



***Aquatic and Wetland Plants: Wet & Wild***

**July 26-31, 2003 ♦ Mobile, Alabama**

**www.botany2003.org**

## SCIENTIFIC PROGRAM

### SATURDAY, JULY 26

**7:00 PM – 10:00 PM**

**Adam's Mark, River Room**

**MEETING: BSA Executive Committee**

Presiding: SCOTT D. RUSSELL, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019-0245. Tele: (405) 325-6234, E-mail: srussell@ou.edu.

### SUNDAY, JULY 27

**8:30 AM – 4:00 PM**

**Adam's Mark, Dauphin**

**MEETING: ASPT COUNCIL**

Presiding: LYNN G. CLARK, Department of Botany, Iowa State University, Ames, IA 50011-1020. Tele: (515) 294-8218, E-mail: lgclark@iastate.edu.

**9:00 AM – 11:00 AM**

**Adam's Mark, Church**

**MEETING: BSA Financial Advisory Committee**

Presiding: HARRY T. HORNER, Department of Botany, Iowa State University, Ames, IA 50011-1020. Tele: 515-294-8635, E-mail: hth@iastate.edu.

**11:30 AM – 1:00 PM**

**Adam's Mark, Church**

**MEETING: BSA New Committee Chair Meeting**

Presiding: LINDA E. GRAHAM, Department of Botany, 211 Birge Hall, University of Wisconsin, Madison, WI 53706. Tele: (608) 262-2640, Fax: (608) 262-7509, E-mail: lkgraham@facstaff.wisc.edu; and WILLIAM DAHL, Botanical Society of America, 4468-74 Castleman Avenue, St. Louis, MO 63166-0299, Tele: (314) 577-9566, E-mail: wdahl@botany.org.

**1:00 PM – 5:00 PM**

**Adam's Mark, De Tonti**

**MEETING: BSA Council**

Presiding: SCOTT D. RUSSELL, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019-0245. Tele: (405) 325-6234, E-mail: srussell@ou.edu.

**3:00 PM – 6:30 PM**  
**MEETING: AFS Council**

**Adam's Mark, Magnolia**

Presiding: CHRISTOPHER H. HAUFLER, Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS 66045. Tele: (785) 864-3255, E-mail: vulgare@ku.edu.

**5:00 PM – 6:30 PM**  
**MEETING: ABLs Executive Committee**

**Adam's Mark, Church**

Presiding: WILLIAM BUCK, Institute of Systematic Botany, The New York Botanical Garden, Bronx, NY 10458-5126. Tele: (718) 817-8624, Fax: (718) 562-6780, E-mail: bbuck@nybg.org.

**5:00 PM – 6:00 PM**  
**MEETING: Student Projectionists**

**MCC, 212**

Presiding: JOHANNE STOGRAN, Botanical Society of America, 1735 Neil Avenue, Columbus, OH 43210. Tele: (614) 292-3519, Fax: (614) 247-6444, E-mail: johanne@botany.org.

**5:00 PM – 6:00 PM**  
**MEETING: UMEB undergraduate students and mentors – orientation**

**MCC, 203B**

Presiding: KAREN S. RENZAGLIA, Department of Biology, Southern Illinois University, Box 6509, Carbondale, IL 62901-6509. Tele: (618) 453-3229, Fax: (618) 453-3441, E-mail: renzaglia@plant.siu.edu.

**7:30 PM – 8:30 PM**  
**OPENING CEREMONY / PLENARY LECTURE: All Societies**

**MCC, 201A-D**

Presiding: SCOTT D. RUSSELL, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019-0245. Tele: (405) 325-6234, E-mail: srussell@ou.edu.

Speaker: EDWARD O. WILSON, *Pellegrino University Research Professor, Harvard University, Cambridge, MA*. The all-species initiative and the future of life.

**8:30 PM – 9:15 PM**  
**BOOK SIGNING – E. O. WILSON: All Societies**

**MCC, Grand Ballroom-Pre-function**

**8:30 PM – 10:00 PM**  
**MIXER: All Societies**

**MCC, Grand Ballroom-Pre-function**

# MONDAY MORNING, JULY 28

7:00 AM – 8:30 AM

Adam's Mark, Mobile Ballroom

**BREAKFAST: ABLs / Bryological and Lichenological Section, BSA** (Ticketed Event)

8:10 AM – 10:45 AM

MCC, 204A

**SESSION 1**

**PLENARY SYMPOSIUM: All Societies –**

*Recent advances in restoration of aquatic and wetland habitats*

Organized by: JUDY JERNSTEDT, Department of Agronomy & Range Science, University of California-Davis, Davis, CA 95616-8515. Tele: (530) 752-7166, E-mail: jjernstedt@ucdavis.edu.

Presiding: JUDY JERNSTEDT, University of California-Davis.

- 8:10 1-1** JERNSTEDT, JUDY. *University of California-Davis*. Introductory remarks.
- 8:15 1-2** TWILLEY, ROBERT. *Center for Ecology and Environmental Technology*. Conceptual ecological models for planning and evaluating the Louisiana coastal area ecosystem restoration plan.
- 8:45 1-3** MIDDLETON, BETH A. *National Wetlands Research Center, U.S.G.S., Lafayette, LA*. Hydrologic and disturbance regimes in wetlands: Restoring the natural balance.
- 9:15 BREAK**
- 9:30 1-4** PROFFITT, ED\* <sup>1</sup>; STEVE TRAVIS<sup>1</sup>; KEITH EDWARDS<sup>2</sup>; REBECCA CHIASSON<sup>3</sup>; and ALAINA OWENS<sup>3</sup>. <sup>1</sup>*USGS, National Wetlands Research Center*; <sup>2</sup>*University of South Bohemia, Czech Republic*; and <sup>3</sup>*University of South Louisiana*. Population and community ecology analyses of restored salt marshes.
- 10:00 1-5** ZEDLER, JOY. *University of Wisconsin, Madison*. Wetland vegetation degradation and limits to restorability.
- 10:30 DISCUSSION**

8:30 AM – 10:00 AM

MCC, 203A

**SESSION 2**

**CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —**

*Algae / non-seed plants / gymnosperms / paleoherbs*

Presiding: KATHLEEN PRYER, Department of Biology, Duke University, Durham, NC 27708-0338. Tele: (919) 660-7380, E-mail: pryer@duke.edu.

- 8:30**    **2-1**    GOTTSCHLING, MARC<sup>1</sup>; JÖRG PLÖTNER<sup>2</sup>; HELMUT WILLEMS<sup>3</sup>; and HELMUT KEUPP<sup>1</sup>. <sup>1</sup>*Freie Universität Berlin, Germany*; <sup>2</sup>*Humboldt Universität, Berlin, Germany*; and <sup>3</sup>*Universität Bremen, Germany*. Molecular phylogeny of Calciodinelloideae (Peridinales, Dinoflagellata) inferred from ITS1, 5.8S, and ITS2 sequence data.
- 8:45**    **2-2**    PRYER, KATHLEEN\*<sup>3</sup>; ERIC SCHUETTPELZ<sup>3</sup>; RAY CRANFILL<sup>2</sup>; PAUL WOLF<sup>4</sup>; ALAN SMITH<sup>2</sup>; and HARALD SCHNEIDER<sup>1</sup>. <sup>1</sup>*University of Goettingen, Germany*; <sup>2</sup>*University of California, Berkeley*; <sup>3</sup>*Duke University, Durham, NC*; and <sup>4</sup>*Utah State University, Logan*. Phylogeny of early-diverging leptosporangiate ferns based on morphology and multiple genes: *rbcL*, *atpB*, *rps4*, and 18S.
- 9:00**    **2-3**    SCHNEIDER, HARALD\*<sup>1</sup>; RAY CRANFILL<sup>2</sup>; ERIC SCHUETTPELZ<sup>4</sup>; SUSANA MAGALLON<sup>3</sup>; and KATHLEEN PRYER<sup>4</sup>. <sup>1</sup>*University of Goettingen, Germany*; <sup>2</sup>*University of California, Berkeley*; <sup>3</sup>*Universidad Nacional Autonoma de Mexico*; and <sup>4</sup>*Duke University, Durham, NC*. Derived ferns diversified in the shadow of angiosperms: Evidence from the fossil record, phylogenetic patterns, and divergence time estimates.
- 9:15**    **2-4**    SCHUETTPELZ, ERIC\* and KATHLEEN PRYER. *Duke University, Durham, NC*. Characterizing molecular rate heterogeneity between two major lineages of filmy ferns (Hymenophyllaceae).
- 9:30**    **2-5**    GERNANDT, DAVID S.\*<sup>1</sup>; GRETTEL GEADA LÓPEZ<sup>3</sup>; and AARON LISTON<sup>2</sup>. <sup>1</sup>*Universidad Autónoma del Estado de Hidalgo, Mexico*; <sup>2</sup>*Oregon State University, Corvallis*; and <sup>3</sup>*Universidad de Pinar del Río, Cuba*. Phylogeny and classification of *Pinus* (Pinaceae) based on cpDNA sequences.
- 9:45**    **2-6**    LITTLE, DAMON P. *Cornell University, Ithaca, NY*. Preliminary documentation of hybridization between species of New World *Cupressus* (Cupressaceae).
- 10:00**    **BREAK**
- 10:15**    **2-7**    LES, DONALD H.\*<sup>1</sup>; MICHAEL L. MOODY<sup>1</sup>; ANDREW S. DORAN<sup>1</sup>; and WILLIAM E. PHILIPPS<sup>2</sup>. <sup>1</sup>*The University of Connecticut, Storrs*; <sup>2</sup>*Memphis, TN*. The first genetically confirmed intersubgeneric F1 hybrid in *Nymphaea* L. (Nymphaeaceae Salisb.).
- 10:30**    **2-8**    STEVENS, ANGELA C.\*<sup>1</sup>; MINDIE FUNKE<sup>1</sup>; SCOTTIE B. DRAPER<sup>1</sup>; TATIANA ZADOROZHNY<sup>1</sup>; CHRISTOPHER DAVIDSON<sup>2</sup>; ALLAN J. BORNSTEIN<sup>3</sup>; and JAMES F. SMITH<sup>1</sup>. <sup>1</sup>*Boise State University, Idaho*; <sup>2</sup>*Idaho Botanical Research Foundation, Boise*; and <sup>3</sup>*Southeast Missouri State University, Cape Girardeau*. A preliminary phylogenetic analysis of Piperaceae using chloroplast and nuclear genes: Utility of the low copy nuclear PEPC intron within sections *Enckea* and *Arctottonia* of *Piper*.
- 10:45**    **2-9**    GARCIA, VICENTE. *University of California, Berkeley*. Phylogenetic and ethnobotanical studies of *Piper* (Piperaceae) taxa from the South Pacific.
- 11:00**    **2-10**    KELLY, LAWRENCE M.\*<sup>1</sup> and FAVIO GONZÁLEZ<sup>2</sup>. <sup>1</sup>*The New York Botanical Garden, Bronx*; <sup>2</sup>*Universidad Nacional de Colombia, Santafé de Bogotá*. Are Aristolochiaceae monophyletic?
- 11:15**    **2-11**    PADGETT, JAMES\* and ZACK MURRELL. *Appalachian State University, Boone, NC*. Phylogeographical, ecological, micro-morphological, and molecular analysis of the species in the *Asarum heterophyllum* complex.

## SESSION 3

CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —  
*Monocots*

Presiding: KENNETH M. CAMERON, The Lewis B. and Dorothy Cullman Program for Molecular Systematics Studies, The New York Botanical Garden, Bronx, NY 10458. Tele: (718) 817-8179, E-mail: kcameron@nybg.org.

- 8:30**    **3-1**    MAHER, SHELLY D.\* and ALICE L. HEMPEL. *Texas A&M University-Kingsville*. Andromonoecy and self compatibility in the rare endemic *Echeandia texensis* (Liliaceae).
- 8:45**    **3-2**    BELL, RACHEL A.\* and DONNA I. FORD-WERNTZ. *West Virginia University, Morgantown*. A taxonomic analysis of *Allium tricoccum* s.l.
- 9:00**    **3-3**    FARMER, S. B. *University of Tennessee, Knoxville*. Phylogeographic survey of Trilliaceae.
- 9:15**    **3-4**    CAMERON, KENNETH M.\*<sup>1</sup> and CHENGXIN FU<sup>2</sup>. <sup>1</sup>*The New York Botanical Garden, Bronx* and <sup>2</sup>*Zhejiang University, Hangzhou, China*. A combined nuclear and plastid gene phylogeny of *Smilax* (Smilacaceae, Liliales).
- 9:30**    **3-5**    KARST, LISA\* and CAROL WILSON. *Portland State University, OR*. Subgeneric division of *Sisyrinchium* (Iridaceae), a western hemisphere genus.
- 9:45**    **3-6**    CARLSWARD, BARBARA. *University of Florida, Gainesville*. Anatomy and molecular systematics of leafless Vandaeae (Orchidaceae).
- 10:00**    **BREAK**
- 10:15**    **3-7**    HAHN, WILLIAM. *Columbia University, New York, NY*. Molecular phylogenetics of Palmae and Gondwanaland breakup.
- 10:30**    **3-8**    GUNN, BEE. *University of Missouri - St. Louis*. The phylogeny of Cocoeae (Arecaceae) with emphasis on *Cocos nucifera*.
- 10:45**    **3-9**    ROALSON, ERIC H. \* and MAURICE S. B. KU. *Washington State University, Pullman*. Phylogenetic relationships in *Eleocharis* (Cyperaceae): Evolutionary origins of the C4 photosynthetic pathway and patterns of morphological innovation associated with adaptation to specialized habitats.
- 11:00**    **3-10**    MASON-GAMER, ROBERTA J. \* and D. MEGAN HELFGOTT. *University of Illinois, Chicago*. The phylogenetic placement of polyploid *Elymus* species within the Triticeae (Poaceae), based on sequences from a nuclear beta-amylase gene.
- 11:15**    **3-11**    PETERSON, PAUL M.\* and SUSAN J. PENNINGTON. *Smithsonian Institution, Washington, DC*. Classification and biogeography of New World grasses (Poaceae).
- 11:30**    **3-12**    MALCOMBER, SIMO\* and ELIZABETH KELLOGG. *University of Missouri - St. Louis*. Expression patterns of the *SEPALLATA* gene *Oryza sativa* *MADS1* (*OSMADS1*) across the Poaceae.

**11:45 3-13** WILLIAMS, KYLE J.\*<sup>1</sup>; W. JOHN KRESS<sup>2</sup>; and PAUL S. MANOS<sup>1</sup>. <sup>1</sup>*Duke University, Durham, NC and* <sup>2</sup>*Smithsonian Institution, Washington, DC*. Appendages do matter: the phylogeny, evolution, and classification of the genus *Globba* and tribe Globbeae (Zingiberaceae).

**9:00 AM – 11:45 AM**  
**SESSION 4**

**MCC, 202A**

**CONTRIBUTED PAPERS: AFS / Pteridological Section, BSA**

Presiding: TOM A. RANKER, University of Colorado, University Museum, Boulder, CO 80309 USA.  
Tele: (303) 492-5074, E-mail: ranker@colorado.edu.

- 9:00 4-1** RANKER, TOM A.\* and JENNIFER M. O. GEIGER. *University of Colorado, Boulder*. Molecular evidence for the phylogenetic placement of Asiatic *Hemionitis arifolia* (Pteridaceae).
- 9:15 4-2** BARBARÁ, THELMA\* and GERALD J. GASTONY. *Indiana University, Bloomington, IN*. Molecular phylogenetics and systematics of *Pellaea* section *Ormopteris* (Pteridaceae subfamily Chelanthoideae).
- 9:30 4-3** BARKER, MICHAEL S.\* and R. JAMES HICKEY. *Miami University, Oxford, OH*. Reiterative lamina morphologies in *Adiantopsis*.
- 9:45 4-4** DIAMOND, H. L.\*; H. R. JONES; and L. J. SWATZELL. *Southeast Missouri State University, Cape Girardeau, MO*. Water balance in the gametophyte of *Cheilanthes lanosa*.
- 10:00 4-5** LOPEZ-SMITH, RENEE\* and KAREN RENZAGLIA. *Southern Illinois University, Carbondale*. The relationship between the sperm cell architecture and the female sex organ of two leptosporangiate ferns.
- 10:15 BREAK**
- 10:30 4-6** WHITTIER, DEAN P.\* *Vanderbilt University, Nashville, TN*. Induced apogamy in the Psilotaceae.
- 10:45 4-7** RANKER, TOM A.\* and JENNIFER M. O. GEIGER. *University of Colorado, Boulder*. Phylofloristics of the Hawaiian fern flora: Preliminary studies on the origins of Hawaiian ferns and testing climate-based models of dispersal.
- 11:00 4-8** NAKAZATO, TAKUYA\*; GERALD GASTONY; and LOREN RIESEBERG. *Indiana University, Bloomington, IN*. Genetic map-based analysis of paleopolyploidy in homosporous ferns.
- 11:15 4-9** ROMANOVA, MARINA\* and GALINA M. BORISOVSKAYA. *St-Petersburg State University, St-Petersburg, Russia*. Fern vegetative body is entirely developed from shoot apical meristem.

- 11:30 4-10** BARKER, MICHAEL S.\*<sup>1</sup>; SHANE W. SHAW<sup>1</sup>; R. JAMES HICKEY<sup>1</sup>; and JOHN E. RAWLINS<sup>2</sup>. <sup>1</sup>*Miami University, Oxford, OH*; and <sup>2</sup>*Carnegie Museum of Natural History, Pittsburgh, PA*. Microlepidopteran soral mimics in the Caribbean.

**9:00 AM – 11:30 AM  
SESSION 5**

**MCC, 202B**

**CONTRIBUTED PAPERS: Paleobotanical Section, BSA –  
Isabel Cookson Student Award Papers**

Presiding: GENE K. MAPES, Department of Environmental & Plant Biology, Ohio University, Athens, OH 45701-2959. Tele: (740) 593-9358, ext. 1126, E-mail: mapesg@ohiou.edu.

- 8:55 5-1** AXSMITH, BRIAN J. (Chair, Paleobotanical Section), *University of South Alabama, Mobile*. Introduction and comments from the Chair.
- 9:00 5-2** SMITH, SELINA Y.\*<sup>1</sup>; GAR W. ROTHWELL<sup>2</sup>; and RUTH A. STOCKEY<sup>1</sup>. <sup>1</sup>*University of Alberta, Edmonton, Canada* and <sup>2</sup>*Ohio University, Athens*. Anatomically preserved tree fern sori from the lower Cretaceous of Vancouver Island.
- 9:15 5-3** WANG, XIN\* and DAVID L. DILCHER. *University of Florida, Gainesville*. 100 million-year-old cytoplasmic membranes.
- 9:30 5-4** RYDIN, CATARINA<sup>1</sup>\*; BARBARA MOHR<sup>2</sup>; and ELSE MARIE FRIIS<sup>1</sup>. <sup>1</sup>*Stockholm University and Swedish Museum of Natural History, Stockholm, Sweden*; and <sup>2</sup>*Humboldt University and Museum of Natural History, Berlin, Germany*. A new fossil seedling from the Early Cretaceous of South America; unique, well-preserved and closely related to *Welwitschia*.
- 9:45 5-5** GARCIA-MASSINI, JUAN L.\* and THOMAS N. TAYLOR. *University of Kansas, Lawrence*. Fungi with affinities to the Glomales in the Permian of Antarctica.
- 10:00 BREAK**
- 10:15 5-6** LITTLE, STEFAN A.\* and RUTH A. STOCKEY. *University of Alberta, Edmonton, Canada*. Permineralized fruits of Lauraceae from the Middle Eocene Princeton chert, British Columbia.
- 10:30 5-7** CHEN, JUDY\*; STEVEN R. MANCHESTER; and ZHIDUAN CHEN. *University of Florida, Gainesville*. Permineralized seeds of Nymphaeaceae from the early Eocene of eastern China.
- 10:45 5-8** PAN, AARON D.\* and BONNIE F. JACOBS. *Southern Methodist University, Dallas*. New plant assemblages from the Late Oligocene Chilga deposits of the Ethiopian Western Plateau.
- 11:00 5-9** CORBETT, SARAH L.\*. *University of Florida, Gainesville*. Implications of the Miocene flora of Alum Bluff, Liberty County, Florida.

- 11:15 5-10** KELLOGG, DEREK\*<sup>1</sup>; THOMAS N. TAYLOR<sup>1</sup>; and MICHAEL KRINGS<sup>2</sup>.  
<sup>1</sup>University of Kansas, Lawrence and <sup>2</sup>Bayerische Staatssammlung für Paläontologie und Geologie, München, Germany. The ultrastructure and function of glandular trichomes in *Sicana odorifera* (Cucurbitaceae).

**10:45 AM – 11:30 AM**  
**SESSION 6**

**MCC, 201A**

**CONTRIBUTED PAPERS: Physiological Section, BSA**

Presiding: HENRI ROGER MAURICE, Department of Biology, University of Southern Indiana, 8600 University Blvd., Evansville, IN 47712. Tele: (812) 461-5231, E-mail: hmaurice@usi.edu.

- 10:45 6-1** THORHAUG, ANITRA\*; GRAEME BERLYN; and ANDREW RICHARDSON. *Yale University, New Haven, CT.* Spectral reflectance measurements of low salinity on three seagrasses: *Syringodium filiforme*, *Halodule wrightii*, and *Zostera marina*.

- 11:00 6-2** GRAVATT, DENNIS A. *Stephen F. Austin University, Nacogdoches, TX.* Crassulacean acid metabolism and survival of asexual propagules in the Texas desert rock outcrop succulent *Sedum wrightii* (Crassulaceae).

- 11:15 6-3** ARANCIBIA, PATRICIA<sup>1\*</sup> and LINDA GRAHAM<sup>2</sup>. <sup>1</sup>Universidad del Bío-Bío, Chile and <sup>2</sup>University of Wisconsin. Carbonic anhydrase in Charophyceae and Bryophytes.

**11:00 AM – 12:00 PM**  
**SESSION 7**

**MCC, 204A**

**ANNALS OF BOTANY SPECIAL LECTURE: Paul A. Keddy**

Presiding: BILL SHIPLEY, North American Editor, *Annals of Botany*. Departement de biologie, Universite de Sherbrooke, Sherbrooke (Quebec) CANADA J1K 2R9. Bill.Shipley@USherbrooke.ca.

Speaker: PAUL A. KEDDY, *Edward G. Schlieder Endowed Chair for Environmental Studies, Southeastern Louisiana University, Hammond.* Wet and Wild: Conserving and Restoring Plant Diversity in Wetlands.

**11:30 AM – 12:00 PM**  
**MEETING: Physiological Section, BSA**

**MCC, 201A**

Presiding: HENRI ROGER MAURICE, Department of Biology, University of Southern Indiana, 8600 University Blvd., Evansville, IN 47712. Tele: (812) 461-5231, E-mail: hmaurice@usi.edu.



# MONDAY AFTERNOON, JULY 28

12:00 PM – 1:30 PM

MCC, 201C

LUNCHEON: AFS (Ticketed Event)

12:00 PM – 1:00 PM

MCC, 201D

MEETING AND LUNCHEON: BSA Education Committee

Presiding: LINDA E. GRAHAM, Department of Botany, 211 Birge Hall, University of Wisconsin, Madison, WI 53706. Tele: (608) 262-2640, Fax: (608) 262-7509, E-mail: lkgraham@facstaff.wisc.edu; and WILLIAM DAHL, Botanical Society of America, 4468-74 Castleman Avenue, St. Louis, MO 63166-0299, Tele: (314) 577-9566, E-mail: wdahl@botany.org.

1:00 PM – 5:00 PM

MCC, 204A

SESSION 8

**SYMPOSIUM: BSA Economic Botany, Genetics, Tropical Biology, Ecological, Physiological, and Systematics Sections**

*Transgenic crops: Science, policy, politics*

Organized by: DAVID M. SPOONER, USDA, Agricultural Research Service, Department of Horticulture, University of Wisconsin, Madison, WI 53706-1590. Tele: (608) 264-5213, E-mail: dspooner@wisc.edu.

Presiding: DAVID M. SPOONER, USDA, Agricultural Research Service.

- 1:00 8-1** SPOONER, DAVID M. *USDA, Agricultural Research Service*. Introduction.
- 1:15 8-2** BRETTING, PETER K.\* and J. W. RADIN. *USDA/ARS, NPS, Beltsville, MD*. Defining biotechnology: Increasingly important and increasingly difficult.
- 1:45 8-3** HORSCH, ROBERT B. *Monsanto Corporation, St. Louis, MO*. Development and use of transgenic plants.
- 2:15 8-4** ORTIZ-GARCÍA, SOL\* and EXEQUIEL EZCURRA. *Instituto Nacional de Ecología, México D.F., México*. Transgenic maize in Mexico: Risks and reality.
- 2:45 BREAK**
- 3:00 8-5** SNOW, ALLISON. *Ohio State University, Columbus, OH*. A plant ecologist's view of genetically modified (GM) crops.
- 3:30 8-6** PAARLBERG, ROBERT L. *Wellesley College, Wellesley, MA*. The international policy struggle over GM crops.
- 4:00 8-7** RODEMEYER, MICHAEL. *Pew Initiative on Food and Biotechnology, Washington, DC*. Policy implications of transgenic crop gene flow.
- 4:30 DISCUSSION**

**CONTRIBUTED PAPERS: Developmental and Structural Section, BSA –  
Reproductive Structures**

Presiding: MERRAN L. MATTHEWS, Institute of Systematic Botany, University of Zurich, Zollikerstrasse 107, Zurich, 8008-CH, Switzerland. Tele: 41 1 634 8418; E-mail: mmatthews@access.unizh.ch.

- 1:00 9-1** FRIEDMAN, WILLIAM E.\*; WILLIAM N. GALLUP; and JOSEPH H. WILLIAMS. *University of Colorado, Boulder*. Female gametophyte development in *Kadsura*: Implications for Schisandraceae, Austrobaileyales, and the early evolution of flowering plants.
- 1:15 9-2** OSBORN, JEFFREY M.\*; JULIE A. SCHWARTZ; BENJAMIN L. GUTMAN; and NATALIE A. MELROSE. *Truman State University, Kirksville, MO*. Pollen and anther development in *Cabomba* (Cabombaceae, Nymphaeales).
- 1:30 9-3** VON BALTHAZAR, MARIA<sup>1</sup>\*; WILLIAM S. ALVERSON<sup>2</sup>; and DAVID A. BAUM<sup>1</sup>. <sup>1</sup>*University of Wisconsin, Madison*; and <sup>2</sup>*The Field Museum, Chicago, IL*. Floral development and androecium structure of the Malvatheca clade (Malvaceae).
- 1:45 9-4** MATTHEWS, MERRAN L.\* and PETER K. ENDRESS. *University of Zurich, Switzerland*. Cucurbitales: Floral structure and systematic relationships.
- 2:00 9-5** BUZGO, MATYAS<sup>1</sup>\*; DOUGLAS E. SOLTIS<sup>1</sup>; PAMELA S. SOLTIS<sup>1</sup>; SANGTAE KIM<sup>1</sup>; HONG MA<sup>2</sup>; JAMES LEEBENS-MACK<sup>2</sup>; BERNHARD A. HAUSER<sup>1</sup>; and CLAUDE W. DEPAMPHILIS<sup>2</sup>. <sup>1</sup>*University of Florida, Gainesville*; and <sup>2</sup>*Pennsylvania State University, University Park*. Perianth development in a basal monocots.
- 2:15 BREAK**
- 2:30 9-6** JARAMILLO, M. ALEJANDRA\* and ELENA M. KRAMER. *Harvard University, Cambridge, MA*. Perianth development in the family Aristolochiaceae (Piperales).
- 2:45 9-7** CAMERON, KENNETH M. *The New York Botanical Garden, Bronx*. The structure and occurrence of trilocular ovaries within Orchidaceae.
- 3:00 9-8** HORNER, HARRY T.; ROSANNE HEALY; TERESA CERVANTES-MARTINEZ; and REID G. PALMER\*. *Iowa State University, Ames*. The soybean floral nectary: An interesting secretory gland with unique features.
- 3:15 9-9** DI STILIO, VERONICA S.<sup>1</sup>\*; DAVID A. BAUM<sup>2</sup>; and ELENA M. KRAMER<sup>3</sup>. <sup>1</sup>*University of Washington, Seattle*; <sup>2</sup>*University of Wisconsin, Madison*; and <sup>3</sup>*Harvard University, Cambridge, MA*. Floral MADS box genes and the evolution of dioecy by homeosis in dioecious meadow rues (*Thalictrum*, Ranunculaceae).
- 3:30 BREAK**
- 3:45 9-10** MITCHELL, CAROLINE H.\* and PAMELA K. DIGGLE. *University of Colorado, Boulder*. Breaking down dioecy: A morphological and developmental characterization of unisexual flower types in dioecious taxa.

- 4:00**    **9-11**    DIGGLE, PAMELA K.<sup>1\*</sup> and JILL S. MILLER<sup>2</sup>. <sup>1</sup>*University of Colorado, Boulder;* and <sup>2</sup>*Amherst College, Amherst, MA*. Floral size dimorphism in taxa with unisexual flowers: a search for underlying causes.
- 4:15**    **9-12**    RYERSON, KIRSTEN C.<sup>1\*</sup>; JILL S. MILLER<sup>2</sup>; and PAMELA K. DIGGLE<sup>1</sup>. <sup>1</sup>*University of Colorado, Boulder* and <sup>2</sup>*Amherst College, Amherst, MA*. Andromonoecy in *Solanum palinacanthum*: the emergence of new variation in patterns of staminate flower production.
- 4:30**    **9-13**    MIKESELL, JAN. *Gettysburg College, Gettysburg, PA*. Reproductive capacity in *Alliaria petiolata*.
- 4:45**    **9-14**    NOYES, RICHARD D. *University of Colorado, Boulder*. Function of unreduced (diplosporous) ovules across generations in *Erigeron* (Asteraceae) - insights into the evolution of apomixis.

**1:00 PM – 3:15 PM**

**MCC, 202B**

**SESSION 10**

**CONTRIBUTED PAPERS: Paleobotanical Section, BSA –**  
*Isabel Cookson Student Award Papers / Tertiary and Late Cretaceous paleobotany*

Presiding: RUTH A. STOCKEY, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada. Tele: (780) 492-5518, E-mail: ruth.stockey@ualberta.ca.

- 1:00**    **10-1**    TOMESCU, ALEXANDRU MIHAIL FLORIAN\* and GAR W. ROTHWELL. *Ohio University, Athens*. The Early Silurian Massanutten Sandstone of Virginia: An updated perspective on early terrestrial biotas.
- 1:15**    **10-2**    STEVANOVIC-WALLS, IVANA M.\*<sup>1</sup>; HERMANN W. PFEFFERKORN<sup>1</sup>; and VERA ALLEMAN<sup>2</sup>. <sup>1</sup>*University of Pennsylvania, Philadelphia* and <sup>2</sup>*Universidad Ricardo Palma, Lima, Peru*. Late Early Carboniferous lycopsids of a warm temperate climate in Gondwana (Peru).
- 1:30**    **10-3**    STEVANOVIC-WALLS, IVANA M.\*<sup>1</sup>; ROBERT A. GASTALDO<sup>2</sup>; and WILLIAM N. WARE<sup>3</sup>. <sup>1</sup>*University of Pennsylvania, Philadelphia*; <sup>1</sup>*Colby College, Waterville, ME*; and <sup>3</sup>*Dunwoody, GA*. - Vegetational heterogeneity in the Blue Creek mire of Early Pennsylvanian (Langsettian) age, NW Alabama.
- 1:45**    **10-4**    HERNANDEZ-CASTILLO, GENERO R.\*<sup>1</sup>; RUTH A. STOCKEY<sup>1</sup>; and GAR W. ROTHWELL<sup>2</sup>. <sup>1</sup>*University of Alberta, Edmonton, Canada* and <sup>2</sup>*Ohio University, Athens*. Architecture, stature, and life cycle of primitive conifers from *Euramerica*.
- 2:00**    **BREAK**
- 2:15**    **10-5**    PIGG, KATHLEEN B.\*<sup>1</sup> and MELANIE L. DEVORE<sup>2</sup>. <sup>1</sup>*Arizona State University, Tempe* and <sup>2</sup>*Georgia College & State University, Milledgeville*. Paleocene fruits with affinities to Actinidiaceae from the Almont and Beicegel Creek floras of North Dakota.

- 2:30**    **10-6**    MANCHESTER, STEVEN R. *University of Florida, Gainesville.* Contemplating Platanaceae.
- 2:45**    **10-7**    MANCHESTER, STEVEN R. *University of Florida, Gainesville.* Phytogeographic implications of the fossil flora of the Green River Formation.
- 3:00**    **10-8**    UPCHURCH, GARLAND R.\*<sup>1</sup>; G. H. MACK<sup>2</sup>; and ELISABETH A. WHEELER<sup>3</sup>. <sup>1</sup>*Southwest Texas State University, San Marcos*; <sup>2</sup>*New Mexico State University, Las Cruces*; and <sup>3</sup>*North Carolina State University, Raleigh.* Late Cretaceous fossil forests from South-Central New Mexico.

**1:30 PM – 3:15 PM**  
**SESSION 11**

**MCC, 201B**

**CONTRIBUTED PAPERS: ABLs / Bryological and Lichenological Section, BSA – Aaron J. Sharp Award Student Presentations**

Presiding: REBECCA YAHR, Department of Biology, Duke University, Durham, NC 27708. Tele: (919) 660-7362, E-mail: ry2@duke.edu.

- 1:30**    **11-1**    KINSER, ABEL J.\* and BARBARA J. CRANDALL-STOTLER. *Southern Illinois University, Carbondale.* The liverwort genus *Moerckia*.
- 1:45**    **11-2**    FUSELIER, LINDA\* and D. N. MCLETCHIE. *University of Kentucky, Lexington.* Habitat use by the sexes of a dioicous liverwort, *Marchantia inflexa*.
- 2:00**    **11-3**    POLI, DOROTHYBELLE<sup>1</sup>\*; MARK JACOBS<sup>2</sup>; and TODD J. COOKE<sup>1</sup>. <sup>1</sup>*University of Maryland, College Park* and <sup>2</sup>*Swarthmore College, Swarthmore, PA.* Auxin regulation of axial growth in bryophyte sporophytes: Its potential significance for the evolution of early land plants.
- 2:15**    **BREAK**
- 2:30**    **11-4**    JOHNSON, ERIC\*; SCOTT SCHUETTE; and KAREN RENZAGLIA. *Southern Illinois University, Carbondale.* Aspects of the morphology and ultrastructure of the sporophyte of *Sphaerocarpos texanus* Austin.
- 2:45**    **11-5**    FISHER, KIRSTEN M. *University of California, Berkeley.* Reproductive patterns in the *Syrrophodon involutus* complex: A case of the island syndrome in mosses.
- 3:00**    **11-6**    WICKETT, NORMAN J. *University of Connecticut, Storrs.* Molecular evolution of the achlorophyllous liverwort, *Cryptothallus mirabilis*.

**CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —  
*Phylogeny reconstruction methods and theory / bioinformatics***

Presiding: MARK P. SIMMONS, Department of Biology, Colorado State University, Ft. Collins, CO 80523. Tele: (970) 491-2154, E-mail: psimmons@lamar.colostate.edu.

- 1:30**    **12-1**    KIM, SANGTAE\*<sup>1</sup>; MI-JEONG YOO<sup>1</sup>; PAMELA S. SOLTIS<sup>2</sup>; VICTOR A. ALBERT<sup>3</sup>; JAMES S. FARRIS<sup>4</sup>; MICHAEL ZANIS<sup>5</sup>; and DOUGLAS E. SOLTIS<sup>1</sup>. <sup>1</sup>*University of Florida, Gainesville*; <sup>2</sup>*Florida Museum of Natural History, Gainesville*; <sup>3</sup>*University of Oslo, Norway*; <sup>4</sup>*Naturhistoriska Riksmuseet, Sweden*; and <sup>5</sup>*Washington State University, Pullman*. Phylogeny and diversification of B-class genes in angiosperms: Reconstructing a 250 million-year-old duplication.
- 1:45**    **12-2**    LÖHNE, CORNELIA\* and THOMAS BORSCH. *University of Bonn, Germany*. Phylogenetic utility and molecular evolution of chloroplast *petD* intron sequences in basal angiosperms.
- 2:00**    **12-3**    SHAW, JOEY\*; EDGAR LICKEY; JOHN BECK; SUSAN FARMER; WUSHENG LIU; JERMEY MILLER; KUNSIRI CHAW SIRIPUN; CHARLES WINDER; EDWARD SCHILLING; and RANDALL SMALL. *University of Tennessee, Knoxville*. Phylogenetic utility of fifteen noncoding cpDNA regions among major lineages of seed plants.
- 2:15**    **12-4**    NIXON, KEVIN C. and DAMON P. LITTLE\*. *Cornell University, Ithaca, NY*. The use of optimality criteria in DNA sequence alignment and its application in a new computer program.
- 2:30**    **12-5**    SIMMONS, MARK P.\*<sup>1</sup>; TIMOTHY G. CARR<sup>2</sup>; and KEVIN O'NEILL<sup>2</sup>. <sup>1</sup>*Colorado State University, Fort Collins*; <sup>2</sup>*Cornell University, Ithaca, NY*. Relative character-state space, amount of potential phylogenetic information, and heterogeneity of nucleotide and amino acid characters.
- 2:45**    **12-6**    ZANDER, RICHARD H. *Missouri Botanical Garden, St. Louis*. The reliability of apparent overall convergence in phylograms.
- 3:00**    **BREAK**
- 3:15**    **12-7**    KELCHNER, SCOT A. *The Australian National University, Canberra, Australia*. Mixed-model analysis for phylogeny estimation from multiple data sets.
- 3:30**    **12-8**    SIMMONS, MARK P.\*<sup>1</sup> and MASAKI MIYA<sup>2</sup>. <sup>1</sup>*Colorado State University, Fort Collins* and <sup>2</sup>*Natural History Museum & Institute, Chiba, Japan*. Efficiently resolving the basal clades of a phylogenetic tree using Bayesian and parsimony approaches.
- 3:45**    **12-9**    MISHLER, BRENT D.\*<sup>1</sup>; SEAN ASKAY<sup>1</sup>; CAMPBELL WEBB<sup>2</sup>; DAVID ACKERLY<sup>3</sup>; RICHARD MOE<sup>1</sup>; and STACI MARKOS<sup>1</sup>. <sup>1</sup>*University of California, Berkeley*; <sup>2</sup>*Yale University, New Haven, CT*; and <sup>3</sup>*Stanford University, CA*. Phylogenetically structured databases: The future of bioinformatics.

- 4:00**    **12-10**   PRATHER, L. ALAN\*<sup>1</sup>; ORLANDO ALVAREZ-FUENTES<sup>1</sup>; MARK H. MAYFIELD<sup>2</sup>; and CAROLYN J. FERGUSON<sup>2</sup>. <sup>1</sup>*Michigan State University, East Lansing*; <sup>2</sup>*Kansas State University, Manhattan*. Documenting the decline in plant collecting in the United States: Implications for systematic and floristic research.

**1:45 PM – 4:30 PM**  
**SESSION 13**

**MCC, 203B**

**CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —**  
**“Magnoliad Complex” and Caryophyllanae**

Presiding: J. HUGO COTA-SANCHEZ, Department of Plant Sciences, University of Saskatchewan, Saskatoon SK S7N 5E8 , Canada. Tele: (306) 966-4405, E-mail: hugo.cota@usask.ca.

- 1:45**    **13-1**    SCHARASCHKIN, TANYA. *University of California, Davis*. Biogeographic history and character evolution of *Anaxagorea* (Annonaceae) based on phylogenetic analyses of morphological characters and non-coding chloroplast regions.
- 2:00**    **13-2**    LI, JIANHUA\*<sup>1</sup>; JUN WEN<sup>2</sup>; JEREMY LEDGER<sup>1</sup>; TOM WARD<sup>1</sup>; and PETER DEL TREDICI<sup>1</sup>. <sup>1</sup>*Harvard University, Jamaica Plain, MA* and <sup>2</sup>*Field Museum of Natural History, Chicago, IL*. Phylogenetics of Calycanthaceae based on molecular and morphological data, with an emphasis on sequence heterogeneity of nrDNA ITS region.
- 2:15**    **13-3**    DOUST, ANDREW. *University of Missouri-St. Louis*. Floral development and molecular phylogeny support the generic status of *Tasmannia* (Winteraceae).
- 2:30**    **13-4**    WILLIAMS, JOSEPH H.\* and WILLIAM E. FRIEDMAN. *University of Colorado, Boulder*. Female gametophyte development in *Illicium* (Austrobaileyales) and the evolution of endosperm ploidy and genetic constitution in early angiosperms.
- 2:45**    **13-5**    MORRIS, A. B.\*<sup>1</sup>; M. A. GITZENDANNER<sup>1</sup>; D. E. SOLTIS<sup>1</sup>; and P. S. SOLTIS<sup>2</sup>. <sup>1</sup>*University of Florida, Gainesville* and <sup>2</sup>*Florida Museum of Natural History, Gainesville*. Revisiting phylogenetic relationships in *Illicium*: Biogeographic implications for the position of New World taxa.
- 3:00**    **BREAK**
- 3:15**    **13-6**    DOUGLAS, NORMAN A.\* and PAUL S. MANOS. *Duke University, Durham, NC*. Phylogenetics and selfing in *Boerhavia* (Nyctaginaceae).
- 3:30**    **13-7**    SANCHEZ-DEL PINO, IVONNE\*<sup>1</sup>; HILDA FLORES OLVERA<sup>2</sup>; and TIMOTHY J. MOTLEY<sup>1</sup>. <sup>1</sup>*The New York Botanical Garden, Bronx* and <sup>2</sup>*Herbario Nacional, UNAM, Mexico*. Preliminary cladistic analysis of the subtribe Froelichiinae (Amaranthaceae) based on molecular and morphological data.
- 3:45**    **13-8**    APPLEQUIST, WENDY L. *Missouri Botanical Garden, St. Louis*. Field observations and systematics of *Talinella* and *Dendroportulaca* (Portulacaceae).
- 4:00**    **13-9**    HERSHKOVITZ, MARK. *Universidad de Chile, Santiago, Chile*. California as a phylogenetic sink for Portulacaceae diversity.

- 4:15**    **13-10**   COTA-SANCHEZ, HUGO. *University of Saskatchewan, Saskatoon, Canada.* Phylogeny of the subfamily Cactoideae: A look at the epiphytic cacti based on sequence data from cpDNA.

**2:00 PM – 3:45 PM**  
**SESSION 14**

**MCC, 201A**

**CONTRIBUTED PAPERS: AFS/ Pteridological Section, BSA**

Presiding: W. CARL TAYLOR, Milwaukee Public Museum, 800 West Wells Street, Milwaukee, WI 53233 USA. Tele: (414) 278-2760, E-mail: ct@mpm.edu.

- 2:00**    **14-1**    KORALL, PETRA<sup>3\*</sup>; PAUL KENRICK<sup>1</sup>; and WILSON A. TAYLOR<sup>2</sup>. <sup>1</sup>*Natural History Museum, London, UK;* <sup>2</sup>*University of Wisconsin-Eau Claire;* and <sup>3</sup>*Swedish Museum of Natural History and Stockholm University, Stockholm, Sweden.* Phylogeny of Selaginellaceae based on molecular and morphological data.
- 2:15**    **14-2**    TAYLOR, W. CARL<sup>1\*</sup>; ANGEL R. LEKSCHAS<sup>1</sup>; NEIL T. LEUBKE<sup>1</sup>; QING-FENG WANG<sup>2</sup>; XING LIU<sup>2</sup>; SARA B. HOOT<sup>3</sup>; and NANCY NAPIER<sup>4</sup>. <sup>1</sup>*Milwaukee Public Museum, WI;* <sup>2</sup>*Wuhan University, People's Republic of China;* <sup>3</sup>*University of Wisconsin, Milwaukee;* and <sup>4</sup>*Medical College of Wisconsin, Milwaukee, WI.* Phylogeny of Chinese *Isoetes* species as indicated by chromosome numbers and nucleotide sequences of the nuclear ribosomal ITS region and second intron of a LEAFY homolog.
- 2:30**    **14-3**    HICKEY, R. JAMES\* and JESSICA M. BUDKE. *Miami University, Oxford, OH.* The sella and its derivatives in *Isoetes*.
- 2:45**    **14-4**    SHAW, SHANE\* and R. JAMES HICKEY. *Miami University, Oxford, OH.* Comparative morphology: Three dimensional rendering of the glossopodiums of North American *Isoetes* ligules.
- 3:00**    **BREAK**
- 3:15**    **14-5**    BUDKE, JESSICA M.\*; R. JAMES HICKEY; and KERRY D. HEAFNER. *Miami University, Oxford, OH.* Morphological characterization of North America's first octoploid *Isoetes*.
- 3:30**    **14-6**    HEAFNER, KERRY D.\*; R. JAMES HICKEY; and LINDA E. WATSON. <sup>1</sup> *Miami University, Oxford, OH.* Taxonomic and systematic studies of the *Isoetes melanopoda* Gay & Durieu assemblage in Eastern North America.

**3:00 PM – 3:45 PM**  
**SESSION 15**

**MCC, 201B**

**CONTRIBUTED PAPERS: Phytochemical Section, BSA**

Presiding: GERALD SEILER, USDA-ARS, Northern Crop Science Lab., PO Box 5677, Fargo, ND 58105. Tele. 701-239-1380, E-mail: seilerg@fargo.ars.usda.gov.

- 3:00**    **15-1**    WALLER, CHRISTINE J.\*<sup>1</sup>; LUCIA M. VAZQUEZ<sup>2</sup>; and GARY L. TRAMMELL<sup>2</sup>.  
<sup>1</sup>Springfield, IL and <sup>2</sup>University of Illinois at Springfield. The antimicrobial properties of  
*Baptisia leucophaea* leaf extracts.
- 3:15**    **15-2**    JOHNSON, EMANUEL L.\*; JAMES A. SAUNDER; S. MISCHKE; C. S. HELLING;  
and S. D. EMCHE. USDA ARS, Beltsville, MD. Identification of *Erythroxylum* taxon by AFLP  
DNA analysis.
- 3:30**    **15-3**    SEILER, GERALD\* and THOMAS J. GULYA. USDA-ARS, Fargo, ND. Achene oil  
concentration and fatty acid composition of *Helianthus exilis*, an endemic serpentine sunflower  
of California.

**3:45 PM – 4:15 PM**

**MCC, 201B**

**MEETING: Phytochemical Section, BSA**

Presiding: EMANUEL L. JOHNSON, USDA ARS, 10300 Baltimore Ave, BARC-W, Bldg 001,  
Beltsville, MD 20705-2350. Tele (301) 504-5323, E-mail: JohnsonE@ba.ars.usda.gov.

**4:00 PM – 5:00 PM**

**MCC, 201A**

**MEETING: Pteridological Section, BSA**

Presiding: Warren Hauk, Pteridological Section Chair, Department of Biology, Denison, University,  
Granville, OH 43023, USA. Tele: (740) 587-5758; E-mail: hauk@denison.edu.

## MONDAY EVENING, JULY 28

**5:00 PM – 6:00 PM**

**MCC, 203A**

**BUSINESS MEETING: ASPT / Systematics Section, BSA**

Presiding: LYNN G. CLARK, Department of Botany, Iowa State University, Ames, IA 50011-1020.  
Tele: (515) 294-8218, E-mail: lgclark@iastate.edu; and WAYNE ELISENS, Department of Botany &  
Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019. Tele: (405) 325-5923,  
Fax: (405) 325-7619, E-mail: elisens@ou.edu.

**5:30 PM – 7:30 PM**

**MCC, 202A**

**MIXER AND BUSINESS MEETING: Developmental and Structural Section, BSA**

Presiding: PAMELA DIGGLE, Department of Ecology and Evolutionary Biology, University of  
Colorado, Boulder, CO 80309; Tele: (303)492-4860; E-mail: pameladiggle@colorado.edu.

**6:00 PM – 7:00 PM**

**Russo's Restaurant, 166 S. Royal Street**

**MIXER: Paleobotanical Section, BSA**



7:00 PM – 10:00 PM

Russo's Restaurant, 166 S. Royal Street

BANQUET AND AUCTION: Paleobotanical Section, BSA (Ticketed Event)

## TUESDAY MORNING, JULY 29

7:00 AM - 8:30 AM

Adam's Mark, Blakeley I

BREAKFAST: Missouri Botanical Garden (Ticketed Event)

8:00 AM - 12:00 PM

MCC, 204A

SESSION 16

**SYMPOSIUM: Teaching Section, BSA –**

*Methods and myths about conducting research in botany education*

Organized by: MARSHALL D. SUNDBERG, Department of Biological Sciences, Emporia State University, Emporia, KS 66801. Tele: (620) 341-5605 E-mail: sunderm@emporia.edu; and JAMES H. WANDERSEE, 223-F Peabody Hall, Louisiana State University, Baton Rouge, LA 70803. Tele: (225) 578-2348, E-mail: jwander@lsu.edu.

Presiding: MARSHALL D. SUNDBERG, Emporia State University, Emporia, KS.

**8:00**    **16-1**    SUNDBERG, MARSHALL D.<sup>1</sup> and JAMES H. WANDERSEE<sup>2</sup>. <sup>1</sup>*Emporia State University, Emporia, KS and* <sup>2</sup>*Louisiana State University, Baton Rouge*. Botany education research and botanical research: Some important differences and similarities.

**8:30**    **16-2**    UNO, GORDON. *University of Oklahoma, Norman*. Exemplary studies in botanical education.

**9:00**    **16-3**    MOORE, RANDY. *University of Minnesota, Minneapolis*. Standards of evidence applied to botany education research.

**9:30**    **16-4**    NOVAK, JOSEPH D. *University of West Florida, Pensacola*. The evidence that botany teaching is not the same as botany learning-and its implications.

**10:00**    **DISCUSSION**

**10:15**    **BREAK**

**10:30**    **16-5**    SUNDBERG, MARSHALL D.<sup>1</sup> and JAMES H. WANDERSEE<sup>2</sup>. <sup>1</sup>*Emporia State University, Emporia, KS and* <sup>2</sup>*Louisiana State University, Baton Rouge*. Qualitative research in botanical education is quality research.

**11:00**    **16-6**    SUNDBERG, MARSHALL D.<sup>1</sup> and JAMES H. WANDERSEE<sup>2</sup>. <sup>1</sup>*Emporia State University, Emporia, KS and* <sup>2</sup>*Louisiana State University, Baton Rouge*. A proposed research agenda for botany education.

**11:30**    **DISCUSSION**

**CONTRIBUTED PAPERS: Ecological section, BSA –  
Plant ecology**

Presiding: SUZANNE KOPTUR, Department of Biological Sciences, Florida International University, Miami, FL 33199. Tele: (305) 348-3103, E-mail: kopturs@fiu.edu.

- 8:15**     **17-1**   MOODY, MICHAEL L.\* and DONALD H. LES. *University of Connecticut, Storrs.* Hybrid watermilfoil (*Myriophyllum spicatum* x *M. sibiricum*; Haloragaceae) populations: An invasive threat to North American lakes.
- 8:30**     **17-2**   KIM, G. Y. \*; C. W. LEE; S. B. PARK; and G. J. JOO. *Pusan National University, Busan, S. Korea.* Grazing by wintering waterfowl on food plant *Scirpus triqueter* in a tidal mudflat.
- 8:45**     **17-3**   EVANS, M. E. K. \*<sup>1</sup>; W. J. HAHN<sup>2</sup>; and D. HEARN<sup>1</sup>. <sup>1</sup>*University of Arizona, Tucson* and <sup>2</sup>*Columbia University, NY.* Testing life history theory in a phylogenetic context: the association of climate and habit in evening primroses (*Oenothera*, Onagraceae).
- 9:00**     **17-4**   SUDLER, K. NICOLE\*. *University of Kentucky, Lexington.* The effect of competition and physiological integration on fitness-related traits: A two-year study of *Viola blanda*.
- 9:15**     **17-5**   O'BRIEN, ERIN\* and JOEL BROWN. *University of Illinois at Chicago.* Effects of spatial heterogeneity on the Tragedy of the Commons response to competition.
- 9:30**     **17-6**   ROSENTHAL, DAVID\*<sup>1</sup>; VOLKER STILLER<sup>2</sup>; FULCO LUDWIG<sup>1</sup>; and LISA DONOVAN<sup>1</sup>. <sup>1</sup>*University of Georgia, Athens* and <sup>2</sup>*University of Utah, Salt Lake City.* Patterns of plant and soil water relations along a cold desert ecotone: Significant differences on a small ecological scale.
- 9:45**     **DISCUSSION**
- 10:00**    **BREAK**

Presiding: TIMOTHY BELL, Chicago State University, Department of Biological Sciences, 9501 South King Drive, Chicago, IL, 60628. Tele: (773) 995-2442, E-mail: tj-bell1@csu.edu.

- 10:15**    **17-7**   SNYDER, JENISE M.\* and JENNIFER H. RICHARDS. *Florida International University, Miami.* Spikelet phenology and floral compatibility of sawgrass, *Cladium jamaicense* (Cyperaceae) in the south Florida Everglades.
- 10:30**    **17-8**   LIU, HONG\* and SUZANNE KOPTUR. *Florida International University, Miami.* Breeding system and pollination of a narrowly endemic herb of the lower Florida Keys: Impacts of the urban wildland interface.
- 10:45**    **17-9**   FUMERO-CABAN, JOSE J.\* and ELVIA MELENDEZ-ACKERMAN. *University of Puerto, San Juan.* Behavior and pollination efficiency of flower visitors of *Pitcairnia Angustifolia* (Bromeliaceae).

- 11:00** 17-10 ADAMS, CHRISTOPHER A.; JERRY M BASKIN; and CAROL C. BASKIN. *University of Kentucky, Lexington*. Comparative seed ecophysiology of four closely-related *Aristolochia* species: A test of two hypotheses on changes in ecological and physiological requirements and tolerances in plant lineages.
- 11:15** 17-11 DEVLIN, DONNA\*. *University of Louisiana, Lafayette*. Effects of a seedling predator on distribution of *Rhizophora mangle*.
- 11:30** DISCUSSION

**8:30 AM – 12:15 PM**  
**SESSION 18**

**MCC, 203A**

**CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —**  
*Lamiales*

Presiding: LUCIA LOHMANN, Department of Biology, University of Missouri-St. Louis, St. Louis, MO 63110. Tele: (314) 664-3892, E-mail: Lohmann@mobot.org.

- 8:30** 18-1 HOGGARD, RONALD K.\*<sup>1</sup>; NINA RØNSTED<sup>2</sup>; STEPHANIE F. DUNBAR<sup>3</sup>; PAUL J. KORES<sup>1</sup>; and WAYNE J. ELISENS<sup>1</sup>. <sup>1</sup>*University of Oklahoma, Norman*; <sup>2</sup>*Royal Botanic Gardens, Kew, Richmond, Surrey, UK*; and <sup>3</sup>*University of Hawaii, Manoa*. The origin and biogeography of the Hawaiian and South Pacific Ocean island endemic species of *Plantago* section *Plantago*.
- 8:45** 18-2 ELISENS, WAYNE\* and PAUL KORES. *University of Oklahoma, Norman*. Testing concordance of [phylo]genetic signal from crossing data and nuclear ITS sequence variation among climbing snapdragons.
- 9:00** 18-3 SCHENK, JOHN J.\* and AARON LISTON. *Oregon State University, Corvallis*. Progenitor-derivative speciation and hybridization in the serpentine endemic *Synthyris cordata* (Scrophulariaceae s.l.).
- 9:15** 18-4 BENNETT, JONATHAN\* and SARAH MATHEWS. *University of Missouri, Columbia*. Phytochrome evolution in parasitic Orobanchaceae.
- 9:30** 18-5 RANDLE, CHRISTOPHER P.\* and ANDREA D. WOLFE. *Ohio State University, Columbus*. The evolution and expression of in holoparasitic sister genera *Harveya* Hook. and *Hyobanche* L. (Orobanchaceae): Expression of the large subunit of Rubisco despite the presence of pseudogenes.
- 9:45** 18-6 WOLFE, ANDREA D.\*; CHRISTOPHER P. RANDLE; and NIDIA ARGUEDAS. *Ohio State University, Columbus*. Patterns of evolution in *Hyobanche* L. (Orobanchaceae).
- 10:00** BREAK
- 10:15** 18-7 LOHMANN, LUCIA. *University of Missouri-St. Louis*. A new generic classification for Bignoniaceae (Bignoniaceae).
- 10:30** 18-8 GROSE, SUSAN O.\* and RICHARD G. OLMSTEAD. *University of Washington, Seattle*. Patterns of evolution in Neotropical Bignoniaceae: relationships within Crescentieae.

- 10:45 18-9** McDADE, L. A.\*<sup>1</sup>; T. F. DANIEL<sup>2</sup>; C. A. KIEL<sup>1</sup>; and K. VOLLESEN<sup>3</sup>. <sup>1</sup>*Academy of Natural Sciences, Philadelphia, PA*; <sup>2</sup>*California Academy of Sciences, San Francisco*; and <sup>3</sup>*Royal Botanic Gardens, Kew, Richmond, UK*. Acantheae (Acanthaceae) with an emphasis on relationships among Old World plants with remarkable one-lipped corollas.
- 11:00 18-10** FUNKE, MINDIE\* and JAMES F. SMITH. *Boise State University, ID*. Phylogenetic relationships of tribe Coronanthereae (Gesneriaceae): evidence from multiple genes.
- 11:15 18-11** DRAPER, SCOTTIE B.\* and JAMES F. SMITH. *Boise State University, ID*. Maximum information and minimum sequencing: resolving phylogenetic relationships among closely related species of *Columnea* (Gesneriaceae) using multiple genes.
- 11:30 18-12** ROALSON, ERIC H.\*<sup>1</sup>; LAURENCE E. SKOG<sup>2</sup>; JOHN K. BOGGAN<sup>2</sup>; and ELIZABETH A. ZIMMER<sup>2</sup>. <sup>1</sup>*Washington State University, Pullman* and <sup>2</sup>*Smithsonian Institution, Washington, DC*. Generic boundaries in the Gloxinieae (Gesneriaceae): tracking diversification and convergence in floral form with nuclear, chloroplast, and morphological cladistic data sets.
- 11:45 18-13** DODD, RICHARD S.\*<sup>1</sup>; ALEJANDRO HERNANZ-NETTEL<sup>1</sup>; and ZARA AFZAL-RAFI<sup>2</sup>. <sup>1</sup>*University of California, Berkeley* and <sup>2</sup>*Université d'Aix-Marseille III, France*. Species diversity and phylogeography of the Atlantic-east-Pacific mangrove genus *Avicennia*.
- 12:00 18-14** TRUSTY, JENNIFER L.\*<sup>3</sup>; RICHARD G. OLMSTEAD<sup>1</sup>; DAVID J. BOGLER<sup>4</sup>; ARNOLDO SANTOS-GUERRA<sup>2</sup>; and JAVIER FRANCISCO-ORTEGA<sup>3</sup>. <sup>1</sup>*University of Washington, Seattle*; <sup>2</sup>*Jardín de Aclimatación de La Orotava, Tenerife, Canary Islands, Spain*; <sup>3</sup>*Florida International University, Miami*; and <sup>4</sup>*The Missouri Botanical Garden, St. Louis*. Molecular phylogenies from nuclear and chloroplast genes support the connection of the Macaronesian genus *Bystropogon* (Lamiaceae) to the radiation of the new world Mentheae.

**8:30 AM – 12:00 PM**

**MCC, 203B**

**SESSION 19**

**CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —**

***Rosids: Malpighiales to Rosales***

Presiding: BERYL B. SIMPSON, Integrative Biology and Plant Resources Center, The University of Texas, Austin, Texas 78712. Tele: (512) 471-7335, E-mail: beryl@mail.utexas.edu.

- 8:30 19-1** WURDACK, KENNETH J.\* and ELIZABETH A. ZIMMER. *Smithsonian Institution, Suitland, MD*. *CoxI* intron evolution in *Euphorbia* s.l. (Euphorbiaceae s.s.).
- 8:45 19-2** STEINMANN, VICTOR\*<sup>1</sup> and GEOFFREY LEVIN<sup>2</sup>. <sup>1</sup>*Instituto de Ecología, Patzcuaro, Michoacan, Mexico*; and <sup>2</sup>*Illinois Natural History Museum, Champaign*. The copperleaf conundrum: Molecular and morphological data appear irreconcilable in *Acalypha* (Euphorbiaceae).
- 9:00 19-3** NOTIS, CHRISTINE H.\*<sup>1</sup>; WALTER S. JUDD<sup>1</sup>; DOUGLAS E. SOLTIS<sup>1</sup>; and PAMELA S. SOLTIS<sup>2</sup>. <sup>1</sup>*University of Florida, Gainesville* and <sup>2</sup>*Florida Museum of Natural History, Gainesville*. Phylogenetic analysis of Kielmeyeroideae (Clusiaceae) based on ITS sequences.

- 9:15**    **19-4**    ALFORD, MAC H. *Cornell University, Ithaca, NY*. When in doubt, put it in the ... Salicaceae? Systematics of the Flacourtiaceae revisited.
- 9:30**    **19-5**    ALFORD, MAC H. *Cornell University, Ithaca, NY*. Systematics of the tribe Prockieae (Flacourtiaceae).
- 9:45**    **19-6**    WOJCIECHOWSKI, MARTIN F.<sup>2</sup>; MATT LAVIN<sup>1</sup>; and MICHAEL J. SANDERSON\*<sup>3</sup>. <sup>1</sup>*Montana State University, Bozeman*; <sup>2</sup>*Arizona State University, Tempe*; and <sup>3</sup>*University of California, Davis*. A phylogeny of legumes (Fabaceae) based on sequences of the plastid *matK* gene.
- 10:00**    **BREAK**
- 10:15**    **19-7**    CRONK, QUENTIN\*<sup>1</sup>; RICHARD REE<sup>1</sup>; and HELENE CITERNE<sup>2</sup>. <sup>1</sup>*UBC Botanical Garden and Centre for Plant Research, Vancouver, BC, Canada*; and <sup>2</sup>*Royal Botanic Garden, Edinburgh, UK*. Natural selection on florally expressed developmental genes associated with transition between floral types in *Lupinus* (Fabaceae).
- 10:30**    **19-8**    REDDEN, KAREN M.\* and PATRICK S. HERENDEEN. *The George Washington University, Washington, DC*. Morphology, diversity, and phylogeny of *Paloue*, *Elizabetha*, and related caesalpinoid legumes from northeastern South America.
- 10:45**    **19-9**    SIMPSON, BERYL\*<sup>1</sup>; JENNIFER TATE<sup>2</sup>; and ANDREA WEEKS<sup>1</sup>. <sup>1</sup>*The University of Texas, Austin* and <sup>2</sup>*Florida Museum of Natural History, Gainesville*. Phylogeny and biogeography of *Hoffmannseggia* (Leguminosae: Caesalpinioideae): A tale of many travels.
- 11:00**    **19-10**    VANDEN HEUVEL, BRIAN\* and DANIEL POTTER. *University of California, Davis*. Phylogenetic relationships among the actinorhizal members of Rosaceae based on DNA sequences of three plastid and two nuclear regions.
- 11:15**    **19-11**    OH, SANG-HUN\*<sup>1</sup> and DANIEL POTTER<sup>2</sup>. <sup>1</sup>*Duke University, Durham, NC*; and <sup>2</sup>*University of California, Davis*. Hybrid origin of *Stephanandra* (Neillieae: Rosaceae) inferred from DNA sequences.
- 11:30**    **19-12**    WHITTEMORE, ALAN T. *U. S. National Arboretum, Washington, DC*. Interspecific hybridization in Texas *Celtis*.
- 11:45**    **19-13**    DATWYLER, SHANNON\*; WENDY CLEMENT; STEPHANIE SWENSON; and GEORGE WEIBLEN. *University of Minnesota, St. Paul*. Where did the figs come from? Phylogenetic relationships in Moraceae based on *ndhF* and 26S sequences.

9:00 AM – 11:30 AM  
SESSION 20

MCC, 201B

**SYMPOSIUM: ABLIS / Bryological and Lichenological Section, BSA –  
*Sex and individuality in lichens***

Organized by: JAMES D. LAWREY, Department of Environmental Science and Policy, George Mason University, Fairfax, VA 22030. Tele: (703) 993-1059, E-mail: jlawrey@gmu.edu; and PAULA T. DEPRIEST, Botany Section, United States National Herbarium, National Museum of Natural History, Smithsonian Institution, Washington, DC 20013. Tele: (202) 357-2545, E-mail: DePriest.Paula@nmnh.si.edu.

Presiding: JAMES D. LAWREY, *Department of Environmental Science and Policy, George Mason University, Fairfax, VA.*

- 9:00**     **20-1**    LAWREY, JAMES D. *George Mason University, Fairfax, VA.* Introduction.
- 9:15**     **20-2**    CRITTENDEN, P. D.\*; P. S. DYER, F. A. SEYMOUR, and G. J. MURTAGH. *University of Nottingham, UK.* Sex and individuality in lichen-forming fungi.
- 9:45**     **20-3**    DEPRIEST, PAULA T.<sup>1</sup>; SUE LUTZ<sup>1</sup>; and JAMES D. LAWREY<sup>2</sup>. <sup>1</sup>*National Museum of Natural History, Smithsonian Institution, Washington, DC* and <sup>2</sup>*George Mason University, Fairfax, VA.* Genetic analysis of individualism in *Umbilicaria mammulata*.
- 10:15**    **BREAK**
- 10:30**    **20-4**    FAHSELT, DIANNE. *University of Western Ontario, Canada.* Populational variation in physiological features of photobionts.
- 11:00**    **20-5**    STOCKER-WÖRGÖTTER, ELFIE. *University of Salzburg, Austria.* Are selected species of the genus *Neuropogon* composed of two different mycobionts?

9:00 AM – 11:45 AM  
SESSION 21

MCC, 202A

**CONTRIBUTED PAPERS: Developmental and Structural Section, BSA –  
*Vegetative structures***

Presiding: NANCY DENGLER, Department of Botany, University of Toronto, Toronto, Ontario, M5S 1A1, Canada. Tele: (416) 978-3536; E-mail: dengler@botany.utoronto.ca.

- 9:00**     **21-1**    STILES, JEFFREY C.\*; BRIAN WHEAT; KIN FOONG; and JAMES L. SEAGO, JR. *State University of New York, Oswego.* Aspects of root development in GMO cotton and maize.
- 9:15**     **21-2**    O'QUINN, ROBIN\* and LARRY HUFFORD. *Washington State University, Pullman.* Homology and evolution of subterranean perennation structures in *Claytonia* sect. *Claytonia* (Portulacaceae).
- 9:30**     **21-3**    CHRISTIANSON, MICHAEL L. *University of California, Berkeley.* Probing the determinate nature of erect shoots of *Psilotum*.

- 9:45**    **21-4**    KELLY, WANDA\* and TODD COOKE. *University of Maryland, College Park*. Geometrical relationships specifying the phyllotactic pattern of aquatic plants.
- 10:00**    **21-5**    BOYCE, C. KEVIN<sup>1\*</sup>; GEORGE D. CODY<sup>2</sup>; MACIEJ A. ZWIENIECKI<sup>1</sup>; and N. MICHELE HOLBROOK<sup>1</sup>. <sup>1</sup>*Harvard University, Cambridge, MA* and <sup>2</sup>*Carnegie Geophysical Laboratory, Washington DC*. Biochemical and physiological innovation during the proliferation of vascular cell types.
- 10:15**    **BREAK**
- 10:30**    **21-6**    KANG, JULIE; JOHN TANG; PETRA DONNELLY; and NANCY DENGLER\*. *University of Toronto, Canada*. Primary vascular pattern and expression of *ATHB-8* in shoots of *Arabidopsis*.
- 10:45**    **21-7**    MCKOWN, ATHENA D.\* and NANCY G. DENGLER. *University of Toronto, Canada*. The specialized vein pattern in C4 *Flaveria* species is not strongly developmentally canalized.
- 11:00**    **21-8**    KORN, ROBERT. *Bellarmine University, Louisville, KY*. The marginal band, a new structural component of the developing dicot leaf.
- 11:15**    **21-9**    HEARN, DAVID<sup>1\*</sup> and LUCINDA McDADE<sup>2</sup>. <sup>1</sup>*University of Arizona, Tucson*; and <sup>2</sup>*The Academy of Natural Sciences, Philadelphia, PA*. Training techie tools for the anatomy trade: Automated anatomy characterization using artificial neural nets.
- 11:30**    **21-10**    COOK, MARTHA E. *Illinois State University, Normal*. Further studies of the enigmatic charophycean green alga *Entransia fimbriata* (Charophyceae).

**9:00 AM – 11:30 AM**  
**SESSION 22**

**MCC, 202B**

**CONTRIBUTED PAPERS: Paleobotanical Section, BSA**  
*Mesozoic paleobotany*

Presiding: GAR W. ROTHWELL, Department of Environmental & Plant Biology, Ohio University, Athens, OH 45701-2959. Tele: (740) 593-1129, E-mail: rothwell@ohiou.edu.

- 9:00**    **22-1**    KLAVINS, SHARON D.\*, EDITH L. TAYLOR and THOMAS N. TAYLOR. *University of Kansas, Lawrence*. A cycad pollen cone from the Middle Triassic of Antarctica.
- 9:15**    **22-2**    AXSMITH, BRIAN J. *University of South Alabama, Mobile*. A reevaluation of the Late Triassic conifer *Pseudohirmerella* based on cones, associated leafy shoots and anatomically preserved wood from North America.
- 9:30**    **22-3**    MAPES, GENE K.\*<sup>1</sup>; GAR W. ROTHWELL<sup>1</sup>; and JASON HILTON<sup>2</sup>. <sup>1</sup>*Ohio University, Athens* and <sup>2</sup>*National Museums of Scotland, Edinburgh*. Anatomy of the cheirolepidiaceous pollen cone *Classostrobus*; a new species from the Jurassic of England.

- 9:45**    **22-4**    STOCKEY, RUTH A.\*<sup>1</sup> and GAR W. ROTHWELL<sup>2</sup>. <sup>1</sup>*University of Alberta, Edmonton, Canada* and <sup>2</sup>*Ohio University, Athens*. Cretaceous tree fern radiations: new permineralized Dicksoniaceae.
- 10:00**    **BREAK**
- 10:15**    **22-5**    ROTHWELL, GAR W.\*<sup>1</sup> and RUTH A. STOCKEY<sup>2</sup>. <sup>1</sup>*Ohio University, Athens* and <sup>2</sup>*University of Alberta, Edmonton, Canada*. Anatomically preserved vascular and nonvascular cryptogams from the Lower Cretaceous of western North America.
- 10:30**    **22-6**    BOUCHER, LISA. *University of Nebraska, Omaha*. Paleobiogeography of Cretaceous macrofloras in southern North America.
- 10:45**    **22-7**    MOHR, BARBARA\*<sup>1</sup>; CATARINA RYDIN<sup>2</sup>; and ELSE MARIE FRIIS<sup>2</sup>. <sup>1</sup>*Humboldt University and Museum of Natural History, Berlin, Germany* and <sup>2</sup>*Stockholm University and, Swedish Museum of Natural History, Stockholm, Sweden*. Gnetalean diversity during the Early Cretaceous of Brazil.
- 11:00**    **22-8**    DUNN, MICHAEL T. *Ohio University, Athens*. The Fayetteville Flora of Arkansas, USA: An Upper Mississippian (middle Chesterian/lower Namurian A) plant fossil assemblage with permineralized and compression remains.

**9:00 AM – 10:45 AM**  
**SESSION 23**

**MCC, 201A**

**CONTRIBUTED PAPERS: Tropical Biology Section, BSA**

Presiding: SUSANA A. MAGALLON, Departamento de Botánica, Instituto de Biología, Universidad Nacional Autónoma de México, Circuito Exterior, Anexo al Jardín Botánico, A.P. 70-233, México D.F. 04510, México. Tele: 52-55-5622-9087, E-mail: s.magallon@ibiologia.unam.mx.

- 9:00**    **23-1**    BREWER, STEVEN W.<sup>1</sup>; M. REJMANEK<sup>2</sup>; M. A. H. WEBB<sup>3</sup>; and P. V. A. FINE<sup>4</sup>. <sup>1</sup>*Rhodes College, Memphis, TN*; <sup>2</sup>*University of California, Davis*; <sup>3</sup>*Oregon State University, Corvallis*; and <sup>4</sup>*University of Utah, Salt Lake City*. Relationships between phytogeography of tree species and limestone topography in southern Belize.
- 9:15**    **23-2**    MELENDEZ-ACKERMAN, ELVIA<sup>1</sup>; W. JOHN KRESS<sup>2\*</sup>; LEYDA ROHENA<sup>1</sup>; ESTHER TOLEDO<sup>1</sup>; MATTHEW GITZENDANNER<sup>3</sup>; PAMELA SOLTIS<sup>3</sup>; and DOUGLAS SOLTIS<sup>3</sup>. <sup>1</sup>*University of Puerto Rico, Puerto Rico*; <sup>2</sup>*National Museum of Natural History, Washington, DC*; and <sup>3</sup>*University of Florida, Gainesville*. Patterns of genetic and morphological variation in *Heliconia bihai* (Heliconiaceae) in the Lesser Antilles.
- 9:30**    **23-3**    LOBOVA, TATYANA A.\* and SCOTT A. MORI. *New York Botanical Garden, Bronx*. Species of Piperaceae dispersed by bats in French Guiana.
- 9:45**    **23-4**    FINE, PAUL<sup>1\*</sup>; DOUGLAS DALY<sup>2</sup>; M. VILLA<sup>3</sup>; and F. GORKY<sup>3</sup>. <sup>1</sup>*University of Utah, Salt Lake City*; <sup>2</sup>*New York Botanical Garden, Bronx*; and <sup>3</sup>*Pontificia Universidad Católica del Ecuador, Quito, Ecuador*. The evolution of white sand specialization in *Protium* (Burseraceae) in Amazonian forests.

**10:00**    **BREAK**



**10:15**    **23-5**    SEZEN, UZAY U.\* and ROBIN L. CHAZDON. *University of Connecticut, Storrs.* Extreme reproductive dominance of the canopy palm *Iriartea deltoidea* in a tropical second-growth forest.

**10:30**    **23-6**    MARC GOTTSCHLING<sup>1\*</sup>; MAXIMILIAN WEIGEND<sup>1</sup>; JAMES S. MILLER<sup>2</sup>; and HARTMUT H. HILGER<sup>1</sup>. <sup>1</sup>*Freie Universität Berlin, Germany* and <sup>2</sup>*Missouri Botanical Garden, St. Louis.* Phylogeny of Cordiaceae (Boraginales) inferred from ITS1 sequence data.

**10:45 AM – 11:15 AM**

**MCC, 201A**

**MEETING: Tropical Biology Section, BSA**

Presiding: SUSANA A. MAGALLON, Departamento de Botánica, Instituto de Biología, Universidad Nacional Autónoma de México, Circuito Exterior, Anexo al Jardín Botánico, A.P. 70-233, México D.F. 04510, México. Tele: 52-55-5622-9087, E-mail: s.magallon@ibiologia.unam.mx.

**11:30 AM – 1:00 PM**

**MCC, 202B**

**LUNCHEON: Economic Botany Section, BSA (Ticketed Event)**

Presiding: DAVID M. SPOONER, USDA, Agricultural Research Service, Department of Horticulture, University of Wisconsin, Madison, WI 53706-1590. Tele: (608) 264-5213, E-mail: dspooner@wisc.edu.

Speaker: PETER BRETTING, *National Program Leader for Plant Germplasm and Genomes, USDA/ARS, Beltsville, MD.* Shifting international norms for scientific germplasm collection and for recording traditional knowledge.

**11:30 AM – 12:30 PM**

**MCC, 201C**

**MEETING AND LUNCHEON: UMEB undergraduate students and mentors**

Presiding: KAREN S. RENZAGLIA, Department of Biology, Southern Illinois University, Box 6509, Carbondale, IL 62901-6509. Tele: (618) 453-3229, Fax: (618) 453-3441, E-mail: renzaglia@plant.siu.edu; and JEFFREY M. OSBORN, Division of Science, Truman State University, 100 E. Normal Street, Kirksville, MO 63501-4221. Tele: (660) 785-4017, Fax: (660) 785-4045, E-mail: josborn@truman.edu.

**11:30 AM – 12:30 PM**

**MCC, 201D**

**MEETING AND LUNCHEON: BSA Membership Committee**

Presiding: LINDA E. GRAHAM, Department of Botany, 211 Birge Hall, University of Wisconsin, Madison, WI 53706. Tele: (608) 262-2640, Fax: (608) 262-7509, E-mail: lkgraham@facstaff.wisc.edu; and WILLIAM DAHL, Botanical Society of America, 4468-74 Castleman Avenue, St. Louis, MO 63166-0299, Tele: (314) 577-9566, E-mail: wdahl@botany.org.

# TUESDAY AFTERNOON, JULY 29

12:30 PM – 2:00 PM  
SESSION 24

MCC, Grand Ballroom

## CONTRIBUTED POSTERS: All Societies

### ABLS/ BRYOLOGICAL AND LICHENOLOGICAL SECTION, BSA

- 24-1 WASHBURN, STEPHEN J.\* and THERESA M. CULLEY. *University of Cincinnati, Cincinnati, OH*. Impact of ambient ozone levels on lichen flora in the greater Cincinnati area: Computer analysis of ambient ozone concentrations.
- 24-2 ATWOOD, JOHN J.\* and CARL F. CHUEY. *Youngstown State University, Youngstown, OH*. Additional records and confirmations to the moss flora of Ohio.
- 24-3 RUSHING, ANN E. *Baylor University, Waco, TX*. Thallus growth and branching of the lichen *Ramalina stenospora*.

### AFS / PTERIDOLOGICAL SECTION, BSA

- 24-4 GOLA, EDYTA\* and JUDY JERNSTEDT. *University of California, Davis*. Detachment of *Huperzia* propagules: Letting go and leaving home.
- 24-5 HAUK, WARREN D.\*; LARKIN F. KENNEDY; and HEATHER M. HAWKE. *Denison University, Granville, OH*. Phylogenetic relationships among species of *Botrychium* s.s. (Ophioglossaceae) based on three plastid DNA sequence data sets.
- 24-6 TOWILL, LESLIE\*. *Arizona State University, Tempe*. Effect of fungi on rhizoid and root growth of the fern *Ceratopteris richardii*.
- 24-7 WOLF, PAUL G.\*<sup>1</sup>; CAROL A. ROWE<sup>1</sup>; ROBERT B. SINCLAIR<sup>2</sup>; and MITSUYASU HASEBE<sup>3</sup>. <sup>1</sup>*Utah State University, Logan*; <sup>2</sup>*The Jackson Laboratory, Bar Harbor, ME*; and <sup>3</sup>*National Institute for Basic Biology, Okazaki, Japan*. Complete nucleotide sequence of the chloroplast genome from a leptosporangiate fern, *Adiantum capillus-veneris* L.

### DEVELOPMENTAL AND STRUCTURAL SECTION, BSA

- 24-8 GHOSH, NABARUN<sup>1</sup>\*; RENE CAMACHO<sup>1</sup>; ELIZABETH SCHNIEDERJEN<sup>1</sup>; DON SMITH<sup>2</sup>; C. SAADEH<sup>3</sup>; and MICHAEL GAYLOR<sup>3</sup>. <sup>1</sup>*West Texas A&M University, Canyon*; <sup>2</sup>*University of North Texas*; and <sup>3</sup>*Allergy A.R.T.S., Amarillo, TX*. The aeroallergen index and meteorological condition in the Texas panhandle.
- 24-9 SHERMAN, TIMOTHY D.<sup>1</sup>\*; T. WAYNE BARGER<sup>2</sup>; JOHN C. HOFFMAN<sup>3</sup>; and KEVIN C. VAUGHN<sup>3</sup>. <sup>1</sup>*University of South Alabama, Mobile*; <sup>2</sup>*University of West Georgia, Carrollton*; and <sup>3</sup>*USDA-ARS, Stoneville, MS*. The unusual role of the Dodder (*Cuscuta pentagona*) seedling root.
- 24-10 PARSLEY, LARISSA C.<sup>1</sup>\* and ANN E. RUSHING<sup>2</sup>. <sup>1</sup>*William Carey College, Hattiesburg, MS* and <sup>2</sup>*Baylor University, Waco, TX*. The sequence of development of leaf propagules in *Bryophyllum daigremontianum*.

- 24-11** SCHMIDT, RACHEL E.\* and GREGORY K. BROWN. *University of Wyoming, Laramie*. Systematic Leaf Anatomy in Bromeliaceae subfamily Bromelioideae.
- 24-12** DARNOWSKI, DOUGLAS W.\*; SARAH LIND; MEGAN MCMAHON; and SHAUNA BOLDEN. *Washington College, Chestertown, MD*. Vegetative Propagation in Australian Tuberos and Pygmy Sundews (*Drosera*; Droseraceae).
- 24-13** DOTY, KAREN F.\*; AMY M. BETZELBERGER; and MARTHA E. COOK. *Illinois State University, Normal*. Microtubule dynamics in the charophycean alga *Chaetosphaeridium* (Charophyceae).
- 24-14** RUEHLE, JON. *University of Central Arkansas, Conway*. The *Petunia* inflorescence pattern results from iterating cycles of axillary meristem initiation and identity.
- 24-15** KIRCHOFF, BRUCE K.<sup>1\*</sup> and ROSS CANGELOSI<sup>2</sup>. *University of North Carolina, Greensboro and <sup>2</sup>Raleigh, NC*. Visual data presentation techniques for the study of flower development.
- 24-16** TRUMAN, PATRICIA A. and W. JOHN HAYDEN\*. *University of Richmond, Richmond, VA*. *Acalypha deamii*: Distribution East of the Appalachians and comparative studies of reproductive anatomy.
- 24-17** SEVENER, HEATHER C.<sup>1\*</sup>; ELIZABETH A. KELLOGG<sup>2</sup>; and BARBARA A. SCHAAL<sup>1</sup>. <sup>1</sup>*Washington University, St. Louis, MO and <sup>2</sup>University of Missouri, St. Louis*. Molecular evolution of *APETALA1* homologs in Poaceae.
- 24-18** TIAN, HUI QIAO<sup>1</sup>; SCOTT D. RUSSELL<sup>2\*</sup>; and TONG YUAN<sup>2</sup>. <sup>1</sup>*Xiamen University, Fujian, China and <sup>2</sup>University of Oklahoma, Norman*. Cell cycle synchronization in the male and female gametes of *Nicotiana tabacum*.

#### ECOLOGICAL SECTION, BSA

- 24-19** MARTINE, CHRISTOPHER T.\*<sup>1</sup>; DAVID LUBERTAZZI<sup>1</sup>; and ANDREW DUBRUL<sup>2</sup>. <sup>1</sup>*University of Connecticut, Storrs and <sup>2</sup>Florence Memorial High School, NJ*. A long-term study on the reproductive biology of the endangered dioecious shrub *Corema conradii* (Empetraceae): Preliminary notes on post-fire seedling recruitment.
- 24-20** KALLER, MATTHEW\* and MARK HESTER. *University of New Orleans, LA*. Effects of herbivory, nutrient addition, and disturbance in a reciprocal transplant study between an oligohaline and mesohaline marsh in southeastern Louisiana.
- 24-21** SMITH, BRENT\* and PAT CALIE. *Eastern Kentucky University, Richmond*. High resolution GIS mapping of *Solidago shortii* (Asteraceae), a Kentucky endemic species.
- 24-22** CLAERBOUT, A. E.\*<sup>1</sup> and J.M COONS<sup>2</sup>. *University of Illinois, Urbana and <sup>2</sup>Eastern Illinois University, Charleston*. Comparison of *Physaria ludoviciana* (Silvery Bladderpod) Populations across their range.

- 24-23** COLEMAN, CHRISTINA\* and ROBERT S. BOYD. *Auburn University, AL*. Herbivore defense as an explanation for hyperaccumulation: Relative heavy metal toxicity to diamond back moth (*Plutella xylostella*).
- 24-24** BOSWELL, GANTT\*. *Tulane University, New Orleans, LA*. Changes in leaf morphology and biomass allocation reflect soil nitrogen availability in a carnivorous plant.
- 24-25** LEY, COURTNEY<sup>1</sup>; MICHELLE ZJHRA<sup>2</sup>; and ROBERT RAGUSO\*<sup>3</sup>. <sup>1</sup>*Keene State College, NH*; <sup>2</sup>*Georgia State University, Statesboro*; and <sup>3</sup>*University of South Carolina, Columbia*. How do red, yeasty Pawpaw flowers attract their pollinators?
- 24-26** GOODRICH, K. R.\*<sup>1</sup>; M. L. ZJHRA<sup>2</sup>; and R. A. RAGUSO. <sup>1</sup>*University of South Carolina, Columbia* and <sup>2</sup>*Keene State College, NH*. Sex- and time-specific scent production in Pawpaw (*Asimina triloba*: Annonaceae) flowers.
- 24-27** CARTER, GREGORY A.\*<sup>1</sup>; ALAN K. KNAPP<sup>2</sup>; MELINDA D. SMITH<sup>3</sup>; GREG HOCH<sup>2</sup>; and JIM E. ANDERSON<sup>4</sup>. <sup>1</sup>*University of Southern Mississippi, Ocean Springs*; <sup>2</sup>*Kansas State University, Manhattan*; <sup>3</sup>*National Center for Ecological Analysis and Synthesis, Santa Barbara, CA*; and <sup>4</sup>*NASA, Stennis Space Center, MS*. Indicators of phytodiversity in hyperspectral imagery of the Konza Prairie, Kansas.
- 24-28** YAGER, LISA Y.\*<sup>1</sup> and STEVE LEONARD<sup>2</sup>. <sup>1</sup>*Camp Shelby, MS* and <sup>2</sup>*Wiggins, MS*. Results of Louisiana Quillwort (*Isoetes louisianensis*) monitoring on Camp Shelby training site, MS.
- 24-29** JHEE, EDWARD M.\*; ROBERT S. BOYD; and MICKY D. EUBANKS. *Auburn University, AL*. Nickel hyperaccumulation defends *Streptanthus polygaloides* (Brassicaceae) against an oligophagous herbivore.
- 24-30** SMITH-HUERTA, NANCY L.\* *Miami University, Oxford, OH*. Nectar production in *Clarkia unguiculata* (Onagraceae) as affected by nutrient supply.
- 24-31** ZHANG, SULI\*<sup>1</sup> ; HUIBIN TU<sup>1</sup>; and JIANHUA LI<sup>2</sup>. <sup>1</sup>*Bureau of Environmental Protection, Xinxiang, Henan, China* and <sup>2</sup>*Arnold Arboretum of Harvard University, Jamaica Plain, MA*. Characteristics of floristics and vegetation of Yellow River Old Course Avian Nature Reserve in northern Henan, China.
- 24-32** STANFORD, ALICE M.\* and TIMOTHY DELSOL. *University of the Virgin Islands, St. Thomas, VI*. Genetic diversity of *Bastardiopsis eggersii* (Malvaceae), a rare Virgin Islands endemic.
- 24-33** JOHNSON, SANDRA L.\* *Middle Tennessee State University, Murfreesboro*. Trends in the abundance of cedar glade plants following prescribed burn.
- 24-34** KIL, BONG-SEOP\*<sup>1</sup>; HYUN-GYEONG YOO<sup>1</sup>; and JI-HYUN KIL<sup>2</sup>. <sup>1</sup>*Wonkwang University, Iksan, Chonbuk, S Korea* and <sup>2</sup>*National Institute of Environmental Research, Incheon, S Korea*. Allelopathic effects of *Artemisia lavandulaefolia*.
- 24-35** FRAZIER, CHRISTOPHER K. and TIMOTHY K. LOWREY\*. *University of New Mexico, Albuquerque*. Combined natural history collections web-accessible database for New Mexico.

- 24-36** MOFFETT, JR.\*; J. MINCY; ROBERT S. BOYD; and MICHAEL C. WOOTEN. *Auburn University, AL*. Effects of post-hurricane sand-fencing and fertilizing restoration techniques on vegetation recovery along the Ft. Morgan Peninsula, Alabama.
- 24-37** STRIBLING, JUDITH\*<sup>1</sup>; JEFFREY CORNWELL<sup>2</sup>; AND OLIVIA GLAHN<sup>1</sup>. <sup>1</sup>*Salisbury University, MD* and <sup>2</sup>*University of Maryland Center for Environmental Science, Cambridge*. Microscale spatial variability in brackish marsh vegetation and associated patchiness of sediment biogeochemistry.
- 24-38** WELLS, TAMI\*<sup>1</sup>; GREGORY CARTER<sup>2</sup>; CYNTHIA MONCREIFF<sup>1</sup>; and JOHN CALDWELL<sup>1</sup>. <sup>1</sup>*The University of Southern Mississippi, Ocean Springs* and <sup>2</sup>*Gulf Coast Geospatial Center, GCRL, Ocean Springs, MS*. Assessing aboveground primary productivity in Mississippi gulf coast tidal marshes by remote sensing.
- 24-39** MIDDLETON, BETH\* and KAREN MCKEE. *National Wetlands Research Center, Lafayette, LA*. Latitudinal variation in primary production and carbon stores in baldcypress swamps of the Mississippi River Alluvial Plain: A surrogate for global climate change prediction.
- 24-40** SUSTACHE, JOSE<sup>1</sup>; CARLA CORTES\*<sup>1</sup>; SOFIA OLIVERO<sup>3</sup>; ELVIA MELENDEZ<sup>2</sup>; SUSAN ARAGON<sup>2</sup>; MARIELY MORALES<sup>2</sup>; DENNY FERNANDEZ<sup>3</sup>; and MIGUEL GARCIA<sup>3</sup>. <sup>1</sup>*Department of Natural Resources and the Environment, San Juan, Puerto Rico*; <sup>2</sup>*University of Puerto Rico, San Juan*; and <sup>3</sup>*University of Puerto Rico, Humacao*. Characterization of the plant diet of introduced pigs and goats in Mona Island Reserve, Puerto Rico.

#### ECONOMIC BOTANY SECTION, BSA

- 24-41** MORNINGSTAR, DAWN\*<sup>1</sup>; PENELOPE A. PERKINS-VEAZIE<sup>2</sup>; and STANLEY A. RICE<sup>1</sup>. <sup>1</sup>*Southeastern Oklahoma State University, Durant* and <sup>2</sup>*USDA South Central Agricultural Research Laboratory, Lane OK*. Lycopene extraction from freeze-dried tomatoes.
- 24-42** CHIKARMANE, SONA; TANIA REHSE\*; and KATHLEEN PRYER. *Duke University, Durham, NC*. Tracing the cultural and botanical origins of turmeric (*Curcuma longa* L.).

#### GENETICS SECTION, BSA

- 24-43** CALIE, PATRICK\* and CHRISTINA SHACKLEFORD. *Eastern Kentucky University*. Variability of seed germination within and between populations of the Kentucky endemic, Short's goldenrod (*Solidago shortii* - Asteraceae).
- 24-44** DANE, FENNY\* and PING LANG. *Auburn University, AL*. Phylogenetic relationships of *Citrullus* (Cucurbitaceae) using DNA sequences from several coding and noncoding chloroplast DNA regions: implications for evolution of watermelon.
- 24-45** DEPAMPHILIS, C.; H. MA; D. SOLTIS; P. SOLTIS; J. CARLSON; S. TANKSLEY; J. LEEBENS-MACK; W. FARMERIE; M. FROHLICH; D. FIELD; L. ZAHN; S. KIM; M. BUZGO; H. KONG\*; and J. ARRINGTON. *Penn State University; University of Florida; Cornell University, NY; and British Museum of Natural History, UK*. The Floral Genome Project: Comparative analysis of sequence and expression of florally expressed genes.

- 24-46** DUAN, FAPING; SHUGUO FAN\*; YUANQING LI; and CHENGYE LIANG. *Cornell University, NY and Chinese Academy of Sciences, China*. Effects of liberty and bar-transgenic rice residue on microorganisms and activity of soil enzyme.
- 24-47** DUAN, FAPING; SHUGUO FAN\*; YUANQING LI; and CHENGYE LIANG. *Cornell University, NY and Chinese Academy of Sciences, China*. Poisonous mechanism of gulfosinate and resistant mechanism of bar-transgenic rice.
- 24-48** DUAN, FAPING; SHUGUO FAN\*; YUANQING LI; and CHENGYE LIANG. *Cornell University, NY and South China Institute of Botany, the Chinese Academy of Sciences, China*. Studies on resistant inheritance of bar-transgenic rice and expression of bar gene
- 24-49** ELLER, MICHELE\* and HALINA KNAP. *Clemson University, SC*. Genomics of polyamine biosynthesis genes in soybean.
- 24-50** LIU, XIANAN; GINGER SWIRE-CLARK; and WM. VANCE BAIRD\*. *University of Illinois and Clemson University, SC*. Differential expression of genes regulated in response to abiotic-stress in sunflower.
- 24-51** LIU, XIANAN and WM. VANCE BAIRD\*. *University of Illinois and Clemson University, SC*. Identification of a novel gene, HaABRC5, up-regulated in response to drought, salinity and exogenous abscisic acid from *Helianthus annuus* (Asteraceae).
- 24-52** MEEROW, ALAN\*; MICHAEL GIDEON; and JASON CLAYTON. *USDA-ARS-SHRs, National Germplasm Repository, FL*. Microsatellite DNA variation in *Iris hexagona* Walter.
- 24-53** MYLECRAINE, KRISTIN\*; JOHN KUSER; GEORGE ZIMMERMANN; PETER SMOUSE; and LENA STRUWE. *Rutgers University, NJ*. Varietal status of *Chamaecyparis thyoides* var. *henryae* supported by allozyme and morphological data.
- 24-54** TERCEK, MICHAEL\*; DONALD HAUBER; and STEVEN DARWIN. *Tulane University, LA*. Ecology and evolution of geothermally adapted *Agrostis* of North American and the Kamchatka Peninsula.

#### **PALEOBOTANICAL SECTION, BSA**

- 24-55** JOHNSON, TIMOTHY and WILSON A. TAYLOR. *University of Wisconsin, Eau Claire*. Ultrastructure of the patinate miospore *Cymbosporites echinatus* from the Lower Devonian of Herefordshire, England.
- 24-56** MICKLE, JAMES E. *North Carolina State University, Raleigh*. Conifer cones from the Late Cretaceous Tar Heel Formation of the Atlantic Coastal Plain of North Carolina, USA.

#### **PHYSIOLOGICAL SECTION, BSA**

- 24-57** CONSTABLE, J. V. H.<sup>1</sup>\*; B. PEFFER<sup>2</sup>; and D. DENICOLA<sup>2</sup>. <sup>1</sup>*California State University, Fresno* and <sup>2</sup>*Slippery Rock University, Slippery Rock, PA*. Light limitation and seasonal carbon phenology of Mayapple (*Podophyllum peltatum*).

- 24-58** TARPLEY, LEE\* and TEFAMICHAEL H. KEBROM. *Texas A&M Agricultural Research and Extension Center, Beaumont.* Rice ratoon tiller initiation and early establishment: Responses to exogenous hormone applications.

#### PHYTOCHEMICAL SECTION, BSA

- 24-59** KURCHII, BOGDAN A. *Institute of Plant Physiology and Genetics, Kiev, Ukraine.* Serine, Threonine, Tyrosine and Histidine having opened functional reactive groups are sophisticated receptors.

#### ASPT / SYSTEMATICS SECTION, BSA

- 24-60** WARD, N. MISA\* and PETRA UNGER. *EDAW Inc., Sacramento, CA.* Rare Plants of the Ione Formation in California.
- 24-61** FORD-WERNTZ, DONNA\*<sup>1</sup> and PAUL HARMON<sup>2</sup>. <sup>1</sup>*West Virginia University, Morgantown* and <sup>2</sup>*West Virginia Division of Natural Resources, Elkins.* The West Virginia Vascular Flora Atlas.
- 24-62** ZARUCCHI, JAMES L. *Missouri Botanical Garden, St. Louis.* Challenges to Producing a Continental Flora.
- 24-63** CONTI, ELENA\*; KARINA ARROYO; and FRANK RUTSCHMANN. *University of Zurich, Switzerland.* Phylogenetic relationships and molecular dating of the rare *Saxifraga florulenta* Moretti: Implications for biogeography and the evolution of monocarpy.
- 24-64** RUTSCHMANN, FRANK\*<sup>1</sup>; TORSTEN ERIKSSON<sup>2</sup>; and ELENA CONTI<sup>1</sup>. <sup>1</sup>*University of Zurich, Switzerland* and <sup>2</sup>*Royal Swedish Academy of Sciences, Stockholm, Sweden.* Testing the out-of-India dispersal of Crypteroniaceae by molecular dating.
- 24-65** ZHANG, WENHENG\* and (JENNY) QIU-YUN XIANG. *North Carolina State University, Raleigh.* Eastern Asian-Eastern North American floristic disjunction-rates of molecular evolution after isolation.
- 24-66** WON, HYOSIG\* and SUSANNE S. RENNER. *University of Missouri-St. Louis.* Horizontal gene transfer from flowering plants to *Gnetum*.
- 24-67** ARSENAULT, M.<sup>1</sup>; J. PRESBY-GERMANO<sup>2</sup>; A. KLEIN<sup>2</sup>; W. WRIGHT<sup>1</sup>; and C. CAMPBELL\*<sup>1</sup>. <sup>1</sup>*University of Maine, Orono* and <sup>2</sup>*University of New Hampshire, Durham.* Incongruence between three genomes in phylogenetic relationships within *Picea* (Pinaceae).
- 24-68** MILLAM, KENDRA C.\*<sup>1</sup>; THOMAS J. GIVNISH<sup>1</sup>; and THOMAS S. PATRICK<sup>2</sup>. <sup>1</sup>*University of Wisconsin, Madison* and <sup>2</sup>*Georgia Natural Heritage Program, Social Circle, GA.* Geographic patterns within the North American *Trillium erectum* complex: evidence from DNA sequence and morphometric analyses.
- 24-69** FARMER, S. B. *University of Tennessee, Knoxville.* Phylogenetic relationships of Trilliaceae.
- 24-70** JARRELL, DAVID and HAMED HOSSEIN\*. *Mary Washington College, Fredericksburg, VA.* Molecular systematics of *Phalaenopsis* (Orchidaceae): A preliminary study.

- 24-71** JUSWARA, L. S. *Ohio State University, Columbus*. Towards a revision of *Goodyera* section *Otosepalum*.
- 24-72** HEANEY, J MICHAEL. *University of Florida, Gainesville*. Anatomy of *Polystachya* (Epidendreae-Orchidaceae).
- 24-73** WILLIAMS, NORRIS H. and MARK. W. WHITTEN. *Florida Museum of Natural History, Gainesville*. Molecular phylogenetics and generic concepts in the Maxillarieae (Orchidaceae).
- 24-74** GELLI DE FARIA, ANA PAULA<sup>1</sup>; TÂNIA WENDT\*<sup>1</sup>; and GREGORY BROWN<sup>2</sup>. <sup>1</sup>*Universidade Federal do Rio de Janeiro, Brazil* and <sup>2</sup>*University of Wyoming, Laramie*. Morphological data and phylogenetic analysis of *Aechmea* (Bromeliaceae subfamily Bromelioideae) - a first approximation.
- 24-75** GAO, LIZHI. *University of Michigan, Ann Arbor*. Population genetic structure and conservation genetics of wild rice *Oryza rufipogon* (Poaceae) as detected by polymorphic microsatellite loci.
- 24-76** GAO, LIZHI. *University of Michigan, Ann Arbor*. Comparisons of microsatellite variability and population genetic structure of two endangered wild rice species, *Oryza rufipogon* and *O. officinalis*, and their conservation implications.
- 24-77** WU, CHENG-CHIANG\*<sup>1</sup>; ELENA M. KRAMER<sup>2</sup>; HEATHER WATCHEL<sup>2</sup>; JER-MING HU<sup>1</sup>. <sup>1</sup>*National Taiwan University, Taipei, China* and <sup>2</sup>*Harvard University, Cambridge, MA*. Lower core-Eudicot phylogeny based on combined analysis of *PISTILLATA*, *APETALA3*, 18S rDNA, *LEAFY*, *rbcl*, and *atpB* sequences.
- 24-78** ARAKAKI, MONICA\*<sup>1</sup>; JOSE L. PANERO<sup>2</sup>; and BONNIE CROZIER<sup>2</sup>. <sup>1</sup>*University of Florida, Gainesville* and <sup>2</sup>*University of Texas, Austin*. Systematics of the genus *Weberbauerocereus* Backeb. (Cactaceae).
- 24-79** EDWARDS, ERIKA J.\*<sup>1</sup>; MIRIAM DIAZ<sup>2</sup>; and MICHAEL J. DONOGHUE<sup>1</sup>. <sup>1</sup>*Yale University, New Haven, CT* and <sup>2</sup>*Universidad Experimental Francisco de Miranda, Coro, Venezuela*. What can *Pereskia* really tell us about early cactus evolution?
- 24-80** KIM, SANG-TAE\*<sup>1</sup>; SONIA E. SULTAN<sup>2</sup>; and MICHAEL J. DONOGHUE<sup>1</sup>. <sup>1</sup>*Yale University, New Haven, CT* and <sup>2</sup>*Wesleyan University, Middletown, CT*. Phylogeny and evolution of *Polygonum* sect. *Persicaria* (Polygonaceae) in eastern North America.
- 24-81** KROSNICK, SHAWN E.\* and JOHN V. FREUDENSTEIN. *The Ohio State University, Columbus*. Morphological and molecular patterns in the Old World species of *Passiflora* (subgenus *Decaloba* supersection *Disemma*).
- 24-82** ZHANG, LI-BING\* and SUSANNE S. RENNER. *University of Missouri-St. Louis*. Phylogeny of Cucurbitales inferred from seven chloroplast and mitochondrial loci.
- 24-83** LANG, PING\* and FENNY DANE. *Auburn University, AL*. Phylogeny of *Castanea* (Fagaceae) based on chloroplast noncoding sequence data.
- 24-84** SLOTTA, T. A. B.\* and D. M. PORTER. *Virginia Tech, Blacksburg*. Phylogeography of rare California bush mallows (*Malacothamnus*: Malvaceae).



- 24-85** DREHER, STEPHEN E. *Rancho Santa Ana Botanic Garden, Claremont, CA.* Systematics, ecology and hybridization patterns of the genus *Sphaeralcea* (Malvaceae).
- 24-86** GUGGISBERG, ALESSIA\*<sup>1</sup>; AUSTIN MAST<sup>1</sup>; SYLVIA KELSO<sup>2</sup>; and ELENA CONTI<sup>1</sup>. <sup>1</sup>*University of Zurich, Switzerland* and <sup>2</sup>*Colorado College, Colorado Springs.* Polyploidy, biogeography and evolution of breeding systems in *Primula* sect. *Aleuritia* with special emphasis on an allotetraploid complex: an integrated phylogenetic, population genetic, and molecular cytogenetic approach.
- 24-87** OGUNWENMO, K. OLUSOLA. *Babcock University, Lagos, Nigeria.* Fruit and seed morphology, germination and seedling behaviour of some taxa of *Ipomoea* L. (Convolvulaceae).
- 24-88** OGUNWENMO, K. OLUSOLA\* and A. IBIRIYIKE OBISANYA. *Babcock University, Lagos, Nigeria.* Comparative phytochemical analysis of *Ipomoea triloba* L. complex (Convolvulaceae) in Nigeria.
- 24-89** BENNETT, JONATHAN\*<sup>1</sup> and ROBERT SCOTLAND<sup>2</sup>. <sup>1</sup>*University of Missouri, Columbia* and <sup>2</sup>*Oxford University, UK.* Pollen Morphology of the Strobilantheae.
- 24-90** MORAWETZ, JEFFERY J.\* and ANDREA D. WOLFE. *Ohio State University, Columbus.* Preliminary phylogenetic analysis of the parasitic plant genus *Alectra* (Orobanchaceae).
- 24-91** CHUNG, KUO-FANG\*<sup>1</sup> and BARBARA A.SCHAAL<sup>2</sup>. <sup>1</sup>*Missouri Botanical Garden, St. Louis* and <sup>2</sup>*Washington University, St. Louis, MO.* Phylogenetic biogeography of *Oreomyrrhis*: a trans-Pacific distributed Apiaceae.
- 24-92** YI, TINGSHUANG\* and JUN WEN. *Field Museum of Natural History, Chicago, IL.* Chromosomal evolution in Araliaceae.
- 24-93** LIU, H.\*<sup>3</sup>; J. TRUSTY<sup>3</sup>; R. OVIEDO<sup>1</sup>; A. ANDERBERG<sup>2</sup>; and J. FRANCISCO-ORTEGA<sup>3</sup>. <sup>1</sup>*Ministerio de Ciencia, La Habana, Cuba*; <sup>2</sup>*Swedish Museum of Natural History, Stockholm, Sweden*; and <sup>3</sup>*Florida International University, Miami.* Molecular systematics of the Caribbean sunflower genera *Rhodogeron* Griseb. and *Sachsia* Griseb.
- 24-94** KARAMAN, VESNA\* and LOWELL E. URBATSCH. *Louisiana State University, Baton Rouge.* Preliminary results on the phylogeny of the *Hinterhubera* and *Novenia* groups (Hinterhuberinae: Asteraceae) based on ETS and ITS sequence data.

#### TEACHING SECTION, BSA

- 24-95** KARPOFF, ARNOLD J. and ANDREW C KEMP. *University of Louisville, Louisville, KY.* A collaboration in teacher education: Experimental botany for teachers.

#### TROPICAL BIOLOGY SECTION, BSA

- 24-96** TRUSTY, JENNIFER L.<sup>1</sup>; HERBERT C. KESLER<sup>2</sup>; and JAVIER FRANCISCO-ORTEGA<sup>1</sup>. <sup>1</sup>*Florida International University, University Park* and <sup>2</sup>*Fairchild Tropical Garden, Coral Gables, FL.* A floristic inventory of Isla del Coco, Costa Rica.

2:00 PM – 4:00 PM  
SESSION D-1

MCC, 201A

**DISCUSSION SESSION: All Societies**

*Maintaining support for herbaria and natural history collections in the 21<sup>st</sup> Century*

Sponsored by ASPT, BSA, ABLs, and AFS

Presiding: L. ALAN PRATHER, Department of Plant Biology, 166 PBL, Michigan State University, East Lansing, MI 48824-1312. Tele: (517) 355-4695, Fax (517) 353-1926, E-mail: alan@msu.edu, and LYNN G. CLARK, Department of Botany, Iowa State University, Ames, IA 50011-1020. Tele: (515) 294-8218, E-mail: lgclark@iastate.edu.

2:00 PM – 3:00 PM  
SESSION 25

MCC, 201C

**CONTRIBUTED PAPERS: Economic Botany Section, BSA**

Presiding: KATHLEEN C. BURKS, Florida Department of Environmental Protection, 3800 Commonwealth Blvd., MS 705, Tallahassee, FL 32399. Tele: (850) 487-2600, E-mail: kathy.burks@dep.state.fl.us.

- 2:00**    **25-1**    BURKS, KATHLEEN C., *Florida Department of Environmental Protection, Tallahassee*. Snowflakes in Florida: *Nymphoides cristata* (Roxb.) Kuntze and other new invasive non-native aquatics introduced via the water garden and aquarium trade.
- 2:15**    **25-2**    AMPORN PAN, LAAW<sup>1\*</sup>; S. S. DHILLION<sup>2</sup>; and P. WERUKAMKUN<sup>1</sup>. <sup>1</sup>*Srinakharinwirot University, Bangkok, Thailand* and <sup>2</sup>*Agricultural University of Norway, Ås, Norway*. Aquatic plant diversity and use by two village communities in Na Haeo, northeast Thailand.
- 2:30**    **25-3**    HINKLE, ANYA E. *University of California, Berkeley*. Distribution of a male sterile form of *Cordyline fruticosa* (Lomandraceae) in the eastern Pacific.
- 2:45**    **25-4**    YOUNG, COLIN A. *University of Connecticut, Storrs*. A comprehensive and quantitative assessment of Belizean Creole ethnobotany: Implications for the forest conservation.

2:00 PM – 4:45 PM  
SESSION 26

MCC, 201B

**COLLOQUIUM: ASPT –**

*Biogeography of alpine plants on the large scale: Current stage and prospects*

Organized by: RETO NYFFELER, Institut für Systematische Botanik, Universität Zürich, CH-8008 Zürich, Switzerland.

Presiding: RETO NYFFELER, Universität Zürich, Switzerland.

- 2:00**    **26-1**    NYFFELER, RETO. *Universität Zürich, Switzerland*. Introduction.
- 2:15**    **26-2**    REE, RICHARD. *University of British Columbia, Vancouver, Canada*. Morphological and phylogenetic analyses of sympatric species of *Pedicularis* (Orobanchaceae) in south-central China.
- 2:30**    **26-3**    VON HAGEN, BERNHARD. *Martin Luther Universitaet, Halle, Germany*. Causes for the rapid radiation of *Halenia* in neotropical mountain ranges.
- 2:45**    **26-4**    HOOT, SARA B. *University of Wisconsin, Milwaukee*. Phylogeny and biogeography of alpine *Anemone* species.
- 3:00**    **26-5**    BELL, CHARLES. *Yale University, New Haven, CT*. Phylogeny and biogeography of Valerianaceae (Dipsacales), with special refernce to the alpine South American species.
- 3:15**    **BREAK**
- 3:30**    **26-6**    MADRIÑÁN, SANTIAGO. *Universidad de los Andes, Bogot-, DC, Colombia*. Patterns and processes of Páramo plant diversification.
- 3:45**    **26-7**    WINKWORTH, RICHARD C.\*<sup>1</sup>; STEVEN J. WAGSTAFF<sup>3</sup>; DAVID GLENNY<sup>3</sup>; PETER J. LOCKHART<sup>2</sup>. <sup>1</sup>*Yale University, New Haven, CT*; <sup>2</sup>*Massey University, Palmerston North, New Zealand*; and <sup>3</sup>*Manaaki Whenua Landcare Research, Lincoln, New Zealand*. Evolution of the New Zealand alpine flora: origins, diversification and dispersal.
- 4:00**    **26-8**    KALIN ARROYO, MARY T.\*<sup>1</sup>; CLAUDIA HERNÁNDEZ<sup>1</sup>; FERNÁNDA PÉREZ<sup>1</sup>; JAMES ZARUCCHI<sup>2</sup>. <sup>1</sup>*Universidad de Chile, Santiago, Chile* and <sup>2</sup>*Missouri Botanical Garden, St. Louis*. The South American Andes: a fertile ground for molecular evolutionary studies in high elevation ecosystems.
- 4:15**    **DISCUSSION**

**2:00 PM – 5:00 PM**  
**SESSION 27**

**MCC, 203B**

**CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —**  
*Cornales, Ericales, Solanales and Gentianales*

Presiding: JAMES W. HORN, Department of Biology, Duke University, Durham, NC 27708. E-mail: jwh7@duke.edu.

- 2:00**    **27-1**    HORN, JAMES W. *Duke University, Durham, NC*. Evolution of floral patten formation and mature floral structure in *Hibbertia* (Dilleniaceae).
- 2:15**    **27-2**    HUFFORD, LARRY\*<sup>1</sup> and MICHELLE MCMAHON<sup>2</sup>. <sup>1</sup>*Washington State University, Pullman* and <sup>2</sup>*University of California, Davis*. Phylogeny and systematics of Loasaceae subfamily Loasoideae.
- 2:30**    **27-3**    XIANG, (JENNY) QIU-YUN\*<sup>1</sup>; DAVID THOMAS<sup>1</sup>; WENHENG ZHANG<sup>1</sup>; CHUANZHU FAN<sup>1</sup>; and STEVEN R. MANCHESTER<sup>2</sup>. <sup>1</sup>*North Carolina State University, Raleigh* and <sup>2</sup>*Florida Musuem of Natural History, Gainesville*. Phylogeny and divergence times

of the Cornelian cherries (*Cornus* subg. *Cornus*, Cornaceae) - Congruence among parsimony, maximum likelihood, and Bayesian analyses, and implications for evolution and biogeography.

- 2:45**    **27-4**    XIANG, (JENNY) QIU-YUN\*; JEFFREY THORNE; TAE-KUN SEO; DAVID THOMAS; CHUANZHU FAN; and WENHENG ZHANG. *North Carolina State University, Raleigh*. Phylogeny and disjunct biogeography of *Cornus* - Divergence times and rates of molecular evolution.
- 3:00**    **27-5**    FAN, CHUANZHU\* and (JENNY) QIU-YUN XIANG. *North Carolina State University, Raleigh*. Characterization of anthocyanin regulatory gene in *Cornus* - Utility in evolutionary studies of the genus.
- 3:15**    **BREAK**
- 3:30**    **27-6**    FRITSCH, PETER W.\*<sup>1</sup>; YUGUO WANG<sup>2</sup>; SUHUA SHI<sup>2</sup>; FRANK ALMEDA<sup>1</sup>; and BONI C. CRUZ<sup>1</sup>. <sup>1</sup>*California Academy of Sciences, San Francisco* and <sup>2</sup>*Zhongshan University, Guangzhou, China*. Phylogeny and infrageneric classification of *Symplocos* (Symplocaceae) inferred from DNA sequence data.
- 3:45**    **27-7**    KRON, KATHLEEN. *Wake Forest University, Winston-Salem, NC*. Phylogenetic relationships of *Menziesia* (Rhodoreae, Ericoideae, Ericaceae) based on nrITS and *matK* sequence data.
- 4:00**    **27-8**    POWELL, E. ANN\* and KATHLEEN A. KRON. *Wake Forest University, Winston-Salem, NC*. Species limits and phylogenetic relationships in *Satyria* sensu stricto (Vaccinieae, Ericaceae).
- 4:15**    **27-9**    MONFILS, ANNA K.\* and L. ALAN PRATHER. *Michigan State University, East Lansing*. Phylogeny and pollen evolution of *Cantua* (Polemoniaceae subfamily Cobaeoideae): Evidence from chloroplast and nuclear DNA sequence data.
- 4:30**    **27-10**    MOTLEY, TIMOTHY J. *The New York Botanical Garden, Bronx*. Phylogeny of Hawaiian and Pacific *Hedyotis* (Rubiaceae): Fruit evolution and the implications for conservation and genomics.
- 4:45**    **27-11**    SPOONER, DAVID\*<sup>1</sup>; IRIS PERALTA<sup>2</sup>; SANDRA KNAPP<sup>3</sup>. <sup>1</sup>*USDA, Madison, WI*; <sup>2</sup>*National University of Cuyo, Mendoza, Argentina*; and <sup>3</sup>*The Natural History Museum, London, United Kingdom*. AFLP phylogeny of wild tomatoes (*Solanum* L. section *Lycopersicon* [Mill.] Wettst. subsection *Lycopersicon*).

**2:00 PM – 3:15 PM**

**MCC, 203A**

**SESSION 28**

**CONTRIBUTED PAPERS: Paleobotanical Section, BSA**

*Paleozoic paleobotany / Informal presentations*

Presiding: LISA BOUCHER, Department of Biology, University of Nebraska-Omaha, 6001 Dodge St., Omaha, NE 68182. Tele: (402) 554-2477, E-mail: boucher@unomaha.edu.

- 2:00**    **28-1**    BOYCE, C. KEVIN\*; MACIEJ A. ZWIENIECKI; and N. MICHELE HOLBROOK. *Harvard University, Cambridge.* How to make a leaf? 400 million years of repeated developmental, physiological, and biochemical answers to the same evolutionary question developmental and structural section.
- 2:15**    **28-2**    KRINGS, MICHAEL\*<sup>1</sup>; ANKE GREWING<sup>1</sup>; THOMAS N. TAYLOR<sup>2</sup>; and JEAN GALTIER<sup>3</sup>. <sup>1</sup>*Westfälische Wilhelms-Universität, München, Germany;* <sup>2</sup>*University of Kansas, Lawrence;* and <sup>3</sup>*Université de Montpellier, Montpellier, France.* *Lageniastrum macrospora*, the oldest fossil endophytic alga.
- 2:30**    **28-3**    KNAUS, M. JANE. *Southwest Texas State University, San Marcos.* Plant biostratigraphy, an artifactual taxonomy, and comparative floristics based on diversity estimates.
- 2:45**    **INFORMAL PRESENTATIONS**

**2:00 PM – 3:45 PM**  
**SESSION 29**

**MCC, 202A**

**CONTRIBUTED PAPERS: Teaching Section, BSA –**  
***Strategies for teaching and learning***

Presiding: STANLEY A. RICE, Department of Biological Sciences, Southeastern State University, Durant, OK 74701. Tele: (580) 745-2688, E-mail: srice@sosu.edu.

- 2:00**    **29-1**    RICE, STANLEY A. *Southeastern Oklahoma State University, Durant.* Use of Fast-Plants ® in laboratory studies of plasticity.
- 2:15**    **29-2**    KLEIER, CATHERINE. *Adams State College, Alamosa, CO.* Active learning in the plant sciences classroom.
- 2:30**    **29-3**    KARPOFF, ARNOLD\* and ANDREW KEMP. *University of Louisville, Louisville, KY.* Teaching teachers experimental botany.
- 2:45**    **29-4**    EAKIN, DAVE<sup>1</sup>; KELLI HARRIS<sup>1</sup>; and RUTH BEATTIE<sup>2</sup>. <sup>1</sup>*Eastern Kentucky University, Richmond* and <sup>2</sup>*University of Kentucky, Lexington.* An assessment of the role of multimedia in enhancing student learning in freshman level biology courses.
- 3:00**    **29-5**    MACKLIN, MONICA. *Northeastern State University, Tahlequah, OK.* Student active science in a field botany course.
- 3:15**    **29-6**    RICE, STEVEN K. and R. PAUL WILLING. *Union College, Schenectady, NY.* Students investigate forest succession by combining field data collection and simulation modeling using STELLA software.
- 3:30**    **DISCUSSION**

2:30 PM – 4:15 PM  
SESSION 30

MCC, 201D

**CONTRIBUTED PAPERS: ABLIS / Bryological and Lichenological Section, BSA –  
*Bryophyte systematics***

Presiding: BARBARA J. CRANDALL-STOTLER, Department of Plant Biology, Southern Illinois University, Carbondale, IL 62901. Tele: (618) 453-3232, E-mail: crandall@plant.siu.edu.

- 2:30**    **30-1**    FORREST, LAURA L.<sup>1\*</sup>; BARBARA J. CRANDALL-STOTLER<sup>1</sup>; and A. VIRGINIA FREIRE<sup>2</sup>. <sup>1</sup>*Southern Illinois University, Carbondale* and <sup>2</sup>*University of Wisconsin—Stevens Point*. A molecular phylogeny of the simple thalloid liverwort family Fossombroniaceae (Marchandiophyta) as inferred from the chloroplast genes *rps4*, *trnL* and *rbcL*.
- 2:45**    **30-2**    GOFFINET, B.<sup>1\*</sup>; W. R. BUCK<sup>2</sup>; C. COX<sup>3</sup>; A. J. SHAW<sup>3</sup>; and N. WICKETT<sup>1</sup>. <sup>1</sup>*University of Connecticut, Storrs*; <sup>2</sup>*New York Botanical Garden, Bronx*; and <sup>3</sup>*Duke University, Durham, NC*. Circumscription and affinities of the Sematophyllaceae (Bryophyta, Hypnales) based on multigenomic phylogenetic inferences.
- 3:00**    **30-3**    CRANDALL-STOTLER, BARBARA J. *University of Southern Illinois, Carbondale*. Sporophyte anatomy and systematic relationships of *Xenothallus vulcanicolus* R.M. Schust.
- 3:15**    **BREAK**
- 3:30**    **30-4**    NEWTON, ANGELA E. *The Natural History Museum, London, UK*. The family Rutenbergiaceae (*Rutenbergia* and *Neorutenbergia*) in Africa, Madagascar and the Mascarenes.
- 3:45**    **30-5**    DUFF, R. JOEL<sup>1\*</sup>; CHRIS CARGILL<sup>2</sup>; and KAREN RENZAGLIA<sup>3</sup>. <sup>1</sup>*University of Akron, Akron, OH*; <sup>2</sup>*Center for Plant Biodiversity Research, Canberra, Australia*; and <sup>3</sup>*University of Southern Illinois, Carbondale*. Hornwort phylogeny and classification revisited.
- 4:00**    **30-6**    EAKIN, DAVID A. *Eastern Kentucky University, Richmond*. Additions to SEM determinations of endostome and exostome characteristics in various species of *Regmatodon* (Regmatodontaceae) and *Macrohymenium* (Sematophyllaceae).

3:00 PM - 4:00 PM  
SESSION 31

MCC, 204B

**CONTRIBUTED PAPERS: Historical Section - BSA**

Presiding: LYTTON JOHN MUSSELMAN, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529-0266. Tele: (757) 683-3595, E-mail: lmusselm@odu.edu.

- 3:00**    **31-1**    MUSSELMAN, LYTTON JOHN. *Old Dominion University, Norfolk, VA*. The Botanical activities and herbarium of George Edward Post (1838-1909).
- 3:15**    **31-2**    HALBROOKS, MARY C. *Kent State University, Burton, OH*. History of the restored English Garden at Stan Hywet: An Ellen Biddle Shipman designed landscape.

**3:30**    **31-3**    DAVENPORT, LARRY J. *Samford University, Birmingham, AL.* Charles Mohr and the medicinal plants of Alabama.

**3:45**    **DISCUSSION / INFORMAL PRESENTATIONS**

**3:15 PM – 4:15 PM** **MCC, 201C**  
**MEETING: Economic Botany Section, BSA**

Presiding: DAVID M. SPOONER, USDA, Agricultural Research Service, Department of Horticulture, University of Wisconsin, Madison, WI 53706-1590. Tele: (608) 264-5213, E-mail: [dspooner@wisc.edu](mailto:dspooner@wisc.edu).

**3:15 PM – 4:15 PM** **MCC, 203A**  
**MEETING: Paleobotanical Section, BSA**

Presiding: BRIAN J. AXSMITH (Chair, Paleobotanical Section), Department of Biological Sciences, University of South Alabama, Mobile, AL 36688-0002. Tele: (251) 460-7528, E-mail: [baxsmith@jaguar1.usouthal.edu](mailto:baxsmith@jaguar1.usouthal.edu).

**3:45 PM – 4:45 PM** **MCC, 202A**  
**MEETING: Teaching Section, BSA**

Presiding: D. TIMOTHY GERBER, Department of Biology, University of Wisconsin–La Crosse, La Crosse, WI 54601. Tele: (608) 785-6977, E-mail: [gerber.dani@uwlax.edu](mailto:gerber.dani@uwlax.edu).

**4:00 PM – 4:45 PM** **MCC, 204B**  
**MEETING: Historical Section, BSA**

Presiding: LARRY J. DAVENPORT, Department of Biology, Samford University, Birmingham, AL 35229-2234. Tele: (205) 726-2584, E-mail: [ljdavenp@samford.edu](mailto:ljdavenp@samford.edu).

**4:45 PM – 5:45 PM** **MCC, 204A**  
**MEETING: BSA Annual Business Meeting (All Members)**

Presiding: SCOTT D. RUSSELL, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019-0245. Tele: (405) 325-6234, E-mail: [srussell@ou.edu](mailto:srussell@ou.edu).

## TUESDAY EVENING, JULY 29

**6:00 PM – 7:00 PM**

**MCC, 204A**

**SOCIAL: BSA New and Prospective Members**

Presiding: SCOTT D. RUSSELL, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019-0245. Tele: (405) 325-6234, E-mail: srussell@ou.edu.

**6:00 PM – 7:00 PM**

**USS Alabama**

**MIXER: ASPT**

**7:00 PM – 10:00 PM**

**USS Alabama**

**BANQUET AND AUCTION: ASPT (Ticketed Event)**

Presiding: LYNN G. CLARK, Department of Botany, Iowa State University, Ames, IA 50011-1020. Tele: (515) 294-8218, E-mail: lgclark@iastate.edu.

Address of the ASPT President-Elect: LUCINDA McDADE, *Academy of Natural Sciences, Philadelphia, PA*. DNA and more: The incredible continuing contributions of herbarium (and museum) specimens.

## WEDNESDAY MORNING, JULY 30

**7:00 AM – 8:30 AM**

**MCC, 201D**

**MEETING AND LIGHT BREAKFAST: Pacific Section, BSA**

Presiding: DIETER WILKEN, Santa Barbara Botanic Garden, 1212 Mission Canyon Road, Santa Barbara, CA 93105. Tele: (805) 682-4726, E-mail: dwilken@sbbg.org.

**7:00 AM – 8:30 AM**

**MCC, 201C**

**BREAKFAST: Miami University of Ohio (Ticketed Event)**

**8:00 AM – 12:00 PM**

**MCC, 202A**

**SESSION 32**

**CONTRIBUTED PAPERS: Ecological Section, BSA –  
*Phenotypic plasticity, gene ecology, and reproductive ecology***

Presiding: AMY FAIVRE, Department of Biology, Cedar Crest College, Allentown, PA 18014. Tele: (610) 606-4666 ext. 3580, E-mail: aefavre@cedarcrest.edu.



- 8:00**     **32-1**   RICE, STANLEY A.\* *Oklahoma State University, Durant*. Anti-herbivore defense in male and female bois-d'arcs, *Maclura pomifera* (Moraceae) in southern Oklahoma.
- 8:15**     **32-2**   LEE, DAVID W.\*<sup>1</sup>; ADRIENNE L. EDWARDS<sup>2</sup>; and JENNIFER RICHARDS<sup>1</sup>. <sup>1</sup>*Florida International University, Miami* and <sup>2</sup>*Illinois Natural History Survey, Champaign*. Effects of water depth on growth and biomass allocation in *Eleocharis cellulosa* Torr.
- 8:30**     **32-3**   HAWKINS, TRACY S.\*; JERRY M. BASKIN; and CAROL C. BASKIN. *University of Kentucky, Lexington*. A comparative study of biomass allocation in seed- and ramet-derived plants of *Cryptotaenia canadensis* (Apiaceae): A monocarpic species of the North American temperate deciduous forest.
- 8:45**     **32-4**   WENDER, NAOMI J.<sup>1</sup>; KATHLEEN DONOHUE\*<sup>1</sup>; and CHANDRA R. POLISETTY<sup>2</sup>. <sup>1</sup>*Harvard University, Cambridge, MA* and <sup>2</sup>*University of Kentucky, Lexington*. Genetic constraints on the evolution of dispersal are mediated by phenotypic plasticity.
- 9:00**     **32-5**   CULLEY, THERESA M.\*<sup>1</sup>; AMY K. DUNBAR-WALLIS<sup>2</sup>; ANN K. SAKAI<sup>2</sup>; STEPHEN G. WELLER<sup>2</sup>; and DIANE R CAMPBELL<sup>2</sup>. <sup>1</sup>*University of Cincinnati, Cincinnati, OH* and <sup>2</sup>*University of California, Irvine*. The quantitative genetics of ecophysiological traits in the gynodioecious shrub, *Schiedea salicaria* (Caryophyllaceae).
- 9:15**     **32-6**   JONES, CYNTHIA\*<sup>1</sup>; NANCY RYAN<sup>1</sup>; CARL SCHLICHTING<sup>1</sup>; and ADRIENNE NICOTRA<sup>2</sup>. <sup>1</sup>*University of Connecticut, Storrs* and <sup>2</sup>*The Australian National University, Canberra*. Leaf shape, size and specific leaf area in the highly diverse South African genus, *Pelargonium*.
- 9:30**     **32-7**   NE'EMAN, G.\*<sup>1</sup>; R. SCHWARTZ<sup>2</sup>; and A. PEREVOLOTSKI<sup>3</sup>. <sup>1</sup>*University of Haifa – Oranim, Tivan, Israel*; <sup>2</sup>*The Society for Protection of nature in Israel and Yad-HaNadiv*; and <sup>3</sup>*The Volcani Center, Beit Dagan, Israel*. The effect of grazing on reproduction and population dynamics of the Mediterranean geophyte *Anemone coronaria*.
- 9:45**     **32-8**   BOYD, ROBERT\*. *Auburn University, AL*. Factors affecting seed production by the endangered chaparral shrub *Fremontodendron californicum* ssp. *decumbens* (Sterculiaceae).
- 10:00**           **BREAK**
- Presiding: STANLEY A. RICE, Department of Biological Sciences, Southeastern Oklahoma State University, Durant, OK 74701-0609. Tele: (580) 745-2688, E-mail: srice@sosu.edu.
- 10:15**     **32-9**   FAIVRE, AMY E.\* *Cedar Crest College, Allentown, PA*. Self-incompatibility systems and effective pollinators of seven understory *Psychotria* species on Barro Colorado Island, Panama.
- 10:30**     **32-10**  KOPTUR, SUZANNE\*<sup>1</sup> and ELENA PINTO-TORRES<sup>2</sup>. <sup>1</sup>*Florida International University, Miami* and <sup>2</sup>*Florida International University and Fairchild Tropical Garden, Miami*. Pollinators and their activity at flowers of *Jacquemontia reclinata*, an endangered morning glory of south Florida coastal strand.
- 10:45**     **32-11**  PINTO-TORRES, ELENA\*<sup>1</sup> and SUZANNE KOPTUR<sup>2</sup>. <sup>1</sup>*Florida International University and Fairchild Tropical Garden, Miami* and <sup>2</sup>*Florida International University, Miami*. Investigating the breeding system of an endangered coastal dune plant, *Jacquemontia reclinata* (Convolvulaceae).

- 11:00** 32-12 BROWN, SARAH M.\* and ANDREW G. STEPHENSON. *Pennsylvania State University, University Park*. The effect of two environments on the fitness of *Campanula* plants that differ in their self-compatibility phenotype.
- 11:15** 32-13 BASKIN, CAROL C.\*<sup>1</sup>; JERRY M. BASKIN<sup>1</sup>; and ALVIN Y YOSHINAGA<sup>2</sup>. <sup>1</sup>*University of Kentucky, Lexington* and <sup>2</sup>*Center for Conservation Research and Training, Honolulu, HI*. Seed dormancy and germination of four Hawaiian montane lobelioid shrubs.
- 11:30** 32-14 BASKIN, JERRY M.\*<sup>1</sup> CAROL C. BASKIN<sup>1</sup>; BARBARA H. DAVIS<sup>1</sup>; and SEAN M. GLEASON<sup>2</sup>. <sup>1</sup>*University of Kentucky, Lexington* and <sup>2</sup>*United States Army, Hilo, HI*. Physical dormancy in seeds of *Dodonaea viscosa* (Sapindales, Sapindaceae) from Hawaii.
- 11:45** DISCUSSION

**8:15 AM – 11:45 AM**  
SESSION 33

**MCC, 204B**

**SYMPOSIUM: ASPT / Paleobotanical Section, BSA —**

*Dating in the 21<sup>st</sup> Century: Theory and reality in finding a date for your clade I—Theory and methods*

Organized by: PATRICK S. HERENDEEN, Department of Biological Sciences, George Washington University, 2023 G Street NW, Washington, DC 20052. Tele: (202) 994-5828, E-mail: herenden@gwu.edu, and PETER R. CRANE, Royal Botanic Gardens, Kew, UK. Tele: 44-(0)-20-8332-5112, E-mail: p.crane@rbgkew.org.uk.

Presiding: PATRICK S. HERENDEEN, George Washington University, Washington, DC.

- 8:15** 33-1 HERENDEEN, PATRICK S.\*<sup>1</sup> and PETER R. CRANE<sup>2</sup>. <sup>1</sup>*George Washington University, Washington D.C.* and <sup>2</sup>*Royal Botanic Gardens, Kew, U.K.* Introduction.
- 8:30** 33-2 FOOTE, MICHAEL. *University of Chicago, Chicago, IL*. Evaluating discordances between molecular and paleontological divergence times.
- 9:00** 33-3 LUPIA, RICHARD\*<sup>2</sup>; PETER J. WAGNER<sup>1</sup>; and MICHAEL D. NOWAK<sup>2</sup>. <sup>1</sup>*The Field Museum, Chicago, IL* and <sup>2</sup>*University of Oklahoma, Norman*. Using fossil distributions to calibrate phylogenies: An example using heterosporous ferns.
- 9:30** 33-4 MANOS, P. S.\*<sup>1</sup>; S. M. MANCHESTER<sup>2</sup>; P. S. SOLTIS<sup>2</sup>; D. E. STONE<sup>1</sup>; D. E. SOLTIS<sup>2</sup>; and D. L. DILCHER<sup>2</sup>. <sup>1</sup>*Duke University, Durham, NC* and <sup>2</sup>*University of Florida, Gainesville*. Integrating fossil taxa in phylogenetic analysis: Examples from the angiosperm family Juglandaceae.
- 10:00** BREAK
- 10:15** 33-5 DOYLE, JAMES A. *University of California, Davis*. Tying fossils to molecular phylogenies: Examples from Cretaceous basal angiosperms.
- 10:45** 33-6 HUELSENBECK, JOHN. *University of California-San Diego, La Jolla*. Bayesian estimation of divergence time.

- 11:15 33-7 YODER, ANNE D. *Yale University, New Haven, CT*. Testing island biogeographic models with molecular data.

8:30 AM – 12:00 PM  
SESSION 34

MCC, 202B

CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —  
*Asterids: Apiales to Asterales*

Presiding: GREGORY CHANDLER, Department of Biological Sciences, The University of North Carolina at Wilmington, 601 S. College Rd., Wilmington NC 28403-5915. Tele: (910) 962-3470, E-mail: chandlerg@uncw.edu.

- 8:30 34-1 CHANDLER, GREGORY\*<sup>1</sup> and GREGORY PLUNKETT<sup>2</sup>. <sup>1</sup>*The University of North Carolina, Wilmington* and <sup>2</sup>*Virginia Commonwealth University, Richmond*. The phylogenetic placement and evolutionary significance of the polyphyletic subfamily Hydrocotoideae (Apiaceae).
- 8:45 34-2 SPRENKLE, TAYLOR S.\*<sup>1</sup>; GREGORY M. PLUNKETT<sup>2</sup>; and PORTER P. LOWRY<sup>3</sup>. <sup>1</sup>*University of Florida, Gainesville*; <sup>2</sup>*Virginia Commonwealth University, Richmond*; and <sup>3</sup>*Missouri Botanical Garden, St. Louis*. Molecular systematics of tribe Myodocarpeae (Araliaceae s.l.).
- 9:00 34-3 WEN, JUN\*; CHUNGHEE LEE; and SHILIANG ZHOU. *Field Museum of Natural History, Chicago, IL*. Geographic disjunctions, rapid radiations and species delimitations: insights from the ginseng genus (*Panax* L., Araliaceae).
- 9:15 34-4 MITCHELL, ANTHONY\*; CHUNGHEE LEE; and JUN WEN. *Field Museum of Natural History, Chicago, IL*. Phylogenetic relationships of *Brassaiopsis* (Araliaceae) and morphological evolution based on DNA sequence data from two nuclear and two chloroplast regions.
- 9:30 34-5 COSTELLO, ANNEMARIE\*<sup>1</sup>; and TIMOTHY MOTLEY<sup>2</sup>; <sup>1</sup>*American Museum of Natural History, New York, NY* and <sup>2</sup>*The New York Botanical Garden, Bronx*. Phylogenetic relationships within the *Tetraplasandra* Group (Araliaceae) revealed by Amplified Fragment Length Polymorphisms (AFLP) markers.
- 9:45 34-6 WINKWORTH, RICHARD C.\* and MICHAEL J. DONOGHUE. *Yale University, New Haven, CT*. *Viburnum* phylogeny, biogeography and character evolution – evidence from multiple genes.
- 10:00 BREAK
- 10:15 34-7 KARAMAN, VESNA\* and LOWELL E. URBATSCH. *Louisiana State University, Baton Rouge, LA*. Status of *Boltonia asteroides* complex (Asteraceae: Astereae).
- 10:30 34-8 CLEVINGER, JENNIFER A.\* and CURTIS C. CLEVINGER. *James Madison University, Harrisonburg, VA*. The systematics of *Silphium* (Asteraceae: Heliantheae): A revision based upon morphological and molecular data.

- 10:45 34-9** EDWARDS, CHRISTINE E.\*<sup>1</sup>; EVGENY V. MAVRODIEV<sup>1</sup>; MARK TANCIG<sup>3</sup>; DIRK C. ALBACH<sup>2</sup>; PAMELA S. SOLTIS<sup>3</sup>; and DOUGLAS E. SOLTIS<sup>1</sup>. <sup>1</sup>*University of Florida, Gainesville*; <sup>2</sup>*University of Vienna, Austria*; and <sup>3</sup>*The Florida Museum of Natural History, Gainesville*. The phylogeny of subtribe Scorzonerinae (Asteraceae) as inferred from ITS sequence data.
- 11:00 34-10** BALDWIN, BRUCE G. *University of California, Berkeley*. Cryptic diversity, peripatric speciation, and unequal rates of phenotypic evolution in an annual tarweed clade (*Layia*, Madiinae, Compositae).
- 11:15 34-11** VANDERPOOL, STARIA\*<sup>1</sup> and LINH DAVIS<sup>2</sup>. <sup>1</sup>*Arkansas State University, State University, AR* and <sup>2</sup>*Cleveland National Forest, San Diego, CA*. Genetic variability of an extended metapopulation of *Solidago riddellii* (Asteraceae).
- 11:30 34-12** THOMPSON, STACEY L. and JEANNETTE WHITTON\*. *The University of British Columbia, Vancouver, Canada*. Multiple origins of asexual autopolyploids in *Townsendia hookeri* (Asteraceae).
- 11:45 34-13** TATE, JENNIFER A.\*<sup>1</sup>; ANNE-CATHRINE SCHEEN<sup>3</sup>; Z. JEFFREY CHEN<sup>2</sup>; DOUGLAS E. SOLTIS<sup>1</sup>; and PAMELA S. SOLTIS<sup>1</sup>. <sup>1</sup>*Florida Museum of Natural History, Gainesville*; <sup>2</sup>*Texas A&M University, College Station, TX*; and <sup>3</sup>*University of Oslo, Norway*. Patterns of gene expression in a recent allopolyploid of recurrent origin: revisiting the *Tragopogon* system.

**9:00 AM – 11:30 AM  
SESSION 35**

**MCC, 204A**

**SYMPOSIUM: Developmental and Structural Section, BSA –  
*Structural and Functional Adaptations of Vascular Plants to Wetland Ecosystems I***

Organized by: JAMES L. SEAGO, JR., Department of Biology, State University of New York, Oswego, NY 13126. Tele: (315) 312-2777, E-mail: seago@oswego.edu; FRANK W. EWERS, Department of Botany, Michigan State University, East Lansing, MI 48824. E-mail: ewers@msu.edu; and WILLIAM P. FRIEDMAN, Department of Evolutionary Biology and Ecology, University of Colorado, Boulder, CO, 80309. Tele: (303) 492-3082, E-mail: William.Friedman@colorado.edu.

Presiding: WILLIAM FRIEDMAN, University of Colorado, Boulder, CO.

- 9:00 35-1** FRIEDMAN, WILLIAM P. *University of Colorado, Boulder, CO*. Opening remarks.
- 9:15 35-2** SEAGO, JAMES L., JR. *State University of New York at Oswego, NY*. Structural adaptations of roots and rhizomes to wetland habitats.
- 9:30 35-3** SORRELL, BRIAN K. *National Institute of Water and Atmospheric Research, New Zealand*. Fresh perspectives on the functional significance of aerenchyma in wetland plants.
- 10:15 BREAK**
- 10:30 35-4** MARICLE, BRIAN R. and RAYMOND W. LEE. *Washington State University, Pullman, WA*. Oxygen transport through aerenchyma in *Spartina* (Poaceae).

**10:45 35-5** STEVENS, KEVIN J.; R. L. PETERSON; and R. J. READER. *University of Guelph, Canada*. Root system characteristics and plant performance under conditions of flooding and drought: Can predictive models of wetland plant response be constructed using root system characteristics?

**11:00 35-6** RICHARDS, JENNIFER H. *Florida International University, Miami, FL*. Understanding population structure in large, perennial, wind-pollinated wetland species: Insights from sawgrass (*Cladium jamaicense*).

**9:00 AM – 11:00 AM**  
**SESSION 36**

**MCC, 203A**

**CONTRIBUTED PAPERS: ABLIS / Bryological and Lichenological Section, BSA – Lichenology, bryophyte ecology and physiology**

Presiding: STEVEN K. RICE, Department of Biological Sciences, Union College, Schenectady, NY 12308. Tele: (518) 388-6243, E-mail: rices@union.edu.

**9:00 36-1** GOFFINET, B.<sup>1\*</sup>; T. TONSBERG<sup>2</sup>; and T. GOWARD<sup>3</sup>. <sup>1</sup>*University of Connecticut, Storrs*; <sup>2</sup>*University of Bergen, Norway*; and <sup>3</sup>*University of British Columbia, Canada*. Phylogenetic affinities of North American populations of *Dendriscoaulon* based on inferences from variation in the ITS nrDNA sequences.

**9:15 36-2** YAHR, REBECCA<sup>1\*</sup>; RYTAS J. VILGALYS<sup>1</sup>; and PAULA T. DEPRIEST<sup>2</sup>. <sup>1</sup>*Duke University, Durham, NC* and <sup>2</sup>*Smithsonian Institution, Washington, DC*. Specificity and selectivity in lichen symbiosis: Photobiont associations shift along a geographic gradient in *Cladonia* species.

**9:30 36-3** FEUERER, T.<sup>1</sup> and T. L. ESSLINGER<sup>2\*</sup>. <sup>1</sup>*Institut für Allgemeine Botanik, Hamburg, Germany* and <sup>2</sup>*North Dakota State University, Fargo*. Biodiversity of North American lichens and lichenicolous fungi.

**9:45 36-4** BENNETT, JAMES P.<sup>1</sup> and DARRELL M. WRIGHT<sup>2</sup>. <sup>1</sup>*University of Wisconsin, Madison* and <sup>2</sup>*Wellington, New Zealand*. Elemental chemistry of *Xanthoparmelia scabrosa* on roads and sidewalks in New Zealand.

**10:00 BREAK**

**10:15 36-5** SAXENA, ANUJ. *Sacred Heart College, Naipalapur, India*. Comparison of lead tolerance potential in *Marchantia* and *Plagiochasma* and their application in active biomonitoring.

**10:30 36-6** STARK, LLOYD R.<sup>1\*</sup>; LORENZO NICHOLS II<sup>1</sup>; and D. NICHOLAS MCLETCHE<sup>2</sup>. <sup>1</sup>*University of Nevada, Las Vegas* and <sup>2</sup>*University of Kentucky, Lexington*. Are females at an advantage in leaf regeneration in the desert moss *Syntrichia*?

**10:45 36-7** RICE, STEVEN K.\* and NICOLE SCHNEIDER. *Union College, Schenectady, NY*. Canopy size and the control of water balance in *Leucobryum glaucum*.

**CONTRIBUTED PAPERS: Genetics Section, BSA –  
*Population and conservation genetics***

Presiding: MATTHEW GITZENDANNER, University of Florida, Department of Botany, P.O. Box 118526, Gainesville, FL 32611-8526. Tele: (508) 335-4798, E-mail: magitz@botany.ufl.edu.

- 9:00**    **37-1**    MYLECRAINE, KRISTIN\*; JOHN KUSER; PETER SMOUSE; and GEORGE ZIMMERMANN. *Rutgers University, NJ*. Rangewide allozyme variation in Atlantic white-cedar: Geographic patterns and implications for historical biogeography.
- 9:15**    **37-2**    XIANG, (JENNY) QIU-YUN; DAVID THOMAS\*; ADJOA RICHARDSON-AHEDOR; and CHARLES WILLIAMS. *North Carolina State University; University of Oklahoma; and Idaho State University*. Microsatellite polymorphism and genetic structure of a broad hybrid zone of *Aesculus* (Hippocastanaceae).
- 9:30**    **37-3**    RICHARDSON-AHEDOR, ADJOA\*; CHARLES WILLIAMS; and QUI-YUN XIANG. *University of Oklahoma; Idaho State University; and North Carolina State University*. Evidence of introgression in the broad hybrid zone of the Buckeye genus *Aesculus* L. (Hippocastanaceae).
- 9:45**    **37-4**    NOVAK, STEPHEN\*; DEAN MARSH; LYNELL DEINES; and JOSEPH RAUSCH. *Boise State University, ID*. Genetic variation in *Taeniatherum caput-medusae* (Poaceae): Amount and distribution of variability.
- 10:00**    **37-5**    RAUSCH, JOSEPH\*; STEPHEN NOVAK; and JAMES SMITH. *Boise State University, ID*. Genetic variation in the invasive grass *Taeniatherum caput-medusae* (Poaceae): Randomly amplified polymorphic DNA (RAPD) analysis.
- 10:15**    **BREAK**
- 10:30**    **37-6**    WINDER, CHARLES\* and RANDALL SMALL. *University of Tennessee*. Conservation genetics of the endangered Cumberland stitchwort, *Minuartia cumberlandensis* (Caryophyllaceae).
- 10:45**    **37-7**    LORING, HEATHER\*; ANNE COX; MATTHEW GITZENDANNER; DOUGLAS SOLTIS; and PAMELA SOLTIS. *University of Florida and Florida Division of Forestry*. Conservation and population genetics of the federally endangered species *Asimina tetramera* (Annonaceae).
- 11:00**    **37-8**    JENNINGS, LINDA\* and JEANETTE WHITTON. *University of British Columbia, Canada*. Genetic, morphological and ecological variation within and between two Southern Utah endemics, *Townsendia aprica* and *T. jonesii* var. *lutea* (Asteraceae).
- 11:15**    **37-9**    RAMP, JENNIFER\*; TOM RANKER; and SHARON COLLINGE. *University of Colorado, Boulder*. A comparative study of population genetic variability in eight populations of the endangered vernal pool annual *Lasthenia conjugens* (Asteraceae).

- 11:30 37-10** GITZENDANNER, MATTHEW\*; C. WEEKLEY; E. MENGES; DOUGLAS SOLTIS; and PAMELA SOLTIS. *Archbold Biological Station, FL and University of Florida*. Genetic diversity and mating type identification in *Ziziphus celata* (Rhamnaceae), a critically endangered Florida shrub species.

**10:00 AM – 11:00 AM**

**MCC, 201D**

**SESSION D-2**

**DISCUSSION SESSION: All Societies**

***Show me the green! Federal funding and the botanical sciences***

Presiding: ROBERT E. GROPP, *Senior Public Policy Representative, American Institute of Biological Sciences, Washington, DC*.

**11:15 AM – 12:15 PM**

**MCC, 203A**

**BUSINESS MEETING: ABLS / Bryological and Lichenological Section, BSA**

Presiding: WILLIAM R. BUCK, *New York Botanical Garden, Bronx, NY*. Tele: (718) 817-8624, E-mail: bbuck@nybg.org.

## **WEDNESDAY AFTERNOON, JULY 30**

**12:00 PM – 1:00 PM**

**MCC, 201D**

**MEETING AND LUNCHEON: *American Journal of Botany* Editorial Board**

Presiding: KARL J. NIKLAS, *Department of Plant Biology, Cornell University, Ithaca NY 14853*. Tele: (607) 255-8727, E-mail: kjn2@cornell.edu.

**1:00 PM – 4:00 PM**

**MCC, 202A**

**SESSION 38**

**CONTRIBUTED PAPERS: Ecological Section, BSA –  
*Population and vegetation ecology***

Presiding: PAUL KEDDY, *Department of Biology, Southeastern Louisiana University, Hammond, LA 70403*. Tele: (985) 549-5294, E-mail: pkeddy@seiu.edu.

- 1:00 38-1** LUCKEYDOO, LEE.\* *USDA-ARS, Columbus, OH*. Vegetation occurring in passively revegetated constructed wetlands receiving agricultural drainage waters in Northwest Ohio.

- 1:15 38-2** DEVALL, MARGARET S.\*; NATHAN M. SCHIFF; and STEPHANIE A. SKOJAC. *Center for Bottomland Hardwoods Research, Stoneville, MS*. Introduction of the endangered pondberry (*Lindera melissifolia* [Walt.] Blume) to new sites in Mississippi.

- 1:30**    **38-3**    THOMPSON, JENNIFER N.; JEFFREY L. WALCK\*; and SITI N. HIDAYATI. *Middle Tennessee State University, Murfreesboro*. The microhabitat of the federally endangered *Dalea foliosa*: Implications for establishing new populations.
- 1:45**    **38-4**    WEEKLEY, C. W.\*<sup>1</sup>; P. F. QUINTANA-ASCENCIO; and E. S. MENGES. *Archbold Biological Station, Lake Placid, FL*. Demographic variation between scrub and roadside populations of *Hypericum cumulicola*, an endangered herb of the Lake Wales Ridge, Florida.
- 2:00**    **38-5**    BELL, TIMOTHY\*<sup>1</sup> and MARLIN BOWLES<sup>2</sup>. *Chicago State University, IL and <sup>2</sup>Morton Arboretum, Lisle, IL*. Variation in persistence probability among subpopulations for a restored Illinois population of the federal threatened Pitcher's Thistle (*Cirsium pitcheri*).
- 2:15**    **38-6**    SIMS, HALLIE J.\*<sup>1</sup>; WILLIAM E. STEIN<sup>2</sup>; ALLISTER REES<sup>3</sup>; BRUCE H. TIFFNEY<sup>4</sup>; CINDY V. LOOY<sup>5</sup>; PATRICIA G GENSEL<sup>6</sup>; SCOTT L. WING<sup>1</sup>; ANNE RAYMOND<sup>7</sup>; PETER WILF<sup>8</sup>; ROBERT A. GASTALDO<sup>9</sup>; KIRK R. JOHNSON<sup>10</sup>; and JOHN ALROY<sup>11</sup>. <sup>1</sup>*Smithsonian Institution, Washington, DC*; <sup>2</sup>*Binghamton University, Binghamton NY*; <sup>3</sup>*University of Arizona, Tucson*; <sup>4</sup>*University of California, Santa Barbara*; <sup>5</sup>*University of Utrecht, Netherlands*; <sup>6</sup>*University of North Carolina, Chapel Hill*; <sup>7</sup>*Texas A&M, College Station, TX*; <sup>8</sup>*Pennsylvania State University, University Park*; <sup>9</sup>*Colby College, Waterville ME*; <sup>10</sup>*Denver Museum of Nature and Science, Denver CO*; and <sup>11</sup>*University of California, Santa Barbara CA*. The evolution of within-community land plant diversity over the Phanerozoic.
- 2:30**    **38-7**    HUANG, MINGJUAN\*; LAWRENCE J. SPENCER; NATHANIEL J. STRICKER; CHANGSHAN WU; and J. RAUL RAMIREZ. *Ohio State University, Columbus*. Vegetation classification of Killbuck Wildlife Area, Ohio, using multi-seasonal Landsat TM imagery.
- 2:45**    **38-8**    LAWLESS, P. J.\*; J. M. BASKIN; and C. C. BASKIN. *University of Kentucky, Lexington*. Analyses of richness, diversity, and similarity in seven xeric limestone prairies in the interior low plateaus physiographic province in Kentucky.
- 3:00**    **38-9**    ROTH, AGATHA MARIE<sup>1</sup>; PAUL KEDDY\*<sup>1</sup>; DANIEL CAMPBELL<sup>1</sup>; HALLIE DOZER<sup>2</sup>; and GLEN MONTZ<sup>1</sup>. <sup>1</sup>*Southeastern Louisiana University, Hammond* and <sup>2</sup>*Louisiana State University, Baton Rouge*. Does competition control the herbaceous diversity of longleaf pine savannas?
- 3:15**    **38-10**    METTLER-CHERRY, PAIGE A.\*<sup>1</sup> and MARIAN SMITH<sup>2</sup>. *Southern Illinois University, Carbondale* and <sup>2</sup>*Southern Illinois University, Edwardsville*. Effects of the flood of 1993 on Illinois River floodplain vegetation and its relationship to the threatened species, *Boltonia decurrens*.
- 3:30**    **DISCUSSION**

**1:00 PM – 3:15 PM**  
**SESSION 39**

**MCC, 202B**

**CONTRIBUTED PAPERS: ASPT / Systematics Section, BSA —**  
*Rosids: Fagales, Myrtales, Brassicales, Malvales and Sapindales*

Presiding: LOREEN ALLPHIN, Department of Integrative Biology, Brigham Young University, Provo, UT 84602. E-mail: loreen\_woolstenhulme@byu.edu.



- 1:00**    **39-1**    JENSEN, RICHARD J.\*<sup>1</sup> and PATRICIA T. TOMLINSON<sup>2</sup>. <sup>1</sup>*Saint Mary's College, Notre Dame, IN* and <sup>2</sup>*Berry College, Mount Berry, GA*. Leaves, acorns, and character variability in *Quercus* (Fagaceae).
- 1:15**    **39-2**    LEVIN, RACHEL\*<sup>1</sup>; WARREN WAGNER<sup>1</sup>; PETER HOCH<sup>2</sup>; WILLIAM HAHN<sup>3</sup>; ELIZABETH ZIMMER<sup>1</sup>; and KENNETH SYTSMA<sup>4</sup>. <sup>1</sup>*Smithsonian Institution, Washington, DC*; <sup>2</sup>*Missouri Botanical Garden, St. Louis*; <sup>3</sup>*Columbia University, New York, NY*; and <sup>4</sup>*University of Wisconsin, Madison*. Evolutionary relationships in the evening Primrose family (Onagraceae): Tribes Onagreae and Epilobieae.
- 1:30**    **39-3**    BERRY, PAUL E.<sup>1</sup>; WILLIAM J. HAHN<sup>2</sup>; KENNETH J. SYTSMA\*<sup>1</sup>; JOCELYN C. HALL<sup>1</sup>; and AUSTIN MAST<sup>3</sup>. <sup>1</sup>*University of Wisconsin, Madison*; <sup>2</sup>*Columbia University, New York, NY*; and <sup>3</sup>*University of Zurich, Switzerland*. Phylogenetic relationships and biogeography of *Fuchsia* (Onagraceae) based on nuclear ITS and chloroplast *trnL-trnF* and *rpl16* data.
- 1:45**    **39-4**    STONE, R. DOUGLAS\* and BRUCE BALDWIN. *University of California, Berkeley, CA*. Phylogenetic utility of two low-copy nuclear genes – *G3pdh* and the third intron of nitrate reductase – in a widespread and diverse group of tropical trees (Melastomataceae, subfamily Memecyloideae).
- 2:00**    **39-5**    HALL, JOCELYN C. and KENNETH J. SYTSMA\*. *University of Wisconsin, Madison*. Phylogeny, molecular dating, and biogeographic patterns of Core Brassicales.
- 2:15**    **39-6**    ALLPHIN, LOREEN\*<sup>1</sup> and MICHAEL D. WINDHAM<sup>2</sup>. <sup>1</sup>*Brigham Young University, Provo, UT*; and <sup>2</sup>*University of Utah, Salt Lake City*. Patterns associated with rarity and endemism in the genus *Draba* from the Intermountain region of western North America, USA.
- 2:30**    **39-7**    SLOTTA, T. A. B.\* and D. M. PORTER *Virginia Tech, Blacksburg*. Variation of *GBSSI* and *rpL16* in the *Malacothamnus* Alliance (Malvaceae).
- 2:45**    **39-8**    SMALL, RANDALL\* and EDGAR LICKKEY. *University of Tennessee, Knoxville*. Phylogeny of *Hibiscus* sect. *Furcaria* (Malvaceae) based on nuclear-encoded alcohol dehydrogenase sequences.
- 3:00**    **39-9**    MILLER, ALLISON and BARBARA SCHAAL\*. *Washington University, St. Louis, MO*. Phylogeography of a Mesoamerican fruit tree (*Spondias purpurea* L., Anacardiaceae), based on chloroplast sequence data.

**1:00 PM – 3:15 PM**  
**SESSION 40**

**MCC, 203B**

**CONTRIBUTED PAPERS: Genetics Section, BSA –**  
***Molecular genetics, molecular evolution and genomic analysis***

Presiding: JOHN BURKE, Department of Biological Sciences, Vanderbilt University, VU Station B 351634, Nashville, TN 37235. Tele: (615) 936-3892, E-mail: john.m.burke@vanderbilt.edu.

- 1:00**    **40-1**    LEXER, CHRISTIAN\* and LOREN RIESEBERG. *Indiana University, Bloomington*. Natural selection for salt tolerance QTLs in wild sunflower hybrids: Implications for the origin of *Helianthus paradoxus*, a diploid hybrid species.

- 1:15**    **40-2**    BURKE, JOHN\*; and LOREN RIESEBERG. *Vanderbilt University, Nashville, TN and Indiana University, Bloomington*. The fitness effects of transgenic disease resistance in wild sunflowers.
- 1:30**    **40-3**    EUBANKS, MARY\*; JAMES REYNOLDS; and WALTER RIEDELL. *Duke University and USDA ARS Northern Small Grains Insect Research Laboratory, SD*. A bridging cross to enhance genetic diversity and sustainability in maize.
- 1:45**    **40-4**    GOU, XIAOPING; TONG YUAN; and SCOTT RUSSELL\*. *University of Oklahoma, Norman*. Selection of differentially expressed gene products in the sperm cells of *Plumbago zeylanica*.
- 2:00**    **BREAK**
- 2:15**    **40-5**    BAUM, DAVID\*; REBECCA OLDHAM; and HO-SUNG YOON. *University of Wisconsin, Madison*. Moving genes between species to test the role of LEAFY (*LFY*) in the evolution of plant architecture in Brassicaceae.
- 2:30**    **40-6**    ROALSON, ERIC\*; ANDREW MCCUBBIN; and RICHARD WHITKUS. *Washington State University, Pullman and Sonoma State University*. Evolutionary dynamics of genome structure in *Carex* section *Lupulinae* (Cyperaceae): Assessing hypotheses of chromosome evolution in a phylogenetic framework.
- 2:45**    **40-7**    SYMONDS, V.\* and A. LLOYD. *University of Texas, Austin*. An analysis of microsatellite locus diversity in *Arabidopsis thaliana*: Mutational dynamics and application.
- 3:00**    **40-8**    KONG, H.\*; W. NI; J. LEEBENS-MACK; C. DEPAMPHILIS; and H. MA. *Penn State University*. Highly heterogeneous rates of evolution in the SKP1 gene family in plants and animals: functional and evolutionary implications.

**1:15 PM – 5:00 PM**

**MCC, 204B**

**SESSION 41**

**SYMPOSIUM: ASPT / Paleobotanical Section, BSA —**

*Dating in the 21<sup>st</sup> Century: Theory and reality in finding a date for your clade II—Case studies*

Organized by: PATRICK S. HERENDEEN, Department of Biological Sciences, George Washington University, 2023 G Street NW, Washington, DC 20052. Tele: (202) 994-5828, E-mail: herenden@gwu.edu, and PETER R. CRANE, Royal Botanic Gardens, Kew, UK. Tele: 44-(0)-20-8332-5112, E-mail: p.crane@rbgkew.org.uk.

Presiding: PATRICK S. HERENDEEN, George Washington University, Washington, DC.

- 1:15**    **41-1**    RENNER, SUSANNE S. *University of Missouri-St. Louis*. A comparison of five approaches to dating when data are not clock-like.
- 1:45**    **41-2**    MAGALLÓN, SUSANA\*<sup>1</sup> and MICHAEL SANDERSON<sup>2</sup>. <sup>1</sup>*Universidad Nacional Autónoma de México, México* and <sup>2</sup>*University of California, Davis*. Estimating the age of angiosperms using constraints from the fossil record.

- 2:15**    **41-3**    SAVOLAINEN, VINCENT\*<sup>1</sup>; PETER CRANE<sup>1</sup>; PAMELA SOLTIS<sup>2</sup>; and DOUGLAS SOLTIS<sup>2</sup>. <sup>1</sup>*Royal Botanic Gardens, Kew, Richmond, U.K.* and <sup>2</sup>*University of Florida, Gainesville*. Ages of basal angiosperm clades: Molecular and paleobotanical evidence.
- 2:45**    **BREAK**
- 3:00**    **41-4**    FOREST, FELIX\*<sup>1</sup>; FRANK RUTSCHMANN<sup>2</sup>; and PETER R. CRANE<sup>1</sup>. <sup>1</sup>*Royal Botanic Gardens, Kew, U.K.* and <sup>2</sup>*University of Zurich, Zurich, Switzerland*. Inferring molecular age estimates in the birch family (Betulaceae) using multiple calibration points and minimum age constraints.
- 3:30**    **41-5**    DAVIS, CHARLES\*<sup>1</sup>; CHARLES BELL<sup>2</sup>; and SARAH MATHEWS<sup>3</sup>. <sup>1</sup>*University of Michigan, Ann Arbor*; <sup>2</sup>*Yale University, New Haven, CT*; and <sup>3</sup>*University of Missouri, Columbia*. High latitude Tertiary migrations and Afroasian biogeography: Evidence from the tropical clade Malpighiaceae.
- 4:00**    **41-6**    LAVIN, MATT\*<sup>1</sup>; MARTIN F. WOJCIECHOWSKI<sup>2</sup>; PATRICK HERENDEEN<sup>3</sup>; and MICHAEL J. SANDERSON<sup>4</sup>. <sup>1</sup>*Montana State University, Bozeman*; <sup>2</sup>*Arizona State University, Tempe*; <sup>3</sup>*George Washington University, Washington, D.C.*; and <sup>4</sup>*University of California, Davis*. Timing and patterns of diversification in papilionoid legumes.
- 4:30**    **DISCUSSION**

**1:30 PM – 4:15 PM**  
**SESSION 42**

**MCC, 204A**

**SYMPOSIUM: Developmental and Structural Section, BSA –**  
***Structural and Functional Adaptations of Vascular Plants to Wetland Ecosystems II***

Organized by: JAMES L. SEAGO, JR., Department of Biology, State University of New York, Oswego, NY 13126. Tele: (315) 312-2777, E-mail: seago@oswego.edu; FRANK W. EWERS, Department of Botany, Michigan State University, East Lansing, MI 48824. E-mail: ewers@msu.edu; and WILLIAM P. FRIEDMAN, Department of Evolutionary Biology and Ecology, University of Colorado, Boulder, CO, 80309. Tele: (303) 492-3082, E-mail: William.Friedman@colorado.edu.

Presiding: WILLIAM FRIEDMAN, University of Colorado, Boulder, CO.

- 1:30**    **42-1**    EWERS, FRANK W. *Michigan State University, East Lansing*. Structure and function of mangrove plants.
- 2:00**    **42-2**    ANGELES, GUILLERMO and FERNANDO ORTEGA. *Instituto de Ecologia, Veracruz, Mexico*. Ecoanatomy of the secondary xylem of four mangrove species from the Gulf of Mexico.
- 2:15**    **42-3**    LOPEZ-PORTILLO, JORGE and CLAUDIA PAREDES. *Instituto de Ecologia, Veracruz, Mexico*. Xylem transport physiology of mangroves.
- 2:30**    **BREAK**

- 2:45**    **42-4**    SCHNEIDER, HARALD and KATHLEEN PRYER, *University of Göttingen, Germany and Duke University, Durham, NC.* Convergent evolution in vegetative and reproductive characters of aquatic vascular plants.
- 3:15**    **42-5**    STOCKEY, RUTH A. *University of Alberta, Edmonton, Canada.* Structural and functional adaptations of fossil vascular plants to wetland ecosystems.
- 3:45**    **42-6**    FISHER, JACK B. *Fairchild Tropical Garden, Miami, FL.* Plant adaptations to wetlands: Summation of talks.

**3:30 PM – 4:30 PM**  
**SESSION D-3**

**MCC, 201D**

**DISCUSSION SESSION: All Societies**  
*How to become a professional botanist: Advice for students*

Presiding: KAREN S. RENZAGLIA, Department of Biology, Southern Illinois University, Box 6509, Carbondale, IL 62901-6509. Tele: (618) 453-3229, Fax: (618) 453-3441, E-mail: renzaglia@plant.siu.edu; and JEFFREY M. OSBORN, Division of Science, Truman State University, 100 E. Normal Street, Kirksville, MO 63501-4221. Tele: (660) 785-4017, Fax: (660) 785-4045, E-mail: josborn@truman.edu.

**3:30 PM – 4:30 PM**  
**MEETING: Genetics Section, BSA**

**MCC, 203B**

Presiding: STEPHEN NOVAK, Department of Biology, Boise State University, Boise, ID 83725-1515. Tele: (208) 385-3548, E-mail: snovak@boisestate.edu.

**4:00 PM – 5:30 PM**  
**MIXER AND MEETING: Ecological Section, BSA**

**MCC, 202A**

Presiding: SUZANNE KOPTUR, Department of Biological Sciences, Florida International University, Miami, FL 33199, Tele: (305) 348-3103, Fax: (305) 348-1986, E-mail: kopturs@fiu.edu.

## **WEDNESDAY EVENING, JULY 30**

**5:00 PM – 6:30 PM**  
**MIXER: ABLS / Bryological and Lichenological Section, BSA**

**MCC, 203A**

**6:00 PM – 7:00 PM**  
**MIXER: BSA**

**Adam's Mark, 1<sup>st</sup> Floor, Pre-function**

**7:00 PM – 10:00 PM**  
**BANQUET: BSA** (Ticketed Event)

**Adam's Mark, Ballroom I-II**

Presiding: SCOTT D. RUSSELL, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019-0245. Tele: (405) 325-6234, E-mail: srussell@ou.edu.

Address of the BSA President-Elect: LINDA E. GRAHAM, *University of Wisconsin, Madison*. A tale of two liverworts: The importance of organismal biology as an essential link between molecular and systems biology.

## THURSDAY, JULY 31

**8:00 AM – 12:00 PM**  
**MEETING: BSA Executive Committee**

**Adam's Mark, Bay Point**

Presiding: LINDA E. GRAHAM, Department of Botany, 211 Birge Hall, University of Wisconsin, Madison, WI 53706. Tele: (608) 262-2640, Fax: (608) 262-7509, E-mail: lkgraham@facstaff.wisc.edu.

**8:00 AM – 12:00 PM**  
**MEETING: Deep Gene Research Coordination Network**

**Adam's Mark, Mobile I**

The Deep Gene Research Coordination Network is an alliance that focuses on integrating plant phylogenetics and plant genomics. This workshop will be oriented toward defining new research directions for bridging these fields. Graduate students are especially encouraged to attend. This meeting is free, but open by reservation only, please contact the organizer if you are interested in reserving a place (bmishler@socrates.berkeley.edu).

Presiding: BRENT D. MISHLER, University of California-Berkeley, University and Jepson Herbaria, 1001 Valley Life Sciences Bldg # 2465, Berkeley, CA 94720-2465. Tele: (510) 642-6810, E-mail: bmishler@socrates.berkeley.edu.

**8:00 AM – 12:00 PM**  
**MEETING: Deep Time Research Coordination Network**

**Adam's Mark, Mobile II**

The Deep Time Research Coordination Network is an alliance that facilitates research at the interface of paleobotany, geology, and systematics/phylogenetics. This meeting is free, but open by reservation only, please contact the organizer if you are interested in reserving a place (Doug Soltis; dsoltis@botany.ufl.edu). Other organizers include: Pam Soltis (psoltis@flmnh.ufl.edu), David Dilcher (dilcher@flmnh.ufl.edu), and Pat Herendeen (herenden@gwis2.circ.gwu.edu).

Presiding: DOUGLAS E. SOLTIS, Department of Botany, University of Florida, Gainesville, FL 32605. Tele: (392) 353-1721, E-mail: dsoltis@botany.ufl.edu.