ACS of Western New York

# Double Bond

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

***Volume 85*** ***April 2013***

## 2013 SCHOELLKOPF AWARD NOMINATIONS

Please consider submitting a nomination for this prestigious award--the oldest continuously presented section award in the ACS.

Information is available on the award website: wny.sites.acs.org/awards.htm. Questions may be directed to the Schoellkopf Committee Chair, Dr. Jeffrey Rose (jmr222@mac.com, 716-879-4597).

Nominations should be submitted electronically as a single PDF document by **May 1, 2013** to the secretary:

Dr. Mary O'Sullivan
osulliv1@canisius.edu

## UNDERGRADUATE RESEARCH SYMPOSIUM

The 6th annual **ACS Undergraduate Research Symposium**, sponsored by the Western New York section, will be hosted by Niagara University on April 13, 2013.

The event features posters and talks by researchers from schools all over Western New York and the surrounding area. The Keynote address this year will be by Prof. Emma Master, from the University of Toronto:

*Enzymatic modification of plant fibre chemistry: from outside in to inside out*

Please join us for this event celebrating the research accomplishments of our next generation of chemists. More information can be found on the symposium website:

wny.sites.acs.org/undergradsymposium.htm

The registration fee of $5.00 includes breakfast and lunch. If you have not registered, kindly RSVP to help us estimate numbers:

Dr. Timothy M. Gregg
greggt@canisius.edu

## 2013 OUTSTANDING HIGH SCHOOL SCIENCE TEACHER OF THE YEAR

Please join us in recognizing
**Mr. Matthew J. Hellerer**
of St. Joseph's Collegiate Institute
at our annual Education Awards Banquet

Wednesday, April 24, 2013

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

Awards 7:45 p.m.
Outstanding High School Science Teacher
Chemistry Olympiad High Scorers
Outstanding College Seniors

The speaker this year will be

**Matthew R. Abbott**
Lead Flight Director, NASA
whose address is entitled:

*The Day-to-Day Operation of the International Space Station*

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

Cost $30, $15 for students

**** RSVP by April 17, 2013 ****

Please send your reservation information to Alice Steltermann (716-888-2340, or stelter@canisius.edu).

## 2013 OUTSTANDING HIGH SCHOOL SCIENCE TEACHER OF THE YEAR (OSTY)

Matt Hellerer has been a teacher at St. Joseph's Collegiate Institute for nearly 30 years where he has taught biology, chemistry, honors chemistry and AP chemistry. He earned a BS in Nutritional Science from Cornell Univ. and an MS in science education from Canisius College. In his "spare time", he is also the head coach of the cross country, indoor and outdoor track teams and has produced one of the strongest distance running programs in WNY.

Mr. Robert Scott, the President of St. Joe's, provided this insight into Mr. Hellerer in his nominating letter. "At all times, Matthew Hellerer is passionate about Chemistry and passionate in "winning" his students to likewise love Chemistry. His passion and his work ethic are readily apparent to the students entrusted to him and he has often been cited by his former students as the teacher who was especially influential in their development. Passion … Relationship … Work Ethic – are terms that leave us challenged to adequately explain. Matthew Hellerer brings each of these into clear focus when watching him in the classroom, during a science lab, or coaching cross-country. In each of these instances, as well as in his relationships with his colleagues, Matthew Hellerer's love for teaching and concern for his students is evident."

Matthew Dow, one of Mr. Hellerer's colleagues at St. Joe's provided these comments. "Matt expects excellence from his students and he receives it. Matt's students consistently score a 4 or 5 on the AP Chemistry exam, at a rate far higher than the average. One of Matt's favorite ways to allow his students and former students to show off their accomplishment is by asking them at the annual St. Joe's Open House to yell out their AP score. Without fail, the number "5" rings out throughout the room."

And finally, one of Matt's former students, Ken Crawford had this to add. "(He) is a true chemist and a true teacher – I can say this because we've had exhilarating conversations about glycerides, without exaggeration, for hours. He is very aware of how chemistry infiltrates and affects everyday life and continuously re-educates himself on how chemistry can mold the future. The only thing he knows better than chemistry is how to transfer his knowledge to his students. Just as bonds can be broken to make simpler compounds – Matt can break down and present complicated subject matter in a way that is simple enough for teenagers to truly grasp. Being taught by Matt was a genuine educational experience that is hard to describe in words. It was so far from memorization and equations and I still remember entering his class and being enveloped in an atmosphere of chemistry that was entertaining while also being educational."

## WNY CHEMISTRY OLYMPIAD HIGH SCORERS

Below are listed the students with the highest scores on this year's Western New York Chemistry Olympiad Test, along with the name of each student's chemistry teacher at their school.

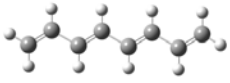
| *Student* | *High School* | *Teacher* |
|---|---|---|
| Joseph Suhay | St. Joe's | Mr. Matthew Hellerer |
| Patrick McCormack | Orchard Park | Dr. Robert Rominger |
| Amber Kudla | N.Tonawanda | Mr. Arthur Harack |
| Christopher Joshi | Clarence | Dr. Katalin Posch |
| Alexander Merriman | Canisius | Mr. Dennis Linda |
| Cornell Overfield | St. Joe's | Mr. Matthew Hellerer |
| Sullivan Curry | Clarence | Dr. Katalin Posch |
| Kristina Kasprzycki | Grand Island | Mr. Robert Collard |
| Matthew Eichhorn | Williamsville S. | Ms. Barbara Jeziorski |
| Maya Reed McDaniel | City Honors | Ms. Valerie Davis |

The top 8 students above have been invited to take the National Chemistry Olympiad exam later this month. The top 20 students from the national competition will then take part in a two-week intensive study camp in June at the U.S. Air Force Academy in Colorado Springs, CO. At the camp's conclusion, four students will be named as the U.S. team to the International Chemistry Olympiad, where they will compete with the world's most talented high school students from more than 70 other nations for gold, silver and bronze medals. The 2013 competition will be held July 15-24, 2013 in Moscow, Russia.

## 2013 UNDERGRADUATE AWARDS

Every year, the WNY section recognizes outstanding graduating college seniors. The students listed below, nominated by their institutions, are awarded the 2013 Student General Excellence Award. This award is given as recognition for outstanding academic achievement and significant research accomplishments in their undergraduate majors.

| *Student* | *Institution - Major* |
|---|---|
| Valerie Fleischauer | Buffalo State College - Chemistry |
| Elisabeth A. Geyer | Canisius College - Biochemistry |
| David J. Fortman | Canisius College - Chemistry |
| Robert Kubiak II | D'Youville College - Chemistry/Biology |
| Steven Henderson | U. Buffalo, SUNY - Biochem/Chemistry |
| Marat Mitelman | U. Buffalo, SUNY - Chemistry/Math minor |
| Lucas Smith | U. Buffalo, SUNY - Med. Chemistry |
| Lauren B. Stutzman | U. Buffalo, SUNY - Chem. Engineering |
| Marie Albano | Niagara University - Biochemistry |
| Ryan Schoepfel | Niagara University - Chemistry |



**70 YEARS AGO IN *THE DOUBLE BOND***

*The following excerpts appeared in the April, 1943* Double Bond

"On Having a Research and Development Department"
From "Business for Pleasure" – Mark Spade

1. It does no harm.
2. Impresses visitors and customers.
3. Provides congenial employment for a number of blokes who might otherwise be reduced to teaching small boys.
4. One day someone might find something out.
5. Scientists are usually nice quiet lads – without vice.

Disadvantages – only one – the cost; an impediment, true, but money isn't everything.

*Please remember*:

1. Scientists must bend a great deal of glass tubing and other things before results are forthcoming.

2. Research is a long-term problem and success may only be proved long after the business is liquidated.

3. It is of no use whatever pestering your Research Department with the fact that sales are falling off, that profits are non-existent. Scientists are not interested in sordid business matters. That is why they become research workers. Besides, they are far too busy bending glass tubing.

4. Research costs a lot – it never pays dividends.

Finally – if a quick answer is required to any problem, ask the foreman. He hasn't had the disadvantage of a scientific education.

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*The thirteenth century philosopher, Roger Bacon was one of the first Englishmen to interest himself in chemistry. The earliest known description of black powder in a European language appears to be that which occurs in one of his letters. An account of this letter by Tenney L. Davis was published in* Industrial and Engineering Chemistry *in 1928 (Vol. 20, page 772). It is abstracted herewith principally in the words of the author.*

In a letter written in the thirteenth century, Roger Bacon speaks of natural wonders, of Greek fire, and of a material by which "the sound of thunder may be artificially produced in the air with greater resulting horror than if it had been produced by natural causes". Following this he discourses upon the ignorance of the vulgar and of the manner in which it abuses great truths which it does not understand. "A man is crazy who writes a secret unless he conceals it from the crowd and leaves it so that it can be understood only by effort of the studious and wise". The portion of the letter following this introduction is devoted to descriptions of the Philosopher's Egg, by which name Bacon means black powder, but unlike the earlier portion it is written in an obscure and almost incoherent style. This account of the Philosopher's Egg contains the following:

> "Sed tamen salis petrae L VRV VO PO VIR CAN VTRIET sulphuris, et sic facies tonitrum et coruscationem: sic facies artificium. Videas tamen utrum loquor in aenigmate, vel secundum veritatem."

In translation, this reads:

> "But however of saltpeter L VRV VO PO CAN VTRIET of sulfur, and so you will make thunder and lightning, and so you will make the artifice (or turn the trick). But you must take note whether I am speaking in enigma or according to the truth."

The correct solution of the anagram contained in the above is:

R. VI PART. V. NOV. CORULI V. ET

Translating this and the common latin abbreviations which it contains, and placing it in the context, one gets, "But however, of saltpeter take six parts, of new (or young) willow (charcoal) five, and five of sulfur." Although this 6.5.5 formula for black powder does not correspond to very good material, it would be satisfactory for filling firecrackers such as Bacon describes in another of his works. Guns were first used in Europe about fifty years after his death, the optimum composition was sought out, and the 6.1.1. formula was chosen.

Although Roger Bacon had no knowledge of guns, he seems to have seen the possibilities in his material for he closes his letter with the statement: "Whoever will re-write this will have a key which opens and no man shuts: and when he will shut, no man opens". The statement is apt for there is a finality about the things which are accomplished by means of an explosive.

For a detailed account of the solution of the anagram, the reader is referred to the original article by Dr. Davis.

*Editor's note: the original 1928 article is available via C&EN Online subscription, and is an interesting, if not in-depth, treatment of the solution of the anagram. It cites articles written about anagram that appeared in 1911 and 1914.*

## WNYACS Officers & Staff



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