

Stanford



Jennifer Brophy

Assistant Professor of Bioengineering

Bio

ACADEMIC APPOINTMENTS

- Assistant Professor, Bioengineering
- Member, Bio-X

PROFESSIONAL EDUCATION

- Postdoctoral Fellow, Stanford University , Biology
- Ph.D., Massachusetts Institute of Technology , Biological Engineering (2016)
- B.S., University of California at Berkeley , Bioengineering (2010)

LINKS

- Brophy lab site: <http://www.brophylab.org/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

We develop technologies that enable the genetic engineering of plants and their associated microbes with the goal of driving innovation in agriculture for a sustainable future. Our work is focused in synthetic biology and the reprogramming of plant development for enhanced environmental stress tolerance.

Teaching

COURSES

2023-24

- Fundamentals for Engineering Biology Lab: BIOE 44 (Win)
- Introduction to Bioengineering (Engineering Living Matter): BIOE 80, ENGR 80 (Spr)

2022-23

- Fundamentals for Engineering Biology Lab: BIOE 44 (Win)
- Introduction to Bioengineering (Engineering Living Matter): BIOE 80, ENGR 80 (Spr)

2021-22

- Introduction to Bioengineering (Engineering Living Matter): BIOE 80, ENGR 80 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Nora Enright, Sasha Zemsky, Grace Zhong

Postdoctoral Faculty Sponsor

Soyeon Choi

Doctoral Dissertation Advisor (AC)

Bella Archibald, Isabel Goldaracena Aguirre, Anna Johnson, Vivian Zhong

Undergraduate Major Advisor

Julia Gershon

Doctoral (Program)

Danielle Klinger, Benjamin Rosenbluth

Publications

PUBLICATIONS

- **Synthetic genetic circuits as a means of reprogramming plant roots.** *Science (New York, N.Y.)*
Brophy, J. A., Magallon, K. J., Duan, L., Zhong, V., Ramachandran, P., Kniazev, K., Dinneny, J. R.
2022; 377 (6607): 747-751
- **First Plant Cell Atlas symposium report** *PLANT DIRECT*
Rice, S. L., Lazarus, E., Anderton, C., Birnbaum, K., Brophy, J., Cole, B., Dickel, D., Ehrhardt, D., Fahlgren, N., Frank, M., Haswell, E., Huang, S., Leiboff, et al
2022; 6 (6)
- **Toward synthetic plant development.** *Plant physiology*
Brophy, J. A.
1800
- **Intrinsically disordered protein biosensor tracks the physical-chemical effects of osmotic stress on cells.** *Nature communications*
Cuevas-Velazquez, C. L., Velloso, T., Guadalupe, K., Schmidt, H. B., Yu, F., Moses, D., Brophy, J. A., Cosio-Acosta, D., Das, A., Wang, L., Jones, A. M., Covarrubias, A. A., Sukenik, et al
2021; 12 (1): 5438
- **Vision, challenges and opportunities for a Plant Cell Atlas.** *eLife*
Plant Cell Atlas Consortium, Jha, S. G., Borowsky, A. T., Cole, B. J., Fahlgren, N., Farmer, A., Huang, S. C., Karia, P., Libault, M., Provart, N. J., Rice, S. L., Saura-Sanchez, M., Agarwal, P., et al
2021; 10
- **Understanding and engineering plant form** *SEMINARS IN CELL & DEVELOPMENTAL BIOLOGY*
Brophy, J. N., LaRue, T., Dinneny, J. R.
2018; 79: 68–77
- **Understanding and engineering plant form.** *Seminars in cell & developmental biology*
Brophy, J. A., LaRue, T. n., Dinneny, J. R.
2017