

The Global Change Center



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1. Vision and Mission of the Center

Exponential human population growth has altered ecosystem and planetary processes, straining natural resources and the oceans, forests, grasslands, and freshwaters that are critical to a prosperous society. For example, climate change, habitat loss/degradation, invasive species, pollution, and emerging infectious diseases are among the challenges that alter these ecosystems, decimate biodiversity, and adversely affect our water, air, food, and energy systems. A more interdisciplinary understanding of these human-induced, global changes is urgently needed to inform public policy, minimize further environmental degradation in the face of a rapidly growing society, and to promote sustainable solutions to the greatest environmental challenges of the 21st century.

Because interdisciplinary research and student training are essential to tackle the new frontier of global environmental challenges, the Global Change Center at Virginia Tech (GCC) was founded in 2015 and housed within the Fralin Life Sciences Institute. The Center brings together experts from diverse disciplines from most colleges on campus to confront these complex global challenges and train the next generation of leaders.

The *vision* for the GCC is to be an elite Center that confronts global changes and their complex interactions as they increasingly threaten the environment and society. Our *mission* is to address these challenges by providing a campus-wide framework that encourages, facilitates, and rewards interdisciplinary research, education, and outreach across the intellectual landscape of Virginia Tech.

2. Objectives

In keeping with the land grant mission of Virginia Tech, the GCC has several overarching objectives that include:

- 1) Elevate Virginia Tech as an innovative international leader in global-change science, from basic research to development of science-based solutions that can inform decisions and policy, and provide visibility of our strengths to the world.
- 2) Establish and nurture a collaborative, inclusive, and well-integrated interdisciplinary research community of diverse faculty with expertise that spans disciplines across the biophysical sciences, engineering, social sciences, and humanities.
- 3) Recruit and retain the most innovative faculty and students in the world to Virginia Tech.

- 4) Position Virginia Tech to secure significant extramural funding and to form meaningful partnerships with broad stakeholders
- 5) Facilitate, promote, and reward novel cross-campus collaborations amongst specialists in the natural sciences, engineering, social sciences, and humanities.
- 6) Support faculty to develop real world solutions to global challenges such as habitat restoration, disease and invasive species mitigation strategies, water quality monitoring and forecasting, policy recommendations, and carbon management.
- 7) Make the best available science accessible to decision-makers and the public by promoting effective communication, participation, and dissemination.
- 8) Serve the Commonwealth and the world by creating novel interdisciplinary research, leadership, and communication training programs for undergraduate and graduate students seeking to become the next leaders in global change science.
- 9) Generate novel experiential learning opportunities for undergraduates to include research with the Center's world-renowned faculty and science policy fellowship in Washington D.C.
- 10) Connect the campus community with the local community through active engagement and outreach to include public lectures, science fairs, and partnering with local schools and retirement communities.

3. Affiliated Faculty & Process for Affiliation

The Global Change Center at Virginia Tech is envisioned to have broad participation by faculty members from many academic units that grows over time. At the time of the Center's founding in 2015, it had 37 faculty affiliates. At the time of this Charter revision (Dec 2023), the Center has more than 90 faculty affiliates from more than 20 academic units.

To become affiliated with the GCC, full time, tenure-track faculty members at Virginia Tech will contact the Center Director to discuss the advantages of affiliation (e.g., access to seed funding, unique training opportunities, new collaborations), as well as the explicit expectations of GCC affiliation (e.g., graduate student recruitment, committee service, participation in events each semester, annual reporting). Faculty submit a formal application that is reviewed by the Center's Advisory Committee (AC) for approval. Affiliations are granted for two-year periods, and are periodically reviewed by the Center's Director and AC to ensure that each faculty affiliate has remained actively engaged. Faculty that have been engaged will have their 2-year affiliation automatically renewed. However, lack of active engagement will be

discussed with the faculty affiliate and is grounds for Center's leadership to deny renewal of their affiliation.

4. Governance of the Center

The Global Change Center is a university-wide, faculty-led initiative, involving most colleges on campus. The Center is housed in the Fralin Life Sciences Institute (FLSI). The Center will be led by a director and the AC. FLSI's Executive Director and its Stakeholder Committee will be kept apprised of the Center's progress through annual reports. A Center Coordinator will assist the director, organize events, and implement a comprehensive communication plan in support of the Center's vision and strategic directions.

The Center's governance structure will be evaluated during the first year, after three years, and as needed thereafter by the Administrator, Director, and AC. For example, the possibility of appointing an Associate Director or additional staff support will be considered upon establishment and growth of the Center, pending need and increased availability of funding to support these roles.

Administrator:

The Executive Director of The Fralin Life Sciences Institute will serve as the administrator of the Global Change Center.

Director qualifications, role, and responsibilities:

The Director of the Global Change Center at Virginia Tech will be a senior faculty member with an internationally-recognized research program, to include a highly successful record of scientific achievement and extramural funding related to Global Change. The Director should have a demonstrated record of collaborative work, program development and/or administration, and interactions with broad stakeholders. They should possess a service-oriented mindset, balanced with the ability to make strategic decisions for the benefit of the Center's community. The Director should be fiscally responsible, transparent with their decision making, and an excellent communicator.

The Global Change Center Director will be appointed by the Fralin Life Sciences Institute Director (Administrator). The Center Director should receive an annual stipend from FLSI and the Center's home academic unit should receive an annual budget transfer from FLSI as compensation (buyout) for the Director's time.

The Center Director will:

1. Identify strategic opportunities and directions for the Center
2. Liaise among the Center, academic colleges and departments on campus, other Centers and Institutes, and the Virginia Tech upper administration
3. Foster a collegial environment that promotes synergies and collaboration
4. Create leadership opportunities and mentoring to faculty affiliates of the Center
5. Appoint members to committees to conduct Center business
6. Chair the AC, keep the it advised regarding activities of the Center, and solicit AC member suggestions
7. Oversee and administer interdisciplinary graduate and undergraduate training programs
8. Lead public-relations efforts to build the stature and reputation of the Center
9. Administer seed grant programs and other initiatives to affiliated faculty to generate collaborative research and innovation
10. Lead student and faculty recruitment efforts
11. Conduct the daily fiscal business of the Center
12. Prepare agendas for Center committee meetings in consultation with committee chairs and the Center coordinator

Performance of the Global Change Center's Director should be reviewed annually by the Administrator, and every 5 years in a more formal process that solicits input from the Center's faculty and key stakeholders (e.g., relevant dept. heads). Renewal of the Director requires favorable performance reviews.

Succession Process for Director:

In the event that the Director's term expires, is not renewed, or the Director steps down from the position, the AC will assume responsibility for making recommendations to the Administrator for the Director's replacement. The succession process will be as follows:

1. The Director will recuse themselves from the AC to avoid possible conflict of interest.
2. The AC will elect a chair for the leadership succession process.
3. The AC will solicit nominations (including self-nominations) from GCC-affiliated faculty for the successor. Only current tenured GCC affiliates will be considered.

4. The AC will verify that each nominee understands the responsibilities of the position and confirm that each nominee wishes to be considered.
5. Nominees will submit their CV and a statement of interest to the AC.
6. Once the pool of nominees is finalized, the AC may elect to appoint up to 5 additional GCC faculty affiliates to ensure balance of perspectives on the committee. These appointees should be highly active members of the Center's faculty community.
7. The AC will share CVs and statements of interest with Global Change Center faculty affiliates. The AC will solicit feedback from all Center faculty affiliates using a survey instrument, in a process that seeks their perspectives on each nominee's suitability for the position, to include (but not limited to) their leadership traits and experience, service-oriented mindset, track record of managing budgets and staff, and professional career stage, credentials and reputation.
8. The AC and its additional faculty appointees will evaluate the feedback on the nominees with the goal of providing consensus recommendations to the Administrator. After careful deliberation, the AC will first rank each candidate as acceptable or unacceptable. The AC will then rank the acceptable candidates based on deliberation and a committee vote for the successor. If deemed necessary, the AC may request a meeting with the finalist(s) to further evaluate their suitability for leading the Center.
9. The AC will provide the Administrator with a written recommendation for the successor, to include a list of rankings of acceptable candidates, the result of the committee's vote for each acceptable candidate, and the strengths and weaknesses of each acceptable nominee that they evaluated.
10. In addition to providing their feedback in writing, the AC and its additional faculty appointees may elect to also meet with the Administrator to further explain their recommendation and answer questions.
11. The Administrator uses the recommendation and feedback of the AC and its additional faculty appointees to appoint the new Center Director.
12. In the event of circumstances that prevent a Director from fulfilling their duties, the AC may consult with the Administrator to appoint a well-qualified GCC Faculty affiliate as Interim Center Director. The Interim Center Director can serve for a period no longer than 6 months (but preferably 3-4 months) while the above process is conducted to identify the Director's successor.

Advisory Committee role and responsibilities:

The Advisory Committee will be composed of 7 Virginia Tech faculty affiliates representing the broadly defined thematic areas of the Center (e.g., habitat loss, pollution, invasive species, disease, climate change) from diverse relevant fields (e.g., biology, geosciences, sociology,

economics, policy, history). AC members will be appointed by the Director for two-year terms, and represent a balance of perspectives and interests from around campus. The AC will be chaired by the GCC Director and shall:

1. Develop policies, goals, and directives of the Center
2. Assist the Director in conducting the business of the Center, primarily at a high-level
3. Conduct regular meetings (e.g., once a month during the initial year(s) of building the Center; once a semester thereafter)
4. Oversee succession of Global Change Center Directors (see above).

Center Coordinator role and responsibilities:

The GCC Coordinator will assist the Center Director in the day-to-day operation of the Center. The Coordinator will:

1. Develop and implement a comprehensive communications plan for the GCC, including a website, social media, e-newsletter, power points, and print media
2. Along with the Center Director, develop and manage the annual operating budget; manage and oversee the disbursement of funds that support the Center
3. Work with faculty associated with the Center to facilitate meetings, committees, strategic initiatives, and other faculty-led activities. Organize Center events including meetings, workshops, social events, and seminars
4. Provide daily support for undergraduate and graduate programs
5. Work with the Center Director to maintain up-to-date policies and procedures for all Center activities in a single, accessible location

5. Anticipated Resource Needs

The Global Change Center relies on investments by the University, predominantly from the Fralin Life Sciences Institute, the Office of the Executive Vice President and Provost, and the Virginia Tech Graduate School.

The **Fralin Life Science Institute** committed to helping the GCC meet its initial base resource requirements of \$160,000 per year starting in 2015. Two years after the GCC was founded and after it's immediate early success, the Fralin Life Sciences Institute was provided with a *Critical Needs Request* from the **Office of the Executive Vice President and Provost** to

cover the majority of these base costs and ensure the permanent long-term sustainability of the GCC. In addition, in 2013 (prior to the Center being chartered) the **Virginia Tech Graduate School** committed to funding the Interfaces of Global Change IGEP, which is the central graduate training program within the Center. The Graduate School's base support included stipends and tuition support for 4 graduate students each year as well as \$30,000 in annual operating funds (*Graduate School contributions are not included in the \$160,000 per year mentioned above*).

With forecasted growth of the Global Change Center, it is anticipated that the Center's base resource needs will double within 10-12 years of being chartered in 2015.

6. Forecast of External Funding Sources

The Global Change Center will competitively disburse funds to faculty through seed grants, faculty-led working groups, and other strategic mechanisms in an effort to create new collaborations and position teams to be successful at securing grants through a diversity of funding sources including NSF, NIH, DOD, DOE, USDA, USEPA, USFWS, state agencies, NGOs, and industry. The faculty members affiliated with the Center already have an extraordinary track record of funding from all of these sources, but will have even greater success through the new collaborative teams assembled within and fostered by the Center.

7. Anticipated Distribution of Returned Indirect Costs

Our funding model requires sufficient base resources from Virginia Tech so that we can strategically allocate resources to faculty to enhance their success at obtaining high levels of external funding. We do not anticipate distributing any indirect costs from faculty-led grants to the Center. Rather, we anticipate that indirect costs on faculty-led grants will be distributed according to current university policies.

8. Relationship of the Center with Other Entities

The Center will draw upon VT's strengths in science, engineering, social sciences, and the humanities, capitalizing on existing expertise in a wide array of academic units at VT (a minimum of 6 colleges, 15 departments). At the time of our initial Charter in 2015, we had already gained considerable traction towards this vision by unifying the enthusiasm of 37 faculty members across campus. We also developed a successful Interdisciplinary Graduate Education Program (IGEP) which will be central to the GCC's educational goals, and in the process have developed a strong relationship with the Virginia Tech Graduate School. The

GCC has strong links to its administrative home, the Fralin Life Sciences Institute, who has committed funding, office space, and administrative support to this endeavor. The Center also has relationships with the Virginia Water Resources Research Institute. We envision broad possibilities for further relationships within Virginia Tech, including with other IGEPs, other Institutes and Centers, the National Capital Region, and other campus-wide sustainability initiatives. Given the breadth and inclusivity of our mission, the GCC is committed to working closely with other existing and emerging entities to capitalize on complementary strengths.

9. Outreach

As a leader in global change research and education, the GCC will fulfill our land grant mission with significant focus on local and regional impacts of factors such as habitat loss, climate change, invasive species, disease, and pollution. Our faculty affiliates will target the development of science-based solutions to these problems, and train graduate students to effectively communicate their science and potential solutions to decision-makers and the broader public. Faculty affiliates of the GCC will serve the Commonwealth by interfacing directly with decision-makers locally, in Richmond, and the National Capital Region, and by training the next generation of interdisciplinary scholars to address the most pressing issues associated with global change.

10. Portfolio of Milestones

To achieve our collective goals, the Global Change Center at Virginia Tech will gradually grow its portfolio of activity that will build on itself over time.

Within the first 1-3 years of being chartered (in 2015):

- Create an **administrative structure and service-oriented leadership approach** that facilitates, promotes, and rewards cross-campus research collaborations and graduate and undergraduate student training amongst specialists in natural sciences, engineering, the social sciences, and humanities.
- Establish a program of internal competitive seed grants for faculty to promote and reward the **formation of interdisciplinary teams** seeking to understand complex and important global-change phenomena, so that they can pursue extramural grants through funding sources including NIH, NSF, DOD, DOI, USDA, DOE, NGOs, and industry.
- Build on the already established and successful **interdisciplinary graduate program** (Interfaces of Global Change IGEP), designed to provide graduate students with a

broad scientific and societal perspective on global-change issues, as well as skills related to leadership, interdisciplinary collaboration, and communication.

- Offer **internal funding opportunities** for students to support and promote interdisciplinary undergraduate, graduate, and postdoctoral research that links multiple labs from different disciplines.
- Provide funding to faculty teams to establish **collaborative research projects** focused on developing science-based solutions to local problems identified as critical priorities by stakeholders, and use these to establish the framework for providing science-based solutions to decision-makers.
- Identify **diverse new funding sources** to support our research, education, and outreach objectives.
- Create an **inclusive and diverse community of global-change scholars** by recruiting faculty to the Center from all Colleges on campus and supporting seminar speakers, weekly roundtable discussion groups, workshops, and regular social events.
- Establish **strong communication channels** both within the group and for broader dissemination of our programs, including a quarterly internal newsletter, an annual stakeholder's newsletter, an annual research retreat, programmatic advertisements, and a website.

And after 3 years of being chartered:

- **Build and grow all of the above programs and initiatives.**
- Develop a **Public Distinguished Lecture Series**, attracting some of the world's leading scholars to the Blacksburg community to discuss critical environmental and societal issues in an open forum.
- Establish **an undergraduate research program** to provide research experiences in global-change science for undergraduates, as well as **science-policy fellowships** in Washington D.C. to provide science and engineering undergraduate student's exposure to career opportunities at the science-policy interface.
- Encourage and support the development of **faculty-led working groups** to build cohesion in thematic spaces that eventually leads to new collaborative grant proposals, graduate courses, publications, etc.
- **Promote the development of new courses** from around campus, primarily at the graduate level, to better meet the interdisciplinary curricular needs of students interested in global-change science and policy.

- Work with Departments and Colleges across campus to identify key areas for growth across academic units, and begin to **strategically recruit new faculty** with needed expertise in engineering and the natural and social sciences related to global-change science and policy.
- **Disseminate and publicize our achievements** to enhance our visibility through a variety of outlets.

11. Annual Evaluation and Assessment

The progress and accomplishments of the GCC will be assessed annually by the Administrator. Each year, the Director will submit a comprehensive Annual Report of GCC activities and faculty and student accomplishments. The report will include qualitative and quantitative metrics to demonstrate progress towards the Center's milestones as set forth in this charter and in future strategic planning documents. The annual report will be reviewed and feedback will be provided by the Administrator.