

CINTACS



Newsletter of the Cincinnati Section of the American Chemical Society

March, 2005
Vol. 42, No. 6

Meeting Calendar

Wed. Mar. 9	Dr. Burkhard Jansen Genome Research Inst. * organic discussion group * biochemistry discussion group
Thurs. April 21	Andy Daniher/Susan Ross High School Awards Northern Kentucky U.
May	Party Night! TBA

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March Monthly Meeting

NUCLEIC ACID THERAPEUTICS – AN OVERVIEW

Burkhard Jansen, MD, PhD.
Novelix Pharmaceuticals,
Pasadena, CA



Abstract

The task of designing specific, active, and well-tolerated modulators of validated targets of high therapeutic relevance is rewarding but also daunting. Nucleic acid – based drugs including siRNA’s, antisense oligonucleotides, aptamers, CpG oligonucleotides, or ribozymes are, at least in theory, attractive candidates for the modulation of selected targets. However, experience has taught us the painful lesson that theoretical attractiveness and delivering of promises in clinical settings do not always coincide. I will discuss the strengths, weaknesses, opportunities and threats to the successful development of key members of the growing family of nucleic acid drug candidates.

About the Speaker

Burkhard Jansen, MD is internationally recognized for his expertise in the preclinical and clinical development of targeted cancer therapeutics. Dr. Jansen currently serves as CEO & President of Novelix Pharmaceuticals, a Pasadena-based company working on targeted cancer drugs. His background includes over 15 years in industry, at the FDA, and initially in academia working on bench to phase III strategies of innovative treatment concepts for cancer.

Previously, he was Head of Experimental Oncology/Molecular Pharmacology, Department of Clinical Pharmacology, at

(Continued on page 4)

THE CINTACS NEWSLETTER**Vol. 42, No. 6 March, 2005**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 April 1 for the May, 2005 issue. Electronic submission is strongly preferred, except for original photos. All materials should be sent to:

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From the Chair

The March meeting will be held at the Genome Research Institute, a new venue for us, and will feature Dr. Burkhard Jansen, CEO and President of Novelix Pharmaceuticals. Dr. Jansen is widely known for his work on the development of novel cancer therapeutics and for his skills in developing new, technology-based businesses. On the day of the meeting, Girindus America Inc. and the Genome Research Institute will host an Oligonucleotide Symposium to celebrate the opening of a new commercial scale oligonucleotide facility at Girindus America. The Symposium brings together an outstanding group of internationally recognized oligonucleotide experts. This event is an excellent opportunity to hear about groundbreaking scientific developments and to celebrate with Girindus America, Inc. and GRI. The Cincinnati Section is very pleased to participate in this event and is very grateful to Girindus America, Inc. and the Genome Research Institute for their sponsorship of the March meeting. Support from industries and academic institutions in our region is essential to our Section. Moreover, the Section seeks to enhance ties between the Section and various institutions in our area and to promote communication between scientists at the various institutions. In addition, the March meeting will include two excellent discussion group meetings: Professor Arthur R. Buckley, from the College of Pharmacy at the University of Cincinnati will speak at the Biochemistry Discussion group meeting and Professor Xavier Creary from the University of Notre Dame will speak at the Organic Chemistry Discussion group meeting. Without a doubt, this meeting is not to be missed!!

At our upcoming meeting on Thursday, April 21 at Northern Kentucky University, the Section recognizes outstanding accomplishments by K-12 teachers and students. Support for science education in the local area schools has been a key part of the Section's program for many years and support for this program by our members is crucial. So, please plan to attend this meeting.

Professor Emel Yakali, 1st Vice Chair has organized and completed a membership survey which will help her in putting together next year's meeting schedule as well as help the Section in planning activities and programs which better meet the needs of our membership. If you have suggestions for Emel, please do not hesitate to contact her at emel.yakali@uc.edu. In addition, our Section has quite a number of committees which are responsible for making the Cincinnati Section a success. Many of our committee chairs have been faithfully and gladly doing the job for many years. Going forward, involvement by the next generation is essential to maintaining the quality of the Section's programs and activities. Now is a good time to consider how you might serve our Section and profession.

I look forward to the March meeting and to seeing you there!

Phil Christenson

**March Monthly Meeting
Wednesday, March 9, 2005**

**Genome Research Institute, University of Cincinnati
2180 E. Galbraith Road, Cincinnati, Ohio, 45237**

**Sponsored by:
*Girindus America, Inc. & the Genome Research Institute***

Featured Speaker: Burkhart Jansen , Ph.D., MD.

Program

4:30 – 6:00 pm	Registration
5:00 – 6:00 pm	Biochemistry Discussion Group: Professor Arthur R. Buckley Organic Chemistry Discussion Group: Professor Xavier Creary
4:30 – 6:00 pm	Social Hour: Fresh raw cut vegetables with dip, assorted cheeses and sliced Turkey pepperoni w/crackers, beer, wine, soft drinks.
6:00 - 7:30 pm	Buffet Dinner, Tossed Salad, Sliced Black Angus Top Round of Beef w/gravy, Boneless Chicken Breast, Vegetable Lasagna, Red Skin Potatoes, Green Beans Almandine, Glazed Baby Carrots, Assorted Cheesecakes. \$25.00 (\$12.00 students, emeritus, unemployed and new members)
7:30 pm	Meeting and Featured Speaker, Burkhart Jansen, Ph.D., MD.,

Dinner Reservations: If you plan to attend the Oligonucleotide Symposium, you **must** send in the Girindus Oligonucleotide Technical Symposium Registration form, see the information on pages 8-9. If you register for the Symposium and dinner on the Symposium form, you do not need to register (again) for the ACS meeting and dinner on the Cincinnati Section's web site.

To register for the ACS meeting and dinner **only** follow the usual procedure and register online at <http://www.che.uc.edu/acs/cinacs.html>. This is the best and easiest way to register. As a lessor alternative, you may send your reservations by email to kim.carey@uc.edu. If it is impossible for you to make a reservation via the internet, call 513-556-0293 (please leave name, affiliation, a contact phone number and state if you are in one of the 1/2 price categories). Deadline for reservations for the ACS meeting/dinner is 12:00 noon on Friday, March 4.

Directions:

- From I-75, heading north, take the Ronald Reagan Highway eastbound. Take the first exit and turn left onto Reading Road. Turn right at the stoplight (Reading Road/Galbraith Road intersection). Cross the railroad tracks and Genome Research Institute is on the left.
- From I-75, heading south, take the Galbraith Rd. exit and turn left onto Galbraith Road eastbound. Go through the Reading Road/Galbraith Road intersection and cross the railroad tracks. Make left at the light into Genome Research Institute parking lot.
- From Ronald Reagan Highway, heading west, take the Galbraith Road exit. Turn right onto Galbraith Road. At second light (before the railroad tracks) turn right into Genome Research Institute parking lot.

A guard will be on duty to direct you. Park in the lot in front of the facility.

(Continued from page 1)

University of Vienna, Austria, where he spearheaded the 'bench to bedside' development of antisense oligonucleotides targeting the chemoresistance factor Bcl-2. This treatment concept received FDA fast-track designation. He gained regulatory experience working at the FDA and served as a consultant to investment banks, pharmaceutical companies and biotechnology companies. Dr Jansen maintains academic appointments at University of Vienna and University of British Columbia.

Biochemistry Discussion Group

HRPAP20: A Novel Regulator of Breast Tumor Growth and Invasion

About the Discussion Group Leader

Arthur R. Buckley, Ph.D. is Professor and Graduate Program Director in the Division of Pharmaceutical Sciences in the University of Cincinnati College of Pharmacy. He received his BA in biology (University of Colorado, Denver CO) and MS and Ph.D. degrees in pharmacology and toxicology (University of Arizona, Tucson, AZ). Following a postdoctoral experience at the University of Arizona, he served on the faculty at the University of South Florida College of Medicine (Tampa, FL), Kirksville College of Osteopathic Medicine (Kirksville, MO), and the University of North Dakota School of Medicine and Health Sciences (Grand Forks, ND) before moving to his current position in 1998. His research program has been supported by the NIH, the American Cancer Society, the American Institute for Cancer Research, and the Susan B. Komen Breast Cancer Foundation.

A major focus of Dr. Buckley's research program has been with the role of the pituitary hormone, prolactin, in regulation of immune cell survival particularly under stressful conditions. A second research focus is with the aberrant gene expression that underlies the acquisition of an invasive phenotype in breast cancer. Recently, Dr. Buckley's group identified the novel protein, HRPAP20, which appears to play an important role in breast cancer cell growth and invasion.

Organic Discussion Group

Ionic Liquids and DMSO: Novel Solvents for Formation of Carbocations

Professor Xavier Creary
Department of Chemistry
and Biochemistry
University of Notre Dame



Abstract

A number of triflates, mesylates, chlorides, and trifluoroacetates undergo clean first order solvolysis reactions in DMSO- d_6 and in ionic liquids such as 1-butyl-3-methylimidazolium triflamide (BMIM NTf₂). Evidence will be presented that supports the involvement of carbocationic intermediates. Thus representative substrates such as *t*-BuCH(OTf)CO-*t*-Bu, 1-adamantyl mesylate, 7-norbornenyl mesylate, cumyl trifluoroacetate, 1,6-methano[10]annulen-11-yl triflate, and PhCH(OTf)CF₃ react readily in DMSO- d_6 at 25 °C to give rearranged and unrearranged oxosulfonium salts and subsequent products derived from these salts. The chemistry in ionic liquids follows analogous pathways. A primary feature of these solvolyses is the high reactivity of triflates in ionic liquids as well as in DMSO- d_6 . The decreased need for electrophilic solvation of triflate anion in ionic liquids and in DMSO is the suggested reason for high triflate reactivity.

About the Discussion Group Leader

Professor Creary received his B.S. in 1968 from Seton Hall University, South Orange, N.J. His Ph.D. is from The Ohio State University in 1973. After a year as a postdoctoral with J.F. Bunnett at the University of California, Santa Cruz, he joined the faculty at Notre Dame in 1974. Professor Creary has been a recipient of an Alfred P. Sloan Fellowship. His current research interests are in the areas of synthetic organic chemistry and reactive intermediates with an emphasis on kinetic and isotopic labeling methods for elucidation of reaction mechanism.

Younger Chemists Committee: Upcoming Happy Hour!

Join us at **Jillian's** in Covington on **Friday, March 11, from 6:30-8:30 PM** (in the front bar/TV area) for a fun way to end the work week! As always, we'll have FREE food/drinks and an interesting collection of younger chemists (age 35 and under) from the Cincinnati area. Bring a new YCC-type colleague and win a prize- all are welcome! Attendees are encouraged to hang around afterward for games, dancing, bowling, etc. This will be a great opportunity to unwind, have some fun, and meet other fabulous chemists like you! If you plan to attend, have questions or need more information, contact the YCC chair, Joy Henderson: 513-948-2359, acscincinnati@yahoo.com

38th Central Regional Meeting Cincinnati, OH

In 2007, the Cincinnati Section will host

the 38th Central Regional Meeting. The last time the Section hosted the meeting was in 2000. The 2000 meeting was a great success with a total of 570 papers/posters and over 1000 official registrants. Success of the meeting was entirely attributable to the dedicated volunteer effort of the Section's members.

The 38th meeting offers the opportunity for the members of the Section to display their professional spirit once again. Volunteers are needed to serve as both chairs and members of those committees or assignments following without listed names:

General Chair	Joe Caruso
Associate Chair	Ray D'Alonzo
Technical Program	Jeanette Krause and Bobby Barnett
Arrangements	Kim Carey, Jeannette Krause, Carla Quercioli
Development	
Education	
Exhibits	
Finance	

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Pharmacology for Chemists

Joseph G. Cannon, Emeritus Professor of Medicinal Chemistry,
University of Iowa

Tuesday through Thursday, April 19-21, 2005
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How You'll Benefit from This Course

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- Understand the chemistry behind the drugs used for therapy
- Understand pharmacological principles and how the chemical sciences impinge upon pharmacology research
- Improve your ability as a chemical scientist to interact with pharmacologists in research pursuits
- Be exposed to the status of contemporary pharmacologic thought and drug therapy-where progress is being made and where advances will likely be made

About the Instructor

Joseph G. Cannon, Emeritus Professor of Medicinal Chemistry, University of Iowa, is the author or co-author of more than 200 articles in organic chemistry, medicinal chemistry, and pharmacology. He is one of the highest rated instructors in the ACS Continuing Education program and is the recipient of the Smissman-Bristol-Myers-Squibb Award sponsored by the ACS Division of Medicinal Chemistry.

General Concepts and Principles of Pharmacology

Definitions

Survey of appropriate literature of pharmacology

Membrane models, ion channels, structure of liquid water, implications to pharmacology

Absorption and distribution of drugs: active and passive transport

Blood-brain barrier

Drug metabolism, storage, and excretion, Enzyme induction

Drug-receptor interactions, Theories of drug activity

Introduction to pharmacokinetics

Nervous System

Anatomy and physiology of the nervous system

Nerve impulse transmission

Autonomic nervous system

Autonomic physiology and pharmacology

Noradrenergic system: receptors, agonists, antagonists, mixed acting drugs

Dopaminergic system: physiology, Parkinsonian syndrome

Cholinergic system: receptors, agonists, antagonists, acetylcholinesterase inhibitors, Alzheimer's syndrome, other forms of cognitive dysfunction

Central nervous system drugs

Definitions

Aspects of CNS anatomy and physiology

Neurotransmitters and receptors

Antidepressants

(Continued on page 10)

Hans and Marlies Zimmer International Scholar

Professor Norbert Jakubowski

April 4-8, 2005

The Department of Chemistry at the University of Cincinnati is very pleased to present the third series of lecture-visits by international scholars actively engaged in areas of frontier chemical research. Professor Jakubowski will present a public lecture as well as a four-hour short course during his stay. Details on the lecture follow below; see page 10 for short course details.

Instrumental Developments for Analytical Atomic Spectroscopy

Professor Norbert Jakubowski

Friday, April 8 4:00 PM, 502 Rieveschl
University of Cincinnati

Abstract

Since the early days of Bunsen and Kirchhoff atomic spectroscopy has developed to one of the most important tools for analytical chemistry, and even about 150 years later there is still a need to improve instrumentation. In this lecture some instrumental developments from the Institute for Analytical Sciences (ISAS) will be discussed, which had already led to new commercially available instruments in absorption, emission and mass spectrometry. At hand of selected examples it will be shown that these instruments extend the application range of atomic spectroscopy in particular in the material and life sciences. Finally, trends will be discussed how future instrumentation may become cheaper and more powerful by making use of miniaturisation strategies which can lead to "lab on a chip" systems with sample treatment, separation and detection integrated in one device.

About the Zimmer International Scholar

Professor Norbert Jakubowski of the Institute for Analytical Sciences, ISAS, Dortmund Germany. Professor Jakubowski received his BSc and MSc at the University of Essen and completed his dissertation work at the University of Hohenheim. He has

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over 90 publications, several years of experience in research as well as significant teaching experience. Over the years he has been involved in active research at ISAS and is currently the Director of the department "Functional Genomics and Proteomics".

Reception and Banquet Friday, April 8, 2005 UC, Faculty Club

5:30 p.m.	Reception following seminar
6:30	Dinner
7:30	Zimmer Program and presentation of Awards

Deadline for reservations is Tuesday, April 5, 2005
To make a reservation, go to:

<http://www.che.uc.edu/kim/alumni/Zimmer/zimmerindex.htm>

For short course information, see page 10

Girindus Oligonucleotide Technical Symposium and Facility Inauguration

March 9, 2005

**Genomics Research Institute Auditorium
University of Cincinnati, 2180 E. Galbraith Rd.
Cincinnati, Ohio 45237**

Sponsored by:

***Girindus America Inc., Genomics Research Institute and Cincinnati Chapter
of the American Chemical Society***

Girindus America extends an invitation to an Oligonucleotide Technical Symposium being held in conjunction with the inauguration of our new commercial scale oligonucleotide facility. This symposium is co-sponsored by the Genomics Research Institute and the Cincinnati Section of the American Chemical Society. We have assembled an international team of oligonucleotide experts who will present during this one day symposium. *See the following page for the complete program.* The symposium includes a tour of our new oligonucleotide facility. Following the conference the Cincinnati Section of the ACS will hold a dinner meeting.

There is no charge for the conference. There is a nominal charge for the ACS dinner that can be paid prior to the dinner. Travel and lodging costs are the responsibility of the attendees. Attendance for the conference will be limited. In order to reserve a place at the symposium please complete and return the registration form below as soon as possible.

Girindus Oligonucleotide Technical Symposium Registration Form

Fax Completed Form to: 513-679-3053, attention: Dr. Inga Gwose

Or email to: igwose@girindus.com

____ Yes, I will attend the Girindus Oligonucleotide Technical Symposium held March 9, 2005.

____ Yes, I will also attend the ACS dinner held the evening of March 9, 2005.

____ No, I am unable to attend the Symposium.

Name: _____

Title: _____

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Phone: _____ Fax: _____

Email: _____

Girindus Oligonucleotide Technical Symposium
Genomics Research Institute Auditorium, University of Cincinnati,
2180 E. Galbraith Rd., Cincinnati, OH 45237
March 9, 2005

8:00 – 9:00 am	Registration and Continental Breakfast
9:00 – 9:15 am	Welcome and Opening Remarks
9:15 – 10:00 am	<i>Discovery and development of 2'-deoxy-2'-fluoro-arabinonucleic acids (FANA) as Therapeutic Agents</i> Masad J. Damha, Ph.D., McGill University, Montreal, Canada
10:00 - 10:45 am	<i>Recent Studies to the Mechanism and Application of Immune Stimulatory CpG TLR9 Agonists</i> Eugen Uhlmann, Ph.D., Coley Pharmaceutical Group, Langenfeld, Germany
10:45 – 11:00 am	Break
11:00 – 11:45 am	<i>The Future of Nucleic Acid Therapeutics in Oncology</i> Burkhard Jansen, MD., Novelix Pharmaceuticals, Pasadena, California
11:45 – 12:30 pm	<i>Antisense Oligonucleotide Based Therapeutics</i> C. Frank Bennett, Ph.D., Isis Pharmaceuticals, Carlsbad, California
12:30 – 1:30 pm	Lunch
1:30 – 2:30 pm	Girindus Oligonucleotide Platform Overview and Facility Tour
2:30 – 3:15 pm	<i>Regulatory History and Trends in Oligonucleotides</i> G. Susan Srivasta, Ph.D., ElixinPharma Encinitas, California
3:15 – 3:30 pm	Break
3:30 – 4:15 pm	<i>Polymer Materials and Oligonucleotides – Nucleic Acid Chemistry on the Interface</i> Hartmut Seliger, Ph.D., University of Ulm, Germany
4:15 – 4:30 pm	Closing Remarks
4:30 – 6:00 pm	Reception at Genomics Research Institute
6:00 – 9:00 pm	American Chemical Society Cincinnati Chapter Dinner Meeting at the Genomics Research Institute
	Featured Speaker: Burkhard Jansen Ph.D., MD., <i>Nucleic Acid Therapeutics – an Overview</i>

(Continued from page 6)

Antianxiety agents
Mood stabilization
Antipsychotics
Sedatives and related agents

Analgesics and related agents

Definitions, testing methods
Placebo effect

Anti-inflammatory analgesics: the inflammatory response, role of prostaglandins, survey of drugs in this category

“Coal tar” analgesics, possible mechanisms of action, metabolic aspects, toxicity

Opioid analgesics-survey of chemical types, “MPTP,” receptors, mechanisms of actions, endogenous peptide analgesics

Cardiovascular Agents

Aspects of cardiovascular anatomy and physiology
Hypertension

Physiology of blood pressure regulation
Renin/angiotensin system
Antihypertensive drugs: physiology and

pharmacology

Arrhythmias

Aspects of physiology
Agents used: pharmacological mechanisms
Physiology of muscle fiber contraction

Ion channels

Myocardial ischemia (angina pectoris)

Physiological aspects
Drugs employed

Cost

The course fee will be \$750 for ACS members and \$850 for non-members. The fee includes course materials, continental breakfast and refreshment breaks for all 3 days (**compare to \$1,345 and \$1,445 at the ACS National meeting**). Seating will be limited. Please call Rick White at 513-622-1624 and leave a voice mail with your name, affiliation, and phone number to reserve your seat today. Payment can be made by sending check or money order, payable to “Cincinnati Section ACS”, to the address listed below, or you may pay by credit card at the CINTACS website (<http://www.che.uc.edu/acs>).

D. Rick White
The Procter & Gamble Co.
Health Care Research Center, Box 705
8700 Mason-Montgomery Rd.
Mason, OH 45040

The last date to register is **Friday, April 14.**

“Healthy Water, Healthy People” Workshop

Saturday April 9, 2005
9 AM to 3:30 PM
Greenacres Foundation
Cost: \$10

You read about this workshop in your February CINTACS. (if you missed it there, the February issue of CINTACS can be found at: <http://www.che.uc.edu/acs/cinacs.html>) To register, go to the website: www.green-acres.org Do not let the March 18th deadline slip by!

Short Course

Hans and Marlies Zimmer International Scholar, Dr. Norbert Jakubowski

Inductively Coupled Plasma Mass Spectrometry (ICP-MS): Principles, Instrumentation and Applications

This course is an introduction to plasma based mass spectrometry and describes the physical principles, instrumentation, analytical capabilities, limitations and applications, in particular to ICP-MS. The course describes the newest developments in instrumentation including collision and reaction cell and sector field instrumentation. Multielement analysis will highlight conventional ICP-MS and isotope ratio measurements using multicollector instruments. Various sample introduction systems will be described for the analysis of gases, liquids and solid samples with laser ablation stressed as an important method from small atoms to big molecules.

Specific topics to be covered: Introduction to ICP-MS, survey of applications and sample preparation, sample introduction systems, the ICP as an MS ion source, interferences, plasma conditions, ion extraction and beam formation, mass analyzers (quadrupoles, time-of-flight and magnetic sector field devices), and selected applications with the new state-of-the-art laser ablation for metalloprotein/ proteomic studies featured

(Continued on page 15)

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acs](http://www.che.uc.edu/acs)

Meeting Sponsors, 2004-5 Program Year, Cincinnati Section, ACS

Here are six of the seven sponsors for our monthly Section meetings in the new program year. We do not yet have a sponsor for the April meeting. This group of schools, industries, and individuals have each contributed a minimum of \$1000 (in kind or cash) to sponsor our meetings by covering most meeting expenses such as speaker travel, lodging, and food; guest meals, A/V expenses, and the pre-dinner Social Hour.

The Section is very appreciative of these sponsors and their contributions because they ultimately lead to better talks, higher attendance, and more value to meeting attendees. Please thank them for their generosity and let them know you appreciate their contributions to the Section. A good time to do this would be when the donor is recognized at the sponsored meeting.

September Meeting
October Meeting

No Sponsor Solicited
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December Meeting

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March Meeting

April Meeting
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** IOTA SIGMA PI, Honor Society for Women in Chemistry, has made a financial contribution to help support this meeting, hosted by NKU.

Ted J. Logan, Chair
Sponsor Solicitation Committee

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NCW Poster Contest Winners

"Health and Wellness"

Here are the winners of the 2004-05 Cincinnati Section's National Chemistry Week Poster contest

<u>Winners</u>	Daziah Turner	Jacob Heath	Tiana Dunham	Cheyenne Harden
<u>Grade Level</u>	kindergarten	fourth	seventh	tenth
<u>Represented School</u>	Phoenix Community Learning Center	Taylor Mill Elementary	W.E.B. DuBois Academy	Walnut Hills High School
<u>Teachers</u>	Mrs. Means	Mrs. Silva and Mrs. Muenchen	Ms. Webb	Mrs. Hemsley
<u>School phone</u>	513-351-5801	859-356-2566	513-651-9624	513-363-8400
<u>Location</u>	Cincinnati, OH	Covington, KY	Cincinnati OH	Cincinnati OH

The local Cincinnati Section of the American Chemical Society has once again sponsored a chemistry contest as a part of National Chemistry Week. This year the contest was based on the role of chemistry in "Health and Wellness". The challenge was to draw a poster illustrating contributions made by chemists to the advancement of health and wellness. The local ACS section elementary contest committee has selected one winner from each grade category K-2nd, 3rd-4th, 5th-8th and 9th-12th.

Entries were judged based upon:

- Artistic Merit
- Poster Message (related to the role of chemistry in keeping people healthy and well)
- Originality and Neatness

Winners of the Cincinnati Section of the ACS along with their teachers and parents will be honored as guests of our local section's dinner meeting in April 2005, at Northern Kentucky University. The Cincinnati Section ACS has submitted the local winning poster in each of the four grade categories to the National ACS Office of Community Activities in, Washington, D.C. All of these winning posters will be displayed during the 229th ACS national meeting in San Diego, CA, March 13-17th, 2005. One national winner and one national honorable mention will be selected for each grade category during the San Diego ACS meeting for national recognition and prizes.

- National Winners will be awarded a handheld color TV
- National Honorable Mentions will receive a Set of Talk About 2-Way Radios
- Teachers of National Winning Students will be awarded a Periodic Table of the Elements Poster.

Educators, thank you for encouraging your students to participate in this contest. No one ever stands so tall...as when they stoop...to help a child.

American Chemical Society
Cincinnati Section
Contest Committee

American Polymer Standards Corporation

P.O. Box 901, Mentor, OH 44060 * 8686 Tyler Blvd., Mentor, OH 44060

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Columns

*Number Average MW by VPO

*Particle classification (1-100 micron)

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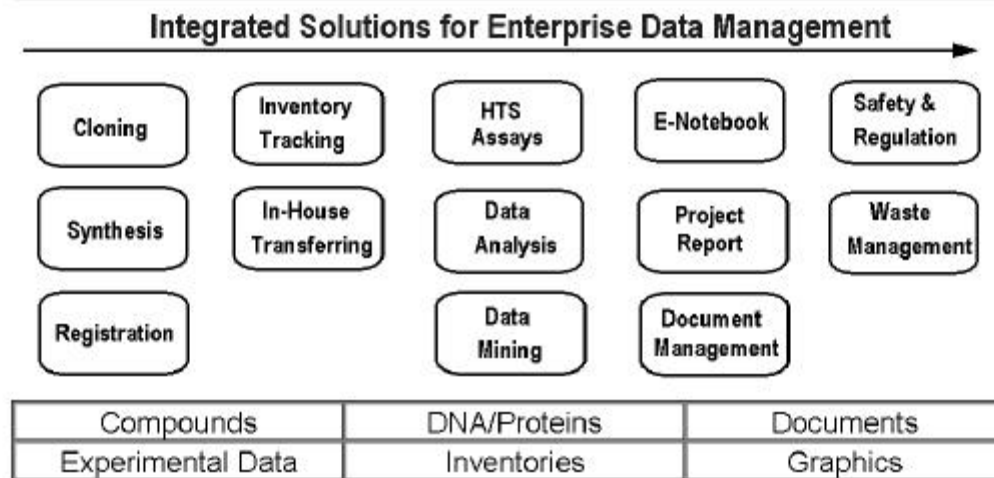
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(Continued from page 5)

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Planning for the meeting must begin ASAP. Anyone wishing to volunteer or with an interest in potentially chairing a technical session/symposium should contact the program co-chairs, Jeanette Krause (krauseje@email.uc.edu) or Bobby Barnett (barnetbl@email.uc.edu) or Joe Caruso, Meeting General Chair, by phone at 513-556-9306 or by email (joseph.caruso@uc.edu) as soon as possible.

(Continued from page 10)

Target Audience:

The course is appropriate for those who are trained in (analytical) chemistry and who are interested in this method. A general knowledge of instrumental analysis and inorganic chemistry is required.

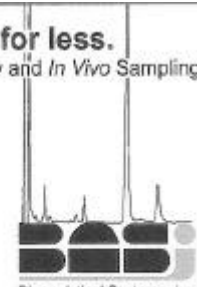
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