

**Action for Justice, Equity and Diversity (AJED) Committee  
Department of Biology  
Duke University**

**Fall semester 2021 report**

**AJED committee members:**

François Lutzoni (Co-Chair of AJED), Professor

Justin Wright, (Co-Chair of AJED) Professor

Amber Brooks, undergraduate student

Jill Chaskes-Foster, staff

Amanda DelVecchia, Research Scientist

Danae Diaz, graduate student

Dakota Douglas, undergraduate student

Elissa Foss, graduate student

Alison Hill, Senior Lecturer

Paul Magwene, Associate Professor

Steve Nowicki, Professor

Nina Sherwood, Associate Professor of the Practice

Lucia Strader, Associate Professor

Emily Bernhardt (ex officio - Professor and chair of the Department of Biology)

Each semester of the regular academic year, the AJED committee submits a report to the Department of Biology. This is our third report since the inception of this committee in July 2020. During the Fall semester of 2021 this committee had four main objectives.

**(1) AJED, undergraduate student subcommittee – Biology Cultural Union (BCU)**

***Subcommittee members during the fall semester of 2021:***

Amber Brooks (Co-Chair)

Dakota Douglas (Co-Chair)

François Lutzoni

The primary focus of this subcommittee is to establish a new undergraduate group on campus for traditionally underrepresented students to create a greater sense of community within the biology department. This new group will consist of a mentor/mentee relationship amongst the under and upperclassmen, along with bringing in guest speakers starting in fall 2022 to speak on their experiences in biology. Thus, more undergraduates will be exposed to all the diverse opportunities in biology. The group will also serve as a liaison between the undergraduate biology population and AJED such that members of the group will be able to share their experiences in order to increase justice, equity, and diversity. Initial members were selected from the list of undergraduate applicants interested in the AJED positions and an introduction presentation was given. The Biology Cultural Union was established during the fall semester of 2021 by Amber Brooks

(junior) and Dakota Douglas (senior). There will be a follow up in the spring semester to gauge concrete interest in the group.

## **(2) AJED, education subcommittee**

### ***Subcommittee members during the fall semester of 2021:***

Alison Hill (Chair)  
Jill Foster  
François Lutzoni  
Steve Nowicki  
Nina Sherwood

Our committee is continuing the analysis of Bio201L course data (started in Spring21). We have recently ascertained that students from low-resourced high schools are over-represented in the bottom 10% of our class; we have data that supports this conclusion over 7 different semesters. Bio201L incorporates best practices from the education literature including a highly structured course format with ongoing opportunities for formative assessment throughout the semester; previous analyses of Bio201L course data showed that our change in course format (compared with a former molecular biology course) successfully reduced the achievement gap for our students from historically marginalized communities. Our recent analysis indicates the limitations of our ability, despite best efforts, to overcome larger structural forces that exist both on and off campus.

We recommend that ongoing curriculum discussions in our department prioritize an equity lens in decision-making; this is especially important when evaluating our introductory curriculum. Our recommendations are that: 1) the department design and implement a new course in introductory biology that would precede the gateway courses; this course would require the implementation of some sort of placement mechanisms to identify students; 2) the size of gateway courses should be reduced (less than 100 students per lecture); 3) Bio201L, in particular, could benefit from a “rethink” for how course material is presented. In particular, by increasing the emphasis on socially relevant material we hope that we can motivate potentially “at risk” students by helping to build a more personal connection with course concepts.

### **Ongoing plans**

We plan to gather data this semester that will help us think about curriculum design through an equity lens—especially how to implement a general biology course and how to identify students for this course. Additionally, we envision utilizing the talents of our two undergraduates (Dakota and Amber) to help us conceive a more equitable introductory curriculum; this may take the form of focus groups with undergraduates.

### **(3) AJED, faculty recruitment subcommittee – Frontiers in Biology seminar series**

#### ***Subcommittee members during the fall semester of 2021:***

Lucia Strader (Co-Chair)  
Justin Wright (Co-Chair)  
Paul Magwene  
Richard Hileary

This seminar series was designed to highlight excellent research from early career scientists from underrepresented backgrounds. After soliciting nominations from the faculty at large, the committee selected 8 speakers. 6 accepted our invitations and to date have provided a series of excellent seminars with high levels of faculty engagement. We are collecting feedback from the faculty on each of the speakers, and anticipate that several of them will be excellent candidates for the cohort hire starting in the fall.

### **(4) AJED, undergraduate advising for students interested in research and graduate school – “BioGrad Pathways Program”**

#### ***Subcommittee members during the fall semester of 2021:***

François Lutzoni (Co-Chair)  
Steve Nowicki (Co-Chair)  
Amber Brooks  
Dakota Douglas

To increase admission to PhD and other graduate programs in the biological sciences of Duke students from under-represented and marginalized groups and backgrounds, we seek to develop a pre-graduate school program that provides encouragement, information, and tangible forms of support across all four years of a student’s undergraduate experience. This subcommittee explored potential mechanisms to increase awareness about graduate school and reliable advising channels for undergraduate students majoring in biology with an interest to apply to graduate school. Ideally, students will begin to engage with the program as early as the second semester of their first year at Duke, although students will be able to participate even if they don’t connect with the program until their sophomore year or later. The overarching goal of this program is to provide information and insight into what it means to obtain a PhD or other graduate degree, how to prepare for successful admission to graduate programs, and the many career paths that a PhD or other graduate degrees in the biological sciences can lead to.

Most biology major students at Duke are premed. However, because an increasing number of students are joining research labs at Duke, and graduating with an honor thesis, there seems to be a slight trend away from the traditional medical school MD track, towards graduate school. As far as we know, there is no program to inform students about this alternative path and to provide guidance throughout their four years at Duke.

First-generation college students and students with less exposure to academia are less likely to be aware of this alternative career path. Information sessions need to be provided to students before and after they declare their major. Therefore, university-wide and departmental efforts need to be integrated and deployed simultaneously. During the spring semester of 2022, this committee will explore the development of such program in partnership with the Biology Cultural Union (BCU) and the Department of Biology DUS, and in consultation with the Office of Undergraduate Education, the Undergraduate Research Support office, and the Academic Advising Center.

This program could be run in collaboration with the Duke LIFE student group ([undergrad.duke.edu/programs/duke-life-student-group](http://undergrad.duke.edu/programs/duke-life-student-group)) and the Rubenstein Scholars program ([rubensteinscholars.duke.edu/](http://rubensteinscholars.duke.edu/)), both programs that support low-income, first-generation college students at Duke, as well as in collaboration with identity centers serving undergraduates from underrepresented groups, such as the Mary Lou Williams Center for Black Culture ([studentaffairs.duke.edu/mlw](http://studentaffairs.duke.edu/mlw)).