



# THE DAYTON SECTION

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## BULLETIN

September-October 2001

*"Decoding the Stradivarius: The Materials,  
the Sound and the Mystique"*

Wright State University  
Tuesday, September 11, 2001



*"Overview of the DoD High Performance  
Computing Modernization Program"*

TBA  
Thursday, November 1, 2001

**DATED MATERIAL -- MEETING ANNOUNCEMENT -- DO NOT DELAY**

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**AMERICAN CHEMICAL SOCIETY  
Dayton Section  
Eugene W. Kettering Center  
140 East Monument Avenue  
Dayton, Ohio 45402-1267**

# Meetings...

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## September

**Date:** Tuesday, September 11, 2001

**Place:** Recital Hall of the Creative Arts Center(see map page 3)  
Wright State University

**Agenda:** 6:30 PM – Social  
7:30 PM – Talk

**Speaker:** Dr. Joseph Nagyvary  
Texas A&M University

**Topic:** "Decoding the Stradivarius: The Materials, the Sound, and the Mystique"

**Abstract:** 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.

At this presentation, you will hear the violin that came out of this work, as well as the details of the work.

**Biography:** 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. (continued page 3)

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# October

## Women Chemists Committee

**Date:** Thursday, November 1, 2001

**Place:** TBA (check the website and the next Bulletin for updates)

**Agenda:** TBA

**Speaker:** Dr. Leslie Perkins,  
High Performance Computing Modernization Office

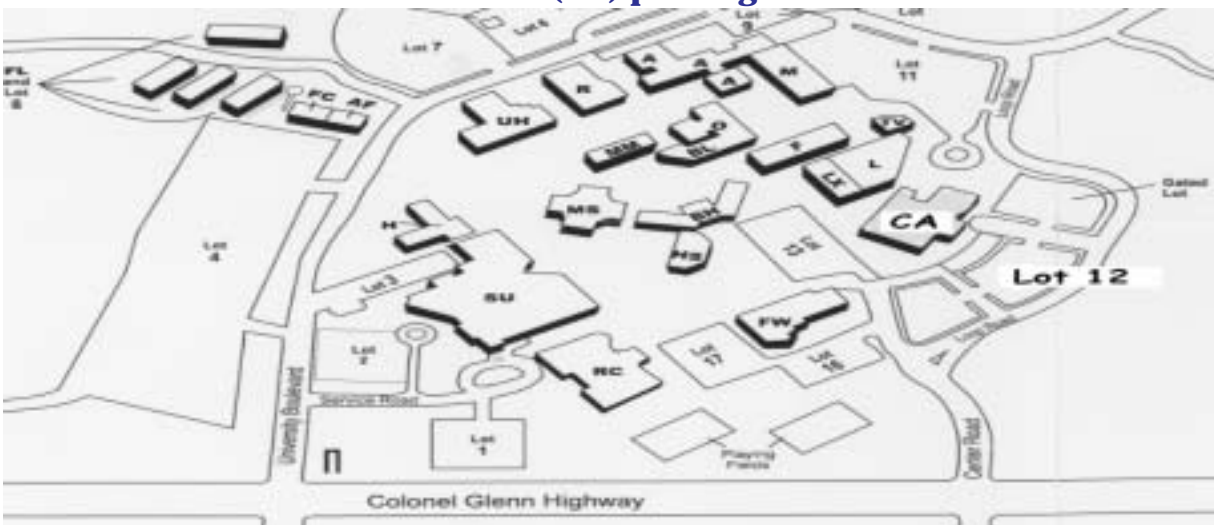
**Topic:** "Overview of the DoD High Performance Computing  
Modernization Program"

**Biography:** Dr. Leslie Perkins serves as the Deputy Program Manager for the Common High Performance Computing Software Support Initiative (CHSSI)/Programming Environment and Training (PET) activities of the High Performance Computing Modernization Program. Dr. Leslie Perkins joined the HPCMP from the Air Force Research Laboratory's Propulsion Directorate at Edwards Air Force Base, CA. As Assistant Chief Scientist for AFRL-Edwards, her duties included overseeing the basic research efforts—totaling about \$2.4 million—conducted at the Edwards' research site. She was also responsible for the final technical review of all in house and contract programs. She supervised 11 Air Force Palace Knight Program Participants, served as Program Element Monitor for basic research activities, and administered the National Research Council and Air Force Office of Scientific Research (AFOSR) Summer Research Programs. Dr. Perkins previously served as the Computational Chemistry and Materials Science Computational Technology Area lead for DoD. Dr. Perkins holds a Ph.D. in physical chemistry from Iowa State University and a B.S. degree in chemistry from the University of New Orleans.

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### Creative Arts Center (CA) parking will be in Lot 12



## From the Chair

The High School Awards ceremony at Sinclair Community College in June was a very special occasion. The speaker, Professor Ken Williamson, won the Patterson Award (Then the Thomas - Hochwalt Award) in 1952. He gave a short history of the award, which revealed that it pre-dated the Thomas - Hochwalt years. In fact, his father won the predecessor award, the ACS Prize Essay Contest, in Kentucky in 1924. You can read the rest of the award talk on the Dayton Section website.

In addition to having Ken Williamson back to present the Patterson Award, we learned that Bonnie Buddendeck, the teacher of all of this year's finalists, was Dr. Williamson's student in organic chemistry at Mount Holyoke College. She also did research that was later published. The date of that work will remain a secret! Because this was such a special occasion, WYSO, the local National Public Radio affiliate, did a short story on the Patterson Award on its "Sounds Local" feature. Thank you, WYSO, Steve Lucht, and Aileen LeBlanc.

The Patterson-Crane Award in May was also a special event. Dr. Gerard Moss gave an interesting talk about his experiences with ring system nomenclature. This followed the nominating presentation given by Dr. Derek Horton, the 1997 Patterson-Crane Awardee,

The work on the Patterson-Crane Award was accomplished without a hitch by Dr. Melinda Greer, Dr. David Grossie, and Ms. Margaret Roach, along with the Columbus and the ACS Division of Chemical Information members of the Award Committee. Prof. Greer has taken over for Margaret Roach, who stepped down as Dayton Section Committee Chair after many years in that position. I note that just as Margaret's retirement as a librarian at Wright State University did not result in her departure from the library scene, neither did her retirement from Chair of the Patterson-Crane Award Committee result in her departure from that scene. Melinda had the benefit of Margaret's experience in the preparations for this year's program. This does not diminish the credit to Melinda for arranging a flawless program, but adds to the credit to both Margaret and Melinda for such a seamless transition. The Dayton Section will benefit greatly if others make such a successful transition from the retiring to new leaders. This month my hat is off to Melinda and Margaret. Please express your gratitude when you see them.

Finally, we do need to transition some Committee Chairs to new people. Unfortunately, in some cases the Committees are inactive so it may be more a matter of re-starting than transitioning. We need your help. Whether it is a one-time offer of assistance or a willingness to dig in, we can find a job that YOU can do. Please send me an e-mail (paigehl@muohio.edu) and let me know that you can help.

Harvey L. Paige, Chair



National Chemistry Week

National Chemistry Week this year is 4-10 November, the theme is "Celebrating Chemistry and Art." The National Office is also sponsoring a T-shirt design contest for Student Affiliate Chapters, the theme of the contest is "Chemistry: The Winning Formula." If you are interested in getting involved in NCW this year or have ideas for activities please contact Steve Trohalaki (255-6671, x3147 or Steven.Trohalaki@afrl.af.mil)



### *Election Time Again*

*Call for nominations for Officers for 2002.*

If you are interested in running for a particular position (all positions except Treasurer are up for election) please contact Dave Tomlin(255-3808, x3181 or David.Tomlin@afrl.af.mil) for details. A ballot with candidate statements will be mailed to all Dayton Section members for the October Election. The deadline for placing a candidate on the ballot is September 15, 2001. Please take this opportunity to get involved in YOUR local section.

### *Wanted*

The Dayton Section is in need of someone willing to take on the duties of Bulletin Editor. For more information about the position and job description, please contact Dave Tomlin, 255-3808 x 3181 or david.tomlin@afrl.af.mil.