

CINTACS



Newsletter of the Cincinnati Section of the American Chemical Society

March, 2011
Vol. 48, No. 6

Meeting Calendar

- Mar. 9 Dr. Leonard Katz, SynBERC
Joint with Dayton Section
@ Savannah Center in West
Chester
- Apr. 13 Education Awards Night
@ Northern Kentucky
University
- Apr. 16 Earth Day Celebration,
Sawyer Point
- May 17 Party Night
Dr. Michael Tunick

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MARCH MEETING

Wednesday, March 9th, 2011

Savannah Center
5533 Chappell Crossing Blvd.
West Chester, Ohio 45069
Phone: (513) 860-4142

Sponsored by Advanced Testing Laboratory

Featured Speaker: **Dr. Leonard Katz**, Director and
Industry Liaison Officer of the Synthetic Biology
Engineering Research Center (SynBERC)

Program

5:30 – 7:00 pm Registration

6:00 – 7:00 pm Social Hour: The bar will be open from approximately 6:00 until 7:00 pm. Each guest will receive 1 ticket, which they will be able to use for *Beer* or *Wine*. A cash bar will be available for those desiring to purchase an additional beverage.

7:00 - 8:00 pm Dinner: Menu: Caprese Salad served with Fresh Mozzarella, Roma Tomatoes, Fresh Basil and Olive Oil. Chicken Saltimbocca served with Creamy Polenta and Steamed Asparagus. Dessert: Tiramisu. Chef's Vegetarian Option available.

Fee: \$25.00 (\$15.00 students, emeritus, unemployed and new members)

8:00 pm Speaker: Dr. Leonard Katz

“Synthetic Biology and SynBERC: Interface Between Biology and Engineering.”

(Continued on page 3)

THE CINTACS NEWSLETTER**Vol. 48, No. 6 March, 2011**Editor.....Kevin Ashley
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 early-mid March for the April 2011 issue. Electronic submission is strongly preferred. All materials should be sent to:

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From the Chair

The March meeting is a joint meeting with the Dayton Section. The speaker is Dr. Leonard Katz, Research Director and Industry Liaison Officer of the Synthetic Biology Engineering Research Center (SynBERC) in California. SynBERC is a National Science Foundation Research Center. SynBERC's vision is to develop the foundational understanding and technologies to build biological components and assemble them into integrated systems to accomplish many particular tasks; to train a new cadre of engineers who will specialize in **Synthetic Biology**; and to educate the public about the benefits and potential risks of synthetic biology. SynBERC brings together many of the pioneers (biologists and engineers from world-class institutions) of synthetic biology to work together to lay the foundation for this nascent field. Dr. Katz' talk entitled, "*Synthetic Biology and SynBERC: Interface between biology and engineering*", will discuss the field of Synthetic Biology and the research work conducted at SynBERC that is of interest to both industry and academia.

There are some events by our section coming up: Our section is a sponsor of the 2011 University of Cincinnati Science & Engineering Fair on March 12th 2011. Special awards at this regional science fair are sponsored by our section as well. To volunteer as a judge, contact John Tebo at tebojh@ucmail.uc.edu. The first International Year of Chemistry (IYC) outreach event is going to take place on Friday, March 25th at the Cincinnati Museum Center. Everyone interested in helping please contact Gloria Story at story.gm@pg.com; it is going to be a blast. Also, our ACS Earth Day Celebration at Sawyer point is coming up on Saturday April 16th 2011. Donna Wiedemann is leading this effort and welcomes anyone interested in helping with it; you can contact her at wiedeman.dj@pg.com. And at our April meeting we will be honoring K-12 students and our Teachers of the Year at Northern Kentucky University.

Please take the opportunity to nominate outstanding teachers for our Teacher of the Year awards and our Outstanding Service to the section award; see inside the newsletter for more details for the nomination process.

Our nominating committee, led by Susan Hershberger, is identifying and preparing a slate of candidates for local section officers and other Executive Committee positions for 2011-2012. The Cincinnati ACS Section serves its members and the Tri-State community through its outreach program, which is nationally recognized. Please consider running for these positions or identifying colleagues you would support on these positions. If you would like to volunteer to run for an office contact Susan Hershberger at hershbss@muohio.edu.

I hope to see you on March 9th.

Victor M. Arredondo

(Continued from page 1)

MARCH MEETING
Joint with ACS Dayton Section
Wednesday, March 9th, 2011

Sponsored by Advanced Testing Laboratory

Savannah Center
5533 Chappell Crossing Blvd.
West Chester, Ohio 45069
Phone: (513) 860-4142

Featured Speaker:

Dr. Leonard Katz

Director and Industry Liaison Officer of the Synthetic Biology Engineering Research Center (SynBERC)

Synthetic Biology and SynBERC: Interface Between Biology and Engineering

Dinner Reservations:

The meeting reservation form is online at <http://registration.acscincinnati.org/>. This is the best and easiest way to register and indicate your dinner option. A less desirable alternative, you may send your reservations by email to webmaster@acscincinnati.org to register. If it is absolutely impossible for you to make reservations via the internet, call 513-626-0242 (please leave name, affiliation, dinner option, a contact phone number and state if you are in one of the reduced price categories). Deadline for registration is 12:00 noon on Tuesday, March. 8th.

Directions:

From NORTH: I-75 South, turn Right on to Union Centre Boulevard Exit (#19). Travel 5 traffic lights, at the 5th light turn left on to Chappell Crossing Blvd.

From SOUTH: I-75 North, turn Left on to Union Centre Boulevard Exit (#19). Travel 6 traffic lights, at the 6th light turn left on to Chappell Crossing Blvd.

From I-71: I-275 to I-75 North. Follow directions above from I-75 North. The Union Centre Boulevard Exit is the first Exit North of I-275.



Biosketch: Leonard Katz, Ph.D.

Leonard Katz is currently the Research Director and Industry Liaison Officer of the Synthetic Biology Engineering Research Center (SynBERC) based at the University of California-Berkeley and located at the Joint BioEnergy Institute (JBEI) in Emeryville, CA. His most recognized research is in the area of genetic manipulation of polyketide synthases for the production of novel polyketides. Dr. Katz received his B.Sc. in Microbiology from McGill University and his Ph.D. in Molecular Biology from the University of California-Santa Barbara, and did a post-doc in Biochemistry at the University of California-San Diego. Dr. Katz spent the major part of his career in the pharmaceutical-biotech sector where he led the group that discovered the modular basis for polyketide biosynthesis, and subsequently developed and employed genetic methodology for the manipulation of polyketide synthases to produce novel polyketide-based pharmaceuticals. In his current position, Dr. Katz's research is concerned with using polyketide synthases to produce renewable chemicals and biofuels. He has 95 publications, 26 granted US patents, and numerous patents pending in the area of uses of polyketide synthases to produce novel natural products. Dr. Katz is the recipient of the 2000 SIM Charles Thom Research Award from the Society for Industrial Microbiology and is a Fellow of the American Association for the Advancement of Science.

Dr. Katz' Abstract:

“Synthetic Biology and SynBERC: Interface between biology and engineering”

Recent advances in molecular biology, genetics, increases in the speed of genome sequencing and DNA synthesis, coupled with the vast increase in both the speed and storage capacity of computers and the internet, have enabled detailed understanding of living organisms at the individual molecule and system levels. From these advances the field of Synthetic Biology has emerged. Although difficult to define precisely, it is generally accepted that the goal of synthetic biology is the deliberate design and fabrication of biologically based parts, novel devices and systems, as well as the redesigning of existing, natural biological system by applying the engineering principles of specification, design, modelling, testing and validation. By its very nature, synthetic biology is a multidisciplinary field that links biology, chemistry, physics, and engineering to produce valuable and life enhancing products in a variety of applications (e.g. medicine, transportation, chemicals, agriculture, etc.). Included in this endeavor are social scientists and philosophers who consider the social and cultural consequences of work itself and the outcomes.

The Synthetic Biology Engineering Research Center (SynBERC) is an NSF-sponsored research project that involves 18 PIs from Stanford, MIT, Harvard, UC-San Francisco, Prairie View A&M, and UC-Berkeley, where it is headquartered. The SynBERC faculty is composed of Bio- and chemical engineers, biochemists, microbiologists, and social scientists who oversee the work of 60 graduate students and post-docs in their laboratories in a variety of applications and fundamental aspects of synthetic biology. SynBERC has an Industrial Advisory Board composed of 20 companies that guides and reviews the research undertaken, a Scientific Advisory Board, and a Student Leadership Council.

Dr. Katz will review the field of Synthetic Biology and focus the structure and organization of SynBERC and describe some of the work being conducted of interest to industry and academia.



Hans and Marlies Zimmer International Scholar

Prof. Dr. Matthias Rief
Technische Universität München, Germany
<http://www.bio.ph.tum.de/>

Zimmer Scholar In-residence
April 11-15, 2011

The Department of Chemistry at the University of Cincinnati is very pleased to present the ninth series of lecture-visits by international scholars actively engaged in areas of frontier chemical research.

Friday, April 15, 2011 at 4:00 p.m.

502 Rieveschl

Mechanics and Dynamics of Single Protein Molecules

Proteins are amazing molecular machines that can fold into a complex three dimensional structure in a self-organization process called protein folding. Even though powerful structural methods have allowed us taking still photographs of protein structures in atomic detail, the knowledge about the folding pathways and dynamics as well as material properties of those structures is rather limited. Over the past 15 years, our group has developed single mechanical methods to study the dynamics and mechanics of protein structures. In my talk I will discuss how single molecule atomic force microscopy and optical tweezers can be used to investigate and control the conformational mechanics of individual proteins. Examples include molecular motors as well as protein folding and protein-protein interactions.

Matthias Rief obtained his PhD in Physics in 1997 at the Ludwig-Maximilians-Universität München, Germany, working with Prof. H. E. Gaub in the field of dynamic spectroscopy of biomolecules. He continued his studies with a DFG sponsored postdoctoral fellowship at Stanford University in the laboratory of J. A. Spudis that focuses on the structure and function of molecular motors. Since 2003, Matthias Rief has been a full professor of Biophysics at the Technische Universität München. He is also Principal Investigator at the Nanosystems Initiative Munich (NIM). In January 2010, Prof. Rief became the coordinator of a new, DFG sponsored, Collaborative Research Centre (SFB) in Munich entitled "Forces in Biomolecular Systems".

Matthias Rief is one of the leading experts in the single molecule spectroscopy of biomolecules. He has made landmark contributions to the understanding of the mechanics of molecular motors and of the fundamental role played by the energy landscape of a biomolecule in response to tension. Prof. Rief has been recognized with a number of awards, including the Jahrespreis of the German Biophysical Society, the Heinz Maier-Leibnitz Prize from the DFG, and the Nanowissenschaftspreis.

Additional information on the Zimmer International Scholar Program/Banquet can be found at:
http://www.che.uc.edu/alumni_community/zimmer/

Earth Day 2011—Call for Volunteers

Dear Volunteers!!

Hello! My name is Donna Wiedemann; I am leading our ACS Earth Day Celebration 2011 at Sawyer Point this year. The theme of the ACS Earth Day event is "Energy – It's Everywhere!" where we will focus on the many types of energy that will sustain our earth. The event this year will be on April 16th from noon until 5:30 pm.

Please let know whether you will be volunteering for to help out on Earth Day. I can be reached at (513) 627-7584 or via email at wiedemann.dj@pg.com. I would like to have at least two people at the booth at any given time. Of course more are welcome! Typically it is broken down to set-up ~8:30- 11 am, first shift from noon until ~3 pm and the second shift from ~3 pm until 5:30 pm and also helps shut down. These times of course can be flexible

I would like to have a team of people to help with developing demonstrations consistent with this year's themes. All ideas are welcome. Once I hear from those interested in participating this year I will set up a teleconference to explore demonstration ideas. I envision we'll have some demos we will only perform and yet others where visitors to the booth can do themselves.

Thank you for your time and attention!! I look forward hearing from you and another year of working together to show how chemists can work in concert with our environment.

-Donna Wiedemann

**VISIT THE ACS
CINCINNATI SECTION
ONLINE:
www.acscincinnati.org**

Last call for Science Fair Judges for University of Cincinnati Science & Engineering Expo on March 12

We would like to remind everyone of the opportunity to serve as a science fair judge at the 7th Annual University of Cincinnati Science & Engineering Expo (SEE) on March 12th, 2011. There will be a training session for the judges in the morning. Breakfast, lunch and complimentary parking will be provided. The organizers ask that each judge have a bachelors degree (or higher) in a science or engineering field. They are also interested in getting local teachers involved in the judging.

The Cincinnati ACS Section will sponsor **\$300 in awards** for the Science Fair.

To register online as a science fair judge, please go to:

www.uc.edu/ScienceFair/registration/JudgeRegistration.aspx

For further information please contact:

John Tebo
Head, Chemistry-Biology Library
Science Fair Steering Committee Member
University of Cincinnati
513-556-1494
john.tebo@uc.edu

For additional info on the science fair, go to:

www.uc.edu/sciencefair



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

We are seeking 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.

Currently contact Dan Esterline at:
Daniel.Esterline@Thomasmore.edu

[for Ted J. Logan, CHAIR
Sponsorships and Solicitations Committee
Cincinnati Section, ACS]

Last Call for Nominations: Outstanding Service Award

Nominations are being accepted for the Cincinnati ACS Section Outstanding Service Award. The nominee should have performed an extraordinary service to the Cincinnati Section. The nominator should be a member of the Section. A complete nomination consists of a letter written by the nominator detailing the reasons the nominee is deserving of the award, and at least one supporting letter by another member of the Section. The nomination may include the nominee's CV.

Nominations are **due by March 11, 2011**

Last Call for Nominations: Teacher of the Year Awards

Each year the Cincinnati Section of the American Chemical Society (ACS) recognizes outstanding area educators by giving awards in the following categories:

- High School Chemistry Teacher of the Year
- Middle School/Junior High School Science Teacher of the Year
- Elementary School Science Teacher of the year

Nominations should include the teacher's CV and at least one letter of nomination (ideally from the school principal), indicating why the individual exemplifies excellence in Chemistry Education (for High School) or Science for Middle or Elementary School.

Nominations are **due by February 18, 2010**

Nomination materials for both of the above awards should be sent to:

Philip A. Christenson, Ph.D.
phil.christenson@givaudan.com

or

Givaudan Flavors
1199 Edison Dr
Cincinnati, OH 45216



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Outreach for the International Year of Chemistry

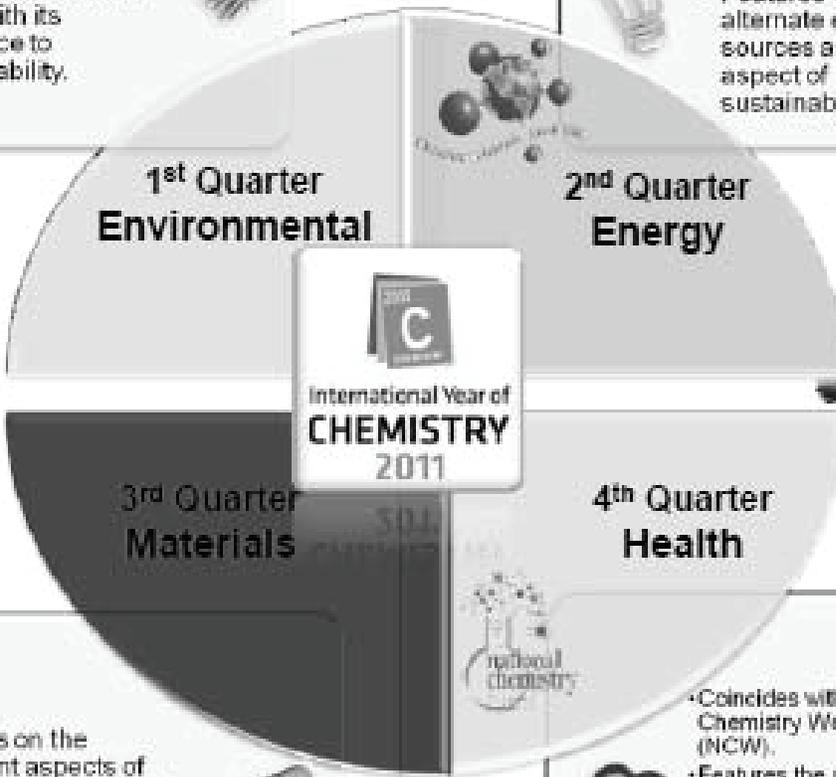
The ACS Committee on Community Activities invites you to celebrate the International Year of Chemistry!

Host festivals, make presentations at your local school or mall, partner with local civic organizations, and show how chemistry is an international science!

• Develops an awareness of water, its sources, and the importance of water purity with its relevance to sustainability.



• Coincides with Chemists Celebrate Earth Day (CCED).
• Features viable alternate energy sources as a key aspect of sustainability.

• Focuses on the important aspects of recycling, properties of materials, and nanomaterials.



• Coincides with National Chemistry Week (NCW).
• Features the positive impact of the chemical sciences on the world as it relates to nutrition, hygiene, and medicine.



Water and the many faces of Chemistry will be included in each theme.

Let us know how we can help your local section have a successful IYC!
Contact us at cca@acs.org.

To learn more about IYC go to www.acs.org/iyc2011.



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International Year of **CHEMISTRY** 2011

ACS Celebrates IYC 2011 ACS Chemistry for Life

WASHINGTON, Jan 31, 2011 The American Chemical Society (ACS) today launched the inaugural edition of its International Year of Chemistry (IYC) Virtual Journal, a dynamic online snapshot of the countless ways in which chemistry improves everyday life for people around the world. It includes a special video welcome from Nancy B. Jackson, Ph.D., who serves as ACS President during the IYC. Jackson is with the Sandia National Laboratories in New Mexico.

Every month through this landmark year, the IYC Virtual Journal <<http://iyc2011.acs.org/2011/01/01/virtual-journal/>> will showcase ways in which chemistry improves everyday life for people around the world. It illustrates how chemists and other scientists work to protect the environment; develop lifesaving new medicines; create cleaner, greener and more sustainable sources of energy; design new materials for cars, buildings, electronics, medical implants and a host of other products.

The four subject areas covered by the virtual journal: health, energy, environment, and materials, are the core themes of the International Year of Chemistry, noted Madeleine Jacobs, executive director and CEO of the ACS. Improving human health, finding sustainable sources of energy, protecting the environment, and developing new materials are among the great global challenges of the 21st Century. The International Year of Chemistry virtual journal provides a unique opportunity to enhance public understanding of the many contributions and solutions that chemists and other scientists are working on to address these great global challenges.

Topics in the launch edition of the IYC Virtual Journal include the use of tobacco and proteins in coffee beans as pesticides; a new genre of environmentally friendly detergents; raves from Europe about “no-mix” toilets; new lubricants that save gasoline and evidence that people over 50 may be consuming too much copper and iron. The virtual journal's content is based on research published in ACS' 39 peer-reviewed scientific journals <<http://pubs.acs.org/>> and *Chemical & Engineering News* <<http://pubs.acs.org/cen/>> , its weekly newsmagazine.

IYC Virtual Journal also connects visitors with content in ACS' popular online calendar, developed specifically for the IYC. The calendar serves as a virtual time machine, transporting the public back to some of the epic events and great intellects that shaped modern society through the magic of chemistry.

The IYC Virtual Journal and IYC: 365 are part of ACS' celebration of the International Year of Chemistry <<http://iyc2011.acs.org/>>

*ACS International Year of
Chemistry Virtual Journal*

HUGHES STEM HIGH SCHOOL

Science, Technology, Engineering & Mathematics

Science Tutors Needed

Volunteer Opportunity: Science Tutors are needed to support high school students in Cincinnati as part of a unique and innovative STEM education program.

What is STEM Education: The acronym stands for courses in the broad fields of Science, Technology, Engineering and Math.

What is the Problem: The U.S. is falling behind other countries (*it ranks 60th among all nations*) in the fraction of college graduates who receive degrees in the sciences or engineering, and pursue STEM-related careers.

Hughes STEM High School & Science Tutoring Program: Hughes STEM High School is one of five Ohio schools selected in a pilot program to focus on STEM education. The Science Tutoring Program is aimed at helping Hughes science teachers and their students to increase science content knowledge and learn more about STEM careers.

Educational Collaboration: Hughes STEM High School is an exciting new collaboration between the University of Cincinnati (UC) and Cincinnati Public Schools, with support from Strive (nonprofit education partnership) and the Ohio STEM Learning Network (osln.org). Hughes is located across from the UC campus.



You can Make a Difference: Join a unique program that connects volunteer scientists, professionals, engineers, etc., with high school students in order to help them excel in the sciences and feel motivated to pursue college degrees and careers in STEM-related fields.

Criteria for Volunteer Tutors:

- College degree in STEM-related subject.
- Career in STEM-related field, either retired or currently employed.
- Willing to commit 1 hour per week to tutor.

How to Volunteer: If you are interested in volunteering, inquire at:

- Email: hughes.science.tutors@gmail.com

More Information:

- Website: <http://hughesstem.cps-k12.org/>
- Video: <http://got.im/52000>

**Save 50% off the Nat'l
ACS Meeting Price**

Statistical Analysis of Laboratory Data

Stephen Morgan, Stanley Deming, Instructors

Monday through Wednesday, May 23-25, 2011

**Mason Business Center – The Procter & Gamble Company
8700 Mason-Montgomery Road, Mason Ohio**

Overview

Master the fundamentals of laboratory data treatment to solve data analysis problems. Through a combination of lectures and problem-solving sessions, this course will teach statistical techniques that can be put to immediate use in the workplace. Participants will learn how to understand the strengths and weaknesses of data, recognize and reduce different types of errors, carry out significance tests, correctly use outlier tests, and more.

Who Should Attend?

Technicians, scientists, engineers, laboratory managers, R&D managers, manufacturing and production managers, and others who need to understand traditional and modern methods of data analysis. This course assumes no previous knowledge of statistics and is aimed at both beginning and experienced workers. Each participant should bring a hand-held calculator to the course.

How You'll Benefit from This Course

Consult with seasoned experts about your data analysis problems.
Enhance your ability to extract more meaningful data from your data sets.
Gain confidence in the use of basic statistical methods.
Improve your decision-making abilities.
Learn new ways to look at data.
Reduce the number of measurements required for certain applications.
Understand statistical terminology and be able to communicate more easily with statisticians.

About the Instructors

Stanley N. Deming is Professor Emeritus of Chemistry at the University of Houston, Houston, Texas and teaches Experimental Design for Productivity and Quality in Research & Development and Statistical Analysis of Laboratory Data

Stephen L. Morgan is Professor of Chemistry at the University of South Carolina, Columbia, South Carolina and teaches Experimental Design for Productivity and Quality in Research & Development and Statistical Analysis of Laboratory Data.

(Continued on next page)

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Course Topics

Measurement	Accuracy and Precision	Means
Standard deviation	Pooling	z Decisions
Confidence intervals	Statistical samples	Outliers
One-way ANOVA	Central limit theorem	p values and power
Statistical testing	Algebra and logic	Hypothesis testing
Formal statistical tests	One-sample t test	Two-sample t test
Paired t test	Fisher's F test	Duncan's multiple range test

Optional topics: Detection limits; Statistical process control; Bioassays

Date and Site

May 23-25, 2011, this is a 3-day course. Location: Mason Business Center (formerly Health Care Research Center) -- The Procter & Gamble Company, 8700 Mason-Montgomery Road, Mason, Ohio 45040. Check-in at 7:30 a.m. on the first day of the course and the course runs from 8:30 a.m. to 5:00 p.m. each day.

Registration and Fees

The course fee will be approximately \$900 for ACS members or \$1000 for non-members (the exact fee may vary depending on the number of registrants). This is approximately 50% of the cost of the same course at a National ACS meeting (\$1795). The fee will include course materials, continental breakfast, lunches, and refreshment breaks. Seating will be limited to 30 people. To reserve a seat, please send an e-mail to Rick White (white.dr.2@pg.com) or call (513) 622-1624 and leave your name, affiliation, phone number and ACS membership status. Registration information will be sent to you by email. **Please notify of your intent to register for the course by Fri, April 1.**

For further information please contact:

Dr. Rick White
The Procter & Gamble Company
Mason Business Center, Box 705
8700 Mason-Montgomery Road
Mason, Ohio 45050
tel. 513-622-1624
e-mail: white.dr.2@pg.com



DEAR ACS CINCINNATI SECTION MEMBERS:

Please participate in a survey about the ACS Cincinnati Section website and e-mails concerning CINTACS and meeting announcements. We would like to get your feedback concerning the web page and e-mail communications so that we can improve service and respond to your desires concerning various features, e.g., CINTACS postings, registration, information dissemination, networking, etc. ...

The link is: <https://www.acsvoting.com/survey/8AQ4TTCQFV/>

Thank you, Matt Gardlick

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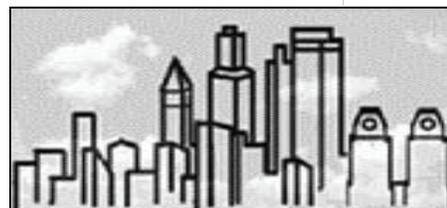


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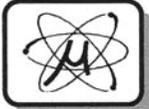
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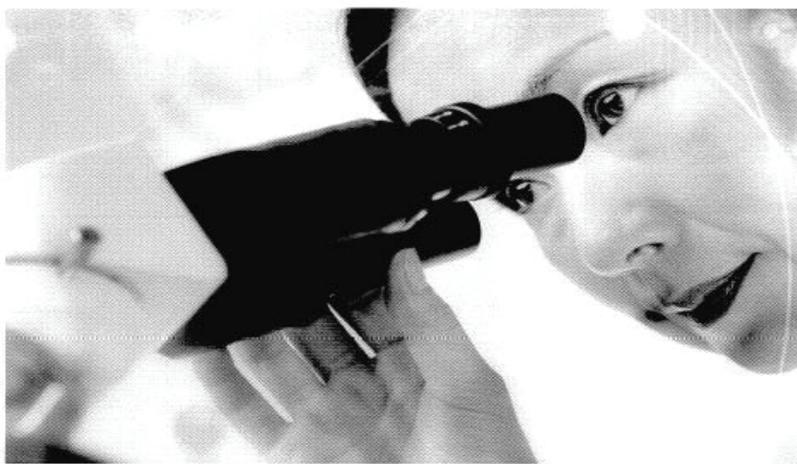
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