



# Double Bond

The Newsletter of the Western New York Section of the American Chemical Society

Volume 82

April 2010

## 2010 OUTSTANDING HIGH SCHOOL SCIENCE TEACHER OF THE YEAR

Please join us in recognizing  
**Mr. Adam Hovey**  
of South Park High School  
at our annual Education Awards Banquet

Wednesday April 28, 2010

Cash bar 6:15 p.m.  
Buffet Dinner 7:00 p.m.

The speaker this year will be

**Dr. Alexis McKittrick**

of Praxair who will speak on:  
*Women in Engineering - Perception vs. Reality*

**Fairdale Banquet Center**  
672 Wehrle Dr.  
Amherst, NY

Cost \$30, \$15 for students

\*\*\*\* RSVP by April 19, 2010 \*\*\*\*

*See page 2 for reservation instructions*



## 2010 UNDERGRADUATE SYMPOSIUM

The 2010 WNYACS Undergraduate Research Symposium was held on March 6 on the campus of Niagara University. The event brought together students and faculty from institutions in the Western New York area and Ontario, Canada. Over 70 students and faculty mentors attended the symposium from the University at Buffalo, Niagara University, Syracuse University, Brock University and Canisius College. Attendees also came from Houghton College, Clarkson University, McMaster University, Le Moyne College, Rochester Institute of Technology, St. Bonaventure University, and Buffalo State College. In total there were seven oral and seventeen poster presentations. Top awards were given in both categories.

The event also provided two keynote addresses. The first, by Dr. Susan Elizabeth Burke, a Principal Scientist & Project Manager at Bausch & Lomb Inc. Her talk was entitled "Chemistry of Vision Care Technologies" and focused on the use of chemistry in the development of everyday products, particularly contact lens and lens care products.

The second address was by Dr. Ignacio Vargas from McMaster University out of Hamilton, Ontario. His talk was entitled "Supramolecular Main-Group Chemistry: From Fundamental Bonding Studies to Functional Materials." Professor Vargas described his recent work on telluradiazole heterocycles in the construction of three-dimensional lattices as possible self-assembled molecular wires.

The organizers would like to thank all who attended, and to acknowledge generous donations from Niagara University, Pearson Education, ChemGlass Life Sciences, New England Biolabs, SAACS and the Department of Chemistry and Biochemistry at Niagara University.

Ron Priefer, Chair  
2010 URS Committee

**2010 OUTSTANDING HIGH SCHOOL SCIENCE  
TEACHER OF THE YEAR (OSTY)**

Mr. Adam Hovey of South Park High School in the Buffalo City school district has been named the 2010 Outstanding High School Science Teacher of the Year. The award is presented annually by the Western New York section of the American Chemical Society to an outstanding high school science teacher after soliciting nominations from 95 area high schools. Mr. Hovey teaches Earth Science, Physics and AP Environmental Science. He won the "Favorite Teacher" award in the 2009 South Park yearbook. He has co-coached the Science Olympiad team, and in 2007 created the Green Team at South Park that has been featured on both WIVB and WKBW TV stations.

The Green Team has been working with Erie County and Buffalo Niagara Riverkeeper to restore the Bailey Peninsula. They have also developed the most successful recycling program in the Buffalo school district and use the funds generated to assist in the recovery of the peninsula. He has spent countless hours of his own time to engage the students with the rescue of the peninsula and a local park. They work closely with the local community in the areas of fund raising and outreach. He has established a network of professionals who bring real-world science into the classroom, including educators from Buffalo Public Schools, RIT, UB, Buffalo State College and Erie Community College.

Mr. Hovey created electronic manuals for science lab procedures that are easier to update and distribute. In addition he produced numerous digital movies featuring "Lab Man", his own superhero. Since then, Buffalo State College has recruited him to train student teachers in the use of video technologies and community networking as teaching aids.

To quote the nominating letter: "Mr. Hovey's enthusiasm and commitment to his students have been a positive influence on the school community as a whole and have exposed these children to experiences beyond the "textbook" science world and shown them what knowledge and action can achieve."

Please join us in recognizing an exceptional educator and leader at our annual Education Awards Banquet where we will also honor our local high school Chemistry Olympiad participants and college students nominated by their departments.

Our speaker at the banquet this year will be Dr. Alexis McKittrick of Praxair. Her keynote talk will be "Women in Engineering - Perception vs. Reality."

**EDUCATION AWARDS BANQUET**

Wednesday April 28, 2010

Cash bar 6:15 p.m.

Buffet Dinner 7:00 p.m.

Cost \$30, \$15 for students

**Fairdale Banquet Center**

672 Wehrle Dr.

(corner of South Forest and Wehrle)

Amherst, NY

Please send your reservation information to Alice Steltermann (716-888-2340, stelterm@canisius.edu) by Monday, April 19, 2010.

Ron Spohn, Chair, Education Committee

**ACS FELLOWS PROGRAM 2010**

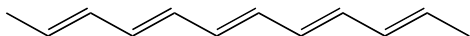
After a very successful first year, the ACS Fellows Program is open for nominations for 2010 Fellows. Nominations will close on Friday, May 7, 2010. Program materials, including a nomination form, eligibility requirements, and instructions for submitting a nomination, are available at [www.acs.org/fellows](http://www.acs.org/fellows).

Nominees for ACS Fellows must be current members in good standing of the ACS. To be selected as an ACS Fellow, a member must have demonstrated excellence in the science profession and provided outstanding service to the ACS. There must be evidence of exceptional accomplishments and professional attainment in one of the areas with significant contributions in the other.

Nominations for Fellows will be solicited through multiple sources, including technical divisions, local sections, ACS committees, and individuals. Each local section may nominate up to the number of councilors from the local section. The primary nominator must be an officer or councilor of the section. However, secondary nominators need not be from the section. If the chair is not the primary nominator, he or she must provide written endorsement of the nomination. Each primary and secondary nominator must submit a letter of recommendation in support of the nomination. Self-nominations will not be accepted.

Fellows will be selected by a broadly representative Selection Committee appointed by the Board Committee on Grants and Awards.

Additional information on the ACS Fellows Program can be obtained by visiting [www.acs.org/fellows](http://www.acs.org/fellows) or by sending an email to [fellows@acs.org](mailto:fellows@acs.org).



## 60 YEARS AGO IN THE DOUBLE BOND

*The following excerpt appeared in the March, 1940  
Double Bond*

### The Chemistry of Marihuana

The February meeting of the Western New York Section of the American Chemical Society held February 20th in Norton Hall, University of Buffalo, was addressed by Roger Adams, professor of organic chemistry at the University of Illinois. Dr. Adams described the production and use of marihuana and told about the work that is being done on its composition by the University of Illinois in cooperation with the Treasury Department.

The hemp plants that furnish marihuana have been known since antiquity. They are mentioned in records as early as 1500 B. C. and were known to possess intoxicating qualities as early as 800 B. C. Depending on the climate, soil, etc. the plants grow from 3 to 18 feet high. The drug marihuana or hashish depending on whether it is collected in America or Asia is prepared from a resin exuded by the flowering plant; probably to repel insect attack on the maturing seed pods. The resin production stops as soon as the seeds are formed. This resin is harvested by natives, wearing leather coats, who walk through the hemp fields. The resin adheres to the leather and is later scraped off with a knife. It looks something like crude rubber and has a faint aromatic odor. According to the League of Nations Commission about a million pounds are collected annually. In America the flowering tops are cut from the plant at the proper stage; dried: ground and sold for cigarettes. In Africa the resin is ground very fine and used to stuff dates or incorporated in cakes, sweetmeats and so forth.

All investigations of marihuana have been retarded by the absence of any specific test for the amount of active principle in a given preparation. The only way various lots of the drug can be compared is by a complicated biochemical assay using a certain breed of dogs. The minimum dose that will cause loss of coordination in the legs of these dogs is a measure of the relative potency of that lot of the drug.

When marihuana is administered to men, it weakens their will and ability to distinguish between reality and illusion. Memory and imagination predominate and the individual casts off the inhibitions of society. He wishes to move about and talk a great deal. At the slightest provocation he will burst into violent laughter. The drug engenders a state of superiority and well-being. All emotions are much exaggerated. The individual's space

perception is impaired and time seems to stand still. He is very suggestible and extremely sensitive to sounds. Marihuana is not ordinarily classed as an addiction drug and its effects on general health are much less harmful than other narcotics. It has been estimated that there are 200,000,000 users of the drug in the world. In all cases the primary purpose of the user is to overcome inhibitions according to Dr. Adams.

Since import of the drug is carefully controlled most of the marihuana sold in this country is harvested locally. It is illegal to grow hemp in the United States without a permit but large amounts of wild hemp are destroyed each year by the Bureau of Narcotics Agents. The plant is easy to identify and the ground preparation can be identified by a microscopic test but there is no specific test for the extract of the dried resin.

The classical method of identification is by the Bean Test in which the extract is treated with 5 percent alcoholic potassium hydroxide yielding a color. This test is specific for hemp but not the active principle. In the work Dr. Adams and his associates have been doing, no better test has been devised as yet. However they have made an extensive study of an alcoholic extract prepared from Minnesota wild hemp. When this alcoholic extract is evaporated and distilled in vacuo, a series of oils is obtained. The end fraction, which boils at 175-190°C and a pressure of 1 mm, contains the active principle. This red oil is probably a mixture of complex esters, including cannabidiol,  $C_{21}H_{30}O_2$ . Most of their attempts to prove the structure and synthesize this compound have not been too successful. Dr. Adams showed numerous slides of synthetic reactions that had been used in attempts to make cannabidiol. He and his colleagues have prepared compounds closely resembling cannabidiol but have not succeeded as yet in isolating any active principle either synthetic or natural. Some unknown chemical present in small amounts may be the active principle. It may not even be related to cannabidiol. However, the work at Illinois is being continued and Dr. Adams hopes that eventually they will isolate the active principle of marihuana.

*Editor's Note: Following extensive efforts by many researchers, the structure of  $\Delta^9$ -tetrahydrocannabinol, the principal active component of marijuana, was reported by Y. Gaoni and R. Mechoulam: J. Am. Chem. Soc. 1964, 86, 1646.*

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**ISSUE COPY DEADLINE: FIRST OF MONTH PRIOR TO PUBLICATION**

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