

The J.C. Raulston Arboretum at North Carolina State University®

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The J.C. Raulston Arboretum (JCRA) was founded in 1976 as the North Carolina State University Arboretum. Dr. J.C. Raulston, the Arboretum's founding director, inspired the university and community with a unique and generous vision of a research, teaching, and outreach arboretum. The plant collections are the foundation of the JCRA. Collection development began in 1976 and now numbers over 6000 native and non-native taxa. The JCRA comprises one of the most diverse displays of woody and herbaceous plants in the United States, including several significant collections and garden displays.

JCRA IS A TEACHING FACILITY

The JCRA has been a teaching facility since its conception, providing an arena for hands-on experience and close-up study. From the original master plan developed by a graduate student in 1980, to the revised master plan completed in 1991, to the complete renovation of the 137 m (450 ft) long Perennial Border in 1999, students have been and will continue to be integral to the mission of the JCRA. Arboretum outreach efforts serve both green industry professionals and the general public. Services include the distribution of plants, as well as educational support regarding their cultivation. Frequent electronic postings to the JCRA's e-mail list established in 1999 have streamlined plant identification and cultivation information (with images) to hundreds of on-line individuals and groups.

The 1990s were committed to ensuring the JCRA's future by adding staff, creating an Advisory Board, developing a long-range strategic plan, a revised master plan, and plans for a 557 m² (6000 ft²) on-site education center.

Following J.C. Raulston's death in 1996, the JCRA was named in his honor. The university solidified its commitment to maintaining and propelling the Arboretum forward. A new Director was hired in 1999, significant university funds were provided to upgrade computers and JCRA facilities, and funding was provided to hire an Assistant Director in 2000.

For the landscape professional, the JCRA's collections are among the most significant in the region. Professionals look to the JCRA not only as an informational resource, but as a direct source of plant material. Nursery professionals are yearly given thousands of cuttings from the JCRA collections. This relationship with professionals has energized the nursery trade across the state, spawning many specialty growers. These growers work closely with the JCRA staff to develop a broader palette of plants for the marketplace.

As a teaching tool, the JCRA's plant collections serve students, professionals, and the public in both botanical and horticultural arenas. The great diversity of the collections affords extensive opportunities for botanical and taxonomic study, allowing comparison of plants from all over the world and many different microclimates. Students and professionals alike utilize the collections to study plant

identification and culture. Access to specified plantings allows students in horticulture classes to learn cultural practices in a hands-on setting.

UNIQUE WAYS TO LEARN ABOUT PLANTS AND WAYS TO USE THEM

The mixture of familiar and new plants displayed in a landscape setting, provides a unique opportunity for the nursery professional, homeowner, or designer to learn about plants and ways to use them. The dynamic nature of the collections ensures the opportunity to educate the public on current trends in gardening with an ever-changing plant inventory. For example, the JCRA's first ornamental grass collection was originally dispersed and integrated into the JCRA at large. The grass collection has since been replaced with a Winter Garden, displaying plants with winter interest. Two new perennial beds show gardeners how to expand seasonal interest and explore textures and colors in the border across all four seasons.

As a continually evolving outdoor laboratory, the JCRA itself is an exhibit in which all plant collections are displayed in a gardenesque setting in a series of "garden rooms," united by a system of grass paths. The model gardens and theme gardens focus the JCRA's landscape exhibits by illustrating specific garden styles with appropriate plantings in innovative ways. These gardens, designed and implemented by students in landscape architecture and horticulture classes, are a unique and influential part of the teaching program, educating students through both hands-on experience and by providing ongoing examples of quality landscapes.

Existing theme gardens include a White Garden, a Japanese Zen Garden, the Perennial Borders, a Mixed Shrub Border, and a Tender Perennial Garden. The Klein-Pringle White Garden is modeled after the white garden at Sissinghurst, and displays plants with white flowers, fruit, and leaves in an enclosed garden room. The Japanese Zen Garden is a meditation space, comprised of raked stone, planted mounds and large stones, and a cypress viewing deck backed with tatami screens. The Perennial Border is a wide mixture of herbaceous perennials, bulbs, small shrubs, and ornamental grasses providing exciting displays of texture, color, and form throughout the year; it was recently renovated in entirety in 1999. The Mixed Shrub Border is a key demonstration of JCRA teachings and principles. This 91 m × 4.6 m (300 × 15 ft) border highlights plants identified through the JCRA evaluation program, and weaves them into a series of vignette gardens displaying all the elements of a successful garden: trees, shrubs, groundcovers, perennials, bulbs, annuals, and landscape features.

Since the JCRA is located in an area of increasing urbanization, many design professionals and home gardeners are pressed to learn new techniques for smaller, less private gardens. Our model gardens are designed on a residential scale to address the urban and suburban landscape pertinent to the student, professional, and public audiences of the JCRA. Other emerging issues in urban gardening, such as container gardening or needs for privacy screening are considered. As in every aspect of planning and management at the JCRA, the demonstration of new and unusual plants is maintained as the focus.

Interpretation of JCRA exhibits begins with students and volunteers learning while they create the gardens, and continues through every aspect of the JCRA's development and use. Our priority calls for the comprehensive labeling and interpretation of all plants and garden concepts. The acquisition of a computer engraving system has begun the immense task of standardized, descriptive labels

at the rate of about 30-50 replacement labels per week. Membership contributions and subsequent grants fund a part-time plant recorder who maintains an accurate plant inventory and computer maps. In 1996, a faculty development grant funded work to link the plant inventory and JCRA collection maps to the World Wide Web. As recently as late 2000, this site included some of the newest streaming video technology and can be reached at the URL: www.ncsu.edu/jcraulstonarboretum. The newest interpretive venture for the ornamental grass collection as well as a general welcome sheet for visitors, is in English and Spanish. Expansion of bilingual interpretation will support institutional goals to serve the diverse horticultural community.

Volunteer guides provide interpretation of JCRA collections and exhibits throughout the year for groups ranging from preschool classes to retirement communities. Self-guided tour sheets which pinpoint plants of seasonal interest are always available to the walk-in visitor.

Both in-house and traveling displays are supported extensively by written materials. At the JCRA, annotated self-guided tours, are available. Documentation of research or special exhibits, such as ratings of the annual bedding plant field trials, are shared with industry members, students, and visitors. In all exhibit design, every effort is made to create and maintain universal accessibility.

PROGRAM DEVELOPMENT TO FIT THE NEEDS OF THE JCRA'S AUDIENCE

Program development is guided by continuing assessment of the needs of the JCRA's audience and evaluation of its service to these groups in pursuit of its mission. This audience and associated educational programs are divided into three major groups: 1) university, community college, and public school students; 2) green industry professionals; and 3) the general public.

The JCRA's outreach to its audiences begins with interaction among students in design and plant sciences, expands to include all facets of green industry professionals in North Carolina and across the nation, and is constantly increasing in its service to families, gardening enthusiasts, and others in the general public.

North Carolina university and community college students in horticulture, landscape architecture, botany, forestry, plant pathology, entomology, parks and recreation management, and other plant and design curricula utilize the JCRA as an outdoor laboratory. At NC State University, with a student body of about 27,000 students, relationships are developed with various disciplines through cooperation with students and faculty in other departments to develop class projects using JCRA facilities. Arboretum support for developing campus arboreta across the state has forged relationships with many community colleges and public schools. The JCRA also serves as a living classroom for high school, middle, and elementary school students.

Members from every facet of the landscape industries statewide and regionally, including nursery professionals, landscape contractors, landscape architects, and urban planners come to the JCRA for information. The green industries are served through the JCRA's plant distribution efforts, regular publications, seminars, and individual staff consultation. The JCRA reaches this audience through articles in trade publications, exhibits at trade shows, and other professional gatherings.

The collection policy targets plants that have landscape potential in USDA Zones 6 to 8. Special emphasis has been focused on: 1) small flowering trees in the genera *Cercis*, *Styrax*, *Prunus*, deciduous *Magnolia*, and *Cornus*; 2) conifers adapted for the Southeast, including *Cryptomeria*, *Picea*, and *Juniperus horizontalis*; 3) broadleaf evergreens, including *Nandina*, *Mahonia*, and *Illicium*; 4) shrubs for winter interest, including deciduous *Ilex* species and *Hamamelis*; and 5) herbaceous perennials.

Plant records are maintained on a flexible software system developed by JCRA staff for inventory. New plants are entered on this system and cataloged by species, date received, plant size, name and address of source, special characteristics or cultural information, and placement within the JCRA by bed number. These beds systematically divide the JCRA's 3.2 ha (8 acres) into 157 areas. De-accessioned plants are "removed" from the computer mapping system, but kept on the inventory system to retain information learned during their period in the JCRA.

SELECTIONS PROGRAM AT JCRA

Finally, a formal system of plant introduction in partnership with the green industry is embodied in the JCRA Selections Program. This fledgling program was initiated to select a small number of plants from the JCRA's inventory, evaluate for landscape merits, and channel them into the wholesale nursery industry for propagation stock. The program is currently being examined from all sides and will soon include the addition of other geographic sites within North Carolina to evaluate plant candidate performance throughout the state.

Great potential resides in the anticipated construction of the McSwain Education Center. This facility will enable the JCRA to broaden its mission in a state-of-the-art environment.