

THE Indicator

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**Professor Colin Nuckolls
2009 Leo Hendrik Baekeland
Award Recipient**

See page 7.

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migration to electronic distribution.**

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**THE
Indicator** 

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Visit Uswww.TheIndicator.org

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Address advertising correspondence to Advertising Manager. Other correspondence to the Editor.

November Calendar

NEW YORK SECTION

Thursday, November 5, 2009

Long Island Subsection

See page 12.

Thursday, November 5, 2009

Chemical Marketing & Economics Group

See pages 12-13.

Friday, November 13, 2009

Hudson-Bergen Chemical Society

See page 13.

Friday, November 20, 2009

HSTTG

See page 14.

Deadline for items to be included in the January 2010 issue of *The Indicator* is November 15, 2009.

NORTH JERSEY SECTION

Thursday, November 5, 2009

Careers in Transition

See page 6.

Wednesday, November 11, 2009

ChemTAG

See page 6.

Thursday, November 12, 2009

Teacher Affiliates Executive Committee

See page 6.

Friday, November 13, 2009

Baekeland Symposium

See page 7.

Monday, November 26, 2009

NoJ Executive Committee

See page 6.

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NOVEMBER HISTORICAL EVENTS IN CHEMISTRY

By Leopold May, The Catholic University of America, Washington, DC

November 1, 1909

Hooker Electro-Chemical Company was founded on this date.

November 2, 1841

C. H. C. Willgerodt was born on this day. He did research on the conversion of internal ketones to terminal thioamides, which is known as the Willgerodt reaction.

November 5, 1854

Paul Sabatier, researcher in catalysis in organic chemistry; discovered process for hydrogenation of oils to solid fats with Senderens, was born on this date. In 1912, he shared the Nobel Prize in Chemistry for his method of hydrogenating organic compounds in the presence of finely disintegrated metals whereby the progress of organic chemistry has been greatly advanced in recent years with F. Victor Grignard for the discovery of the so-called Grignard reagent, which in recent years has greatly advanced the progress of organic chemistry.

November 7, 1929

Eric Kandel discovered how the efficiency of synapses can be modified and did research in molecular mechanism of memory. He was born on this date. In 2000, he shared the Nobel Prize in Physiology or Medicine with Arvid Carlsson and Paul Greengard for their discoveries concerning signal transduction in the nervous system.

November 11, 1884

One hundred and twenty-five years ago on this date, Jean-Baptiste A. Dumas died. He was a researcher on organic compounds, and isolated methanol in 1834 and anthracene with Peligot from coal tar in 1831. Also, he did research on the composition of water, vapor density and made accurate measurement of nitrogen in compounds (Dumas Method). He was born on July 14, 1800.

November 14 1863

One hundred years ago, Leo Baekeland patented Velox paper and plastic Bakelite. He was known as the "father of the plastic industry" and was born on this date.

November 15, 1280

St. Albertus Magnus discovered arsenic in 1250 and the first to use affinity in the sense of chemical reactions. He died on this date.

November 18, 1918

Lawrence E. Glendenin, who discovered promethium in 1945, with J. A. Marinsky and C. D. Coryell, was born on this date

November 20, 1886

Karl von Frisch, who discovered how bees orient and communicate, was born on this date. In 1973, he shared the Nobel Prize in Medicine with Konrad Lorenz and Nikolaas Tinbergen for their discoveries concerning organization and elicitation of individual and social behaviour patterns.

November 24, 1859

One hundred and fifty years ago on this date, *The Origin of Species* by Charles Darwin was published by Oxford University Press

November 26, 1934

Seventy-five years ago on this date, Beckman Instruments, Inc., was incorporated.

Additional historical events can be found at Dr. May's website,

<http://faculty.cua.edu/may/ChemistryCalendar.htm> or the "This Week in Chemical History" at the ACS website: <http://www.acs.org/whatischemistry>.

North Jersey Meetings

<http://www.njacs.org>

NORTH JERSEY EXECUTIVE COMMITTEE MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meeting to discuss topics of importance to running the section and representing the membership. All ACS members are welcome to attend this meeting and to become more involved in section activities.

Date: Monday, November 23, 2009

Time: 6:00 PM

Place: Rutgers University
Wright-Rieman Labs, Room 360
Busch Campus, 610 Taylor Road
Piscataway, NJ 08854

Cost: \$5.00 - pizza dinner

Directions can be found using mapquest and the address above. A map of the campus can be found at

<http://maps.rutgers.edu/maps/default.aspx?campus=4>.

Reservations: call (732) 463-7271 or email njacsoffice@aol.com prior to **Wednesday, November 18, 2009**.

Dinner at the Section Meeting is payable at the door. However, if you are not able to attend and did not cancel your reservation, you are responsible for the price of your dinner.

Learn more about the
North Jersey Section at
www.NJACS.org

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CAREERS IN TRANSITION GROUP

Job Hunting??

Are you aware that the North Jersey Section holds monthly meetings at Fairleigh Dickinson University in Madison to help ACS members? Topics covered at these cost-free workshops are:

- The latest techniques in resume preparation
- Ways for improving a resume
- Answers to frequently asked interview question and
- Conducting an effective job search

The next meeting for the Careers In Transition Group will be held **Thursday, November 5, 2009**, in the Rice Lounge on the first floor of the New Academic Building. The meeting will start at 5:30 PM and end at 9:00. There will be a Dutch-treat dinner. To get the most from the meeting, be sure to bring transparencies of your resume.

Please contact vjkuck@yahoo.com, if you plan on attending this meeting.



ChemTAG

Date: Wednesday, November 11, 2009

Time: 4:00 - 6:00 PM

Place: Madison High School
170 Ridgedale Avenue
Madison, NJ

Claire Miller

cmiller07940@yahoo.com

millerc@madisonpublicschools.org



TEACHER AFFILIATES

Executive Committee Meeting

Date: Thursday, November 12, 2009

Place: JP Stevens High School
855 Grove Street
Edison, NJ

Contact: Paul Sekuler

researchehs@hotmail.com

**2009 LEO HENDRIK BAEKELAND AWARD SYMPOSIUM AND
PRESENTATION TO PROFESSOR COLIN NUCKOLLS
OF COLUMBIA UNIVERSITY**

**At the Intersection of Organic Chemistry,
Material Science, and Nanotechnology**

Date: Friday, November 13, 2009

**Place: Rutgers University
Piscataway, New Jersey**



Program

- 11:30 – 12:00 Registration
- 12:00 – 12:50 *Hugh Karraker*, Great Grandson of Leo Baekeland
On Baekeland and the 100th Anniversary of Modern Plastics
- 1:00 – 1:50 *Professor Klaus Mullen*, Professor of Chemistry
Max Planck Institute for Polymer Research, Mainz, Germany
Self Assembly and Molecular Electronics
- 2:00 – 2:35 Break / Poster Presentations
- 2:45 – 3:35 *Professor Julius Rebek*, Professor of Chemistry
The Scripps Research Institute, La Jolla, CA
The Inner Space of Molecules
- 3:45 – 4:35 *Professor Ronald Breslow*, S.L. Mitchill Professor of Chemistry and
University Professor
Columbia University, New York, NY
The Origins of Homochirality on Earth
- 4:45 – 5:45 Reception / Social / Poster Presentation
- 5:50 – 6:50 Banquet Dinner
- 6:50 – 7:00 Presentation of the Baekeland Medal
- 7:00 – 8:00 *Professor Colin Nuckolls*, Professor of Chemistry
Columbia University, New York, NY
Reaction Chemistry Meets Lithography

Pre-registration is recommended. Deadline is **Friday, October 30, 2009**. Please register online at www.njacs.org. The site also has information on directions, maps and parking, etc.

Registration Fee: \$75 (professionals); \$50 (retired/unemployed); \$25 (students).

Poster presentations will be accepted on a first come first serve basis due to space limitation. This is a good opportunity to showcase your work and network with other scientist. Please email title of the poster, author's names and a brief abstract **by Friday, October 30, 2009** to: Dr. Ambarish Singh (ambarish.singh@bms.com).

Additional questions contact Dr. Michael M. Miller (michael.miller@bms.com), Chair of the Baekeland Award Committee.

2008 CHEMLUMINARY AWARDS

On Tuesday, August 18th, the North Jersey Section of the American Chemical Society was awarded three ChemLuminary Awards during an award banquet at the Fall ACS meeting in Washington, DC. These awards, presented by the President of the ACS, were accepted by Dr. Michael M. Miller, 2008 NJ-ACS Section Chair, on behalf of the Section's membership. Specifically, these honors included:

1. **Outstanding Performance by a Local Section Very Large Size Category**
2. **Greatest Community Involvement in Chemists Celebrate Earth Day**
3. **Outstanding Community Involvement in NCW**

A brief summary of the Section's accomplishments during 2008 can be found below and gives some idea of the requirements and reasons for these awards.

The North Jersey Section is one of the largest sections in the ACS. As such, we see many of the national challenges of the Society at a local level. Several of the most troublesome issues that the NJ-ACS has faced over the past several years include: the relocation of jobs from layoffs or from outsourcing via off-shoring, state budget decreases and reductions in scientific research grants placing local academic professionals at risk, loss of revenue from long-

standing sponsors, and reduced personal connections amongst sub-groups of the Section due to years of delegation. These challenges can not be addressed with simple monthly section meetings. They required a larger effort and a sustained commitment by hundreds dedicated volunteers in all areas of the section. In 2008, this resulted in 94 section meetings with open attendance and countless hours of work on special projects and focused committee sessions. These efforts spanned the boundaries of academia, industry, government, and the Society. Thus, the goal of 2008 was to tackle the above outlined challenges head on and positively impact future sustainability of the Section. In a word, the Section's leaders were asked to be "CREATIVE." This call to arms stood for key values for 2008 including: Communication, Responsibility, Energize, Active, Teamwork, Improvement, Value, and Execution.

In 2008, the Section's top activities included: (1) improving the Section finances and logistics, (2) the selection of a recipient and execution of the second "Award for Creativity in Molecular Design and Synthesis," (3) the organization of the 14th "Chemistry as a Life Science Symposium" and participation in the 40th "Middle Atlantic Regional Meeting" (MARM), (4) the generation of a NJ SEED College Scholars program and the group's outstanding involvement in Project SEED, (5) renewing the North Jersey Newsletter



Members of the North Jersey Executive Committee after the Section received the Outstanding Section Award. From left to right: Bobbi Gorman, Anita Brandolini, Les McQuire, Jeannette Brown, Bill Suits, Susan Fahrenholtz, Bettyann Howson, Mike Miller, Diane Krone, Jackie Erickson, Joe Potenza, Janet Potenza, Anne Kelly, and Maureen Chan.

and migration to an electronic format, (6) the Topical Group's excellence in technical programming, (7) our numerous outreach initiatives (i.e., NCW, Street Fairs, Awards), (8) the Polymer Topical Group's "Biomaterials in Medicine / Personal Care" symposium, (9) the added value of an active "Careers in Transition Program," and (10) the creation of "Member Spotlight" articles which highlight leaders within our area.

Taken as a whole, North Jersey's accomplishments made 2008 an enormous success and a year of positive change within our Section. This was a year where Topical Group meetings were not considered to be self-contained, but part of a greater dialog, and individuals were aligned behind a common vision in order to improve our Section and impact our communities. It is through such continual improvement and passionate commitment that the NJ-ACS volunteers have contributed to the advancement of chemistry and the promotion of chemical research that is paramount for the overall development of the chemical industry and general chemical education in the area and indeed in this country. We are truly at a crossroads within our field. With continued hard work, combined effort, and partnership with our state and national legislatures, we can continue to impact the future success of the chemical enterprise.

THE INDICATOR MIGRATES TO E-DISTRIBUTION

Like nearly every ACS Section, North Jersey and New York are moving toward electronic distribution of their joint newsletter. We post each issue at www.TheIndicator.org as a PDF file, and each section sends an email to all members with the link, when issues are posted. This surely conserves limited resources and saves trees, but it's also in line with how people receive information more generally these days.

For the present, we will continue mailing paper copies to people who request them, and to people whose current email addresses are not registered with ACS. Since we want to drastically reduce the number of paper copies, we kindly ask everyone to register their current email address – which you can do at this webpage: www.acs.org/update (have your membership number handy).

By the way, at www.TheIndicator.org you can view and keyword-search through archived issues going back to 2004. And you can print paper copies for yourself from the PDF files, naturally.



NoJ SECTION RECEIVES ACS OUTSTANDING LARGE SECTION AWARD



Michael Miller, 2008 No. Jersey Chair, after receiving the Outstanding Large Section Award for 2008.

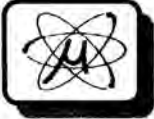


From left to right: Bobbi Gorman and Diane Krone.

Jeannette Brown and Mike Miller. Jeannette's public relations activities were cited when the Award was presented.



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METRO WOMEN CHEMISTS

On Thursday September 18th, more than twenty women of the Metro Women Chemists Committee gathered for a networking dinner at Fairleigh Dickinson University in Madison, NJ. Dr. Kathryn Uhrich, Dean of Math and Physical Sciences of the School of Arts and Sciences at Rutgers University and founder of Polymerix Corporation gave an inspiring and insightful presentation on her road to success. She shared some professional and personal stories from her career path and stressed to the group that one person can make a substantial difference in the lives of others. It was a wonderful opportunity to meet, interact and network with women in the North Jersey/New York area.

Save The Date:

The Chemistry of Chocolate

A Chocolate Tasting & Networking Event. The Chocolate Path will provide a 9-flight chocolate tasting and will discuss the chemistry of chocolate!

Date: **Thursday, January 28, 2010**

Time: 6:00 PM

Place: The Chocolate Path
94 Walnut St.* (New Location!!)
*close to the Walnut Street
train station
Montclair, NJ
www.chocolatepath.com

Cost: ~ \$25 / person

Check out the website,
<http://www.njacs.org/metrowomen.html>,
for more information. If you have any questions about MWCC or if you would like to be added to our email list, contact Amber Charlebois charleb@fdu.edu or Kelly George kelly.george@roche.com



Kathryn Uhrich (Event Speaker and Dean of the Math and Physical Sciences of the School of Arts and Sciences at Rutgers University) and Kelly George new co-chair of the Metro Women Chemists Committee chatting before dinner.

Anne Kelly, Jacqueline Erickson, Susan Fahrenholtz and Maureen Chan enjoying the evening.



New York Meetings

www.newyorkacs.org

ACS NEW YORK SECTION MEETINGS FOR 2009

There will be no Board Meeting in December.

The regular Board Meetings will be held at St. John's University, 8000 Utopia Parkway, Jamaica, NY. These meetings are open meetings and all are welcome. If you are not a member of the Board of Directors and wish to attend please inform the New York Section Office at 516-883-7510 or njesper1@optonline.net.



LONG ISLAND SUBSECTION

Mössbauer Spectroscopy of ^{161}Dy Dicarboxylates

Speaker: Dr. Clive I. Wynter
Nassau Community College

Coordination polymers of lanthanides (Ln) have attracted considerable interest from a wide variety of view such as magnetic material, luminescent materials, and porous materials for molecular inclusion and catalysis. The dicarboxylate anions as a linker ligand, among them those of aliphatic acids, have been recently studied extensively due to their flexibility of the molecules and very diversified coordination modes. In a recent publication, we studied some of the properties of europium dicarboxylates having different chain length with $n = 0$ to 4 in $-\text{O}_2\text{C}(\text{CH}_2)_n\text{CO}_2^-$; i.e. oxalate to adipate. In the presentation, a similar ^{161}Dy Mössbauer spectroscopic study for the Dy dicarboxylates with different chain length from oxalate ($n = 0$) to palmate ($n = 5$) will be discussed.

Date: Thursday, November 5, 2009

Time: Coffee 5:30 PM

Seminar 6:00 PM

Place: Hofstra University
Chemistry/Physics Building
Lister Auditorium

Time: Dinner 7:00 PM

Place: Neighboring restaurant

Cost: \$20.00

CHEMICAL MARKETING & ECONOMICS GROUP

Innovations in Personal Care

Speakers: James M. Weatherall
Senior Vice President
Kline & Company, Inc.
and

Carrie M. Mellage
Director of the Consumer
Practice
Kline & Company, Inc.

The personal care industry continues to provide many opportunities for innovative and enabling technologies. Kline will address two topics in this presentation: we will start with an overview of 'Innovative and Enabling Technologies', which will provide an overview of recent developments in personal care for such technologies as specialty actives and active delivery systems. We will then provide an overview of 'Natural Personal Care', discussing the outlook for these products, and the impact they are having on the personal care products industry.

James M. Weatherall is a Senior Vice President and corporate officer of Kline & Company, based at the company's offices in Little Falls, NJ. He brings nearly 30 years of experience in designing and leading global multiclient marketing research programs across all of the industries served by Kline, which includes reports covering the personal care products value chain from specialty raw materials to finished cosmetics and toiletries. Mr. Weatherall holds an M.M.S. in management science, and a B.S. in chemistry, both from the Stevens Institute of Technology. He is a board member of the Chemical Marketing and Economics Group of the American Chemical Society, New York Section.

Ms. Carrie M. Mellage is Director of the Consumer Practice at Kline & Company, specializing in cosmetics and toiletries. She brings over ten years of experience, and has global responsibility for directing all operations of the firm's consumer products practice. In that role, she has overall responsibility for such multiclient market research report titles as Cosmetics & Toiletries, Global Natural Personal Care, Global Professional Skin Care, and Global Beauty Retailing. Ms. Mellage received an M.B.A. from the Stern School at New York University, and she also holds a B.S. in Marketing from The College of New Jersey.

Date: **Thursday, November 5, 2009**
Times: Cocktails 11:30 AM
 Luncheon 12 noon
 Presentation 1:15 PM
Place: Club Quarters
 40 West 45th Street
 New York, NY
Cost: \$45 for Members who reserve by
Tuesday, November 3.
 \$55 for Guests and Members
 (at door without reservations)

To Reserve: Please reserve early to be eligible for the discount price. We now accept all major credit cards via PayPal, or call Vista Marketing at (917) 684-1659, or via E-mail to cmegroup@mac.com

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Future Dates:

Fourth Annual Energy & Resources Conference" - From Concept to Commercialization: Funding Innovation for a New Economy

Date: **Thursday, December 10, 2009**
 (full-day)

Place: Con Edison Building
 4 Irving Place
 New York, NY

* * * * *

2010 Economic Outlook

Date: **January 7, 2010**

* * * * *

Pharmaceutical Review

Date: **February 4, 2010**

* * * * *

2010 Petrochemical & Energy Outlook

Speaker: Dr. Fred M. Peterson
 President
 Probe Economics LLC

Date: **March 4, 2010**



HUDSON-BERGEN CHEMICAL SOCIETY — JOINT MEETING WITH THE SCHOOL OF NATURAL SCIENCES OF FAIRLEIGH DICKINSON UNIVERSITY

Developing Chemical Tools for Deciphering Unknown Biological Functions of Nek2 Kinase Using Chemical-Biology Approaches

Speaker: Sanjai Kumar, Ph.D.
 Queens College - CUNY

Nek2 is a Ser/Thr centrosomal kinase that tightly regulates centrosome cohesion and separation so that accurate chromosome segregation is achieved during mitosis. In animal model, it has been shown that any abnormal activity of Nek2 kinase may lead to a loss of regulation in precise chromosome segregation during mitosis. In fact, Nek2 has been found to be abnormally expressed in many types of cancer cells and is a potential target for cancer therapy. While biochemical, proteomics and microscopic data strongly suggest that one of the main biological roles of Nek2 is to oversee the function of centrosome during the early mitosis and possibly during the entire cell cycle, a precise mechanism by which this is achieved at molecular level remains to be unraveled. We intend to develop novel chemical tools (inhibitors, substrates, and sensors) that will be used for discovering the unknown biological function of Nek2 kinase in human biology and cancer.

Dr. Kumar obtained his Ph.D. degree in Chemistry in the laboratory of Prof. Rex F. Pratt at Wesleyan University, Middletown, CT. Subsequently, he moved on to do his post-doctoral research work in the laboratory of Prof. Zhong-Yin Zhang and Prof. David S. Lawrence at Albert Einstein College of Medicine, NY. His research at Einstein involved at the interface of chemistry and biology. More specifically he designed and synthesized activity-based probes and inhibitors of protein tyrosine phosphatases (PTPs) and protein kinases (PKs). Currently he is an assistant professor in the department of Chemistry & Biochemistry at Queens College, CUNY. His current research interests include designing and synthesizing small molecule ligands (e.g. biosensors, and inhibitory agents) for use in chemical biology and functional proteomics.

Date: **Friday, November 13, 2009**

Times: Social 5:30 PM
 Dinner 6:00 PM
 Lecture 7:00 PM

Place: Dickinson Hall Caf e
 Fairleigh Dickinson University
 Teaneck, NJ

Cost: \$20.00 for dinner (dinner cost for students is \$ 10).

Reservations: Dr. Mihaela Leonida (201) 692-2338, e-mail: mleonida@fdi.edu by **November 2, 2009.**

HIGH SCHOOL TEACHERS TOPICAL GROUP

Magic to Grab Your Student's Attention

Speakers: Jay L. Rogoff
JLRogoff@hotmail.com

and

Chris W. Ward
MagicBug@verizon.net

Jay and Chris are experienced science teachers who long ago learned that simple, easy to do magic tricks liven up the classroom and keep students attentive. They'll show you how.

Date: Friday, November 20, 2009

Time: Social and Dinner — 5:45 PM

Place: M&G Pub (Murphy and Gonzales)
21 Waverly Place (at Green Street,
North-east corner)

New York, NY

No reservations required

Time: Meeting 7:15 PM

Place: New York University
Silver Center Room 207
32 Waverly Place (South-east
corner Washington Sq. East)
New York, NY

Security at NYU requires that you show a picture ID to enter the building. In case of unexpected severe weather, call John Roeder, 212-497-6500, between 9 AM and 2 PM to verify that meeting is still on; 914-961-8882 for other info.

Note: Street parking is free after 6:00 PM. For those who prefer indoor attended parking, it is available at the Melro/Romar Garages. The entrance is on the west side of

Broadway just south of 8th Street, directly across from Astor Place. It is a short, easy walk from the garage to the restaurant or meeting room.



58TH ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM

Sponsored by: The New York Chemistry Students' Association of the American Chemical Society's New York Section

The symposium provides an excellent opportunity for undergraduate chemistry students in the NY metropolitan area to present the results of their research. The program includes a keynote address, presentation of student papers (15 minute talks to small groups), followed by a luncheon.

Last year's URS, at Pace University in Pleasantville was a great success; we had over 120 presentations by students from all over the New York region. The keynote address was given by Dr. Michael Alekshun from Schering Plough.

For more information go to:

http://newyorkacs.org/grp_students.html

Date: Saturday, May 8, 2010

Place: Adelphi University

If you have any questions please contact:

Alison Hyslop, Co-chair

hyslopa@stjohns.edu

Sharon Lall-Ramnarine, Co-chair

slallramnarine@qcc.cuny.edu

JaimeLee Rizzo, Co-chair

jrizzo@pace.edu



NY Section, Student Affiliate Committee Co-chairs Sharon Lall-Ramnarine, Alison Hyslop, and JaimeLee Rizzo.

NEW YORK SECTION ELECTION RESULTS

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Alternate Councilors for 2010

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The New York Section extends a sincere thank you to all of the candidates in the 2009 Elections. Your time and efforts are greatly appreciated.



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Others

CHEMISTS RESPOND TO THE CHALLENGE OF AIDS

Challenges Designing and Implementing an Emerging Pharmaceutical Infrastructure in Africa

Speaker: Rolande Hodel
President AIDSfreeAfrica

AIDSfreeAFRICA, is a group of professional volunteers responding to the challenge, enabling Africans to meet their health needs. AIDS has dramatically shortened the life span throughout Africa. Proud natives claim they are not dying from AIDS, but rather the many complications of their impaired immune system. Primitive health care systems and limited financial resources prevent many modern drugs and treatments systems from being utilized.

With limited resources AIDSfreeAFRICA, a non profit volunteer organization, has considerable accomplishments enabling local companies in Cameroon to actively participate in the delivery of needed materials. Now activities are expanding to neighboring countries as new solutions are being researched that can be implemented in country with local talent.

Using Basic Scientific Approaches to Discover Agents Targeting Drug- Resistant HIV

Speaker: Professor Eddy Arnold
Center for Advanced
Biotechnology and Medicine
Rutgers University
Department of Chemistry and
Chemical Biology

Studies of reverse transcriptase (RT), an essential component of the AIDS virus and the target of many of the most widely used anti-AIDS drugs will be presented. Using the techniques of X-ray crystallography, Dr. Arnold's team has solved the three-dimensional structures of HIV-1 RT in complex with antiviral drugs and pieces of the HIV genome. These studies have illuminated the working of an intricate and fascinating biological machine in atom-by-atom detail and have yielded numerous novel insights into polymerase structure-function relationships,

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THE CHALLENGE OF AIDS

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detailed mechanisms of drug resistance, and structure-based design of RT inhibitors. Synthesis of the information being developed has led to the development of inhibitors that show great promise as potential treatments for AIDS.

Date: Monday, November 9, 2009

Time: 7:00 - 9:00 PM

Place: Drew University
Science Auditorium

Registration is free at

www.njacs.org/afa2009.html

Directions and more details can be found at the web site www.njacs.org/afa2009.html or by contacting Bill Suits, NJACS Meetings and Arrangements Chair, at billsuits@earthlink.net or (908) 875-9069.



THE HENRY DRYSDALE DAKIN MEMORIAL LECTURE

The Great Ideas of Biology

Speaker: Sir Paul Nurse
President
Rockefeller University

Three of the ideas of biology are the gene theory, the theory of evolution by natural selection, and the proposal that the cell is the fundamental unit of all life. When considering the question of what is life, these ideas come together because the special way cells reproduce provides the conditions by which natural selection takes place allowing living organisms to evolve. A fourth idea is that the organization of chemistry within the cell provides explanations for life's phenomena. A new idea is the nature of biological self organization on which living cells and organisms process information and acquire specific forms.

Date: Wednesday, November 18, 2009

Time: Lecture 7:00 PM

Place: Ruth S. Harley University Center
Room 202-203
Adelphi University
Garden City, NY

Cost: Free and open to the public.

Further information can be obtained from me at landesbe@adelphi.edu or 516-877-4130.

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Graduate Seminar Series – Fall 2009

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October 26

"Selective Potentiometric Detection of Macromolecular Ions"

Professor Kalle Levon

Polytechnic Institute of NYU, New York, NY

November 2

"Catalysis for the 21st Century: the Convergence of Energy and the Environment"

Dr. Bob Farrauto

BASF Catalysts LLC, Iselin, NJ

November 10

AIChE National Meeting: No Class

November 23

"Pharmaceutical Development of Comminution and Fluidized Bed Granulation Operations: from Theory to Industrial Practice"

Professor Ecevit Bilgili

Otto H. York Dept. of Chemical, Biological and Pharmaceutical Engineering
NJIT, Newark, NJ

November 30

"Modification of Surfaces Using Light and Click Chemistry"

Professor Jeff Koberstein

Columbia University, New York, NY

Dates: Mondays

Times: Refreshments 2:30 PM

Seminars 2:45 PM

Place: Room 373, Tiernan Hall

Seminar Coordinator: Professor Marino
Xanthos, 973-642-4762,

Xanthos@njit.edu



EARTH AND ENVIRONMENTAL SCIENCE LECTURE SERIES AT MONTCLAIR STATE UNIVERSITY

The public is welcome to attend this series of lectures sponsored by the Earth and Environmental Science Department.

Date: Tuesdays

Time: 4:00 PM

Place: Mallory Hall Room 265.

November 3

Dr. Brian Teasdale, Department of Biology,
Kean University

"Genetic variation and biogeographical
boundaries within *Porphyra umbilicali*
(*Bangiphycidae Rhodophyta*)"

November 17

Student Research - Poster Presentations

December 8

Dr. Judith Weis, Rutgers University (Author
Presentation)

"Salt Marshes: A Natural and Unnatural
History"

(Dr. Weis will be available for book signing
after the seminar)

For information about these lectures contact
Kevin Olsen, 973-655-4076 or

OlsenK@Mail.Montclair.Edu

Call for Nominations

ACS NEW YORK SECTION'S OUTSTANDING SERVICE AWARD FOR 2009

Each year since 1958 the New York Section
presents an Outstanding Service Award to a

most deserving member of the section. Many
members of the New York Section provide
their time, leadership talent, and educational
skills to the New York Section. The tradition of
excellence of the New York Section is attribut-
able directly to the cumulative effect of these
individuals. Please help the New York Section
to recognize the efforts of our colleagues by
nominating them for this award. Nominations
will be reviewed by a committee consisting of
the previous five winners of the award. The
Outstanding Service Award for 2009 will be
presented at the New York Section's Section-
wide Conference in January 2010.

Nominations with supporting data should be
mailed to the OSA Committee Chair, Dr.
Robert H. Beer, Department of Chemistry,
Fordham University, 441 East Fordham Road,
Bronx, NY 10458, or emailed to
beer@fordham.edu.

For more information about the award along
with a list of former award recipients, please
visit the New York Section's website at
http://www.newyorkacs.org/awards_nyacs.html.

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CALL FOR NOMINATIONS

(continued from page 17)

EDWARD J. MERRILL AWARD FOR OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER FOR 2010

Now is the time to submit nominations for the Edward J. Merrill Award, North Jersey Section, for Outstanding High School Chemistry Teacher for the year 2010.

Go to njacs.org/education.html#merrill and obtain your preliminary nomination form and guidelines. The full packet takes time to do a good job! The deadline is **December 1**.

We all know an outstanding high school chemistry teacher. Perhaps one from your town, your son's or daughter's teacher or just one that you have heard about or worked with at some point. The award carries \$500 for the teacher, \$500 in supplies for the teacher's classroom and a plaque to display at home or in the classroom.

Any questions or help needed contact George Gross, njmoxie1@verizon.net.



NOMINATIONS ARE OPEN FOR 2011 ACS NATIONAL AWARDS

Nominations for the national awards administered by ACS that will be presented in 2011 are now being taken. The deadline date for submitting nomination packages for 2011 is **November 1, 2009**. Earlier transmittal of nomination documents is strongly encouraged.

The ACS Board Committee on Grants and Awards, which oversees the awards program, urges the nomination of individuals from groups not commonly named as recipients of ACS awards such as women, minorities, chemists from industry and the National Laboratories and faculty members at universities not well-represented in the awards program. If you are aware of individual who has done outstanding work, please consider preparing a nomination package for the person. Nomination forms as well as detailed descriptions of all of the ACS national awards are available online at www.acs.org/awards. The awards cover all branches of chemistry.

It should be noted that any individual may nominate a person for an award, unless that individual is a member of the Selection Committee for that award. However, Selection Committee members may submit nominations for other awards.

If you have any questions concerning the awards, it is recommended that you email the Office of the Awards Programs at awards@acs.org. For help in nominating ACS members from the NY/NJ area, you can contact Les McQuire (Les@LesMcQuire.org) or Val Kuck (VKuck@Comcast.net).

Don't let someone's outstanding efforts go unnoticed by the chemistry community. Help the Society recognize those individuals who have made a difference!



2010 SISTER MARIAN JOSÉ SMITH EXCELLENCE IN EDUCATION AWARD

This American Chemical Society award consists of \$1,000 prize and a recognition plaque. It recognizes a Chemistry professor from a degree-granting Institution in the North Jersey area for inspiring students and launching them on successful careers in chemistry as manifested by their accomplishments.

Please submit nominations and supporting letters to Jiwen Chen, Awards Committee Chair, c/o NJ ACS, 4 Cameron Road, Piscataway, NJ 08854. Tel: 609-818-6319, email: jchen@njacs.org. Nominations must be received by **February 19, 2010**. Visit <http://www.njacs.org/awards.html#jose> for more information and a list of past recipients.

Happy
Thanksgiving
from
The
Indicator



ACS NEWS

CAREERS

Did You Know....?

ACS has many programs designed to help our members manage and enhance their careers, some are highlighted below:

Locally, the NJACS **Careers in Transition** group meets monthly to review resumes and discuss effective ways of conducting a job search. For more information, check page 6 of this issue or go to www.njacs.org/careers.html

Benefits for the Unemployed – should you find yourself unemployed, if you have been a member in good standing for at least one year, you can get a dues waiver for up to two years. Contact service@acs.org or call (800) 333-9511 or (614) 447-3776 and report your change in status. Once this has been done, a wide variety of services become available to you at reduced rates, including free registration for national meetings, discounted registration at regional meetings, and discounts on continuing education courses.

Leadership Development – There are excellent online resources in the ACS Center for Professional Development: The ACS Harvard eLearning Library is composed of 42 online business skills courses. Leadership Development courses are also available online or as facilitated courses. For the schedule and pricing information, go to the professional development link on the www.acs.org/careers website.

Job Searching – members can post their resume online, and also participate in career fairs at national meetings. ACS is also planning virtual career fairs in the future.

Career Consultant Program – members can contact a career consultant and discuss job search strategies, interview preparation, resume preparation, salary negotiation, etc. by email and phone. Mock interviews and resume reviews are also available at national meetings. The job searching and career consultant programs are free to members; additional information can be found on the www.acs.org/careers website.

MAINTAIN CUTTING-EDGE SKILLS WITH ACS CONTINUING EDUCATION COURSES

According to a recent article in the *Wall Street Journal*, "maintaining cutting-edge skills" ranked among the top 5 tips for avoiding being a target for layoffs. ACS offers courses designed to help chemical scientists and technicians keep current in today's competitive marketplace. ACS Short Courses are offered in convenient locations around the country to minimize travel costs and time spent away from the office.

ACS Short Course offers the opportunity to take advantage of a wider range of course offerings in a single location and network with a variety of your colleagues. Between **October 12-16, 2009** several courses (Analytical Chemistry, Biochemistry, Engineering and Quality Assurance) will be held at the Woodbridge Renaissance (Formerly Woodbridge Hotel & Conference Center), 515 Route One South & Gill Lane, Iselin, New Jersey, 08830.

Learn more at www.proed.acs.org/



TWO NEW FREE SUBSCRIPTIONS FOR ACS MEMBERS

One Publication That Packs a Punch with the Press

Who reads all 33,500+ articles destined for publication each year in ACS's peer-reviewed scientific journals? The ACS Office of Public Affairs does. Their science writers sift through 130 galleys or ASAPs every working day, searching for newsworthy topics for press releases to the news media.

ACS members now can have a free subscription to the exclusive publication that turns research in journals and *Chemical & Engineering News* into headlines and sound bites in newspapers, magazines, TV, radio and online sites. Until now, the *ACS News Service Weekly Press Pac* was available only to 2,000 journalists around the world.

With a PressPac subscription, you get an insider's perspective on the process of translating chemical research into news that

(continued on page 20)

CONTINUING EDUCATION

(continued from page 19)

connects with the everyday lives of non-scientists.

And Another That Showcases Outcomes

For a sweeping panorama of the news coverage from the PressPac, sign on for a free subscription to *ACS Daily News Briefs*. This daily e-newsletter showcases highlights from news media coverage of the PressPac and other ACS news.

To get the *Weekly PressPac* and *Daily News Briefs*, send an email to newsroom@acs.org with the word "Subscribe" in the Subject line.



GET INVOLVED IN THE ACS CELEBRATION OF IYC 2011:

Support the U.S. Commemorative Stamp Campaign

The ACS is working to urge the United States Postal Service to adopt chemistry as a theme for a commemorative stamp in 2011 in view of the contributions of chemistry to the well-being of humankind in the U.S. and worldwide and on the occasion of the 2011 International Year of Chemistry.

The USPS gets 50,000 subject requests per year and awards only 25 commemorative stamps per year. Your efforts to contribute to this cause this year are very important and very much appreciated!

How to get involved:

- Visit www.acs.org/iyc2011 to download the petition
- Distribute the petition for signature among your colleagues, students, and friends (all chemists and friends of chemistry are encouraged to sign!)
- Mail or FAX completed petitions to the ACS Office of International Activities **no later than November 1, 2009**. (See petition for fax number and address)

To learn more about IYC 2011 and to contribute ideas to the ACS celebration of this historic event, visit www.acs.org/iyc2011.

Member Spotlight

Les McQuire has served as a National ACS Councilor representing North Jersey since 1999; he has been active in Section Leadership since 1996 and Chaired the Section in 2000. Locally, he currently serves as Chair of the Indicator Committee and is Co-chair of the Indicator Editorial Board as well as helping with the organization of symposia and outreach activities.

Nationally, Les is the Chair of the Committee on Committees (ConC), a key elected committee of Council, which oversees the whole ACS committee system, recommends people for appointment to committees and as committee chairs, and evaluates committees. In summary, ConC functions as the ACS's HR/talent management group for its volunteers and the project management function for its committee structure. ConC also organizes training for new committee chairs and provides guidance on many organizational and Leadership issues. Les also participates in the meetings of the National committee on Budget and Finance as the ConC liaison.

Previously Les has served on the Local Section Activities Committee (LSAC) and the Committee on Corporation Associates (the group that interfaces between ACS and its industrial members and employers). He also organized one of the Presidential themes at the Fall 2007 National ACS meeting.

Les was also Program Co-chair for the Middle Atlantic Regional Meeting (MARM) in 2005 and served on various national task forces working to enhance Regional Meetings.

In addition to his role as a councilor and a Leader in North Jersey Les serves as a Facilitator in the ACS Leadership Development System and on the ACS Leadership Advisory Board.

Give us feedback on The Indicator by completing the survey at www.TheIndicator.org/survey.html

Tools That Work

ON-LINE TOOLS THAT WORK FOR CHEMISTS

Ever struggled to connect with members of a team or group to set up a meeting? We all have and finding a time to meet can take as much time as the actual meeting! There is hope and the web provides the tool.

Doodle.com is a simple way to have everyone in your group pick times they could meet from a number of options that you suggest. You can see everyone's picks and the times when the most people can meet.

People do not have to register with **Doodle.com** to use the site but if they choose to do so it is very easy.

To organize an event you give it a name then enter a selection of possible dates and times. The site creates a table with the times across the top and spaces for attendee's names down the side. Then you get a link to your meeting page that you can send to the possible attendees. They go to the site, enter their name and which of the options works for them.

Overall **Doodle.com** is so good you may end up even using it to schedule dinner with friends or family gatherings.

An unrelated but interesting site for you to explore is **flowingdata.com**. This blog/site has countless ways to present data, some useful and some rather pointless but hopefully amusing.

If you have comments or suggestions of tools to highlight in this column e-mail Tools@TheIndicator.org.

Volunteer Corner

Volunteerism is the backbone of the American Chemical Society. Each of us has unique talents and interests that together create expansive programming and immense diversity. Imagine the impact if each of us participated in just one area of volunteer opportunity. Let's use this month for self-reflection and re-dedication!

You can make a difference in our North Jersey Section all year by working in these areas: Publicity/Photography: Jeannette Brown jebrown5134@comcast.net; Writing for *The Indicator*: Les McQuire

LesMcQuire@comcast.net; Helping with High School Chemistry Clubs: your local high school teacher; Membership recruitment: Alan Cooper acooper211@comcast.net. A new program from national ACS is very exciting and may be the "fit" for you. Serve as a Chemistry Ambassador: go to www.acs.org and click on "Chemistry Ambassadors" under "Volunteer Opportunities."

Remember "Chemistry for Life" and Volunteerism is service for a lifetime.

Bobbi Gorman

Press Releases

AIChE WELCOMES RECOMMENDATIONS FROM U.S. CHEMICAL SAFETY BOARD SUPPORTING REACTIVE CHEMICAL SAFETY EDUCATION

AIChE offers process safety education to chemical engineering departments and students through prepared lectures and a student certification program

SEPTEMBER 21, 2009 – The American Institute of Chemical Engineers (AIChE) welcomed recent recommendations by the U.S. Chemical Safety Board (CSB) to include reactive chemical safety education for chemical engineering students at U.S. universities.

The CSB recommendations were produced following the investigation of a December 2007 explosion and fire at a Jacksonville, Florida, company. Four employees were killed in the explosion and several people were injured. The CSB investigation determined that the explosion was caused by a runaway chemical reaction that likely resulted from an inadequate reactor cooling system. The company was producing a gasoline additive.

"As this terrible tragedy emphasizes, we agree with CSB that chemical engineering students should learn more about process safety and about chemical reactivity, in particular," said Scott Berger, Executive Director of AIChE's Center for Chemical Process Safety (CCPS). "AIChE has been on the forefront of supporting process safety for the past 50 years. We have long believed that reactive chemical safety should be an integral part of chemical engineering curricula in universities."

Berger noted that CCPS has been producing prepared lectures and teaching materials on process safety for U.S. universities since 1985 through its Safety in Chemical Engineering Education

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AIChE

(continued from page 21)

(SACHE) program. Professors can obtain educational materials from a website to use in their classrooms. In 2007, SACHE increased its efforts by offering a process safety certification program directly to chemical engineering students. Students can learn about process safety in online tutorials and receive a certification following an online test.

In its report, CSB noted: "Although both the owner/chemical engineer and owner/chemist held bachelor's degrees and had prior chemical industry experience, neither had previously worked with reactive chemical processes. Hence, they were ill-prepared to appreciate and recognize the reactivity hazards of the MCMT process." In response, the CSB called on AIChE and the Accreditation Board for Engineering and Technology (ABET) to work together to include reactive chemical education in baccalaureate chemical engineering curricula across the country. The CSB also recommended that AIChE inform all of its student members about its Process Safety Certificate Program and encourage program participation.

Berger said AIChE experts will discuss how to increase awareness among chemical engineering students about the online program and encourage participation. Berger added that AIChE officials plan to meet with ABET representatives to discuss the CSB report and its recommendation to include reactive hazard awareness in the baccalaureate chemical engineering curricula requirements.

CCPS has previously published a number of books on chemical reactivity, including *Essential Practices for Managing Chemical Reactivity Hazards*, which is distributed for CCPS by John Wiley & Sons.

About CCPS

The Center for Chemical Process Safety was founded by the American Institute of Chemical Engineers in 1985 in response to the accident in Bhopal, India, with a mission of eliminating catastrophic process incidents. More than 120 chemical, energy and pharmaceutical companies sponsor CCPS's work to advance state-of-the-art technology and management practice; serve as the premier resource for process safety information; and foster the safety knowledge of engineers, students and the public through publications and meetings. More information about CCPS is available at www.aiche.org/ccps.

About AIChE

AIChE is a professional society of more than 40,000 chemical engineers in 92 countries. Its members work in corporations, universities and government using their knowledge of chemical processes to develop safe and useful products for the benefit of society.

Through its programs, AIChE continues to be a focal point for information exchange on the frontier

of chemical engineering research in such areas as nanotechnology, sustainability, hydrogen fuels, biological and environmental engineering, and chemical plant safety and security. More information about AIChE is available at www.aiche.org.



MU RESEARCHER USES BACTERIA TO MAKE RADIOACTIVE METALS INERT

Scientist is studying bacteria that could clean contaminated water bodies across the U.S.

By Nancy McMullen

COLUMBIA, Mo. – The Lost Orphan Mine below the Grand Canyon hasn't produced uranium since the 1960s, but radioactive residue still contaminates the area. Cleaning the region takes an expensive process that is only done in extreme cases, but Judy Wall, a biochemistry professor at the University of Missouri College of Agriculture, Food and Natural Resources, is researching the use of sulfate-reducing bacteria to convert toxic radioactive metal to inert substances, a much more economical solution.

The bacteria Wall is studying are bio-corrosives and can change the solubility of heavy metals. They can take uranium and convert it to uraninite, a nearly insoluble substance that will sink to the bottom of a lake or stream. Wall is looking into the bacteria's water cleansing ability and how long the changed material would remain inert.

Wall's research could also be beneficial to heavy metal pollution from storage tanks and industrial waste. The bacteria are already present in more than 7,000 heavy metal contaminated sites, but they live in a specific range of oxygen and temperature, making them difficult to control.

"Our research must be done in the absence of air," Wall said. "Obviously, none but the most committed – and stubborn – will work with them."

Even if an oxygen-tolerant strain were developed, there are still multiple factors that would make applying the bacteria challenging, and these microbes can contribute to massive iron corrosion.

"Knowledge of the way bacteria live in the environment, in microbial communities, is still in its infancy," Wall said. "We just don't know a lot about the communication systems among microbes."

Wall and researchers from the Lawrence Berkeley National Laboratory in California are investigating the bacterium's basic genetics and hope to determine its growth limits and activity in natural settings, including how to make its interactions with metals sustainable. They have already identified a few genes that are critical to converting uranium.

Wall's research has been published in *Applied and Environmental Microbiology*, *Nucleic Acids Research* and *Environmental Microbiology*.

THIS MONTH IN CHEMICAL HISTORY

By Harold Goldwhite, California State University, Los Angeles • hgoldwh@calstatela.edu

Some of my most prized acquisitions of material related to history of chemistry – perhaps because they cost very little – have been obtained at thrift shops and flea markets. In early 2008 I was browsing at a thrift shop in Eugene, Oregon when I came across one of these treasures and snapped it up for a quarter. It is titled “Nuclear Milestones”: speeches by Glenn T. Seaborg, Chairman U.S. Atomic Energy Commission 1961-1971. This particular compilation was presented to participants of the 1990 “Instrumentation” Institute for Chemical Education held at the Lawrence Hall of Science and the Department of Chemistry, University of California at Berkeley. My copy (perhaps all the copies?) is autographed by Seaborg. In this column and the next I will be looking at some of the interesting contents of this paperbound volume. It is generously illustrated with many photographs of historical interest; the frontispiece shows some of those present at the Atomic Pioneer Award Ceremony in February 1970. The awardees at this unique ceremony were Vannevar Bush, James B. Conant, and General Leslie Groves – certainly among the most important of the U.S. pioneers in support of nuclear research – and the presentation was made in the presence of Seaborg and President Richard M. Nixon, both of whom are in the photograph.

The first section of the book, “307 Gilman Hall ...Some Reminiscences” is a talk given in February 1966 at the dedication of this modest room at UC Berkeley as a National Historic Landmark (long before the ACS began its Historical Chemical Landmark program). The date of this dedication was the 25th. anniversary of the discovery of plutonium not only in Room 307 but in adjacent laboratory spaces. As Seaborg said “a less significant or historical looking room hardly existed on the campus The little cubbyhole with its low slanting ceiling directly under Gilman Hall’s roof, where we kept our electroscopes and various samples, is still an appendage to the room”.

Seaborg’s story of the discovery of plutonium is attractively personal, and he dates it back to 1936 when he gave a graduate student seminar reporting on the now-famous work of Fermi and Segre in Rome and Hahn and Strassman in Berlin on the radioactivities observed when uranium was bombarded with neutrons. The accepted explanation at the time was the production of new transuranium isotopes. It was not until 1939 that the explanation of the new activities in terms of fission was put forward by Meitner and Frisch. Seaborg became fascinated by this new research and appreciated in 1939 that in fact no transuranium isotopes had yet been identified. Other workers at Berkeley were not so sure! McMillan and Abelson observed that some of the radioactivities behaved anomalously, in particular a beta-decay with a half-life of about 2.3 days. In further work they confirmed that they did indeed have in hand an isotope of element 93 and by Spring 1940 they had isolated and discovered the first isotope of a transuranium element, which came to be called neptunium. This followed a tradition of naming some heavy elements after planets, like uranium after Uranus. McMillan began to look for other transuranium elements, and began experiments on bombarding uranium with deuterons in the Berkeley cyclotron, but he was called away to work on radar at M.I.T. and agreed that his close colleague Seaborg should continue the search.

Seaborg and Wahl in December 1940 bombarded a target of uranium oxide on a copper plate with fast moving deuterons. They detected a plutonium isotope plus another material that was, significantly, an alpha emitter. They deduced that they had produced an isotope of element 94 with a mass number of 238 and a half-life of under 100 years; it was consequently strongly radioactive. In late January 1941 they sent a note, with authors McMillan, Wahl, Kennedy, and Seaborg, which was later published in “Physical Review”. By late February Wahl and Seaborg had produced chemical evidence, via oxidation studies, that element 94 was chemically different from 92 or 93. These experiments were described in a manuscript sent in March 1941 that confirmed that a new transuranium element had been discovered. By March 1942, after a year in which the new element was called variously just element 94 or even “copper”, for security reasons, it was decided to name the new element after the then-planet Pluto. After lengthy discussions trying to decide between “plutium” and “plutonium” the latter, more euphonious, name was chosen along with the symbol Pu. By this time the Seaborg group had also isolated the more stable and fissile isotope of plutonium of mass 239 and half-life 24,000 years.

In a report to the “Uranium Committee” in March 1942, by which time the US was at war, Abelson wrote: “It is probable that the cost of isotope separation will be great. The decision to spend perhaps a million dollars on a separation plant may well hinge on the results of these experiments”. As Seaborg observes: “We had no idea that our work would play a major role in a program that would eventually cost more than two billion dollars within a few years.”

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SEARCHING FOR THAT SPECIAL JOB?

There are many companies and organizations searching for chemical and biochemical personnel to fill important jobs in their organizations.

- Companies for laboratory and management positions
- Universities & Colleges for teaching positions and laboratory personnel
- Hospitals for technical and research personnel

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- www.mboservices.net
- <http://newyorkacs.org/jobs.html>
- <http://njacs.org/jobs.html>

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