

Dear Faculty, Postdocs, Students, and Friends:

You are cordially invited to attend a seminar presented by



Jennifer Brophy
Department of Biology
Stanford University

Title:
**“Synthetic genetic circuits to modify plant
development”**

DATE: Friday, June 11, 2021

TIME: 12:00 pm PST

ZOOM MEETING ID: 963 2886 4096

PASSCODE: 929813

Host: Alex Borowsky

Abstract: A plant's form is an important determinant of its fitness and economic value. For example, the shape of a plant's root system influences its ability to reach essential nutrients in the soil or to acquire water during drought. Progress in engineering plant structure has been limited by our capacity to design and build genetic programs that alter root growth in a predictable manner. We use synthetic gene circuits to reprogram root structure. These circuits use logical operations to combine the activity of tissue specific promoters and express developmental regulators in patterns that modify root branching and gravity sensing. This work highlights the potential of genetic circuits to enable precise spatial, temporal, and magnitudinal control over gene expression across entire organ systems and offers an exciting means to reprogram plant growth.