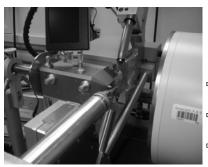
Elemental CHN, S, X, Analysis (same day service) Metals by ICP-OES, ICP-MS, A/A FTIR, UV/VIS Spectroscopy Ion Chromatography Bioavailability Polarimetry DSC, melting point KF Aquametry, Titrimetry

P.O. Box 927 • 29 Samson Ave. • Madison, NJ 07940 • 973.966.6668 • F 973.966.0136 www.robertson-microlit.com • email: results@robertson-microlit.com

Rapid Results • Quality • Accuracy • Competitive Pricing



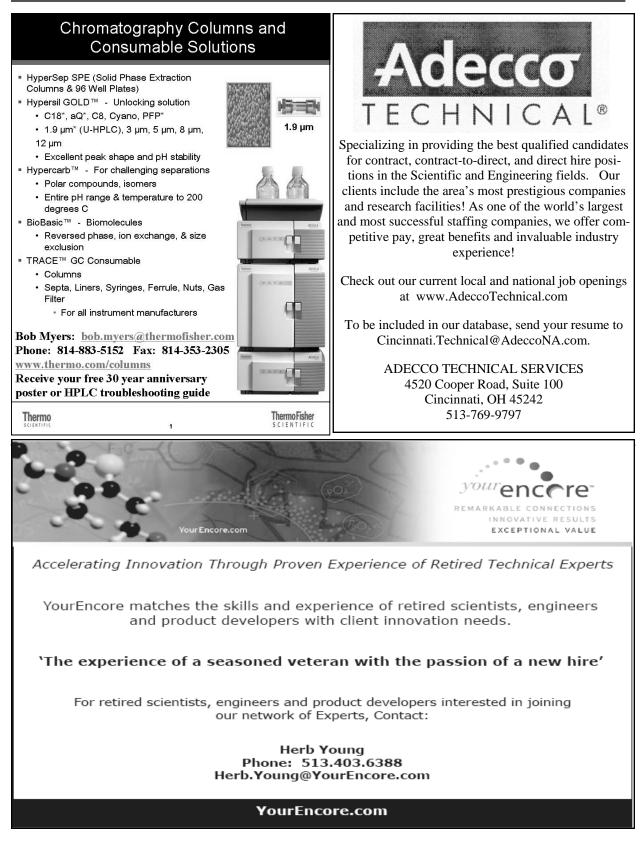






www.goNavis.com/oh1083 513-860-2332

- More than **25 years experience** packaging fragile, large, awkward and valuable items. PhD in colloid & surface chemistry on staff.
- All-risk transit coverage up to \$1 million. Shipments we pack are 99.8% claims-free!
 - International shipments, and we do all the paperwork.



American Chemical Society – Cincinnati Section

Xavier University Department of Chemistry 3800 Victory Parkway Cincinnati, Ohio 45207 Non-Profit Org. U.S. Postage Paid Cincinnati, Ohio Permit #517