ACS of Western New York

Double Bond

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

Volume 83 ***November 2011***

ELECTION OF 2012 LOCAL SECTION OFFICERS

This issue of *The Double Bond* includes your ballot for executive board elections with terms beginning in 2012, as well as brief biographical statements from the candidates.

Please return your ballot by December 1, 2011.

Ballot for Officers of the Western New York Section of the American Chemical Society for 2012

Chair (vote for 1)

Ronny Priefer

Chair-Elect (vote for 1)

Timothy M. Gregg

Vice-chair (vote for 1)

Sarbajit Banerjee

Jeremy L. Steinbacher

Treasurer (vote for 1)

Andrew J. Poss

Member-at-Large (vote for 1)

Sarah E. Evans

Please SELECT and COPY the ballot text to an email and type X's beside the names of the candidates you wish to vote for.

Forward the email to: greggt@canisius.edu *by the* ***Voting Deadline: December 1, 2011.***

To vote on paper, print and detach the ballot on this page, mark your votes with an ***X*** *and send the ballot to:*

Dr. Timothy Gregg
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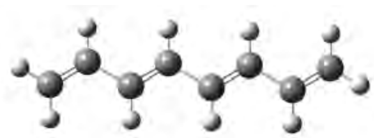

2012 WNYACS EXECUTIVE BOARD CANDIDATE BIOGRAPHIES

For Chair:

Ronny Priefer received his Doctorate in Chemistry at McGill University in 2003. From 2003-2004 he worked in the medicinal chemistry group at Neurochem Inc. in Montreal focusing on Alzheimer's and epilepsy. From 2004-2005 he was employed as a contract research scientist at Starks Associates in Buffalo until starting at Niagara University in the fall of 2005 as Assistant Professor in Organic Chemistry.

His research focuses on total synthesis, thin film self-assembly multilayers, development of new antimicrobial agents, type II diabetes, cubane derivatives, and new synthetic organic methodologies. He has appeared on local television programs and a recent PBS special. He is the founder/director of the Niagara University Scientific Outreach for Chemistry (NUSOC).

For Chair-Elect:

Timothy M. Gregg is associate professor at Canisius College in the Department of Chemistry and Biochemistry. His interests include organic reaction mechanisms and new methods for organic synthesis. He has served as the WNYACS local section newsletter editor for the past five years, and maintains the local section website at wny.sites.acs.org.

Gregg graduated with a bachelor's degree from Brown University and received his Ph.D. from The University of Arizona, where he worked on organic synthesis methodologies involving cyclopropyl ketones. After a postdoctoral fellowship in the lab of Robert H. Abeles, at Brandeis University, he renewed his interest in 3-membered rings as an NIH postdoctoral fellow and then Research Assistant Professor at the University at Buffalo.

For Vice Chair:

Sarbajit Banerjee is an assistant professor at the University at Buffalo in the Department of Chemistry. His research interests include phase transitions in solid-state materials and electronic structure determination via X-ray absorption spectroscopy. Sarbajit received his undergraduate degree in chemistry from St. Stephen's College, his Ph.D. from SUNY Stony Brook, and started his independent career at the University at Buffalo after a post-doctoral stint at Columbia University where he worked in the group of Irving P. Herman.

He has previously assisted with organizing the WNY ACS undergraduate research symposium. He maintains active collaborations with several industrial partners small and large in the WNY area.

Jeremy L. Steinbacher, assistant professor of chemistry at Canisius College, has teaching interests that include organic chemistry and materials/biomaterials chemistry. His research interests are advanced materials for the treatment of cancer, in particular, particle-based drug-delivery agents, "smart" contrast agents for magnetic resonance imaging, and bio-nanoscience and functional polymers with novel architectures.

Prior to Canisius, Steinbacher was a National Institutes of Environmental Health Sciences Post-doctoral Fellow for the Department of Chemistry and Environmental Pathology at the University of Vermont. Steinbacher obtained a doctorate in chemistry and chemical biology and a master's in material science and engineering from Cornell University. He also holds a bachelor's degree in chemistry from Franklin & Marshall College.

For Treasurer:

Andrew J. Poss is a Senior Project Leader at Honeywell International, Inc. He received his BS (1978) and Ph.D. (1984) in organic chemistry from the University of Rochester. He next joined the faculty of the State University of New York at Buffalo as an Assistant Professor of Chemistry. Since 1989, Andy has been employed at Honeywell where he is currently developing new fluorine-based products. He has authored the book entitled "Library Handbook for Organic Chemists" as well as numerous papers, posters and presentations.

For Member-at-Large:

Sarah E. Evans is an assistant professor of Biochemistry at Canisius College. Her teaching interests include biochemistry and bioinorganic chemistry. In her research, Evans uses metal complexes as tools to model biological events, including metal regulatory pathways in bacterial cells. Applications include investigations of the metal- and DNA-binding properties of a vital transcription factor from *Borrelia burgdorferi*, the bacteria that causes Lyme disease.

Evans served as a post-doctoral fellow in the Department of Pharmaceutical Sciences for the University of Maryland's School of Pharmacy. She obtained a doctorate in chemistry from the University of Maryland, Baltimore County, and a bachelor's degree in chemistry from the State University of New York College at Geneseo.

70 YEARS AGO IN *THE DOUBLE BOND*

The following excerpt appeared in the November, 1941 Double Bond

Per K. Frolich, Director of the ESSO Laboratories of the Standard Oil Development Company, spoke on "Synthetic Rubber" at the October meeting of the Western New York Section of the American Chemical Society held in Hayes Hall of the University of Buffalo on Tuesday evening, October 21st.

Dr. Frolich opened his lecture with an illustration of the rebound of a natural rubber ball as compared with a synthetic rubber ball, showing the natural rubber to be far superior to synthetic rubber in this respect. Heating the synthetic rubber in boiling water brings the rebound up to 85% of natural rubber. In calling attention to the critical times, and the future, he made it clear that technical information pertaining to rubber or any defense material could not be discussed freely in the presence of a technical audience.

In 1939, 1,258,900,000 pounds of rubber was used in this country, of which 67% was used in tires, 9.2% in inner tubes, 12.9% in mechanical rubber goods, and 10.9% in specialties. Approximately one-third, 380,000,000 pounds of the total consumption was reclaimed rubber. The route to the Far East, where 97% of our crude rubber is grown, is 10,000 miles and the average freighter makes three trips per year. The present trend of events may interrupt the flow of rubber, but the government monopoly will increase the stocks to one year's supply. The Rubber Reserve Corporation quota for December for tires is 80% of the December 1940 consumption, which does not necessarily mean that tire production will be cut 20%. The motoring public may have to go easy on tires during the emergency.

Although rubber is being produced in South America, it is not very successful, and to increase the production to meet our needs would require a tremendous expansion. The *Hevea braziliensis* trees take seven to ten years to mature, which would not help the present situation. Rubber latex is an auxiliary fluid in the tree and not the sap.

Tracing the early history of synthetic rubber, which reached the high point in the First World War in Germany, Dr. Frolich stated that the fermentation to produce butanol also produced two gallons of acetone for each gallon of butanol. This fermentation was later carried out in Canada, and then in Peoria, Illinois, where the well-known Commercial Solvents Corporation was formed. During the last war, Germany made rubber by fermenting potato starch, but the product was never satisfactory.

The research on synthetic rubber was revived again in the late 1920's when polymerization of butadiene by heat and light was the main process used. Polymerization required several months, until it was observed that dirty pans speeded the polymerization and cut the time to two weeks. Metallic sodium in thread-like form reduced the time to even less than two weeks.

The research so far had revolved around a duplication of nature. In the late twenty's the research was directed toward improvement on natural rubber.

Rubber is asked by man to serve so many purposes, it is remarkable how well it meets the requirements of such a diversity of uses. In the modern automobile, rubber serves in the sidewalls of the tires as a protection for the cords, on the tread to resist wear and abrasion, in the inner tube the elasticity is used to good advantage, in the battery rubber's resistance to acids and its mechanical strength are utilized, non-conduction properties are utilized as insulation, as engine mounts the resiliency and elasticity are used, while as a door seal its ability to withstand the weather and its water resistant properties are utilized.

The more recent synthetic rubbers, Neoprene, Koroseal and others have special properties that result in economy due to longer life even though the price is much higher than natural rubber. Neoprene has been used in tires that gave satisfactory service.

In April, 1940 synthetic rubbers accounted for only 1% of our total consumption, but by the end of 1942 it will be 15%. Also of interest in the second war, the price of natural rubber is 2.2 cents per pound and synthetic rubber is 50 cents per pound. As Dr. Frolich said, "we need synthetic rubber for special uses rather than to replace natural rubber."

One-third of one percent of the crude petroleum taken from the ground each year would supply our total rubber requirements if made into synthetic rubber. Dr. Frolich concluded his lecture with a colored movie of dynamic models of units of the rubber molecule. In these clever pictures, he was able to clearly demonstrate that present theories of the linkages in the rubber molecules are reasonable.

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