

REQUEST FOR APPLICATIONS

Rural Environmental Health T32 Training Program 2024

The overall goal of the [Rural Environmental Health \(REH\) T32 predoctoral training program](#) at Virginia Tech is to provide PhD students with training in environmental health sciences, with a focus on applications in rural landscapes. The program will equip a cohort of graduates with the knowledge and skills to pursue environmental health related careers across a variety of disciplines from investigations into the molecular mechanisms of environmentally-mediated diseases prevalent in rural areas, environmental engineering applications to exposures unique to low population areas, and community-engaged and epidemiology approaches to reduce environmentally-mediated disease burden in rural areas.

Fellow support: Each REH fellow receives 2 years of funding and will follow NIH stipend levels: FY2023=\$27,144 (to be updated to 2024 level). Trainees also receive \$4,550 for training related expenses. The training grant also covers tuition and fees for the first 2 years of the program.

Supplemental Research Support: [Fralin Life Sciences Institute \(FLSI\)](#) will provide funding to support REH trainee/faculty mentor team research. Teams can request budgets up to \$10,000 per year for two years.

Analytical Chemistry Support: [The College of Veterinary Medicine Analytical Chemistry Research Laboratory](#) will support REH trainees with access and training on qualitative and quantitative determination of the concentration of a variety of environmental toxicants (e.g., heavy metals, pesticides) as well as metabolism and pharmacokinetic studies. The lab will provide processing and analysis of up to 10 samples at no cost for REH trainee projects.

Curriculum Overview: REH Trainees will complete approximately 11 credit hours of REH curriculum, participate in a monthly journal club, and develop a F31 application. REH trainees will also complete the [Interfaces of Global Change \(IGC\) Interdisciplinary Graduate Education Program \(IGEP\)](#) at Virginia Tech. The IGC IGEP is a multi-year program that Fellows participate in throughout their Ph.D. program. Curriculum requirements of the IGC IGEP include 8 course credits (3 IGC seminars and 2 electives), completion of a capstone project, and annual participation in the IGC Graduate Research Symposium and other activities throughout each year. Please review the curricular and programmatic requirements for the REH and IGC on [our website](#).

Below is a sample 3 year timeline for students entering the REH training program in their first year. Those entering in their 2nd year would offset REH specific coursework by 1 year.

Year 1

Fall semester:

Environmental Health (PHS 5014, 3 credits)
Home program disciplinary coursework
REH Monthly Journal Club

Spring Semester:

IGC First Seminar (GRAD 5134, 1 credit)
Rural Environmental Health (PHS TBD, 3 credits)
Home program disciplinary coursework

Responsible Conduct of Research and Ethics (BMVS 5174/5094 or TBMH 5105/5106, 4 credits)
REH Monthly Journal Club

Year 2

Fall Semester:

IGC Second Seminar (GRAD 5134, 1 credit)
REH Monthly Journal Club
IGC Global Change Breadth Elective (3 credits)
Selection and confirmation of advisory committee (*to include one REH affiliated faculty member in a different focus area*)

Spring Semester:

Science communication elective (GRAD 5144 or BIOL 6004, 2 credits)
REH elective course (3-7 credits)
IGC Third Seminar (GRAD 5134, 1 credit)
REH Monthly Journal Club
Additional coursework as recommended by advisory committee
F31 Application submission

Year 3

Fall Semester:

Complete IGC Capstone Project (on rural focused environmental health issue)
REH Monthly Journal Club

Spring Semester:

Preliminary Exam completion
Re-submission of F31 application
REH Monthly Journal Club

Year 4-5

Fall/Spring Semester: Complete dissertation research and defend dissertation.

Additional REH and IGC Activities:

1. Participation in the Virginia Rural Health Association (VRHA). All REH Trainees will be required to present at least once at the VRHA annual meeting.
2. Develop an F31 (or equivalent) Application, and students are encouraged to take (BMVS 5174/TBMH 5094) to aid in this development.
3. Participate and present in the IGC Graduate Research Symposium annually throughout their PhD.

Eligibility: Applicants should advance research at the nexus of environmental and health sciences in rural settings. Students should reference the NIEHS' mission to ascertain if their research is applicable to environmental health - *"NIEHS seeks to comprehensively understand the role of environmental factors in human health and disease. In addition to analyzing chemicals in the air you breathe, the water you drink, and the things you touch, environmental health research considers what happens inside your body as chemicals are processed. Environmental factors can be external to your body such as sunlight, mold, and pollutants, or internal such as diet choices, metabolism, and stress. This research covers all lifespan periods."*

More information can be found on the NIEHS Environmental Health Science Basics [webpage](#) and the [NIEHS Strategic Plan](#).

Examples include but are not limited to: characterization of environmental exposures in rural settings; examination of environmental interventions to improve rural health and well-being; investigations of socio-political underpinnings of environmental health management; etc.

Incoming (first-year PhD student to begin in the Fall term 2024) or current PhD students are eligible to apply. To apply, students must be in, or applying to, one of the participating degree granting programs listed below and should be conducting research in one of the focus areas below under the guidance of an affiliated faculty mentor.

Participating degree granting programs at Virginia Tech:

- 1) Translational Biology, Medicine, and Health
- 2) Biomedical and Veterinary Sciences
- 3) Environmental and Water Resources Engineering
- 4) Biological Systems Engineering
- 5) Fish and Wildlife Conservation
- 6) Biological Sciences

<u>Affiliated Faculty by Focus Area:</u>		
<p>Molecular mechanisms of environmentally mediated diseases:</p> <p>Robert Gourdie (TBMH) Austin Gray (BIOL) William Hopkins (FWC) Anthony LaMantia (TBMH) Read Montague (TBMH) Steve Poelzing (TBMH) Sora Shin (TBMH) James Smyth (TBMH) Christopher Thompson (TBMH) Hehuang Xie (TBMH, BMVS)</p>	<p>Community-engaged, implementation science, and epidemiological approaches:</p> <p>Martha Ann Bell (TBMH) Warren Bickel (TBMH) Alasdair Cohen (BMVS, EWR) Alexandra DiFeliceantonio (TBMH) Julia Gohlke (TBMH, BMVS) Alex Hanlon (TBMH) Kimberly Horn (TBMH) Kathy Hosig (TBMH, BMVS) Brittany Howell (TBMH)</p>	<p>Exposure science and risk assessment:</p> <p>Ryan Calder (TBMH, BMVS) Marc Edwards (EWR) Gabriel Isaacman-VanWertz (EWR) Leigh-Anne Krometis (BSE) Linsey Marr (EWR) Amy Pruden (EWR) Peter Vikesland (EWR)</p>

T32 Citizenship Eligibility:

The T32 has restricted citizenship eligibility. Only U.S. citizens, non-citizen nationals, and permanent U.S. residents may be appointed to a T32.

- Trainees who do not have this status must have a valid Alien Registration Receipt Card (I-551).

- Send a notarized statement verifying permanent residency status with the PHS-2271.
- Anyone on a temporary or student visa is not eligible.

Deadline for applications is 5 pm EST on March 1st, 2024. Incomplete, late, or incorrectly formatted applications will not be considered. Notification of awards will be made by mid-April.

Application procedure: All applications must include (in this order):

1. The one-page Cover Sheet (see below)
2. A CV that includes undergraduate GPA, graduate GPA (if applicable), GRE and/or TOEFL score (both optional), and contact information (Institution, email, and phone number) for three references.
3. An application letter, not to exceed 2 pages, that is divided into 3 sections that includes:
 - a. Research Statement: Description of the applicant's research plan, specifically how it relates to environmentally-mediated diseases, rural landscapes and populations and informs an environmental health sciences gap in knowledge.
 - b. Interdisciplinary Statement: Applicants will describe how their research is interdisciplinary.
 - c. Plans for Fellowship Use: How will the applicant use the 3-year program to advance their professional development to become a leader in rural environmental health and contribute to diversity and inclusion in environmental health sciences?
4. A letter of support from the applicant's primary faculty mentor, not to exceed 1 page, that explains:
 - a. The applicant's strengths in undertaking the proposed research and any notable accomplishments;
 - b. The applicant's contributions to outreach or other service-related activities;
 - c. How the applicant's training will benefit from the REH program;
 - d. Each applicant must have a clearly articulated post fellowship funding plan (at least 2 years of financial support planned, which cannot include the REH T32 fellowship). If the funding plan includes any departmental support (e.g., GTA), the letter must include a signature from the home department's authorized representative (department head or graduate program coordinator).

The letter of support should be sent as a PDF file directly to the REH Program Coordinator, Bri Wills; E-mail address: bmwills@vt.edu.

The student's application (Items 1-3 above) should be submitted as a single pdf file by e-mail to REH Program Coordinator, Bri Wills; E-mail address: bmwills@vt.edu.

Label files as LASTNAME_T32REH_FellowshipApp_2024

Selection Process

An Applications Review Committee will be established that will be made up of at least one Steering Committee member and three additional faculty mentors, with representation from each of the three focus areas, while ensuring that mentors of current applicants do not serve on the committee.

The Applications Review Committee members will individually review applicant materials and use an admissions rubric that requests a Likert scale evaluation of: 1) the pertinence of the student's research to rural environmental health disparities, 2) the research potential to advance the field of environmental health sciences as defined by NIEHS, 3) the interdisciplinary nature of the research, 4) the potential for the candidate to contribute to diversity and inclusion in environmental health sciences, and 5) evidence that the REH training program curriculum will help the student reach their professional goals. The committee members will then meet to compare and discuss their scores and determine final admission decisions.

Notes: 1) After the two year fellowship period, students will return to their former funding plan, to include a return to their former pay *source* and *rate* as agreed upon with their academic mentor/department.

Please direct any further questions to the REH Program Coordinator, Bri Wills; E-mail address: bmwills@vt.edu.

COVER SHEET

REH T32 Training Program Application 2024

1. Personal Information:

Name: _____

E-mail address: _____

College: _____

Department: _____

Anticipated Start Date of
Graduate School at VT (if applicable): _____

Faculty Mentor(s): _____

E-mail address Faculty Mentor(s): _____

2. Citizenship Eligibility *(please check one):*

I am a U.S. citizen

I am a Non-US Citizen National or permanent resident of the United States *(Trainees who are permanent residents of the U.S. must submit a notary's signed statement with this appointment form certifying that they have (1) a Permanent Resident Card (USCIS Form I-551), or (2) other legal verification of such status.)*

3. Focus Area *(please check one):*

Molecular mechanisms of environmentally mediated diseases

Community engaged, implementation science, and epidemiological approaches

Exposure science and risk assessment