



WELLESLEY COLLEGE

Global Flora: Greenhouse Renewal, Phase 1

The resurgence of botany at Wellesley is gaining momentum, as we have gone into high gear on the first phase of renovations: the Global Flora Collection of the Margaret C. Ferguson Greenhouses. This project not only will provide an improved home for the greenhouse plant collection, it also will strengthen connections between botany and other sciences and the rest of the liberal arts in new and exciting ways.

The Wellesley2025 Plan for Campus Renewal identified the “permanent collections” greenhouses as one of the Science Center components in urgent need of renovation. College Trustee Mary White '79 saw the greenhouse project as a potential catalyst for increasing interest and participation in science, prompting a round of conceptual planning this past spring. A very generous gift from Nan Walsh Schow '54 early in the process fueled strong enthusiasm for the planning. The exciting conceptual design that resulted (which I shared at the Friends Annual Meeting in June) must have met Mary's criteria for catalysis, because, in a moment that will be forever sealed in my memory, she announced that she would fund the rest of the Global Flora project in its entirety.

Focusing in on the permanent collections greenhouses – the main axis from the Desert House through

the tropics to the hydrophytes, plus the cryptogams – has enabled a transformative re-examination of goals for the collections. Consultations with greenhouse experts revealed that, with the probable exception of the Durant camellia, the plants now in the ground would be better off moved out of the construction zone and replanted afterwards, opening up much greater design flexibility. Margaret Ferguson's original vision to house a diversity of plants from around the world and to “form a center that shall be of interest to all” is guiding conversations with faculty, staff, students and Friends as we seek to create an extraordinary indoor living laboratory.

Aspirations for the Global Flora project are three-fold: to give the botanical collection a focus of broad interest in science and art; to provide a new platform for interdisciplinary science at Wellesley; and to be an innovative example of sustainable design that lends itself to study. I'll elaborate a bit on the current thinking on each, and welcome your reactions.

The focus of the Global Flora plant collection will be diversity of form. The form of a plant reveals a great deal. Plants wear their history in their form – both the evolutionary history of the species and the growth history of the individual in its particular environment. In order to reveal this diversity as fully as possible, we will



Plant form is the focus of Global Flora.

grow distinctive plants under climatic conditions to which they are adapted, and give them the time and space to develop their form. We are planning three relatively large houses to replace the current one large and five small ones: a dry house for everything from cacti to caudiciforms;

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a wet house with various small-scale water bodies, resembling a subtropical bog or a mangrove wetland, along with plants that require high humidity; and a “diversity highlights” house for the most interesting species we can think of. We plan to highlight floral form as well, and will need to acquire new plants such as a protea to join our marvelous *Aristolochias*, *Epiphyllums* and Darwin’s orchids.

The Global Flora project also provides an excellent platform for interdisciplinary science: “indoor ecosystems” with a year-round growing season. Thinking of indoor plants as members of ecosystems opens up many interesting lines of investigation. Planting them together in the ground enables study of interactions among organisms – not necessarily as they would occur “in nature,” but as they do occur indoors, with implications for pest and disease management. Greater indoor biodiversity might benefit humans through associated microbial communities – “microbiomes” – that may help control pathogens. Also, human contact with

nature has documented benefits including reduced stress and improved ability to focus, but the mechanisms of these effects are not well understood. These topics are very appealing to students, and well suited to interdisciplinary teaching and research.

The goal of sustainable design also is well served by the ecosystem approach, as we are thinking of resources such as water and energy as systems, aiming to minimize ongoing dependence on fossil fuels and the campus water supply. We will install a network of sensors to continuously quantify physical conditions (temperature, humidity, light, soil moisture), not only to enable efficient resource use, but also to make possible a wide range of studies with concurrently measured biological responses (e.g. rates of photosynthesis and respiration, changes in microbial communities, human mental acuity).

The well-monitored systems will interest students of engineering and architecture as well as science and environment.

As for the rest of the greenhouses, the three “fingers” of shorter greenhouses will remain in place for now. In keeping with the overall Botanic Gardens theme of plants as food, we aim to integrate plants providing food for humans into a Center for Environment space, yet to be fleshed out. The research and student houses also need renovating or replacing as part of Science Center improvements. In preparation for construction, we are culling the collection of duplicates and lower priority plants – keep an eye out for notices of plant give-aways.

So, thanks to Mary White, Nan Schow, and the capital projects team at Wellesley, we are off and running! This summer, a dozen illustrious architectural firms put in proposals for the Global Flora

project. One particularly stood out to the selection committee: Sheila Kennedy and Frano Violich of KVA in Boston deeply understood the project and had imaginative relevant experience. The team they are bringing to the project includes expertise in sustainable design, material science, lightweight specialty structures, climate engineering, and interactive graphic design and data visualization. And because integration with landscape is especially crucial for this project, the College brought in Andropogon Associates, in my view the gold standard in science-based ecological landscape design, founded by Carol Franklin '62. It truly is a dream design team, and I just cannot wait for the project to take shape. We may not need to wait long, as the goal is to break ground this coming spring!

— Kristina Niovi Jones,
WCBG Director