

To: Faculty and students participating in the *Plant Biotechnology for Health and Sustainability* Predoctoral Training Grant

From: Rob Last, Program Director

Danny Ducat, Associate Program Director

Date: March 13, 2023

Subject: Call for T32 Program Trainee Applications

On behalf of the Executive Committee, *we ask that you encourage qualified students to apply* to participate in the 'Plant Biotechnology for Health and Sustainability' training program, which we are expecting to enter its tenth year of funding on 1 July, 2023. We plan to award three full time fellowships with NIH funds and 2-3 half- or full-time fellowships with MSU funds. Some key points are covered below, and more details are at <http://plantmetabolism.natsci.msu.edu/>.

Eligibility:

First-year PhD students who recently completed their second semester of study at MSU and are doing fundamental research in a trainer's lab are eligible to apply. Highly qualified students will be considered for predoctoral fellowships starting in Fall Semester 2023. **Students who have funding for the coming Fall or Spring Semesters or need to complete their TA assignments can start their fellowships in the first half of 2024.** The fellowships will cover NIH-mandated level of stipend along with tuition and health insurance for up to four semesters and two summers. Fellowship awardees must conduct fundamental research on plants, relevant microorganisms or synthetic biology that is aligned with NIH NIGMS research priorities.

All interested students must submit a completed application by 9 AM ET on Monday, May 15, 2023. Please submit these materials by email to Jessica Lawrence (jesslaw@msu.edu).

The application includes submission of a written Individual Development Plan (IDP) summary. To complete this requirement each applicant will go through a formal IDP self-evaluation process using AAAS myIDP (see: <https://myidp.sciencecareers.org/>), followed by an in depth discussion of topics arising from this process **with their advisor**. The application 1-2 page IDP document should *summarize* the outcome of this IDP discussion. Fellows will submit a follow up IDP summary 14 months later, typically at the start of their fifth semester of graduate studies.

Students considering applying should consult their mentors about the program. It may be helpful for students to have a formal advisor/advisee discussion of expectations. See the list of attached discussion prompts for both students and faculty mentors (*this is not a requirement for the application*).

Accepted students are expected to participate in activities associated with the program, as described below.

Obligations of trainees:

For all trainees:

1. All trainees of the program will complete BMB 960-301 'Plant Biotechnology Research Forum on Plants for Health and Sustainability' seminar course during Fall 2022 and the updated Spring 2024 BMB 864 'Biotechnology and Plant Biochemistry' Course to be coordinated by Bjoern Hamberger. Trainees will also complete three credits of quantitative skills-building coursework (typically HRT 841 'Foundations in Plant

Computational and Data Sciences or three CMSE 960-30X modules, or other courses approved by your advisory committee and Rob Last or Danny Ducat).

2. All program trainees are expected to attend and actively participate in the annual symposium each year.
3. All program trainees will participate in the annual PBHS-specific Responsible Conduct of Research training.

Additional requirements for funded fellows:

1. Fellows will show consistent signs of success in coursework and research for continued funding.
2. Active participation in each annual symposium or retreat, including helping to organize and run the event in year 3 of their graduate training and beyond.
3. Each **NIH-funded fellow** will work with their mentor and the Executive Committee (EC) members to identify and organize an 8-12 week industrial internship to be completed before the end of their 3rd year of graduate studies. In addition to being an excellent career development opportunity, this is a requirement of the NIH T32 Biotechnology Training Program. Funded fellows will receive their stipends, health insurance and tuition during this period.
4. In addition to their primary mentor, the fellows will have another PBHS trainer or EC member on their advisory committee.
5. To encourage exposure to a broad range of topics, fellows will be expected to attend at least 20 seminars annually, including a mix of talks outside of their field of interest as well as those closer to their discipline and research interests. Five short written analyses of talks attended in different seminar series (for example, BMB, CEM, CHEMS, HRT, PLB, Science at the Edge) in both years 2 and 3 will form part of an Individual Development Plan (IDP) and discussion of the seminars will be part of the meeting with the Training Program EC members during their fifth semester of graduate studies.
6. Fellows will participate in mentoring training activities associated with the program and mentor one or more undergraduate students for a minimum of 10 weeks.

Faculty responsibilities:

1. It is expected that faculty trainers whose students have been supported financially will actively participate in multiple aspects of the program, including retreats, symposia and seminar classes.
2. Faculty trainers of funded fellows are required to participate fully in the program events listed in 'obligations of trainees, funded fellows' above. This includes annual career development discussions with your trainee.
3. Current members of the Executive Committee will rotate out of their positions following a period of service and Faculty trainers whose students have participated should be willing to serve on the Executive Committee in future years.