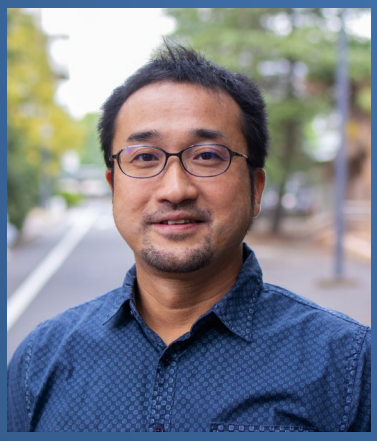
203rd WPI-IIIS Seminar

Unveiling Plant Sensory Transduction: How Plants Sense, Move, and Communicate

Plants, unlike animals, lack a nervous system, but they can rapidly sense various environmental cues (e.g., touch, insect attack and volatiles), transmit this information over long distances and activate local/systemic responses. However, the molecular basis underlying such rapid sensory signal transduction remains largely unknown in plants. Using wide-field, real-time imaging techniques, we have visualized long-distance cytosolic Ca^{2+} signals coupled with electrical signals in *Arabidopsis*, Venus flytrap and *Mimosa pudica*. Plants combine evolutionarily-conserved systems (e.g., glutamate receptor ion channels) with plant-specific systems (e.g., phloem and stomata), enabling Ca^{2+}-based rapid defense responses/movements and plant-to-plant communication via airborne volatiles.



Dr. Masatsugu Toyota

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Date: **Thursday, August 22, 2024**

Time: **10:00 – 11:00**

Venue: **1F Auditorium, IIIS Building**

* On-site participation only

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