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Rochester Academy of Science  
**BULLETIN**

"An organization of people in the Natural Sciences"



May, 2007 - Vol. 61, #5

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ABOUT THE **ACADEMY** - The Rochester Academy Of Science, Inc. is an organization which has been promoting interest in the natural sciences since 1881, with special focus on the western New York state region. Membership is open to anyone with an interest in science. Dues are minimal for the Academy, and are listed in the membership application. Each Section also sets dues to cover Section-related publications and mailings.



For applications and/or more information contact membership chairman Stephen Busschaert, 54 Keswick Rd., Rochester, NY 14609; by telephone 288-5683; or by e-mail <sbusschaert@msn.com>.

The *Academy* Internet web page is <http://www.rasny.org>

The *Astronomy Section* Information phone number is (585) 987-5330. The *Astronomy Section* Internet web page is <http://rochesterastronomy.org>

This "**BULLETIN**" is produced monthly, *except July and September*, by the *Astronomy Section, Rochester Academy of Science*. The editor is Frank Bov, 16 Gladbrook Rd., Pittsford, NY 14534 Phone (585) 422-9910 (days) and (585) 385-1518 (evenings), e-mail <frank.bov@xerox.com>

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**PRESIDENT'S REPORT**  
**May, 2007**

Hello everyone,

I would like to thank all of you who voted in this Spring's election, your involvement is critical. With the turnover of new officers at the end of May, I will be stepping away from the presidency of the Rochester Academy of Science, so these will be my last comments in the *Bulletin* as President.

I have enjoyed helping lead this organization for the past ten years and have found the job both rewarding and a challenge. It has been a lot of fun working with all of you who have helped run the Academy's affairs. Over the years, the Academy has seen a number of changes. Most of these

have been positive but we have had our share of problems and turmoil as well. When disagreements have presented themselves it has been the work of the RAS officers to resolve the problems as best as possible and to keep the RAS community of members together. I can state that that has not always been as straight forward as might be assumed.

The RAS is a lot like other science organizations, in our mission, that we are non profit and entirely formed by volunteers, but I would call attention to the point that the RAS is somewhat special. We are a regional organization, which includes all fields of science and we admit anyone into our Sections based only on the desire to know about science. As a result our members come from all backgrounds and posses widely varying degrees of knowledge. The fact that the RAS is relatively modest in size yet potentially represents the entirety of what science can be, makes it special.

When I first joined the RAS, I did so like most of you, because I had a specific interest in what one of the Sections had to offer. In time I began to learn about the overall organization and discovered what the other Sections were doing.

The cross linking of discovery and ideas is what I like the most about the RAS and why I have tried to help keep the organization moving forward. The long history of the RAS gives some indication of its staying power and popularity.

It is my wish that the academy will continue doing what it does best and that its members will continue to enjoy and share the lifelong process of learning what's new.

Matthew P. Sinacola  
President RAS

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**SCIENCE EXPLORATION**  
**DAYS 2007**

For over three decades, Science Exploration Days has been providing enrichment opportunities for students in the Rochester area. Founded and organized by the Central Western Section of the Science Teachers Association of New York State (STANYS), the program brings together people from the community, industry and academia to share their scientific expertise and science-based technology with secondary students. Through seminars and a large exhibit hall, the young people become acquainted with research, scientific concepts,

applied technology, local natural history, and various topics beyond the standard curriculum.

Hosting the event, since its inception, is St. John Fisher College. Presenters, exhibitors, and teachers with students will be welcomed on campus May 9<sup>th</sup> and 10<sup>th</sup>. Registered senior high students will attend from 9:30 AM to 1:00 PM on Wednesday, followed by the junior high students on Thursday. The public is invited to view the exhibits on Wednesday evening, between 7:00 and 9:00 PM.

The Rochester Academy of Science is an important presence at Science Exploration Days, especially in the exhibit hall. Hands on exhibits and informative displays by the Sections teach and enlighten visitors of all ages. It's an excellent opportunity for us to make the Academy known and to solicit new members.

You are encouraged to participate in this upcoming event by helping your Section prepare an educational, interactive exhibit. Please volunteer to provide materials or be present to engage with the visitors. Contact your Section Leader or Karen Wolf, who is the RAS liaison to the SED program. These people can provide you with more information.

Jutta Siefert Dudley  
RAS Director  
President, STANYS

(Note: St. John Fisher College is located on East Ave. (Rt. 96) at Fairport Rd. (Rt. 31F))

## ABSTRACTS FROM THE 2006 PAPER SESSION SPEECH ADAPTATION AND SITUATIONAL OPTIMALITY

John Rhoades, St. John Fisher College, Rochester, NY, Zhiming Zhao, SUNY Geneseo, Geneseo, NY

Language serves as a primary means of human adaptation. This paper critically examines attempts to identify certain phonological aspects of language systems as particularly adaptive. These postulate that the CV (consonant plus vowel) syllable is an optimum in speech adaptation to warm climates that encourage "distal communication." These attempts are shown to be overly simplistic, motivated by a model that stresses transmission but disregards speech differentiation. An alternative analysis is proposed that recognizes that speech adaptation must negotiate between transmission and differentiation factors.

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## PALLADIUM-CATALYZED REACTIONS OF ARYL CHLORIDES: THE NATURE OF THE CATALYST AND EXTENSION TO "GREEN SOLVENTS"

Cory J. Charbonneau, Margaret E. Logan. Department of Chemistry, SUNY College at Brockport, Brockport, NY

Palladium-catalyzed reactions of aryl chlorides include carbon-carbon, carbon-nitrogen, and carbon-oxygen bond forming reactions, as well as hydro-dehalogenation. The work that will be described explores several aspects of the amination and

hydrodehalogenation reactions of aryl chlorides using palladium catalysts with biphenyl ligands (developed by the Buchwald group). In hydrodehalogenation reactions, the chlorine substituent is replaced with a hydrogen, while in the amination reaction, the chlorine is replaced with an amine. First, studies of both reactions were done to determine whether the active catalyst is homogeneous, or instead exists as nanoparticles. An understanding of the mechanism could be used for applications of the chemistry to, for example, PCB remediation. A second area of study is the use of ionic liquids as the solvent for these reactions, replacing organic solvents that produce waste that is harmful to the environment. Our results in both of these areas will be described.

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## MOLECULAR PHYLOGENY IN THE GENUS STREPTOCARPUS

Jessica M. Stampfle, Sarah E. Caro and Michael A. Kotarski. Academic Center for Integrated Sciences, Department of Biology, Niagara University, Niagara, NY.

*Streptocarpus* and *Saintpaulia* are closely related genera in the Gesneriad family of plants. Previous work using ribosomal DNA internal transcribed spacer (ITS) sequences suggest that *Saintpaulia* is nested within the genus *Streptocarpus*. A 757 base sequence of exon 2 of the *chalcone synthase* (CHS) gene of four species of *Streptocarpus* and several species of *Saintpaulia* were used to produce a relatedness tree. This tree is similar, but not identical to, the tree produced using ITS sequences.

# EVENTS for MAY 2007

(For updates to events, check the Academy web site, <http://www.rasny.org>, or appropriate Section web site.)

## Fri 04 ASTRONOMY GENERAL MEETING

7:30 PM Rochester Institute of Technology, Gosnell Hall, room A300. This month's main speaker is Dr. Andy Robinson, Dept of Physics, RIT. His talk is titled: *Astronomy with Polarized Light*, plus short talks by members. Visitors are always welcome. For information, contact Carol Latta at 230-9548, or <cosmos@rochester.rr.com>.

## Fri 04 FOSSIL MEETING

**NOTE: New Day And Location**  
7:30 PM Arts and Crafts Room, Brookside Recreation Center, 220 Idlewood Road (the old school off S. Winton Road) Speaker: Dr. Gordon Baird/SUNY Fredonia: *Eleven Days on Planet Morocco: Total Emersion Working Group Focus on the Origin of the Devonian Halleridops Trilobite Beds in the Anti Atlas Mountains*. Dinner at Pomodoro Grill at 5:15 PM for interested members. To reserve a spot at dinner, contact Anne Roth-Blizzard at 243 6561 or <annethefossil@aol.com>, or John Handley at 802 8567 or <jhandley@rochester.rr.com>

## Sun 06 LIFE SCIENCE FIELD TRIP

10:00 AM Spring has arrived! Join Karen Wolf and Elizabeth Pixley for a trip to Burroughs Audubon Nature Club or Corbet's Glen depending on which has the best early flowering plants developed this year.. We will meet at Glen Road (on RT 441

just east of the expressway overpass) and car pool to BANC if flowers are better there. (Karen will check them out Wednesday) Contact Karen at 670-9709 for more information.

## Wed-Thur 09-10 SCIENCE EXPLORATION DAYS

St. John Fisher College Student Life Center/Gymnasium. Volunteers are needed to staff displays from all Academy sections. Complementary donuts and coffee in the morning, and a buffet lunch afterward. See the article elsewhere in this issue for more information.

## Fri 11 ASTRONOMY STAR PARTY

9:30 - 11:00 PM, off Hopkins Point Rd. in Mendon Ponds Park. Cloud date Saturday. Join us for views of Saturn and deep sky objects in members' telescopes. Members will be on hand to answer questions and show how to navigate in the sky. Dress warm as evenings may be chilly! For more information, contact Jim Seidewand at 723-6225 or cell 703-9876

## Tue 15 MINERAL MEETING

7:30 PM Brighton Town Hall 2300 Elmwood Ave., Downstairs Community Room. Dr. Karen Harpp from the geology Department of Colgate University will talk about her geochemical research in studying the evolution of the Galapagos Islands. Refreshments. Visitors welcome. For information, call Chuck Hiler

at 924-7496.

## Tue 15 RAS BULLETIN

Articles and event notices due for the June-July-August, 2007 newsletter.

## Wed 16 RAS BOARD MEETING

7:00 PM Brighton Town Hall, Stage Conference Room. Everyone welcomed.

## Sat 19 ASTRONOMY OPEN HOUSE

Wolk Observatory, Ionia, NY. Here's your chance to come see the place, get some hands on instruction on how to use the equipment, and share some food with the other members. Starts about 5:00PM, food around 6:00. Watch for details by email as we get closer! For information, contact Carol Latta at 230-9548, or <cosmos@rochester.rr.com>.

## UPCOMING JUNE EVENTS

## Sat Jun 09 OUTDOOR EXPO

9:00AM - 4:00PM, Mendon Ponds Park Beach Area. The 2007 Outdoor Expo is sponsored by the Genesee Valley Chapter of the Adirondack Mountain Club. Several RAS Sections will have displays at the Expo. Stop by and support your Section. Visit the ADK event web site for more details: <http://www.gvc-adk.org/events/expo/expo2007.php>