NATURAL SCIENCES FELLOWS

Academic Prospectus

HIGH POINT UNIVERSITY
THE PREMIER LIFE SKILLS UNIVERSITY
Wanek School of Natural Sciences

Message from the Directors

Thank you for considering the Natural Sciences Fellows program at High Point University! This four-year specialized program within the Wanek School of Natural Sciences, enriches the academic experiences of students who show exceptional promise by providing unique professional development training that prepares you to be creative, collaborative, analytical thinkers, and scientists to make a positive impact on our world.

At High Point University, you will receive an extraordinary education—that's our promise. We've been named the Best College in the Southern Region for ten years in a row, and this honor doesn't come without its merits.

The Natural Sciences Fellows' Co-Directors and I are excited to get to know you better and have you as a Natural Sciences Fellow! If you would like additional information or if you have questions, please contact us at natscifellows@highpoint.edu.

Dr. Meghan Blackledge, Associate Professor of Chemistry
Senior Director Natural Sciences Fellows (336) 841-9317

Dr. Adam Anthony
Assistant Professor of Physics
Co-Director Natural Sciences Fellows
(336) 841-2862

Dr. Keir Fogarty
Associate Professor of Chemistry
Co-Director Natural Sciences Fellows
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Associate Professor of Biology
Co-Director Natural Sciences Fellows
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"Don't let anyone rob you of your imagination, your creativity, or your curiosity. It's your place in the world; it's your life. Go on and do all you can with it and make it the life you want to live."
—Mae Jemison, former NASA Astronaut, First African American Woman to Travel in Space

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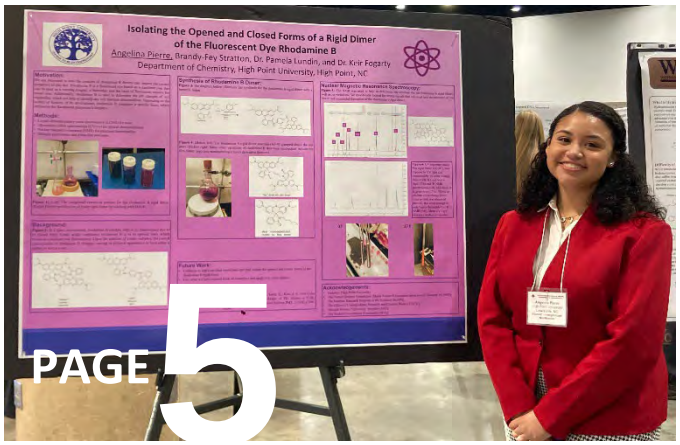
LEARNING OUTCOMES



ACADEMIC MAJORS & FACILITIES

OPPORTUNITIES & EXPECTATIONS

ARE YOU READY TO JOIN US?

GUIDELINES, RENEWAL & CONTRACT

Faculty often invite fellows to work with them on their own research in areas including:

- **Surface science of materials that have potential applications in biomedical devices**
- **Drug repurposing to combat antimicrobial resistance and biofilm formation**
- **Biomimetics physical surface strategies to inhibit bacterial biofilm formation**
- **Organic synthesis to access molecules of therapeutic interest**
- **Study of friction at the atomic level**
- **Asteroseismology of compact pulsating stars**
- **Cancer biology**
- **Entomology**
- **Molecular mechanisms of embryonic development in zebrafish**
- **Molecular microbiology of infectious diseases**
- **Physiological adaptations of plants to environmental stress**
- **Physiology of hibernation in marmots**
- **Planet genetics and breeding**
- **Fourier analysis of binary light curves from NASA's TESS spacecraft**
- **3D printing of molecular orbitals**
- **Study of biofilm formation in a flow reactor using microscopy**
- **Investigating the optical properties of novel fluorescent materials**
- **Chemical synthesis of novel organic pigments and dyes**

Learning Outcomes

As a result of active and thoughtful participation, Natural Sciences Fellows build a foundation of knowledge, skills, attitudes, and behaviors.

ENGAGE

- ♦ Ability to identify and develop personal academic and career goals.
- ♦ Mastery of professional networking skills.
- ♦ Ability to identify and engage in ethical decision-making.
- ♦ Broadening of cultural awareness and understanding.
- ♦ Mastery of writing, presentation and research skills.
- ♦ Ability to clearly communicate scientific concepts to both scientific and lay audiences.
- ♦ Understanding and demonstration of engaged citizenship and service.
- ♦ Mastery of the scientific method.
- ♦ Demonstration of scientific creativity and innovation.
- ♦ Consistent display of professionalism in face-to-face and electronic interactions with peers, faculty, staff, and guests.

EXPLORE

- ♦ Collaboration with faculty on research findings at HPU's annual Undergraduate Research and Creative Works Symposium.
- ♦ Professional travel to scientific meetings and/or national competitions focusing on community STEM engagement for organizations, such as the American Chemical Society, the American Astronomical Society, and the Association of Southeastern Biologists.

"It's not that I am so smart; it's just that I stay with problems longer."

—Albert Einstein

Academic Majors

Successful applicants to the Natural Sciences Fellows program will have a declared major in biology, biochemistry, chemistry, physics, or neuroscience. Fellows must remain as a major in one of these five natural sciences majors.

Biology

From field research to studying the physical adaptations of plants and the molecular microbiology of infectious diseases, biology majors explore a dynamic array of courses and experiences through one-on-one interactions with faculty, inspiring courses, internships, and summer research.

Biochemistry

Grounded in the liberal arts, biochemistry majors are encouraged to explore and engage within and beyond the sciences, to develop critical thinking and research skills, as well as the ability to access and analyze information and ideas across disciplines.

Chemistry

With a spirit of exploration and engagement through rigorous laboratory research, chemistry majors are anchored in a faculty commitment to help students explore and create a new knowledge of molecular-scale phenomena.

Neuroscience

From the generalized to the specialized, neuroscience majors explore interdisciplinary curricular options to prepare for a wide variety of post-baccalaureate goals within career fields such as biomedical research or professional programs in the health sciences, such as medical school. To this end, hands-on, experiential learning opportunities are abundant.

Physics

With the development of strong problem-solving skills and theoretical understanding, experience in designing and carrying out experiments, and extensive application of computational modeling and computer programming, physics majors are prepared for a variety of careers and graduate programs in fields such as astronomy, mathematics, earth and atmospheric science, biophysics, and engineering.

The Wanek School of Natural Sciences is a $65 million, 128,000-square-foot facility that features four stories of innovative labs and classroom space, ample study areas, a Learning Lab, and the Culp Planetarium.

The planetarium and lecture space includes 125 seats and a 50-foot dome with a 4K projection screen and a state-of-the art surround sound system. It is equipped with programming to teach astronomy, earth science, anatomy and a variety of science, technology, engineering, and mathematics (STEM) lessons.

The Caine Conservatory provides 15,000 square feet of space for students and faculty to conduct botanical research and propagate plants for public display.

"Promise me you'll remember: you're braver than you believe, and stronger than you seem, and smarter than you think."

—A.A. Milne

Opportunities & Expectations

Each academic year within the Natural Sciences Fellows Program addresses a specific area of personal and professional growth. These areas – as well as key experiential learning opportunities – are provided as follows:

Natural Sciences Fellows membership includes a $3,000 Scholarship renewable annually based upon academic performance and program guidelines. (See page 9).

Year 1 Creating Community & Developing a Professional Identity

- Receive coaching on professionalism while working with natural sciences faculty and interacting with visiting scientists.
- Attend fellows-only courses.
- Set personal, academic, and professional goals, and establish a plan of action required to achieve those goals.
- Develop a professional identity and prepare a professional portfolio that effectively communicates that identity with potential internship sponsors, summer research programs, employers, and/or graduate and professional programs.
- Enjoy “backstage” access to informal discussions with world- renowned scientists who present their work at High Point University.
- Travel with other fellows and faculty to a city rich with experiences relevant to careers in the natural sciences and health professions.

Year 2 Leadership Through Service to the Community

- Receive leadership and broader cultural awareness training that in preparation for work with diverse populations.
- Opportunity to work with HPU’s Mobile Science Lab to share appreciation of science with local children.
- Assume a leadership role within academic major by serving as a peer mentor to 1st year students.
- Work with other fellows to plan STEM-related service-learning projects.
- Travel with other fellows and faculty to an area in North Carolina rich with experiences relevant to careers in the natural sciences.
- Continue to hone professional communication skills and enjoy “backstage” access to informal discussions with world-renowned scientists.
- Receive coaching on professional portfolios to accurately reflect the rich experiences provided through the Natural Sciences Fellows program.

Year 3 Leadership Through Scientific Creativity & Innovation

- Participate in year-long undergraduate research project mentored by natural sciences faculty.
- Continue to hone professional communication skills and enjoy “backstage” access to informal discussions with world-renowned scientists who present their work at High Point University.
- Receive coaching on updating professional portfolios to accurately reflect the rich experiences within the Natural Sciences Fellows Program.
- Join students from nearly 30 different academic pathways to present work in the annual High Point University Research and Creativity Symposium hosted by the Office of Undergraduate Research and Creative Works.
- Opportunity to travel as a mentor for year one fellows and with faculty to a city rich with experiences relevant to the natural sciences.

Year 4 Leadership as Emerging Professionals

- Receive coaching tailored to your career goals.
- Preparation for the application and interview process with future employers, graduate programs, medical school, etc. to help distinguish you from your peers.
- Attend a scientific meeting to present results from undergraduate research project.
- Continue to hone professional communication skills and enjoy “backstage” access to informal discussions with world-renowned scientists who present their work at High Point University.
- Receive special recognition at the annual Natural Sciences Fellows Banquet that honors fellows’ contributions to the scientific community, university, and greater High Point communities.

“When one door of happiness closes, another opens; but often we look so long at the closed door that we do not see the one opened for us.”

—Helen Keller

Are You Ready to Join Us?

Who?

Natural Sciences Fellows membership is highly selective and limited to the top 50 incoming natural sciences students in each academic year. Successful applicants will possess:

- A declared major in biology, biochemistry, chemistry, neuroscience, or physics.
- Have a track record of success in pre-university studies of the natural sciences.
- Previous science-related experiences will be an advantage.

Scholarship Included

Natural Sciences Fellows membership includes a $3,000 scholarship renewable annually based upon academic performance and program guidelines. (See page 9)

How?

To be considered for membership, you must:

- First, complete and submit your High Point University undergraduate admissions application.
- Second, complete and submit the Natural Sciences Fellows application through your **PantherPage** by February 1 for priority applicants, and by March 1 for all others.

Where to Apply

Both applications, application questions, and access to your PantherPage are available on the Natural Sciences Fellows web page at highpoint.edu/natscifellows

Guidelines. Renewal & Contract

Guidelines & Renewal

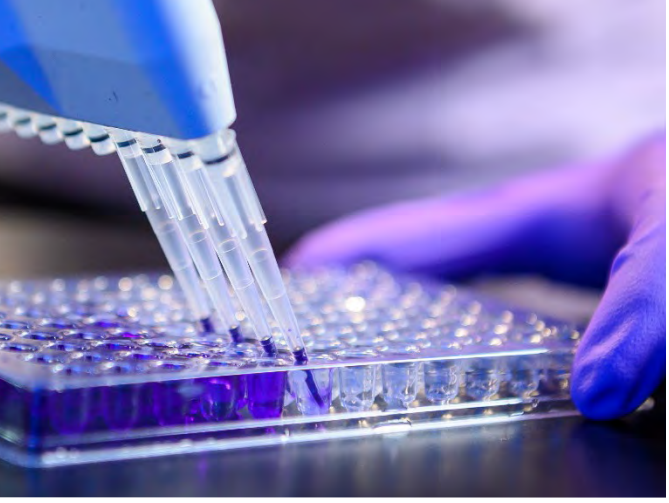
The Natural Sciences Fellows is a welcoming and engaging community that strives to foster personal and professional growth in each of its members. In return for the specialized benefits and opportunities provided by the program, we ask that each fellow honor the following expectations established by High Point University and the Natural Sciences Fellows program:

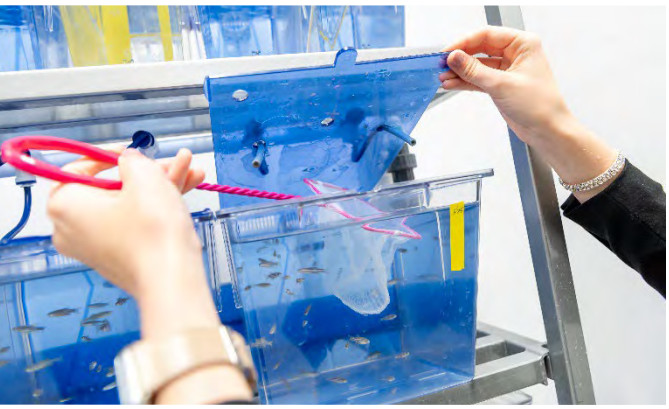
- Adherence to policies and standards set forth in the university's ***Student Guide to Campus Life*** and the ***University Honor Code***. Fellows need to make sure they understand it fully. Violation of the Honor Code can result in removal from the program and loss of fellows' scholarship.
- A high level of professionalism always, both on and off campus. This responsibility carries over into social media, where fellows are expected to consider how their comments, posts and behaviors reflect upon themselves, other fellows, the fellows' program, and the university. Students who discredit the program, faculty, other fellows, or the university will face a review and possible dismissal from the program and loss of fellows' scholarship.
- Remaining a major in at least one of the five major degrees offered in the Wanek School of Natural Sciences (biology, chemistry, biochemistry, neuroscience, or physics).
- Maintenance of a cumulative GPA of 2.75 during freshman year, and 3.00 in subsequent years.
- Attendance at all required Natural Sciences Fellows activities and special events. Documented illness by a medical professional or documented family emergencies are the only exceptions. Documentation must be submitted to a Fellows Director within 24 hours of the scheduled event.
- Professional dress for presentations and special events.
- Earn a passing grade in EXP 1211.
- The Natural Sciences Fellows scholarship is renewable annually based on academic performance and continued participation in the program as noted above. This scholarship is in addition to any Presidential or High Point University Scholarship.
- Fellows must meet GPA and professionalism requirements to be awarded continuation of their Fellowship into the next academic year.

Natural Sciences Fellows Program Contract

I have read and understand the policies and standards of the Natural Sciences Fellows program at High Point University. I acknowledge that membership as a Natural Sciences Fellow is an honor, and I will strive to meet or exceed the high standards of the program in my day-to-day interactions with others, both on and off campus, during my four years at High Point University. I understand that violation of the policies, guidelines, and standards outlined in this Academic Prospectus can result in my dismissal from the fellows' program and forfeiture of the fellows' scholarship.

Signature/Date _____ Printed Name _____





My Notes

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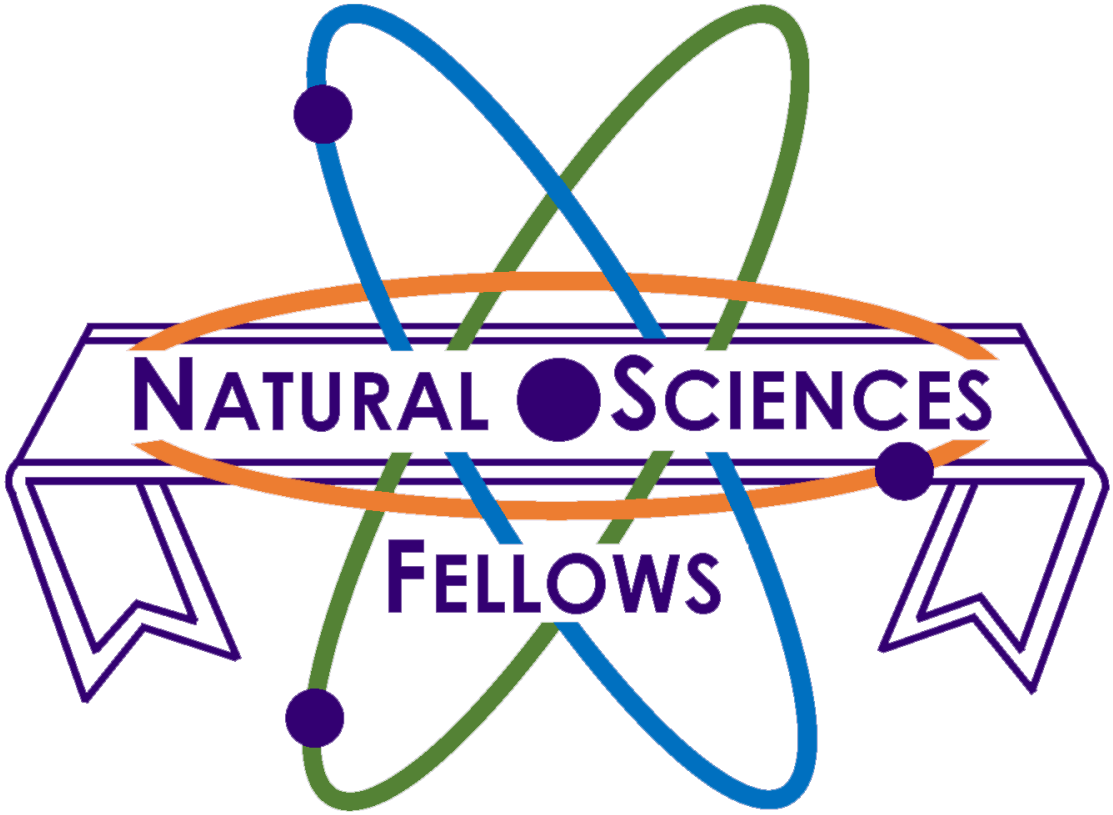
Contact Us



Email: natscifellows@highpoint.edu
Online: highpoint.edu/natscifellows

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High Point University

High Point University's inspiring environment, caring people, and engaging education equip graduates for success and significance by cultivating the values, knowledge, mindset, and skills necessary to thrive in a competitive and rapidly changing world.

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