

# CINTACS



Newsletter of the Cincinnati Section of the American Chemical Society

September, 2011  
Vol. 49No. 1

## Meeting Calendar

Sept. 25	Family & Friends Picnic @ Germania Park
Oct. 14	Oesper Award Events, Charles P. Casey, University of Wisconsin-Madison @University of Cincinnati
Oct. 16-22	National Chemistry Week "Chemistry : Our Health, Our Future"
Dec. 8	Joint mtg. with NOBCChE, Xavier University, Speaker TBD
Jan.	TBD
Feb.	Chemist of the Year
Mar.	TBD
Apr.	Education Awards Night @ NKU, TBD

## In this issue

Sept. mtg. announcement	1,3
From the Chair	2-3
Oesper Events at UC	4-7
October mtg. announcement	4
Prof. Charles P. Casey, 2011 Oesper awardee	5
Oesper poster session: Call for posters	6
Prof. Clark R. Landis, Oesper banquet speaker	6
Report on Earth Day 2011	7
National Chemistry Week	8
Call for section meeting sponsors	8

Come to the first "meeting" of the year:

**8<sup>th</sup> ANNUAL**  
***FAMILY AND FRIENDS PICNIC***  
***Elemental Fun at Germania Park***  
***Sunday, September 25, 2011, 1-5 PM***

Bring your family! Invite your friends! Come and celebrate the end of summer and the beginning of fall, reconnect with old friends and make new ones in a relaxed and casual atmosphere. Activities and entertainment will include food, drinks, and Goldie the clown, face painting, balloons, games, chemistry demonstrations and an inflatable bouncy castle for children.

Registration: 1:00-2:00 PM

Food/Potluck: The section will provide grilled hot dogs, hamburgers, brats, metts, and chicken as well as condiments and drinks including beer, soft drinks and juice boxes.

Attendees are cordially requested to bring a dish to share. If your last name starts with A-M please bring a side dish or salad for 6. If your last name starts with N-Z bring a dessert for 6.

Food will be served at 2 PM

Cost: \$10 for individual members or \$15 for members with their family or friends. \$5 for individual retired members, first time chemists, K-12 teachers, students and unemployed members or \$10 for the same with their family or friends.

(Continued on page 3)

## THE CINTACS NEWSLETTER

Vol. 49, No. 1 September, 2011

Editor.....Adam Bange  
Advertising.....Dan Esterline

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 September 12 for the October 2011 issue. Electronic submission is strongly preferred. All materials should be sent to:

Adam Bange  
Xavier University  
3800 Victory Parkway  
Mail Location 4221  
Cincinnati, Ohio 45207-4221  
Tel.: (513) 745-3950  
Fax: (513) 745-3695  
E-mail: Bangea1@xavier.edu

## ACS Cincinnati Section

Chair:

Rick Mullins  
(513)745-3361  
mullinsr@xavier.edu

1st Vice Chair & Chair-Elect:

Elizabeth Reno  
(513)622-1346  
reno.ea@pg.com

2nd Vice Chair:

Diana McGill  
(859)572-5409  
mcgill@nku.edu

Secretary:

Hong Zhang  
(513) 861-3100 x5143  
hongzhangatl@hotmail.com

Treasurer:

Ed Hunter  
(513)522-6199  
edhunter@fuse.net

Trustee (Chair)

Victor Arredondo  
(513)626-0242  
Arredondo.vm@pg.com

## From the Chair

Greetings Section Members,

I trust that you have had a relaxing and productive summer and I am looking forward with great anticipation to a vibrant and exciting upcoming year in the Cincinnati Section. I am honored to serve you, and the section, as chair.

The new year of the Cincinnati Section meetings will be getting off to a great start with the ever popular Family and Friends Picnic at Germania Park. Already a tradition that should not be missed, the 8<sup>th</sup> year of this family friendly event promises to be better than ever. On Sunday, September 25, from 1:00 to 5:00 pm, the section will provide grilled bratwursts, metts, hamburgers, chicken, hot dogs, tap beer and soft drinks. We also ask that you bring your favorite side dish and/or dessert to share. **Bring your entire family and invite your friends!** There is sure to be something that will entertain all who attend. We expect a return visit from Goldie the Clown who will entertain the kids with such activities as face painting, balloons, and games. The retired chemists group will present memorable chemistry demonstrations that make a long-lasting impression on kids and adults alike. New to this year's event will be a bouncy castle for the kids in attendance. Check out our newly activated Facebook page, or stay tuned to your email for additional activities that are still being planned.

Taking place in October is one of the Section's more popular events, *The Ralph and Helen Oesper Banquet & Poster Session*. This year's banquet will take place on October 14th at the University of Cincinnati. Professor Charles Casey, Homer B. Adkins Professor of Chemistry, of The University of Wisconsin-Madison is this year's Oesper Award honoree. Professor Casey's research interests have focused on mechanistic organometallic chemistry, including the exploration of mechanisms of hydroformylation, hydrogenation, and alkene polymerization. He is the author of more than 300 papers in organometallic chemistry. He will present the Oesper Award Lecture, *Design Evolution Leading to the Discovery of an Efficient Iron Catalyst for the Chemoselective Hydrogenation of Aldehydes and Ketones*. Following the symposium, the banquet begins with a reception and the Cincinnati Section ACS student poster session, followed by dinner and the Oesper Award presentation by Clark Landis, of The University of Wisconsin-Madison. Speakers for the symposium include: Rustem Ismagilov, University of Chicago; Clark Landis, University of Wisconsin-Madison; Melanie Sanford, University of Michigan; Jon Tunge, University of Kansas; Ross Widenhoefer, Duke University and Chae Yi, Marquette University. For those that are interested in the chemical research going on in the Greater Cincinnati area and beyond, this is an event that is not to be missed!

Also coming up in October is National Chemistry Week, which will be celebrated from October 16th to 22nd, so mark your calendars! The theme this year is "**Chemistry – Our Health, Our Future**." As always, we would like to increase our efforts toward sharing the wonders of chemistry with the local community, especially as 2011 is the International Year of Chemistry. If you have the time, the energy and the interest

(Continued on page 3)

*(Continued from page 1)*

**Reservations:** The meeting reservation form is online at [www.acscincinnati.org/acs](http://www.acscincinnati.org/acs). When you register indicate the number of adults and children attending. The deadline for registration is Wednesday, September 20 at noon.

Directions to Germania Park, 3529 West Kemper Road, Cincinnati, OH 45251:

From I-275 take the Colerain Avenue exit and go north on Colerain (US 27) for about 2.5 miles. Take the Kemper Road exit and turn right onto Kemper. Germania Park is on the right after about 1.3 miles. From I-275 W take exit #36 toward Mt. Healthy. Turn right onto Hamilton Avenue (US 127) and go north about 0.8 miles. Turn left onto West Kemper Road. Germania Park is on the left after 1.6 miles.

*(Continued from previous page)*

in volunteering, please do so, as it is a very rewarding experience. We are especially appreciative of the efforts of Jackie Thomas and Gloria Story who are coordinating the NCW events for the section. Please contact them if you are interested in helping out.

On a personal note, my drive back to Cincinnati after the memorial service for Jim Hershberger in Oxford, OH, left me ample time for reflection. As many of you know, Jim Hershberger, and his wife Susan, have served our section in many ways over the past several years. While I have only been a member of the Cincinnati Section for seven of them, and I didn't know Jim that well, their positive impact on the section has been obvious. Although I only knew him as an active section member, it occurred to me during, and after the service that Jim was so much more. Listening to the friends, colleagues, and family members speak so eloquently, celebrating Jim's life and personality, his sense of humor, diversity of interests and excellence in teaching and research, I experienced a range of emotions. Obviously, sadness for a life that ended too soon, but also regret for my own missed opportunity. I have been on the ACS board for several years, and have interacted with Jim at various times throughout. However, it is only at his memorial service that I learned the true magnitude of this great man. I wish I had spent more time getting to know him better as he has impacted those close to him in so many important ways, and I feel I missed this opportunity. I

guess the point I am trying to make is that the ACS is many things to many people. It is a place to network, to share fellowship with people of similar interests, to engage in the pursuit of important science, to socialize...the list goes on and on. But, unless you take the time to get involved, meet people, interact with colleagues from across the Greater Cincinnati area, you run the risk of missing out on some incredible people. Who knows, you may be an incredible person yourself, and your presence at our meetings will enhance all of our lives. So, get involved, step away from the day to day activities of your job, and come to a meeting. Volunteer at a library or museum during National Chemistry Week. Attend the Oesper Symposium. Certainly these events will fulfill your professional life in some way, but you will also meet some outstanding people.

As I mentioned earlier, I anticipate a great year for the section. There are a multitude of opportunities for getting involved as our 2011-2012 year of meetings and events begins. I would love to hear from you; I welcome your ideas for how the Section can better serve you and any help you can offer. See you at the picnic!

Rick Mullins  
Chair  
ACS Cincinnati Section  
[mullinsr@xavier.edu](mailto:mullinsr@xavier.edu)

#### **Social Networking Comes to the Cincinnati Section**

The new Facebook page for the Cincinnati Section of the ACS is up and running. This site will be used for sharing accomplishments, and networking socially and professionally with the membership. If you are already on Facebook, find the section page, "like" us and recommend us to your colleagues and friends. If you have something you would like to share (a recent publication, funded grant, promotion, birth, wedding, etc...), email the section chair, Rick Mullins, at [mullinsr@xavier.edu](mailto:mullinsr@xavier.edu) and this page will be used to share these important happenings in the lives of section members. Additionally, you can follow us on Twitter for similar announcements @Cincinnati\_ACS. The section will continue to maintain the website (<http://www.acscincinnati.org>) for major announcements, including upcoming meetings.

October Meeting: October 14, 2011

**31<sup>st</sup> Oesper Award Banquet, Poster Session and Symposium at the University of Cincinnati**

Tangeman University Center (TUC) University of Cincinnati

*Sponsored by the University of Cincinnati Department of Chemistry*

The Oesper Symposium will be held on October 14, 2011 and will feature the following speakers:

Rustem Ismagilov, California Institute of Technology  
*"Space, Complex Networks, and Microfluidic Tools"*

Clark Landis, University of Wisconsin-Madison  
*"Enantioselective Hydroformylation: Mechanism and Application"*

Melanie Sanford, University of Michigan  
*"Development and Application of New C-H Functionalization Reactions"*

Jon Tunge, University of Kansas  
*"Synthesis via C-C 'Activation'"*

Ross Widenhoefer, Duke University  
*"Synthetic and Mechanistic Aspects of Gold(I)  $\pi$ -Activation Catalysis"*

Chae Yi, Marquette University  
*"Catalytic Coupling Reactions Involving Vinylic C-H Activation"*

Charles Casey, University of Wisconsin-Madison  
*"Design Evolution Leading to the Discovery of an Efficient Iron Catalyst for the Chemoselective Hydrogenation of Aldehydes and Ketones"* (Award Lecture)

Visit the Oesper website for more information and the Symposium schedule: [http://www.artsci.uc.edu/chemistry/alumni\\_community/oesper/](http://www.artsci.uc.edu/chemistry/alumni_community/oesper/) or contact Kim Carey (513-556-0293; [Kim.Carey@uc.edu](mailto:Kim.Carey@uc.edu))

**Directions to Campus:** [http://www.uc.edu/visitors/directions\\_main.html](http://www.uc.edu/visitors/directions_main.html)

**Map of Campus:** [http://www.uc.edu/content/dam/common/docs/maps/campus\\_map\\_west.pdf](http://www.uc.edu/content/dam/common/docs/maps/campus_map_west.pdf)

Banquet price is \$30.00; emeritus, students, K-12 teachers, unemployed and first time members are ½ price. The banquet meal choices are chicken or vegetarian option.

The meeting reservation form is at <http://registration.acscincinnati.org/October/> this is the best and easiest way to register. As an alternative, you may send your reservations by email to Kim Carey at [Kim.Carey@uc.edu](mailto:Kim.Carey@uc.edu). If absolutely impossible to make reservation by internet, telephone 513-556-0293. Deadline for reservations is 12:00 noon on October 5, 2011. Include your name, affiliation, dinner choice and state if you are in the ½ price category. If you decide you must miss a meeting after you have registered, please call to cancel. If you do not cancel, the Section will charge you because it will have been charged by the University.

Contact Kim Carey at 513-556-0293 for additional information.



**Charles P. Casey**  
**Homer B. Adkins Emeritus Professor**  
**of Chemistry**  
**University of Wisconsin-Madison**  
**2011 Oesper Awardee**

The Department of Chemistry at the University of Cincinnati, and the Cincinnati Section of the ACS will present the 2011 Oesper Award to Professor Emeritus Charles P. Casey from the University of Wisconsin-Madison at the Oesper Banquet and Symposium at UC, October 14, 2011.

Charles Casey is being recognized for his pioneering work on metal carbene complexes, mechanisms of organometallic reactions, developing an understanding of homogeneous catalysts, excellence in teaching, and services to the American Chemical Society.

CHARLES P. CASEY is *Homer B. Adkins Emeritus Professor of Chemistry* at the University of Wisconsin-Madison. He received his Ph.D. from Massachusetts Institute of Technology in 1967 where he did graduate research with George M. Whitesides (2004 Oesper Awardee) on organocopper compounds. He then spent several months at Harvard University as an NSF Fellow in the laboratories of Paul D. Bartlett. In 1968, he joined the faculty at the University of Wisconsin-Madison where he spent his entire academic career. He was Department Chair at the University of Wisconsin-Madison from 1998-2001. He served as President of the American Chemical Society in 2004.

Professor Casey's research focuses on mechanistic organometallic chemistry. The mechanisms of important catalytic processes including hydroformylation, hydrogenation, and alkene polymerization have been explored. His recent work has been on new hydrogenation catalysts that operate by simultaneous delivery of a hydride and a proton to polar substrates. Earlier work involved metal-carbene—alkene complexes and their role in both cyclopropanation and olefin metathesis, chelating diphosphines with wide natural bite angles as effective ligands for highly regioselective hydroformylations, and heterobimetallic compounds. He is author of more than 300 papers in organometallic chemistry.

Casey is a member of the National Academy of Sciences and the American Academy of Arts and Sciences and a Fellow of the American Association for the Advancement of Science. He received the Alumni Merit Award from St. Louis University in 1987, an Alexander von Humboldt Senior Award, a Fellowship from the Japan Society for the Promotion of Science, the Arthur C. Cope Scholar Award of the American Chemical Society in 1988, the American Chemical Society Award in Organometallic Chemistry in 1991, and the American Chemical Society Award for Distinguished Service in the Advancement of Inorganic Chemistry in 2011.

Visit the ACS Cincinnati Section On-line:

[www.acscincinnati.org](http://www.acscincinnati.org)





## Oesper Banquet Speaker

### Professor Clark R. Landis

Department of Chemistry  
University of Wisconsin-Madison  
<http://www.chem.wisc.edu/~landis/landis.html>

**Clark Landis** is Professor of Inorganic and Organic chemistry at the University of Wisconsin-Madison (USA). Born in 1956, he received the B. S. degree in chemistry from the University of Illinois-Urbana and his PhD from the University of Chicago for his work with Jack Halpern on the mechanism of enantioselective hydrogenation. Clark's current research interests center on catalysis and include mechanisms of metal-catalyzed alkene polymerization and enantioselective hydroformylation, development of new NMR and mass spectrometric methods for measurement of rapid kinetics, synthesis and applications of modular

chiral diazaphospholane ligands, computational modeling of catalytic processes, bonding theory, and chemical education. With Frank Weinhold he is coauthor of two books, *Valency and Bonding* (Cambridge Press, 2005) and *Exploring Chemistry with NBOs* (Wiley, 2011). He was the recipient of the ACS Award in Organometallic Chemistry in 2010 and the University of Wisconsin Chancellor's Distinguished Teaching Award in 2005.

### October Monthly Meeting

#### Call for Posters

**31<sup>st</sup> Oesper Award Banquet, Poster Session and Symposium at the University of Cincinnati**  
October 14<sup>th</sup>, 2011

**Poster Session:** The Cincinnati Section of the ACS and UC Department of Chemistry co-sponsor the Ralph & Helen Oesper Poster Session/Reception from 5:30-7pm in the Great Hall Tangeman University Center, University of Cincinnati. **Submit abstracts by September 30<sup>th</sup>, 2011** or questions to Cynthia Schroll at [cincychem@hotmail.com](mailto:cincychem@hotmail.com). Email confirmations of receipt of your abstract will serve as registration for the Poster Session only. Please submit using Microsoft Word of similar format, single spaced, 200 words or less.

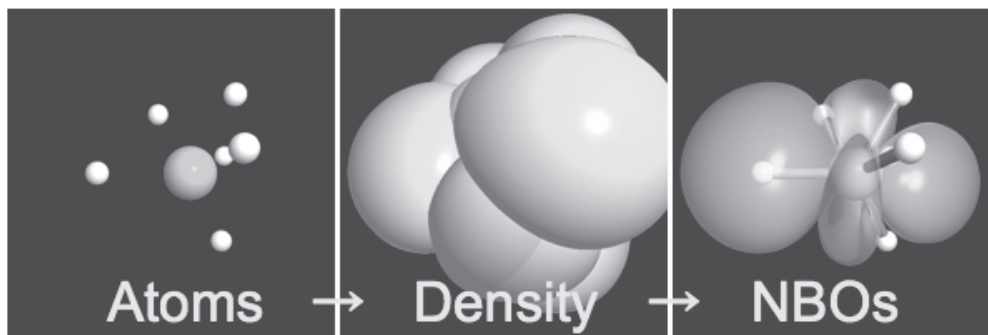
**NOTE:** The poster session is open to anyone wanting to present a poster. We would especially like to encourage people from other universities and industry to present.

## NMR with Proteins –from Hemoglobin to Structural Genomics

Clark Landis, University of Wisconsin-Madison

Has the supercomputer dissolved the chemical bond? In an era where the fundamental properties of most molecules can be computed, one may question the value of Lewis structures, orbital shapes, and electron counting. Alternatively, one may propose that modern computations provide the opportunity to re-evaluate and extend the most basic concepts of chemistry: What is a bond? Do transition metals have an underlying Lewis-like structure? What is hypervalency? What is the nature of the metallic bond?

Bonds arise between chemicals and between chemists and among groups of chemists. Fundamental to chemical bonds are shared electrons, but what do people share? The roles of models, language, and humor in the bonding interactions of Chuck Casey will be explored.



### Another Fun Cincinnati Earth Day Celebration 2011 at Sawyer Point!

Last April 16<sup>th</sup> the Cincinnati Section of the ACS hosted a booth at the annual Earth Day Celebration at Sawyer Point. This year's theme was "Energy – It's Everywhere," we had yet another great year of demonstrations; several attendees commented we were the best booth at the event. Due to poor weather (2<sup>nd</sup> worse anyone can recall) attendance was significantly down, but those in attendance were able to have more direct interaction with us. This was a fun and easy theme to do as we featured demos on wind (Air-Zooka), water (surface tension and erosion), electricity (clocks powered by a potato or w/OJ), magnetism (swizzle magnets), compression (Alka-Seltzer Rockets), thermal (hot and cold pads, MRE warmer), Solar Energy (UV-sensitive beads, solar powered toys), biodiesel (Qingshi and JingJing processed cooking oil into diesel in real-time!), and fluorescence (glow bracelets).

I extend my sincere thanks and appreciation to all those who helped with the selection of demonstrations, setting up, manning the booth and closing down for the day: Gloria Story and son Mike and Friend, Jackie Thomas and husband, MingMing Lu and students Qingshi Tu and JingJing Wang, Susan Hershberger, Scott Tremain, Sandip Chattopadhyay and daughter Usoshi Chatterjee, Hong Zhang and anyone else I may have missed. I'm looking forward to another fun Earth Day next year.

Donna Wiedemann

## National Chemistry Week – Seeking Volunteers

The ACS Cincinnati Section will once again be promoting National Chemistry Week (October 16<sup>th</sup> – 22<sup>nd</sup>) throughout the greater Cincinnati region.

This year's theme is "*Chemistry – Our Health, Our Future.*" We would like to increase our efforts this year at the Cincinnati Museum Center, at local Libraries, and at other venues since this is the International Year of Chemistry! We will be contacting volunteers soon with more information on National Chemistry Week (NCW), including a date for training.

If you haven't participated before, but are interested in NCW outreach activities to local libraries, please contact us to be included on the distribution list.

Your National Chemistry Week coordinator is:

**Jackie B Thomas:** [thomas.jb.1@pg.com](mailto:thomas.jb.1@pg.com)

## SPONSORS SOUGHT FOR 8 SECTION MEETINGS IN THE 2011-2012 PROGRAM YEAR

We continually seek sponsors for each of our 8 monthly Section Meetings in the new program year. Sponsorship entails a commitment of sponsorship (cash or cash equivalent) of \$1000 to essentially pay for the many expenses associated with a quality meeting to be presented to the membership. These expenses include retiree and student meal discounts, speaker's expenses, travel, housing, food, A/V, room rental for the meeting, and a Social Hour where attendees can meet others and build networks and contacts for career growth and enhancement.

Sponsors are recognized in all of the eight yearly issues of CINTACS, and by introduction at the sponsored meeting. This "advertisement" is of great value, especially to new companies in the Cincinnati area. In several instances this has led to participation in governance activities in the Section.

Over the past seven years of this successful program, companies, academic departments, retirees, and faculty have been sponsors of monthly meetings. We are always striving to broaden the base of sponsors as this leads to better representation in Section programs and services to the membership.

If you or your employer has an interest in being a sponsor, please contact the undersigned for more details. Beyond these volunteers, we will be making phone calls and letter contacts to reach our goal of eight sponsors. Every effort will be made to align the Sponsor's areas of interest with our monthly topics.

Please contact Ed Hunter at:  
[edhunter@fuse.net](mailto:edhunter@fuse.net)



# Kinetica, Inc.

ISO 17025 Certified Thermoanalytical Testing Services for the Chemical Process Industry

**Kinetica provides testing and consulting services  
for process safety and process development**

- Accelerating Rate Calorimetry
- Bomb Calorimetry
- Differential Scanning Calorimetry
- Solution Calorimetry
- Explosives and Pyrotechnics Analysis
- Large-scale SADT Testing
- Litigation Support

9560 North Dixie Highway • Franklin OH 45005 • Telephone: 937-743-3082 • Fax: 937-743-3652  
www.thermochemistry.com



- \* GPC/SEC Analysis
- \* GPC/SEC Polymer Standards
- \* GPC/SEC Columns \* Waters™ 150C Parts
- \* WISP 710/712 Parts

**Request your free catalog online**

[www.ampolymer.com](http://www.ampolymer.com)

American Polymer Standards Corporation  
8680 Tyler Blvd., Mentor, OH 44060

Phone: 440-255-2211

Fax: 440-255-8397



## Robertson Microlit Laboratories

*Where speed and accuracy are elemental™*

Elemental CHN, S, X, Analysis (*same day service*)  
Metals by ICP-OES, ICP-MS, AA/AE  
FTIR, UV/VIS Spectrometry  
TGA, DSC, Melting Point/Range

Bioavailability  
Polarimetry  
Ion Chromatography, HPLC  
KF Aquametry, Titrimetry

1705 US Highway 46 • Suite 1D • Ledgewood, NJ 07852 • 973.966.6668 • F 973.966.0136

[www.robertson-microlit.com](http://www.robertson-microlit.com) • email: [results@robertson-microlit.com](mailto:results@robertson-microlit.com)

*Additional services available... Please call for information*

**Rapid Results • Quality • Accuracy • Competitive Pricing**



**micron inc**  
ANALYTICAL SERVICES  
MATERIALS CHARACTERIZATION  
MORPHOLOGY - CHEMISTRY - STRUCTURE  
3815 LANCASTER PIKE WILMINGTON DE. 19805  
Voice 302-998-1184, Fax 302-998-1836  
E Mail [micronanalytical@compuserve.com](mailto:micronanalytical@compuserve.com)  
WEB PAGE : [WWW.MICRONANALYTICAL.COM](http://WWW.MICRONANALYTICAL.COM)

Connect with the ACS on  
Facebook and Twitter



Cincinnati ACS  
Local Section



@Cincinnati\_ACS



**Support CINTACS  
Advertisers!**

## Chromatography Columns & Consumable Solutions

- **HyperSep & HyperSep RETAIN (Polymeric)**
  - SPE Columns & 96 Well Plates
- **Hypersil GOLD™ - Unlocking solution**
  - C18, aQ, C8, Cyano, PFP, Phenyl
  - 1.9µm (U-HPLC), 3µm, 5µm, 8µm, 12µm
- **Hypercarb™ - For challenging separations**
  - Polar compounds, isomers, No pH limit, up to 200° C
- **BioBasic™ - Biomolecules**
  - C18, C8, C4, ion exchange, & SEC
- **TRACE™ GC Consumable**
  - Columns, Septa, Liners, Ferrule, Gas Filters
- **Hypersil BDS™ - Proven Technology**
  - C18, C8, Cyano, Phenyl - 2.4µm, 3µm, 5µm
- **Vials - National Scientific & SUN SRI**
  - New Color ID Patch Vials
- **Reacti-Therm & Reagents – Pierce**
  - Heating/stirring & evaporator module

**Kentucky - Bob Myers**  
[bob.myers@thermofisher.com](mailto:bob.myers@thermofisher.com)  
 Phone: 814-883-5152

**Ohio – Teri Simon (Rongaus)**  
[teri.simon@thermofisher.com](mailto:teri.simon@thermofisher.com)  
 Phone: 267-850-8095

[www.separatedbvyexperience.com](http://www.separatedbvyexperience.com)



Thermo  
SCIENTIFIC

1

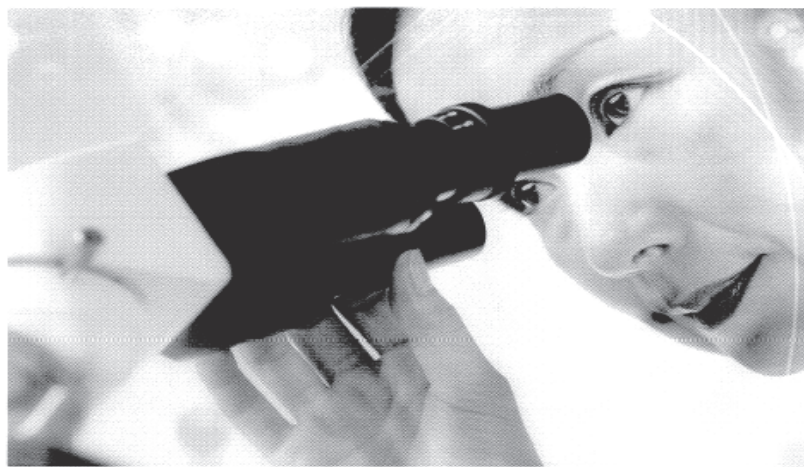
ThermoFisher  
SCIENTIFIC

## ADVANCED TESTING LABORATORY

- ▶ MICROBIOLOGY
- ▶ CHEMISTRY
- ▶ ON-SITE LAB SERVICES
- ▶ PROFESSIONAL SERVICES

6954 Cornell Road | Suite 200  
 Cincinnati, OH 45242  
 513.489.8447  
 513.489.9291 fax  
[ClientRelations@AdvancedTesting.net](mailto:ClientRelations@AdvancedTesting.net)

VISIT  
[www.AdvancedTesting.net](http://www.AdvancedTesting.net)



THE SCIENCE OF TESTING  
 THE ART OF SERVING

**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**