

The Chemical Record

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Columbus Section of the American Chemical Society, Inc.

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Resonating with Stradivari

Wednesday, September 12, 2001

Come to our September meeting and listen to Dr. Joseph Nagyvary discuss the chemistry and composition behind the Stradivarius violins.

See page 4 for more details!

Directions: From N. High St turn into W. 12th Avenue, heading towards the university. There are three options for parking. (1) Follow 12th Ave to Neil Ave. Turn right and follow the road around to the faculty club to park. (2) Follow 12th Ave to College Road and turn right. Turn left into Hagerty Dr. and follow the road around to the front of Orton hall to park. Orton is next door to the faculty club. IGNORE restricted FACULTY A signs, but do not park in disabled spots or at metered parking. As a back up, (3) the union parking ramp is further along College Rd.

A Message from the Chair...

I hope your summer has gone well. It certainly has been a good summer for the Section with three nominations for ChemLuminary awards in the areas of (1) National Chemistry Week Task Force (NCW TF) -- Most Successful Unifying Event Activity Award; (2) Best Event with Legislators or Government Agency; and (3) a Local Section PR Award. Congratulations to all who made these events possible.

Our program resumes in September with a presentation by Dr. Joseph Nagyvary on "Decoding the Stradivarius: The materials, the sound and the mystique". We hope that you can join us for that. You will see from the list of upcoming events that we have a full program for the rest of the year. Please take some time to join us for at least one of these events. If you have never attended an ACS monthly

(continued on next page)

Section News

A Message from the Chair...

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meeting, give us a try. You may make useful professional contacts, learn from the subject matter, and maybe even have some fun.

Finally, and on a more serious note, you will soon receive ballot materials for election of new office holders in the section. These individuals offer their time for the service of the section and its membership. They deserve your inspection of their professional qualifications and statements of purpose, and especially your active participation in the process.

PLEASE VOTE!!

Jimmy Cowan, Chair
(August 2001)

Ohio Bicentennial Sci & Tech Societies Gala Event

As a member of the Ohio Science and Technology Advisory Council to the Governor's Bicentennial Commission, I would like to invite your comments on our proposal to hold a state-wide event for scientific and technical societies in Ohio to celebrate the 2003 state bicentennial. We are in the early conceptual stages, and are trying to gauge interest and expectations. I.e., would the sci/tech societies be interested in coordinating efforts for a broad-scope, multi-disciplinary event with symposia, conferences, etc., and what would teachers want to get out of such a meeting? We believe that such a meeting will:

1. Foster cross disciplinary interaction.
2. Increase public awareness of the benefits of technology to society and specifically to Ohio's economy.
3. Increase public awareness of the contributions that technical societies and organizations make to Ohio.

4. Increase membership in the technical societies.

5. Promote science and technology among Ohio's youth.

6. Provide a forum for discussing the future of high-tech in Ohio, hopefully in a way that might impact state policies.

Still to be decided, the gala event(s) could all occur at a single time and place, or as a series of events at several regional locations.

Since your organization acts as a technology focal point in your region, your input is being solicited to help refine these ideas. If you believe it would be beneficial and/or generate interest among your clientele, please feel free to distribute this email to your colleagues and to solicit their input as well. However, time is limited, as we need to define the scope and mission by the fall of this year so that we can prepare society mailings as part of our early outreach campaign.

For those who are interested, the original proposal may be viewed at <http://www.ohiosci.org/OBCS&TCouncil/Gala.htm>.

Other proposals from the Science and Technology Council are available at <http://www.ohiosci.org/OBCS&TCouncil/ST200Proposals.htm>.

Volunteers and financial assistance are welcome on any of these proposals!

Again, I would be interested in your comments and ideas on the gala event, as well as those of your colleagues, and can be reached at the numbers below.

William D. Timmons, Ph.D.
BIOMECH Systems, Inc.
1507 Chambers Road
Columbus, OH 43212
(614) 485-9219 (Voice)
(614) 485-9194 (Fax)

Section News

It's Summertime!

Time to Play, Time to Learn.... and time to care.

by Maria Rosenthal

With these thoughts in mind, Professor Jeff organized the Chemistry Activities Center at the Relay For Life Event of the American Cancer Society, on Friday, June 22 through Saturday June 23, at Hilliard Davidson High School. Jeff Trent, chemist at Roxane Laboratories and Leader Chemonstrator of the Columbus Local Section, building on his experiences at this event last year and always seeking new ways to help others understand and learn science, assembled various hands-on activities and demonstrations.

A large tent sponsored by Roxane Laboratories was the set of a unique chemistry lab complete with all safety measures like kid-sized goggles, protective eyewear for adults, and a hand washing station. Kids manufactured industrial amounts of the ever popular Goofy Putty and Slime, marveled at the orange electrochemical clock, copper plated silver quarters then stripped the copper, learned how to tell acids and bases using natural indicators such as radishes and the purple cabbage extract. A team of ACS members, Roxane Laboratories chemists, Hilliard HS Chemistry Teachers and Students provided supervision and had the opportunity to talk chemistry, both fun facts and serious questions about chemotherapy, nutrients, and other products that are part of the everyday life of persons dealing with cancer.

Outside the laboratory there was the giant soap bubble station where one could enclose a whole kid in a colorful soap bubble.

Demo shows were presented on a stage designed with a safety fence and splash shields to protect the audience and featured Red, Yel-

low and Green flames; the Banana Hammer; Universal Indicator of ammonia, water and dry ice; and the spectacular boom of H vs. He balloons or flammable vs. non-flammable gas, prompting the magic word WOW! appear out of nowhere, on goldenrod paper sprayed with household ammonia solution. Of course, the full effect of the demos can only be appreciated when you are there, so be sure to catch Professor Jeff at upcoming events, especially National Chemistry Week, November 4th to 10th!

The Relay for Life event is the largest fundraiser of the American Cancer Society where teams pledge to walk around an athletic field track continuously for 18 hours, starting at 7 p.m. and continuing through 1 p.m. the next day. The proceedings benefit research projects on the fight against cancer. Booths, such as the Chemistry Activities Center are provided throughout the event to entertain and inform kids of all ages and relay team members in between laps.

The Columbus Section through the National Chemistry Week, Education and Public Relations and Communications committees provided materials and supplies, publications, and volunteers to assist Professor Jeff in this outreach activity involving the Central Ohio community.



Good Catch! Kids experiment catching each other with giant bubbles!

Meeting #771

Wednesday, September 12th, 2001

OSU Faculty Club
181 South Oval Drive
Columbus, Ohio 43210
614-292-2262

5:30 PM Reception: fruit punch and pretzels

6:00 PM Dinner: Entrées include freshly tossed garden greens, regular and decaffeinated coffees, hot herbal tea, ice tea and freshly baked rolls and butter. (1) Sautéed Chicken Breast, Ginger Peach Cream Three Grain Rice Pilaf and Green Beans with Red Pepper and Almonds OR (2) a vegetarian selection Caribbean Spiced Eggplant Steak, Chickpea and Tomato Stew. Followed by Chocolate Layer Cake

7:00 PM Lecture:

Decoding the Stradivarius: The materials, the sound and the mystique

Dr. Joseph Nagyvary
Texas A&M University

Cost: \$16.00. Emeritus members and unemployed members are \$14.00. Students are \$5.00. (The cost covers the price of dinner. If you cannot attend the dinner, please feel free to attend the program at 7:00 PM).

Reservations: Please phone Marcella Gibbs at 447-3600-x2721, or e-mail mgibbs@cas.org, or reserve online at www.acscolumbus.org by 3:00 PM Wed Sept 5th. Please indicate retired/unemployed/spouse/student status and affiliation when making reservations. To cancel a reservation, please call Marcella by 11:00 AM Fri Sept 7th. No cancellations can be accepted after that time. Uncancelled reservations must be paid. Members having more than two unpaid reservations will be required to cover meal costs in advance. Early reservations are appreciated.

Executive Meeting: A business meeting will be held at 4:30 PM on Wed Sept 12th in Dining Room A of the OSU faculty club. Any section member is welcome to attend the business meeting.

Directions: From N. High St turn into W. 12th Avenue, heading towards the university. There are three options for parking. (1) Follow 12th Ave to Neil Ave. Turn right and follow the road around to the faculty club to park. (2) Follow 12th Ave to College Road and turn right. Turn left into Hagerty Dr. and follow the road around to the front of Orton hall to park. Orton is next door to the faculty club. IGNORE restricted FACULTY A signs, but do not park in disabled spots or at metered parking. As a back up, (3) the union parking ramp is further along College Rd.

About the Topic

Following centuries of speculation, some definitive results were obtained on the material makeup of old Italian string instruments, including one sample of Antonio Stradivari. The results are quite different from those obtained on last century and some recent instruments.

There seem to be three major differences that may have a profound effect on the acoustical properties: (1) The wood of the old instruments was soaked in a brine, (2) the surface was filled with a water-soluble mucilage and mineral powder, and (3) the varnish itself was a microcomposite. Admittedly, the limited number of samples analyzed does not allow a generalization, but numerous studies of reconstruction lend support to this new view of what was really important in the Cremon method of violin making.

Chemistry -- both ancient and modern -- emerges as a critical tool in determining the sound quality of wooden musical instruments. Historical evidence suggests that Stradivari and his colleagues were lucky beneficiaries of fortuitous coincidences with regard to wood procurement and finishing technologies. Much of the mystique concerning Stradivari's violins could have had its real origin at the local drug store.

About the Speaker

Dr. Joseph Nagyvary has brought an unprecedented level of academic expertise to bear upon the age-old violin puzzle. A native of Hungary, he majored in chemistry at the Eotvos Lorand University of Budapest (1952-1956); he became a student of the Swiss Nobel Laureate Paul Karrer in 1957 and received his Ph.D. in the chemistry of natural products in 1962.

While in Zurich, he had his first formal violin lessons on a violin that once belonged to Albert Einstein, a coincidence that helped turn his attention to the physical mysteries of the violin. In 1963, he spent a postdoctoral year with Lord Alexander Todd, a British nobel laureate. He came to the United States in 1964 and settled down in Texas in 1968, where he has remained a professor of biochemistry and biophysics at Texas A&M University.

Dr. Nagyvary was the recipient of a Career Development Grant and numerous other research grants from the National Institutes of Health, the National Science Foundation, and the National Aeronautics and Space Administration. His discoveries concerning the classical violins were made public in over 80 lectures sponsored by the American Chemical Society. On such occasions, comparisons were made between Dr. Nagyvary's new creation and the finest locally available antique Italian violin.

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Section News

Slate of Candidates for November Election

Chair-elect	James Coe, OSU Anton Heyns, CAS
Secretary	George Greene, Ross Rich Dardis, CAS
Treasurer-elect	George Noetlich, City of Columbus Anne Hawking, Lab Support
Councillor	Terry Huston, CAS Matt Platz, OSU Maria Rosenthal, CAS Tom Weeks, retired

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Fax: (614) 299-4002
Contact: L. Eve Karnitis, President
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METALS ANALYST

Well-established and busy environmental testing laboratory has an immediate full-time opening for a metals technician. Job responsibilities include preparation of soils, solid waste, drinking water, wastewater and other matrices for metals analysis. Perform metals analysis by Atomic Absorption, Graphite Furnace AA and ICP. Must be accurate and detail oriented. A Chemistry degree is preferred, with 1 year of experience in metals analysis. WILLING TO TRAIN A CHEMISTRY STUDENT. INTERNSHIP POSSIBLE. PART TIME CONSIDERED. We offer a competitive salary, excellent benefits, and the opportunity to learn in a friendly environment. We are an equal opportunity employer.

The Chemical Record

Email news, announcements, letters, opinions, etc. to srenner@cas.org.

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Editor: Stephen A. Renner, CAS (447-3600 x2449, srenner@cas.org)

Business Manager: Mohammed Khan, CAS (447-3600 x3298, mkhan@cas.org)

Mail items to Stephen A. Renner, Dept. 88, CAS, 2540 Olentangy River Rd., Columbus, OH 43202.

Send address changes/name removals to Ron Haney, Membership Chairman (haneyro@witco.com, 764-6551). Ron Haney maintains the mailing list. Address labels are printed by Mike Miller.

Address advertising correspondence to

Mo Khan, Business Manager,
The Chemical Record,
CAS, POB 3012,
Columbus, OH 43210-0012
Tel. 614-447-3600 x3298,
Email mkhan@cas.org

Calendar

September:

12th; “*Decoding the Stradivarious The Materials, the Sound, and the Mystique*”, Dr. Joseph Nagyvary.

October:

4th; ACS President-Elect, Eli Pearce; Dinner and program at Chemical Abstracts Service.

17th; Charles Brez, Senior V.P. of NineSigma, Inc.; Program to be at Chemical Abstracts Service.

November:

4-10th; National Chemistry Week; Theme: Chemistry in Art.

14th; “*Applications of Biopolymers*”, Dr James N. BeMiller; Program at the Fawcett Center.

December:

12th; Combined meeting with the AIChE; “*A Labor of Love - the art and technology of making chocolate*”, Dr. Witfield Robbins, Nestle Company; Dinner and Program to be held at the Holiday Inn on Lane Avenue.



Columbus Section Of The
AMERICAN CHEMICAL SOCIETY, Inc.
CHEMICAL RECORD
P.O. Box 82181,
Columbus, OH 43202

Local Section ACS Officers.

Chair: Jimmy Cowan, OSU (292-2703), cowan@chemistry.ohio-state.edu

Chair-Elect: Sherry Hemmingsen, Varian Inc. (761-1330), sherry.hemmingsen@varianinc.com

Secretary: Joel Rosenfield, Coca Cola (492-6418), jrosenfield@na.ko.com

Treasurer: George Greene, Ross Laboratories (624-3362), George.Greene@RossNutrition.com

Treasurer-Elect: Joel Rosenfield, Coca Cola (492-6418), jrosenfield@na.ko.com

Immediate Past Chair: Mark Fischer, CAS (447-3600 x3351), mfischer@cas.org

Councilors: Jodie Harper, SEGO International, (614-276-9952), jodie@segointernational.com;

Terry Huston, CAS (447-3600 x3354), thuston@cas.org; Jerry Timmons, The Scotts Company
(937-644-7260), Jerry.Timmons@ScottsCo.com

Alternate Councilors: Thomas A. Evans, Denison University (740-587-6496), evans@denison.edu

Don Songstad, CAS (447-3600 x2157), dsongstad@cas.org

Maria Rosenthal, CAS (447-3600 x3578), mrosentha@cas.org