

Virginia Tech Massey Herbarium Strategic Plan

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Overview: The Massey Herbarium is a “Research Resource” within the Biological Sciences department, similar to other departmental resources including the greenhouse, flow cytometry facility, informatics resources, and microscopy facilities. The herbarium traditionally supports research activities, classroom activities, and provides identification services (especially for the weed science and horticulture departments). The department supplies a budget of \$2,000 annually for supplies. The recent hiring of a new curator comes with a clear mandate to expand the visibility and outreach activities of the herbarium.

Mission: The Massey Herbarium at Virginia Tech seamlessly integrates leading-edge multi-disciplinary research to solve complex issues of local to global relevance involving the southeastern flora with preparing the next generation of scientists and educating the public in diverse ways.

Vision: The Massey Herbarium at Virginia Tech will fulfill its land-grant role and Virginia Tech’s mission of Ut Prosim (“That I May Serve”) by combining research across disciplines and institutions that answers essential questions about the evolution, diversity, ecology and future of the southeastern flora with a vigorous educational program that shares this knowledge with Virginia’s populace in a variety of formats and approaches.

Goals & Objectives:

1. Become a widely known and trusted source of plant information and education for the general public in the New River Valley.
 - Publish a quarterly outreach column about native plants using the herbarium collection for illustration. Continuous.
 - Maintain an accessible online presence (website, Facebook, Twitter) to share botanical information and news.
 - Develop and/or promote botanical exhibitions, begun with sponsoring Flora of Virginia traveling exhibit. 2018, then continuous.
2. Engage local and state communities in outreach activities that increase their botanical knowledge and promote the value of natural history collections.
 - Develop modules for usage by university and K-12 courses on scientific principles using herbarium specimens or specimen data.

- Develop both static displays and special events incorporating botany and collections with the Price House Nature Center to reach the local, especially non-VT, community. Continuous.
- Increase usage of the collection by the local artist community through promotion and facilitation of arts projects. Continuous.
- Participate in campus outreach events (eg, SciFest, BugFest, etc) with engaging activities that increase botanical literacy and promote the value of collections. Continuous.
- Participate in WeDigBio specimen transcription event. *Annual*.

3. Maintain VPI's presence as a pillar of the Virginia botanical community through growth and digitization of the collection and through state-of-the-art research studies.

- Develop potential collaborations and priorities that are relevant locally and globally.
- Gather preliminary data and apply for extramural funding. 2018.
- Execute research studies that result in conference presentations, peer-reviewed publications, and secure research funding. Continuous.
- Develop internal collaborations with VT researchers in diverse fields that can incorporate VPI specimens or data to answer essential questions in their fields. Continuous.

Strategy Statement: We promote the value of botanical collections and further the university mission of service by safeguarding and growing the herbarium collection; extending access to our storehouse of knowledge through specimen digitization, and dissemination of botanical and natural history knowledge; conducting leading-edge research that synthesizes state of the art techniques with specimen-based inquiry; and participating in varied outreach activities and events to bring our message to a diversity of audiences.

Evaluation: activities that will begin to remedy our deficits in visibility and outreach/education efforts on and off campus.

| Activities | Output | Metric | Benchmarks | Milestone |
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| Create online visibility | Website and Facebook account | Website visits. | Track visits and page views and have year over year growth of 10% or more. | Took website and Facebook account online in July 2017. |
| | | Increased specimen usage. | Increase in: 1) VPI specimen record views on SERNEC and 2) specimen loan requests. Compared to previous year for both measures. | |
| Increase role in K-12 science | Participation in outreach events and creation of | Number of K-12 students served and lessons | Participate in outreach events serving a combined | Complete output goals by summer 2018. |

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| education. | educational modules/lessons. | created. | total of 2,000 or more students. Create and implement first collaborative lesson with Price House Nature Center. | |
| Provide training and support for collections-minded students | Museum apprenticeship class. | Student enrollment and number of participating departments. | 15 or more students enrolled, with 3 or more students enrolled through VPI. At least three natural history collections participating. | First class session Spring 2019. |
| | Facilitate creation and provide support for student Natural History Collections Club. | Number of students involved and number of events. | Second year: Enrollment of >20 students and multiple club events/semester. | Established club in Fall 2017. |

Strengths

1. VPI has the largest collection in Virginia and has been a leader in studying the local flora (eg, involvement in Flora of Virginia effort and VA Plant Atlas, documenting species new to the state or to science).
2. Digitization efforts are making the collection available online and accessible globally.
3. Strong support from current departmental administration.
4. Strong connections with state Natural Heritage Program botanists lead to donation of “interesting” specimens (rare taxa, new state records, etc).
5. Located on main campus with ample room for hosting events and tours.

Weaknesses

1. Little usage of the collection by current departmental faculty and students.
2. Funding is mostly unguaranteed and reliant on departmental interest and ability.
3. Ability to accommodate external users (especially larger school groups) is limited by small staff.
4. Previously there has been no outreach activity beyond occasional Native Plant Society events.

Opportunities

1. Numerous collections from federal land are present in the herbarium and could be eligible for funding or collaboration opportunities with federal agencies.
2. There are numerous art initiatives and STEM educational organizations that would be excited to partner with the herbarium on interdisciplinary or outreach efforts.

3. Specimens or objects from the collections could enhance course curricula across campus (e.g., Biology Department, Veterinary Medicine, Weed Science, Horticulture, Appalachian Studies).

Threats

1. Perception of reduced relevance for research, education, or outreach among decision-makers relative to other resources leads to cuts in funding, space, or personnel.
2. Lack of visibility in department and campus and subsequent ignorance of collection makes the herbarium coveted real estate for expansion of laboratory space.
3. Extremely small staff (only the curator since Fall 2017) makes it difficult to “do it all” (secure external funding, publish peer-reviewed research, publish outreach articles, host outreach/educational activities).
4. Retirement of herbarium director (summer 2017) leaves no faculty association with herbarium and thus no voice in faculty-level decision processes.
5. (Rare) flooding from floors above.
6. Supportive departmental chair will leave her position in 2018.

Sustainability:

Maintaining Strengths

VPI's principal strength is its position as the largest herbarium and official state repository of Virginia. The curator will maintain this position by continuing to work closely with the botanical section of the state natural heritage program, actively collecting the regional flora, continuing and developing new exchange programs, and encouraging deposition of research vouchers among VT staff and students. The online presence of the herbarium will also be emphasized, mainly through digitization of the collection but also through development of a website and social media presence.

Addressing Weaknesses

The Massey Herbarium's two primary weaknesses are low visibility (on campus and in the community) and soft funding. We will improve visibility using a multi-pronged approach. At the departmental level, the curator will: host monthly social gatherings in the herbarium (with a subtle collections message), present a departmental seminar on specimen-based research, host a showing of the Flora of Virginia exhibit, develop an online presence, and participate in STEM outreach events. The funding situation will be addressed by an increased attempt to secure external grant funding, initially from NSF or IMLS.

Capitalizing on Opportunities

Virginia Tech's setting as a land grant school in southwestern Virginia provides an academic setting with many courses and departments well-suited for incorporating specimens or data from the herbarium. We will increase usage of the herbarium on campus through communication (seminars, hosting events, online presence) and through development of educational modules for select courses. The local community has a culture that values natural history, science, and artistic expression. We will

develop partnerships with local groups in these fields to increase herbarium usage, incorporate natural history collections in education, and provide a venue for the creation and exhibition of botanical art.

Mitigating Threats

Our collection is most threatened by our lack of visibility and lack of influence in the department. By increasing our presence and role in multiple venues (educational, research, outreach) and applying for external funding, we will present the herbarium as a vibrant, productive unit. Graphical summaries of herbarium productivity and collaborations are being produced to provide memorable assessments of the collection's value. The curator will advocate for replacement of the retiring Director with a new collections-minded faculty to ensure future representation of the collection in faculty-level decisions.

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