

Student Research
Plant Biology & Conservation Symposium

Program and Abstracts

July 6, 2007

Presented by:
Joseph Regenstein, Jr. School of the Chicago Botanic Garden

Student Research in Plant Biology & Conservation
Friday, July 6, 2007
Program

- 8:00 a.m.** **Registration, Fairchild Room**
- 8:30 a.m.** **Welcome Announcements, Alsdorf Auditorium**
- Session I Conservation & Pollination, Alsdorf Auditorium**
- 8:45 a.m.** Life history of *Rhynchospora knieskernii*, a rare early-successional sedge, in the New Jersey Pine Barrens, (Margaret H. Frank)
- 9:00 a.m.** Demographic population viability of a globally threatened wetland plant (Laura Hill)
- 9:15 a.m.** Sexual dimorphism in pollen grain morphology in the cryptically dioecious *Thalictrum macrostylum*, (Rebecca H. Penny)
- 9:30 a.m.** The reproductive cost of phenological and spatial isolation in *Echinacea angustifolia*, a common prairie perennial. (Jennifer Ison)
- 9:45 a.m.** The relationship between breeding system and life-history in *Oenothera* sections *Anogra* and *Kleinia* (Onagraceae) (Kathryn E. Theiss)
- 10:00 a.m.** **Refreshment Break, Fairchild Room**
- Session II Phylogenetics & Evolution, Alsdorf Auditorium**
- 10:30 a.m.** *Agalinis acuta* (Orobanchaceae): A phylogenetically unresolved federally listed endangered plant (James B. Pettengill)
- 10:45 a.m.** Evolutionary insights from the molecular diversity in *Prunus* (Amygdaleae) S-RNase (Chin Siew Wai)
- 11:00 a.m.** From Africa to Papua New Guinea: Geographic structure of the poison tree, *Antiaris toxicaria* (Moraceae), based on ITS sequence data (Wendy Clement)
- 11:15 a.m.** Molecular systematics of the ivies (*Hedera* spp, Araliaceae) (Adam Green)
- 11:30 a.m.** **Lunch, McGinley Pavilion**

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12:30 p.m. **Poster Session, *Linnaeus Room***

Session III Population Genetics & Restoration Ecology, *Alsdorf Auditorium*

2:00 p.m. Preliminary assessment of genetic diversity and population differentiation in Multiflora Rose (*Rosa multiflora* Thunb. ex. Murr.), an invasive plant in Ohio (Rajlakshmi Ghosh)

2:15 p.m. How population size influences the effect of inbreeding and outbreeding on early plant traits in the prairie native *Echinacea angustifolia* (Asteraceae) (Andrea Southgate)

2:30 p.m. The effects of soil impoverishment on the growth and reproduction of an annual prairie plant (Helen Mlynarski)

2:45 p.m. Seasonal variations of key soil characteristics in a tallgrass prairie along a restoration gradient (Lauren Umek)

3:15 p.m. **Keynote Address:**
Genetics, ecology, & climate change: challenges for plant conservation in the 21st century
Kent E. Holsinger, Professor, Department of Ecology & Evolutionary Biology, University of Connecticut, Storrs, Connecticut

4:30 p.m. **Closing Comments**

4:45 p.m. **Reception, *McGinley Pavilion***

Biography--Keynote Presenter

Kent E. Holsinger is a professor in the Department of Ecology and Evolutionary Biology and an adjunct professor in the Department of Statistics at the University of Connecticut. His research encompasses three broad areas: the evolution of plant reproductive systems, the genetics of geographically structured populations, and the application of basic biological principles to conservation problems. He has served as chair of the board of directors for the Connecticut State Museum of Natural History, vice-chair for science and stewardship of The Nature Conservancy Connecticut Chapter, a member of the editorial board for *Conservation Biology*, and an officer of the Botanical Society of America. His leadership and service to AIBS go back more than a decade, with numerous board and committee appointments to cross-disciplinary projects, including the *BioOne* online journals initiative, the National Ecological Observatory Network, the Coalition on the Public Understanding of Science, and the Year of Science 2009.

Abstract--Keynote Presenter

Genetics, ecology, & climate change: challenges for plant conservation in the 21st century. Kent E. Holsinger, Department of Ecology & Evolutionary Biology, U-3043, University of Connecticut, Storrs, CT 06269-3043.

Until the mid-1980s plant conservationists focused on protecting the habitats where endangered taxa occurred, trusting that protection of their habitat would prevent their extinction. The rise of modern conservation biology helped us to realize that protecting habitat is not enough. We came to realize that “rarity” and “endangerment” are not the same thing. Taxa that have recently become rare are more likely to go extinct than those that have always been rare. Genetic analyses can help us to distinguish these possibilities. To prevent the extinction of recent rarities, managers may need to intervene to enhance reproductive success and survival. Demographic analyses can be a vital part of such efforts. In the last decade it has become increasingly clear that all rare plants are endangered, but not for the reasons we thought in the 1970s. Projections from the fourth report of the Intergovernmental Panel on Climate Change suggest that 20–40% of plant and animal species are at increased risk of extinction if the global average temperature increases more than 1.5-2.5°C. In the Cape Region of South Africa, for example, 40% or more of the Proteaceae are at risk. The expected global average increase in temperature over the next century is about 3°C. In New England, the climate of Massachusetts at the end of this century could be similar to that of South Carolina now. The new challenge for plant conservationists is to identify the taxa most vulnerable to climate change and to develop the tools necessary to prevent their extinction.