

## **OPGC Progress Report 2001/2002**

(May 29, 2002)

### **Summary:**

This report summarizes the progress made in the first year of operations of the Ornamental Plant Germplasm Center (OPGC). The grand opening of OPGC was held on July 14, 2001. The mission statement, goals, objectives and development plan of the Center were formulated, presented to and endorsed by the USDA Herbaceous Ornamental Crop Germplasm Committee (HOCGC) at its 2001 meeting on July 16, 2001 at the Ohio Florists' Association Short Course. The development plan was also presented at a wide range of venues, including the American Seed Trade Association (ASTA) 21<sup>st</sup> Vegetable and Flower Seed Conference, the New Ornamental Crop Research Symposium at the Chicago Botanic Garden, universities, etc., reaching the nursery industry, academia, botanic gardens and arboreta, and the general public (including Master Gardeners).

Following the arrival of the Center's Director, May 1, 2001, a recommended list of 25 priority genera (*Alstroemeria*, *Aquilegia*, *Aster*, *Baptisia*, *Begonia*, *Campanula*, *Chrysanthemum* (*Dendranthema*), *Dianthus*, *Euphorbia* (*Poinsettia*), *Geranium*, *Hemerocallis*, *Impatiens*, *Iris*, *Lilium*, *Narcissus*, *Pelargonium*, *Petunia*, *Phalaenopsis*, *Phlox*, *Rudbeckia*, *Salvia*, *Tagetes*, *Verbena*, *Veronica* and *Viola*) was provided to OPGC by HOCGC. During the 2001 HOCGC meeting, it was decided that the list be shortened to the top ten genera. Then, in October 2001, in the process of consultation with the committee to narrow the list down, five more priority genera (*Algaonema*, *Anthurium*, *Dieffenbachia*, *Philodendron* and *Spathiphyllum*) were added. A survey sent to the committee and the ornamental plant industry to rank the priority genera is still in progress.

The OPGC Subcommittee of HOCGC is being activated to provide an external sounding board for OPGC activities.

The Ohio State University (the Ohio Agricultural Research and Development Center) contributed an additional \$67,500 for the improvement of the building, its air-conditioning system, an upgraded 200-Amp with 220-volt electrical supply, a dust collection system, and the repair and upgrade of the greenhouses. The total area of the OPGC building is 6,000 sq.ft. and the greenhouse facility is about 12,000 sq.ft. The building was audited by the University and meets the OSU Physical Hazards Assessment requirements, Hazard Communication Program and Chemical Hygiene Plan. The building water supply is within the quality requirement of the University's Office of Environmental Health and Safety.

The seed cooler has been upgraded with a simple automatic power cut-off system, heated door, chart recorder and door lock. Additional shelves were installed to increase the storage capacity from 11,000 to 25,000 accessions. The seed laboratory and the seed processing room are presently in operation.

The OPGC procured an extensive collection of very high quality seed testing and seed processing equipment from Express Seed Company for \$52,000, which was valued at about \$150,000 when new. Additional seed equipment, laboratory glassware, field pollination cages and materials for bee pollination were all procured and are now in place. A reference library on herbaceous ornamental plants was established. Inventories of laboratory and field equipment, supplies and reference books are in place.

Nearly 1,100 accessions of herbaceous ornamental species have been transferred from the following USDA collections: National Center for Genetic Resources Preservation (Fort Collins, CO) – 199 accessions, Western Regional Plant Introduction Station (Pullman, WA) – 125, North Central Regional Plant Introduction Station (Ames, IA) – 497, Plant Genetic Resources Conservation Unit (Griffin, GA) – 214 and U.S. National Arboretum (Washington, DC) -71 (new germplasm collected in Russia 2001). OPGC is also serving as the duplicate site of vegetatively propagated *Cuphea*. Presently, we are working with the National Arboretum to duplicate the *Hemerocallis* collection (1,088 accessions).

Our first seed multiplication trial is focusing on easy to grow annuals, such as *Tagetes*, *Rudbeckia* and *Zinnia*, and 90 accessions were sown in April, 2002. In addition, eight accessions of *Antirrhinum* genetic stocks will also be tried out in greenhouse pollination. Accessions with old and few seed were germinated in a seed germinator and seedlings then transplanted into plugs. Both single and double seedlings per hill will be tested. Thirty-five pollination cages will be installed at the OSU Waterman Farm. The OSU Honey Bee Laboratory will assist in the management of bees for pollination. In addition, seedlings of nine accessions from the Republic of Georgia collected in 2000 by the Mid-West Plant Collection Consortium (MWPC) and distributed by the Chicago Botanic Garden will be multiplied.

The details of the year's achievements are itemized in the attached Appendix.

## **Appendix: OPGC Progress Report 2001/2002**

### **Physical Facilities:**

- A building layout plan was drawn, and space assigned to make the building into a functional genebank for ornamental plant conservation and distribution.
- OSU/OARDC provided cash contribution of \$67,500 for greenhouse repairs and upgrade (ridge vent, central cooling system conversion to individual compartment system to prevent cross-contamination by diseases, tempered-water supply for irrigation, head-house, hot-water supply, washing and potting area) and building improvements (additional 200-Amp electrical supply, air-conditioning duct-work to reduce building humidity, germination room, dust collection system, etc.)
- Seed Storage Cooler rectifications (USDA fund):
  - Lifted the two dehumidifiers off cooler roof which had sagged due to the weight and vibration of the dehumidifiers, and dripping pans were installed under the dehumidifiers to prevent water accumulation on the roof.
  - Installed heated window, heating coil and lock on door.
  - Adjusted door so that it shuts entirely.
- Seed Storage Cooler improvement (USDA fund):
  - Added safety cut off for dehumidifiers, cooling system and lights.
  - Added temperature and relative humidity chart recorder.
  - Added additional shelving to increase storage capacity from 10,000 to 25,000 accessions (16 oz jars).
  - Procured 10,000 seed storage jars.
- Building Air-conditioner rectifications (OSU fund):
  - Re-built and re-installed the cooling-coil of the new air-conditioning system.
  - Improved building air duct system to increase re-circulating air to lower the humidity in the building. (Last summer there was serious condensation on the floor of cooler walls and cooler door. We will know the effectiveness of the rectifications this coming summer).
- Equipment procurement (USDA fund):
  - Express Seed equipment procurement (\$52,000) – Seed research and technology equipment including thermogradient table, three germinators, two precision balances, seed moisture meter, stereo-microscope, laboratory oven, thermo hydrograph, laboratory mixer, seed germination ware, vacuum seed counter heads, laboratory glassware, cabinet chamber seed dryer, precision temperature-controlled seed dryer, four-channel electronically-controlled aspirator, single seed sorting machine, laboratory seed brushing machine, laboratory specific gravity separator, seed texture separation table, three mechanical sieve sets, three seed coating machines, dust collector and ducts, etc. valued at \$150,000 new.
  - Other equipment procurement – reverse osmosis water purification system, storage freezer, refrigerator, microwave oven, laboratory oven, transmission microscope, pH/conductivity meter, hot-plate stirrer, riffle seed divider, vacuum seed counter pump, office and laboratory shelves, two desk-top computers, hand-held computer, zebra printer, office copier, digital camera, laboratory glassware,

- seed testing media and containers, compressed air system, wheeled belt thresher, Oregon seed blower, laboratory seed scarifier, laboratory and greenhouse trolleys, chemical application sprayers, greenhouse and field tools, beehives, bee maintenance gear and 50 pollination cages (netting and frames).
- OSU Seed Biology Group decided to locate two water-jacket incubators for seed accelerated-aging tests and an air-screen cleaner (Official Laboratory Clipper) at OPGC.
  - Rectified backflow of rainwater from outside into greenhouse corridor (OSU fund).
  - Established a reference floriculture library – over 200 volumes (USDA fund).
  - Establishing an OPGC inventory list each for equipment and books.
  - Negotiated a field-space allocation at Waterman Farm by joining the HCS field rotation system and provision to use other OSU research farms.
  - Four additional fire extinguishers were installed.
  - Installed the building hot water system.
  - The building currently meets the University's health and safety operational requirements including Hazard Communication Program, Chemical Hygiene Plan, fire prevention and control requirements, drinking water quality, noise level and exhaust-hood system.
  - Development of Material Safety Data Sheet (MSDS) notebook.
  - Upgraded the building landscaping.

### **Public Relations:**

- **Inauguration:**
  - OPGC Grand Opening, July 14, 2001 – with representation from USDA, industry and universities.
- **Presentations:**
  - OSU BioHio, Columbus, OH, May 10-12, 2001 (David Tay and Susan Stieve).
  - 2001 OFA Short Course/HOCGC meeting, July 16, 2001.
  - New Ornamental Crop Research Symposium, Chicago Botanic Garden, September 26-29, 2001
  - OSU Department of Horticulture & Crop Science (HCS) seminar, October 12, 2001
  - China Agricultural University (Department of Seed Science and Technology), November 6, 2001 – professors and graduate students.
  - Chinese Academy of Agricultural Sciences (CAAS) Graduate School, November 6, 2001
  - Institute of Vegetables and Flowers (IVF), CAAS, November 8, 2001
  - Master Gardeners, Franklin County, Ohio, Nov. 15, 2001
  - The Wheaton Club, Ohio, Dec. 12, 2001
  - ASTA 21<sup>st</sup> Vegetable and Flower Conference in Albuquerque – Wildflower and Native Plants Group, Jan. 27, 2002
  - ASTA 21<sup>st</sup> Vegetable and Flower Conference in Albuquerque – Home Garden Committee, Jan. 28, 2002

- Consortium of U.S. Universities and Institutes in Cooperation with China for Agriculture, Washington, February 16, 2002
- Michigan State University's Department of Horticulture seminar, East Lansing, MI, Feb. 21, 2002
- Mid-West Regional Seed Quality meeting, The Ohio State University, Columbus, OH, March 14, 2002
- National Center for Genetic Resources Preservation, Fort Collins, CO, March 28, 2002
  
- **Displays:**
  - OSU BioHio, Columbus, OH, May 10-12, 2001
  - 2001 OFA Short Course, Columbus, OH, July 14-18, 2001
  - OSU Horticulture and Crop Science Field Day, Waterman Farm, Columbus, OH, August 9, 2001
  - ASTA 21<sup>st</sup> Vegetable and Flower Conference, Albuquerque, NM, Jan. 26-30, 2002
  - 2002 OARDC Annual Conference, Wooster, OH, April 23, 2002.
  - Otterbein College - Life and Earth Science Career Day, Westerville, OH, May 20, 2002.
  
- **OPGC Facility Tours:**
  - OPGC Grand Opening, July 14, 2001 – USDA, industry and university invited representatives.
  - 2001 OFA Short Course, July 15, 2001 – about 150 people attended.
  - Dr. K. Fujimura, Seed imaging research – August 20, 2001.
  - Nandancho Delegation, Japan (15 people) – August 10, 2001.
  - OSU Horticulture & Crop Science Graduate Student Orientation, Sept. 14, 2001
  - Two Master Gardener tours, November and December 2001.
  - The Wheaton Club (20 people), Ohio, December 12, 2001.
  - Mr. John Armstrong, Secretary/Manager, Ohio Seed Improvement Association – January 4, 2002
  - Dr. Michael Kruse, University of Hohenheim, Germany – January 8, 2002
  - Dr. John Cross, Chair, American Seed Research Foundation, ASTA – January 9, 2002
  - Dr. Usha Pillai-McGarry, University of Queensland, Australia - January 23, 2002
  - Dr. Francis Kwong, PanAmerican Seeds – January 7, 2002
  - Prof. Dr. M. Aktas, Dean, College of Agriculture, Harran University, Turkey – February 11, 2002
  - Dr D. Mackay, University of Missouri – February 12, 2002
  - Dr. M. Kogan (Chair) and Dr. E. Olate, Department of Plant Sciences, Pontificia Universidad Catolica de Chile, Chile – February 14, 2002.
  - OSU Department of Plant Biology group – February 15, 2002.
  - Mr. Jim Doherty, Species Lily Preservation Group – February 19, 2002 and May 11, 2002.
  - Dr. Marlin Languis, Junior Master Gardener Group Leader – February 25, 2002.

- Mr. Michael Gahn, Pioneer Hi-Bred, February 25, 2002.
  - Mr. David Kovach, NC7, Ames, IA – installing Zebra printer, February 26, 2002.
  - Mr. Samuel Contreras, Pontificia Univ. Catolica de Chile, Chile – March 4, 2002.
  - Mr. Mike Wagner, Chapman Elementary on school partnership – March 6, 2002.
  - Mid-West Regional Seed Quality meeting tour, March 14, 2002.
  - Master Gardeners, Hardin County, OH, March 28, 2002.
  - Ohio State Science Day tour – students and family members, May 10, 2002.
  - Dr. Samuel Kyamanywa, Head, Department of Crop Science, Makerere University, Uganda and Dr. George Bigirwa, National Agricultural Research Organisation, Uganda – May 11, 2002.
- **Media:**
    - OPGC brochure and bookmark (10,000) – June, 2001.
    - Web site (<http://hcs.osu.edu/opgc/>) construction (Dr. Tim Rhodus) – June, 2001.
    - EnPlant July 6, 2001 (HCS newsletter) – Update on OPGC (David Tay)
    - OPGC grand opening – July 14, 2001.
    - ARS News July 16, 2001 – ‘New Ornamental Plant Germplasm Center Celebrated’.
    - People Places Plants – New England’s Garden Magazine, Jan-Feb 2002, Page 22 in Garden Notes.
- **Meetings:**
    - Ohio Seed Improvement Association, Dublin, Ohio – June 1, 2001 (David Tay and Susan Stieve).
    - Applewood Seed Company, Denver, Colorado – June 25, 2001 (David Tay and Susan Stieve).
    - Meeting with OSU faculty members, July 17, 2001 – Meeting report sent to 28 persons (David Tay and Susan Stieve).
    - OARDC/CVRDC (Crop Variety Release and Distribution Committee) meeting – September 11, 2001 (David Tay and Susan Stieve)
- **OPGC Endowment:**
    - OPGC Endowment in 2001 – \$30,000.
    - Application submitted to the College Development Office to include OPGC in College of Food, Agricultural, and Environmental Sciences’s donation drive.

### **Germplasm:**

- Collection – Two accessions of native *Impatiens* species
- 1099 accessions - transferred from USDA repositories:
  - NA – 71 accessions of new germplasm collected in Russia 2001
  - NC7 – 497 accessions.
  - NCGRP – 199 accessions.
  - S9 – 214 accessions.
  - W6 – 125 accessions.
  - NC7 – 32 accessions of vegetatively propagated *Cuphea* as duplicate collection.

- NA – presently working with the National Arboretum to duplicate its *Hemerocallis* collection (1,088 accessions), *Iris* (96 accessions) and *Narcissus* collection at OPGC.
- MWPC (Mid-West Plant Collecting Consortium) – sent 9 accessions of germplasm collected in the Republic of Georgia in 2000.
- NACPEC – agrees to share appropriate collected germplasm.
- Cornell Plantation (Mary Hirshfeld) – will share germplasm.
- Native Seed/SEARCH – agrees to share germplasm of *Tagetes*.
- Brisbane Botanical Garden – will share germplasm.
- World-Wide Begonia Research Group/Queensland Begonia Society – USDA import permit in place for importing.
- Preparation for the coming season seed multiplication program.
- Identification and procurement of seed cleaning and laboratory equipment, greenhouse supplies and equipment and pollination cages and field equipment.
- Evaluation of *Cuphea* – provided cuttings to Dr. Claudio Pasian, OSU Floriculture Extension for plot evaluation 2002.

#### **USDA:**

- 2001 PGOC/Regional Technical Committee meeting at the National Center for Genetic Resources Preservation (NCGRP), Fort Collins, June 25-29, 2001 (David Tay and Susan Stieve).
- Herbaceous Ornamental Crop Germplasm Committee meeting, July 16, 2001 (David Tay and Susan Stieve).
- NC7 Plant Introduction Station, Ames, Iowa, July 31 to August 1, 2001 (David Tay and Susan Stieve).
- GRIN training at OPGC – Mark Bohning provided basic GRIN training.
- NCGRP Category 4 Scientist Position - Interviewing committee member, March 25-28, 2002
- GRIN Training meeting, May 20-24, 2002 (David Tay and Susan Stieve).
- National Agricultural Library (Drs. Gary McCone and Melanie Gardner) and GRIN Taxonomy Component (Dr. J. Wiersema) – discussed cooperation in AgNIC project, May 20, 2002 (David Tay and Susan Stieve).

#### **International Cooperation:**

- Attended the International Conference on Agricultural Science and Technology (ICAST), Beijing – November 5-10, 2001.
- Institute of Vegetables and Flowers (IVF) Chinese Academy of Agricultural Sciences, University of Minnesota and Chicago Botanic Gardens – to develop a flower collection mission in China.
- China Agriculture University, American Seed Trade Association (ASTA), International Society of Seed Technologists (ISST) and The Ohio State University – to implement a workshop in seed science and technology.
- Consortium of U.S. Universities and Institutes in Cooperation with China for Agriculture (UCCA for University Consortium for Chinese Agriculture) – attended

the foundation meeting and ceremony in Beijing and the following up meeting in Washington (February 16, 2002).

- World-Wide Begonia Research Group/Queensland Begonia Society, April 24, 2002 – negotiating exchange of germplasm.
- Brisbane Botanical Garden, April 26, 2002 – discussed cooperation.
- Chile – Invitation by Chair, Department of Plant Sciences, Pontificia Univ. Catolica de Chile to cooperate in germplasm conservation.
- Turkey – Invitation by Dean, College of Agriculture, Harran University, Turkey to cooperate in germplasm conservation.
- Argentina – Negotiating an agreement with the National Genebank, INTA to collect germplasm in Argentina.
- Uganda – Pre-proposal in flower germplasm research is being considered by Makerere University for further development.

### **Academic and University Activities:**

- **Dr. David Tay (Director):**
  - Department of Horticulture and Crop Science, OSU Adjunct Faculty appointment.
  - Proposed, approved and allocated \$10-15,000 for a half-time graduate assistantship.
  - University of Queensland, Queensland, Australia – 1 M.Sc. graduation (Committee Chair) and 1 Ph.D. graduation (Committee member). (from programs established during David Tay's employment there).
  - HCS Seed Biology Group – member and resource person in journal classes.
  - Plant Breeding and Genetics Group – member.
  - Graduate Seminar on Weedy and Invasive Plants (Autumn 2001) EEOB (Dept. of Evolution, Ecology, and Organismal Biology) – resource person.
  - Susan Stieve's Ph.D. program - Committee member.
  - Lecture – Plant Research Methods (HCS604), October 25, 2001 (1 class), Seed Physiology, February 25, 2002 (1 class) and Seed Science, February 25, 2002 (1 class).
  - HCS Molecular Genetics position search – meetings with candidates, Feb., 2002.
  - OFA Education Affairs Committee member – starting July, 2001.
  - National Floriculture Forum (California Pack Trials), April 8-14, 2002.
  - Judge, Ohio State Science Day - Plant Science Innovation Award, May 11, 2002.
  - Department of Entomology (Dr. Casey Hoy) - Seed coating of onion seed.
  - Department of Entomology (Dr. Robin Taylor) – proposal on greenhouse indicator plants.
  - Scientific paper review for Dr. Mark Widrechner, North Central Regional Plant Introduction Station.
  - International journal paper review - New Zealand Journal of Botany, May 2002.
  - Will host Professor Richard Criley, University of Hawaii – Sabbatical leave at OPGC August to December, 2002.
  - Society of American Florists (SAF) – August 2001
  - Ohio Florists Association (OFA) – March 2002
  - American Society of Horticultural Sciences (ASHS) – April 2002

- International Society of Horticultural Sciences (ISHS) – April 2002
- American Association of Botanic Gardens and arboreta (AABGA) – May 2002.
- Ohio Historical Society Library – February 2002.
- Publication: Survival of conidia of sorghum ergot (caused by *Claviceps africana*) on panicles, seed and soil in Australia. Bhuiyan, S.A., Ryley, M.J., Galea, V.J., Tay, D., and Lisle A.T. (2002) Australasian Plant Pathology 31, 137-141
- **Ms. Susan Stieve (Curator):**
  - HCS Seed Biology Group – member and participated in journal classes.
  - Graduate Seminar on Weedy and Invasive Plants (Autumn 2001) EEOB (Dept. of Evolution, Ecology, and Organismal Biology) – participant.
  - Ph.D. program – commencing January 2002 (Experiment summer 2002: comparing seed quality and quantity of field verses greenhouse seed production).
  - OPGC Building Coordinator – responsible for the initiating building repair requests, and work health and safety.
  - OSU College of Food, Agricultural and Environmental Science’s Library Improvement Committee – Committee member, 2002.
  - Proposed and actively assisting in development of “Seed Evaluation and Enhancement” course to be taught by Seed Biology Faculty.
  - OFA Education Affairs Committee member – starting July 2001.
  - OSU Nursery Short Course seminars and Central Environment Nursery Trade Show – January 23, 2002.
  - Ohio Florists Association (OFA) – March 2002.
  - Mid-West Regional Seed Quality meeting - March 14-15, 2002.
  - American Society of Horticultural Sciences (ASHS) – April 2002.
  - OSU Honey Bee Laboratory – initiated contact and work with Dr. J. Tew, Director of the Laboratory to develop insect pollination capability.
  - Ohio State Beekeepers Association – June 2002.

#### **Volunteers, Student Intern and Donation:**

- Possum Run Greenhouse – donation of plants for landscaping in 2001 and 2002.
- Dr. Martin Quigley – assisted in landscape design.
- Dr. John Street – obtained donation of turf.
- Mary Maloney – coordination of Master Gardener volunteers.
- Development of volunteer and employment application and standards of behavior forms.
- Bob Gutches, an independent volunteer – general help of over 100 hours.
- Franklin County Master Gardeners (10 volunteers) – general help.
- One HCS student intern – to work on a bibliographic search for web-based database (possible AgNIC project).
- One student casual – to help in general laboratory, greenhouse and field work.
- Penny Aguirre – obtained wholesale discount of 40% for Timber Press reference books.

## **2002/2003 PLAN:**

### **Outreach activities:**

#### **2002:**

- 2002 PGO meeting, June 3-6, 2002.
- First OPGC Subcommittee meeting and planning session, July 14, 2002.
  - Facilitator – Dr. Garry Gibbons.
  - Finalizing priority genera list recommendation.
  - Develop future staffing plans
  - Technical Working Groups – crop specific.
  - Soliciting germplasm contributions from public and private entities – domestic and overseas seed companies, and botanic gardens and arboreta.
  - Proposing a two-tier germplasm acquisition system to accommodate species not on the priority list. (The second tier is similar to the present NCGRP ‘black-box’ system).
  - CBD requirements in germplasm collection, acquisition, and distribution.
  - USDA funding vs. OPGC Endowment.
- 2002 OFA Short Course presentation and poster display, July 13-17, 2002
- 2002 HOCGC meeting, July 15, 2002.
- 2002 AABGA Conference, August 7-10, 2002 – Paper presentation.
- 2002 ISHS/ASHS Convention, August 11-17, 2002 – Paper presentation.

#### **2003:**

- 2003 National Floriculture Forum (NFF), February 21-23, 2003 – Organize and host the Ornamental Plant Germplasm Conservation and Utilization Symposium.
- 2003 International Master Gardener Conference & Trade Show, June 19-22, 2003 – Paper presentation.

### **Physical Facilities:**

- OPGC Tissue Culture (*in vitro*) Laboratory for the preservation of clonal germplasm materials – Design and equip the laboratory.

### **Human Resources Development:**

- Second Curator – Develop strategy to expand curatorial capacities as collections expand.
- Research assistant - Employ a Research Assistant to assist in field, greenhouse and laboratory works.
- Student casual assistants – Employ both Federal Work-Study program students and regular students
- Project management courses – Dr. David Tay.
- Ph.D. Program (continuing) – Ms. Susan Stieve.
- Strengthening Master Gardener volunteer program.
- Developing a “Friends of OPGC” program.

### **Germplasm:**

- Ranking HOCGC priority genera list – Finalizing July 2002 planning session.

- OPGC Operation Manual – Formulation and implementation.
- Technical Working Groups – Organize crop specific technical working groups to fulfill the following (based on Dr. Gary Pederson's 2002 PGOC presentation):
  - Advice
    - Germplasm identification and acquisitions
    - Collection proposals
    - Duplicate identification
    - Descriptors
    - Regeneration techniques
    - Characterization and evaluation techniques
  - Discussion
    - Concerns with the crop
    - Questions of NPGS policy and procedure
    - Representation of user's concerns
    - New approaches for germplasm preservation including core collections, cryopreservation, *in situ* conservation, GIS applications, etc.
  - Feedback on accessions
    - Data for entry into GRIN
    - Use in cultivar and germplasm development
    - Contribution to published research
    - Viability and quality of accessions received
    - Other problems with accessions received

(Note: Dr. Gary Pederson is Research Leader, USDA Plant Genetic Resources Conservation Unit, Griffin, GA.)

- GRIN – Continue to learn the software package.
- GRIN – Working with Dr. J. Wiersema to enhance taxonomic information on the priority genera.
- Species Lily Preservation Group – Preparing to accept germplasm.
- National Arboretum *Iris* collection (96 accessions) – Formulating and organizing maintenance by Columbus Junior Master Gardener group (Dr. Marlin Languis).
- ASTA Wildflower and Native Plant Group – Preparation to accept germplasm as second tier germplasm.
- AABGA/CPC – Work with AABGA and CPC to acquire germplasm from botanic gardens and arboreta.
- World-Wide Begonia Research Group – USDA Import Permit in place for importing.
- NACPEC September 2002 China expedition to Shanxi – Coordinate to receive any herbaceous germplasm collected.
- Institute of Vegetables and Flowers (IVF), CAAS – Continue to develop the proposal to collect *Chrysanthemum* and *Lilium* in China.
- International Bulb Society – Cooperation to conserve *Narcissus* from Spain.
- Native Seeds/SEARCH – Sourcing native *Tagetes*.

**OPGC Endowment:**

- Actively work to develop the endowment (Year 2002 amount - \$30,000).

