Strategic Planning Session

of

The Ornamental Plant Germplasm Center

A joint plant germplasm repository
within the National Plant Germplasm System
between
The Ohio State University
&
The United States Department of Agriculture,
Agricultural Research Service

March 1 – 3, 2006

Final Report
&
Recommendations

FOREWORD

A Planning Team was convened for three days, on March 1-3, 2006, with the purpose of reviewing the five-year-old Ornamental Plant Germplasm Center, located on the campus of The Ohio State University, Columbus. The Planning Team consisted of seven members who represented a broad spectrum of germplasm conservation and usage interests appropriate to review the center: two each from the USDA, universities, and industry, and one member representing botanic gardens. **Dr. Edward (Ned) Garvey**[1] provided perspectives on operational procedures within the USDA National Plant Germplasm System, including plant germplasm collection trips and exchange. **Dr. Alan Meerow**[2] integrated the critical role of public sector breeding programs, germplasm collection, maintenance of clonal repositories, and their importance for genetic research and crop improvement. **Dr. Neil Anderson**[3]**,** also provided public sector breeding program input, integration of research and education opportunities, enhanced oversight and directional role for the Herbaceous Ornamental Crop Germplasm Committee, its working groups within the germplasm center, and writing the final report. **Dr. A. Raymond (Ray) Miller**[4] supplied background and contextual information during the review for team members, served as secretary during for the Planning Team, as well as providing insights into functionality and the role of the germplasm center within the Department of Horticulture and Crop Science and The Ohio State University. The private sector breeding program perspectives, usefulness of germplasm, crop prioritization, efficiency and management issues were critical

[1] Plant Exchange Officer, USDA/ARS National Germplasm Resources Laboratory, Rm 409, Bldg. 003, BARC-West, Beltsville, MD 20705, ngarvey@ars-grin.gov
[2] Research Geneticist and Systematist, USDA/ARS/SHRS National Germplasm Repository, 13601 Old Cutler Road, Miami, Fl 33158; ameerow@saa.ars.usda.gov
[3] Associate Professor; Chair, Herbaceous Ornamental Crop Germplasm Committee; Director, Invasion Biology Research Consortium, Department of Horticultural Science, University Of Minnesota, 1970 Folwell Ave., Saint Paul, MN 55108; ander044@umn.edu

input components by **Dr. Brian Corr**[5]. As a driving force in the founding of the germplasm center, a critical liaison with the Ohio Florists Association, and local business owner, **Justin Marotta**[6] contributed background perspectives, relevancy, and local industry viewpoints. **Dr. James Ault**[7] served as the Chair of the Planning Team, providing perspectives from botanical gardens, public sector breeding programs, and germplasm collection.

This document contains the results of preparatory work, tours of the facilities, interviews with appropriate individuals within and outside of the center, working knowledge of the repository, and review of the background document supplied by the center's Director and staff. The most critical recommendations to enhance and continue the vital role of this repository are outlined in this report. The Planning Team remains fully committed to the long-term viability and relevance of this center to the floriculture industry. Each Planning Team member or the Planning Team as a whole will continue to aid in an advisory capacity after this review for further clarification or ideas for creative problem solving.

OVERVIEW

Since its inception in 1999 and formal inauguration on 14 July 2001, the Ornamental Plant Germplasm Center (OPGC) has become established as a viable repository within the National Plant Germplasm System (NPGS). Our review of the extensive documentation and interviews all provided substantive information on the multi-faceted role of this center. The Planning Team

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[4] Professor and Director of the OSU Professional Golf Management Program, Department of Horticulture and Crop Science, The Ohio State University, 1680 Madison Ave., Madison, OH 44691; miller.5@osu.edu

[5] New Crops Development Manager, Ball Horticultural Company, 622 Town Road, West Chicago, IL 60185; bcorr@ballhort.com

[6] Owner, Possum Run Greenhouses, Inc., 5384 O'Possum Run Road, Bellville, OH 44813; possum@possumrungreenhouse.com

interviewed the faculty & staff in the Department of Horticulture and Crop Science, faculty in other associated departments at The Ohio State University (OSU), USDA/ARS and OSU administration officials with oversight of the center, The Ohio Florist's Association, as well as OPGC administration and staff. We toured the OPGC facilities to view all facets of center activities and discussed issues with the OPGC staff, graduate students, and undergraduate students associated with the repository to hear their impressions, concerns, and insight into the center's activities.

The Planning Team had a positive impression of the importance of the OPGC, its vital role in the preservation and dissemination of herbaceous ornamental taxa. Its high quality physical facilities & equipment, a competent and eager young staff, high visibility within the NPGS, a vigorous promotional campaign to the general public, an extensive cooperative network of scientists, and synergistic research & education endeavors with many OSU programs were observed. The center's excellent involvement of certain graduate students on research topics within the OPGC's mission, as well as education of undergraduate students in the center's current day-to-day operations are an important integration of the OPGC with OSU's research and education activities.

The Planning Team felt that excellent progress had been made in the establishment phase of the center by harnessing numerous resources in a short time-period. Interactions of the OPGC with other NPGS sites have been exemplary; the staff proactively solicited information and received vital help from NPGS partners at other locations. Implementation of recent (2005) recommendations from the Herbaceous Ornamental Crop Germplasm Center (HOCGC) committee has been remarkably swift. The OPGC staff has made significant headway in

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[7] Director, Ornamental Plant Research, Chicago Botanic Garden, 1000 Lake Cook Road, Glencoe, IL 60022; jault@chicagobotanic.org

becoming fluent users of the Germplasm Resources Information Network (GRIN), thereby beginning to reduce the significant data-entry backlog related to ornamental plant germplasm accessions received from the NPGS repositories formerly responsible for such taxa and other donors.

Dr. David Tay, Director of the OPGC, has worked tirelessly to garner funds, create public awareness, enhance national and international visibility by hosting numerous tour groups and visiting scientists, present papers at professional meetings, author publications, direct a large repository staff, and establish an impressive network of researchers, plant breeders, & geneticists directly or indirectly connected with the center. When the curatorial staff completes their graduate school degrees, David will have a strong research staff, all of which can produce the required peer-reviewed publications. David's enthusiasm for the success and continued vitality of the center is readily apparent; the Planning Team appreciated such energy and commitment to the center's mission and strategic goals. We are concerned about the immigration status of Dr. Tay and strongly support his green card application. Permanent residency status is vital to ensure his continued directorship of the OPGC. A strong, highly visible, and enthusiastic director for this center is vital for its maturation, synergy, and relevance.

Susan Stieve, the OPGC Seed Crop Curator, has contributed significantly in the establishment phase of the center. The Planning Team was favorably impressed by her passion and dedication to this position and the OPGC. She enjoys her job, its responsibilities, and remains committed to finishing her Ph.D. degree. Susan has obtained seed processing equipment of significant value for the repository, oversees the many facets of seed increases both in the fields and greenhouses, and has become fluent in germplasm accessioning on GRIN, aiding in the establishment of OPGC data management. Her management skills, knowledge of GRIN,

field/greenhouse seed increase protocols, seed cleaning, and testing procedures are some of her many significant, ongoing contributions to the repository. Susan's progress towards her Ph.D. should continue unabated, as this will aid in the center's collection capabilities, acquisition of critical germplasm, and focus on research opportunities for scientists and students worldwide. This will also enable her authorship on peer-reviewed publications which are critical for an established germplasm repository.

Jennifer Ehrenberger, the OPGC Clonal Crop Curator, is a recently hired curator. She has set up the tissue culture laboratory for the center, commenced clonal *in vitro* germplasm maintenance, and resolved many challenging issues. The Planning Team was impressed with Jennifer's enthusiasm for this position and the repository. She enjoys working with undergraduate and graduate students. As with David and Susan, Jennifer feels it is critical to enhance the research and educational ties between the OPGC, its staff, OSU, the Horticulture & Crop Science department, and other research institutions. She, like Susan, is determined to obtain a graduate degree to complement and enhance her curatorial abilities. Her graduate research interests are plant breeding, which would provide an excellent opportunity for the center to have a more direct linkage with public and private sector flower breeding programs. The Planning Team sees this as an important and unique venue to use plant breeding protocols in the tissue culture laboratory, such as embryo rescue of viable but non-germinating seeds, to aid in the seed regeneration obligations, as well as clonal maintenance of select germplasm.

It was not the purpose of this Strategic Planning Session or the Planning Team to resolve issues beyond its charge. Organizational framework challenges of operating a joint germplasm repository between the USDA and OSU, reporting hierarchies, long-term funding and viability, and other related issues surfaced with regularity. We acknowledge that these are significant and

unique opportunities. At the same time, however, the administrative oversight remains in place and suggestions are provided by the Planning Team to enhance communication or operational/reporting efficiencies within the current organizational framework.

Now that the OPGC establishment phase is completed, the Planning Team focused on the operational and strategic requirements for this repository to mature and become a viable and established center in the development and operational phases. The Planning Team concentrated on the most critical issues, which required thoughtful delineation, and refinement to ensure the OPGC reaches this next goal. We used the four characteristics of a successful USDA/ARS research program described by Midwest Area Director, Dr. Steve Shafer, as the contextual framework for our review. Our recommendations are contained within each of these areas, although overlap between each is inevitable. These four characteristics are: 1) **relevance** (allows the program to be 'sold' to its stakeholders), 2) **capacity** (adequate fiscal, facility, and personnel support), 3) **quality** (research, peer-reviewed publications, and other products must be high), and 4) **impact** (must be evident to the scientific community and the associated industry). All USDA and OSU administrators have the expectation that the OPGC will grow and improve its efficiency in the prioritization, acquisition, maintenance, and research of deliverables.

Our recommendations are delineated below and are **numbered & highlighted in bold**. A summary of these recommendations were presented orally to the USDA/ARS, USDA ADODR (Authorized Departmental Officer's Designated Representative), and OSU administrators, the OPGC Director, OPGC curators and staff at the conclusion of the review on March 3, 2006. The contents of that brief summary are contained in Appendix 1.

RECOMMENDATIONS

Relevance

1. Rewrite the OPGC mission statement to comply with USDA/ARS NP 301 Guidelines.

The OPGC mission statement, as endorsed by the HOCGC in 2001, states that "We work to conserve and nurture the world wealth of herbaceous ornamental plant diversity to bring happiness and health to humankind." Both the OPGC staff and the HOCGC have endorsed this mission statement as well as the current goal "to build the OPGC into the world's leading herbaceous ornamental plant genebank." The OPGC mandates are genebanking, as the primary function, supplemented with secondary functions of research, development, and education. According to Dr. Mark Widrlechner, the USDA ADODR for this repository, specific new goals and quantifiable milestones for the next 3-5 years need to be formulated now that the OPGC is established and operational. The Planning Team concurs with this assessment and requests that attainable annual goals and milestones of the OPGC be formulated for the next five years, based on input from the OPGC Director, his staff, the HOCGC, and appropriate administrators.

Our discussions with USDA/ARS, the USDA ADODR, and OSU administrators focused on the relevancy of this mission statement now that the OPGC has been established. The USDA administrators strongly indicated that the mission statement does not conform to the National Program's NP 301 guidelines. The Planning Team recommends that the mission statement be rewritten to comply with the NP 301 guidelines. This is a matter can be addressed by the OPGC Director, Curators, and the HOCGC, in coordination with the USDA/OSU administration, at the annual 2006 HOCGC meeting.

2. Reduce the number of priority genera to accommodate current staffing levels and available funds.

3. Identify priority species within the revised priority genera.

A recurring issue which requires resolution is the number of priority genera under the jurisdiction of this repository. Currently, there are 30 priority genera, containing 7,900 species, approved by the HOCGC. The Planning Team members have been actively involved in decision-making process, which formulated these priority genera. While the priority genera encompass a significant portion of the floriculture market, acquisition, increase, maintenance, data entry, and distribution of this many genera and species far exceeds the current capability of the OPGC. The OPGC Director and staff felt overwhelmed with the number of prioritized genera which has significantly reduced their efficiency to engage in substantive day-to-day operations. Based on their input as well as that of the Ohio Florists Association, HOCGC members, the USDA and OSU administrators, it is clear that the number of priority genera truly does exceed the current OPGC capacity. If the number of priority genera is not swiftly and significantly decreased to a manageable number of taxa, the OPGC will not achieve its mandates.

The Planning Team recommends that the number of priority genera and respective species be drastically reduced as soon as possible to accommodate current staffing levels, available funding, and current resources, to provide focus and enhance efficiency during the next phase of the OPGC. While an exact number of genera and respective species were not determined during the review period, a consensus among the Planning Team suggests that approximately five genera be chosen from the list of 30 current priority genera. Determination of the exact number and specific priority genera will occur with discussions between the OPGC, the HOCGC, and the Technical Working Groups at the 2006 HOCGC annual meeting. Additional input from private

and public-sector flower breeding programs may be required to determine which species in each genus are top priorities. The Planning Team is adamant that these priority genera and species be relevant to industry needs to ensure continued market viability and provide important germplasm enhancement opportunities worldwide.

4. Revise acquisition, maintenance, and seed increase efforts to reflect reprioritization of taxa.

Once the priority genera and species have been determined, OPGC activities should primarily focus on their acquisition, increase, maintenance, data entry, and distribution. Continued plant collection trips would be made to ensure the windows of opportunity for plant germplasm collection are not missed. Collaborative research with graduate students and faculty on these priority genera would then provide long-term resolution of challenges relevant to germplasm maintenance and simultaneously provide answers to crop-related problems, resulting in peer-reviewed and trade publications. This would resolve the lack of adequate visibility of the OPGC with local (Ohio), national, and international floriculture industry and academic leaders as well as enhancing fundraising with potential donors.

5. Develop and prioritize sound acquisition targets with special consideration of native US taxa.

A sound acquisition strategy needs to be established and implemented within the confines of the newly identified priority genera and species. The OPGC Director and curators, working together, should develop the necessary plant exploration proposals and exchange requests to support this strategy. Sound decision-making on prioritization and germplasm collection,

regeneration, are critical at this phase. Since many countries have restricted plant collection and exchange efforts as a result of the Convention on Biological Diversity , prioritization of plant collection trips to countries wherein the USDA can still collect is necessary. A strong recommendation of the Planning Team was that the OPGC and HOCGC should re-examine North American genera for prioritization and collection.

The OPGC Director and Curators must recognize that they cannot satisfy the multiple interests of every interested party and should focus their attention respectively. Collection of germplasm which are not on the revised priority taxa list should not be targeted for acquisition. Likewise, with the refocused genera/species in the OPGC's core collection a corollary reprioritization of its clientele base and products provided should be conducted. Following this reprioritization, educational and promotional efforts can be aligned with the user groups. This will allow enhanced focus of energy by the Director and Curators in specific and directed promotion.

6. Integrate collaborative research projects with reprioritized target taxa.

More careful integration of undergraduate and graduate student research projects associated with the OPGC is required. The Planning Team members were surprised that many of the research projects currently underway failed to support the core activities of the center or relate closely to the priority genera. Integration of research projects must be more tightly integrated with the OPGC's core mission and goals. For instance, data on insect resistance from the current *Pelargonium* research project using Dr. Richard Craig's clonal germplasm could be used as a selection criterion to reduce the size of this collection (which currently exceeds OPGC's maintenance capabilities). Integration of such linkages would aid in reducing current germplasm

to quell the overwhelming frustration noted in the staff by being ‘spread too thin and in too many directions’.

David Tay’s leadership in recruiting high-quality students from campus is commendable. Several Departmental faculty noted, however, that enhanced research cooperation and fund sharing between the OPGC and OSU faculty/departments are necessary.

7. Restrict germplasm acquisition and maintenance activities to OPGC assigned genera and species.

Germplasm currently at the OPGC, which falls under the jurisdiction of other NPGS sites, should be transferred to those sites. For example, the Planning Team was surprised to observe that tropical foliage genera were being maintained in expensive OPGC greenhouse space when they could be more appropriately, efficiently and cost-effectively maintained at the USDA/ARS-SHRS repository in Miami, Florida.

Capacity

Short-term OPGC goals within the next five years, as delineated above, in part, should match the existing capacity of the personnel. While increases in funding are important long-term objectives, acknowledgement of the current fiscal climate of Congressional appropriations to federal agencies, public research universities, and this repository is appropriate. While tight fiscal management of OPGC funds by the Director and Curators is commendable, it is unlikely that significant increases in appropriations will be forthcoming in the near future. The annual appropriations for this center are tenuous and caused significant concern among the Planning Team. Thus, streamlining the duties of all staff should proceed to ensure that current funding is

used as efficiently and effectively as possible and that priority mandates are executed by the existing staff allocations. Achieving operational efficiency is essential to continue functionality.

8. Clarify OPGC management and administrative structure.

A management structure for the OPGC should be formalized to delineate the hierarchy of responsibilities. An organizational chart should be used to clarify reporting, both vertically and horizontally, among the staff. The responsibilities and expectations of the professional staff should be aligned with similar position at other NPGS sites. This will allow for enhanced functionality, maturation and growth of the staff into their new roles now that the center is established. Input from the HOCGC, this Planning Team, OSU and USDA administrators can be provided, as necessary to aid in this process.

9. Reallocate office space.

Once the administrative organizational structure of the OPGC is approved and implemented, reallocation of office space within the OPGC headquarters should be undertaken. While the existing office space is small, the Director should be the sole occupant of an office while the two Curators should share a joint office. This will support the organizational structure and responsibilities more effectively. The Director would benefit from having his own office to convey his leadership capacity and encourage private conversations with staff, donors, visitors, and researchers. The Curators have similar responsibilities, despite specific differences in crop types (seed vs. clonal), and would benefit by closer proximity when undertaking joint tasks, such as writing cooperative collection trips.

Operational efficiency must be achieved in all OPGC areas. The Planning Team observed significant allocation of resources to low-priority projects or those which would not aid in achieving the center's goals. Much of this may be due to the lack of specific directives from the HOCGC and the cumbersome number of priority genera and species. Both of these are addressed earlier in this document and, once resolved, should enable the OPGC to effectively fulfill its mandate. Focusing germplasm acquisition more strictly to the priority genera and species should reduce acquisition of germplasm that has little functionality. While the *Pelargonium* breeding lines and clones from Pennsylvania State University are a noteworthy gift, the OPGC should not simply maintain all such germplasm. Rather, a deliberative selection process should be undertaken by the responsible Curator based on the priority genera, consultation with the HOCGC, the Technical Advisory Group, and data from research projects on this genus (as noted earlier). This is particularly critical for germplasm that must be maintained clonally at considerable expense.

10. Phase-out Clonal Germplasm Program.

The Planning Team highly recommends initiating a phase-out of clonal germplasm curation. This will free resources for reallocation to species conservation via seed banking which has previously been identified by the HOCGC as a priority for the OPGC. In particular, existing stock of the *Begonia* and *Pelargonium* clonal germplasm should be reduced by 50% within one year (2007) with an additional 50% reduction of the remainder in three years (2009). A moratorium should be implemented on acquiring new clonal germplasm until the revised acquisition strategy can be developed, and the accession backlog is eliminated, uploaded to GRIN, and made accessible to NPGS users. Thereafter, clonal germplasm acquisition will

include only accessions which are in the priority genera and species that are needed to preserve desired genetic combinations that cannot be represented in the seed collections. Maintenance of clonal germplasm is expensive, particularly if the collections are unadapted (non-hardy) to year-round field maintenance and must be grown in the greenhouse or laboratory.

11. Refocus *In vitro* facilities and staff to support regeneration and maintenance activities.

The excellent tissue culture facilities and staff need to refocus their effort to primarily act in a supportive role for seed regeneration. This will require a reprioritization of the lab's functionality beyond subculturing. The tissue culture facility contains important tools for trend-setting germplasm maintenance, and significant research could be performed in this area. In particular, since Jennifer is interested in a graduate degree in plant breeding, her research could complement this process. Numerous opportunities exist for eliminating backlogs of low-viability accessions and circumventing existing and potential bottlenecks. For instance, embryo rescue could be used to rescue priority accessions which are viable but have negligible seed germination. *In vitro* seed germination of priority genera with low germination in viability tests should be implemented, particularly on old (>20 years) and critical collections in the OPGC backlog. This may rescue valuable *Penstemon,* for instance, from Glenn Viehmeyer's historic interspecific, hybrid bridging populations. The HOCGC, Planning Team members, public and private sector flower breeders, and other professionals can provide additional avenues for novel and state-of-the-art germplasm maintenance. Use of the existing knowledge base will aid in implementation of new techniques and resolve unanticipated difficulties. It may be advisable for the Curator or staff to visit tissue culture laboratories to learn new techniques. The clonal

Curator and tissue culture laboratory staff should not hesitate to contact any and all professionals who could provide direction and supportive roles in this process.

12. Eliminate the backlog of adding OPGC accession records into the Germplasm Resources Information Network (GRIN).

A top priority identified by this Planning Team is elimination of this OPGC backlog. While considerable progress has been made in reducing this backlog (entering in 2,179 accessions since July 2005), it is still too large—thereby inhibiting other necessary repository functions. A systematic approach to reducing this backlog is warranted. For instance, viability tests of all backlogged accessions more than 20 years old should be conducted. All non-viable accessions would be inactivated following standard NPGS protocols. For the remaining viable backlogged accessions entering the accessions onto GRIN is a top priority. Rather than initially entering all data fields for each accession onto GRIN, key fields should be entered first to get all accessions into GRIN quickly. Accessibility of OPGC germplasm by NPGS users is critical. Streamlining the uploading process is a mandatory component to ensure efficiency. Following the initial entry of key fields for backlogged accessions as time allows, the additional data fields can be added on a continual basis.

13. Try to obtain a staff member dedicated to IT activities.

It was noted by the Planning Team that it would be valuable for the OPGC to have a dedicated database or information technology (IT) staff person on board to streamline database management, implement existing bar-coding technologies, provide photographic documentation of germplasm accessions, supply personal computing and server support, and enhance the OPGC

website. While funding for such a staff person is not currently available, it is conceivable that funds may be garnered from the reprioritization of genera/species and enhanced efficiencies throughout the repository.

14. Minimize current seed regeneration efforts until reprioritization activities can be completed.

Until the OPGC target genera can be reprioritized and the resulting acquisition, maintenance and documentation strategies developed, minimal fieldwork for seed increases should be conducted. The Planning Team recommends that the 2006 field season consist only of seed increases on the existing, in-ground herbaceous perennials, with the remaining available plot space planted with annual taxa which do not require expensive isolation and managed pollinators. This will reduce staff time and expensive inputs into seed increases, allowing for refocusing staff priorities to revised programs.

15. Maximize operational efficiencies.

When either Curator requires additional personnel to accomplish a major task, the entire staff should be involved as much as possible. Such major tasks should be scheduled in advance, communicated in weekly staff meetings, and prioritized to avoid unnecessary conflicts with vacations, personal leaves, or other scheduling conflicts.

Quality

16. Prepare staff development plans

Since the OPGC staff fall under the jurisdiction and supervision of OSU administrative policies, consistency with OSU guidelines must be enhanced. The Planning Team proposes that all OPGC staff prepare a professional development plan in concert with the university's Office of Human Resources to ensure that these are consistent and in compliance with relevant OSU policies. This will bring the OPGC into alignment with university guidelines.

17. Maintain and enhance OPGC visibility to professional and industry organizations.

An OPGC policy should be instituted to encourage and continue membership and regular participation of the Director and Curators in programs of professional and industry organizations. This is particularly imperative for the annual Ohio Short Course. The Director, OPGC Curatorial Staff and, thus, the OPGC, should be highly visible at this meeting since it is held in Columbus, Ohio. Active participation in this conference should reduce the lack of OFA awareness of the center's functionality and enhanced support of industry goals.

Regular contributions by the Director and Curators to industry and trade publications would provide heightened awareness both locally and nationally. For instance, monthly curatorial columns or articles on plant collection trips would be an inexpensive means of capturing interest by readers and stakeholders alike. Likewise, plant collection presentations at the Ohio Short Course or other such conferences would pique attendee interest and input to make the OPGC "their center". As research continues within the repository, additional recognition will be achieved with continued scientific talks and publications in peer-reviewed journals.

Impact

18. Maintain and enhance existing technical and scientific collaborations with academia and industry.

The OPGC has established multiple relationships with appropriate academic and industry partners within the United States. While this is impressive, it became clear to the Planning Team that most Technical Working Groups, for instance, had never been activated or served in advisory capacities with the OPGC. The Technical Working Groups should be enhanced for encouraging mutually beneficial, long-term relationships. For instance, research collaborations that could benefit flower breeding programs working with priority genera/species could be used to initiate discussions. Likewise, a more active role of the Technical Working Groups in decision-making and research directives would benefit both the OPGC and each related research program. As particular challenges or opportunities arise for each priority crop, scientists within the HOCGC, Technical Working Groups, and/or breeding programs could offer appropriate solutions or pose researchable questions.

Appropriate parameters should be developed to define the OPGC's impact that reflect the hybrid nature of this repository between a public research university (OSU) and the USDA. Greater attention needs to be focused on the USDA expectations for NPGS sites, as noted earlier. The challenging hybrid nature of this repository must not impede achieving its mission and long-term functionality.

Summary.

In summary, the Planning Team was favorably impressed with the past five years of hard work, which has effectively established the OPGC. The opportunities for making this center increasingly functional as a repository of herbaceous ornamental crops are numerous and challenging, but not insurmountable. We are confident that the OPGC Director, Curators, and staff will be able to focus their resources to build a fully functional center with all available germplasm online, as well as towards better prioritization and focusing on the redefined priority genera/species to achieve its newly refined mission. Each Planning Team member and the Planning Team as a whole are strongly committed to the success of the OPGC as a relevant, strong, and successful genebank for herbaceous ornamental crops.

Our Planning Team discussions with the USDA, OSU, and Ohio Florist's Association officials resulted in a decision to convene a two-day HOCGC meeting in Chicago area to focus on rewriting and approving a new mission statement and on other issues generated in this Strategic Planning Session. The 2006 meeting of the HOCGC will be held August 3-4 at the Ball Horticultural Company in West Chicago, Illinois, thanks to the generous offer by Planning Team member Dr. Corr. Previous annual HOCGC meetings held in conjunction with the Ohio Florist's Association Short Course have never been well attended and have not lent themselves to lengthy working meetings. Convening a conference strictly for the HOCGC would allow for productive direction and tangible outcomes to aid the OPGC in achieving its goals. Additionally, such a meeting would coincide with the annual bedding plant trials on the grounds of Ball Horticultural Corporation, as well as affording networking opportunities among HOCGC members, OPGC staff, and private/public sector breeding programs in the Chicagoland area. In particular, tours of the PanAmerican Seed Co., Ball FloraPlant Co., Ball Helix, Ball Seed Co.

should be conducted, as well as visits to the nearby Morton Arboretum and Chicago Botanic Garden.

The HOCGC and this Planning Team will continue to be a sounding board for ideas and provide creative problem solving to the OPGC in accomplishing the recommendations contained in this report.

Hereby Respectfully Submitted by the Planning Team members,

Neil Anderson

Jim Ault

Brian Corr

Ned Garvey

Justin Marotta

Alan Meerow

Ray Miller

APPENDIX 1. DRAFT REPORT.

The following draft report was presented by the Planning Team to The Ohio State University Administrators, USDA/ARS Administrators, and the Ornamental Plant Germplasm Director and staff at the conclusion of the review on March 3, 2006.

Ornamental Plant Germplasm Center
Strategic Review/Planning
Draft Report
March 3, 2006

Overview

- Impression of the Planning Team is generally positive
- Off-campus and on-campus cooperation is evident
- Excellent involvement of graduate students
- Promotion of Center to the general public is better than other NPGS sites
- Excellent physical facilities and equipment
- Eager to learn young staff
- Good involvement with high quality undergraduate students
- Good progress in a relatively short period of time with available resources
- Proactively solicited information and help from other NPGS sites
- Successful at learning in response to and implementing the HOCGC recommendations regarding documentation of germplasm in the GRIN system

Recommendations

Relevance

- Mission statement needs to be brought in line with NP 301 strategic goals
- Narrow the current germplasm focus to the most important species in fewer priority genera
- HOCGC revisit the germplasm status reports for each of the priority genera and analyze current priorities and needs
- Relinquish responsibility for certain germplasm more appropriately handled by other NPGS sites, e.g. tropical foliage
- Integrate student projects more closely into core activities that relate to priority germplasm
- Prioritize clientele and products the Center serves and provides, respectively, then align advertising/ promotional efforts with those groups

Capacity

- Increase operational efficiency
- Formalize a management structure within the Center, including a hierarchy of responsibilities as defined in an organization chart
- Reallocate office space based on administrative organizational structure
- Center goals should match the capacity of personnel
- Align the responsibilities and expectations of the professional staff with those in similar positions at other NPGS sites
- Initiate phase-out of clonal germplasm curation and reallocate resources to species conservation via seed banking. Implement a moratorium on accessing any new clonal germplasm and reduce existing stock by 50% within 1 yr. and an additional 50% in 3 yrs.
- Utilize tissue culture as a supportive tool for seed regeneration, e.g. embryo rescue, in vitro germination, etc, and not as backup germplasm storage.
- Realign curators responsibilities in light of reprioritization of priority germplasm
- Re-evaluate native North American genera for inclusion in priority genera
- For the 2006 field season continue seed production on existing in-ground perennials only and plant remaining plots with annual taxa that do not need isolation
- Conduct viability tests of back logged accessions (20+ yrs.), e.g. *Penstemon*, with the intention of inactivating non-viable accessions

Quality

- All staff will prepare a professional development plan in concert with Human Resources to assure that objectives are consistent with University policies
- Institute regular contributions to industry/trade publications
- All OPGC accessions must be entered into GRIN; for initial GRIN entry, identify key fields and enter those only
- Review collection information for all OPGC accessions to ensure that the collection is in line with Center priorities
- Institute a policy for regular participation of Center management (curators & director) in programs of professional and industry organizations

Impact

- Build long term, on-going relationships with appropriate U.S. partners (i.e., academic and industry) which are mutually beneficial
- Develop appropriate parameters to define impact that reflects the hybrid (OSU-USDA partnership) nature of the Center and USDA expectations for NPGS sites