

# THE WAGNER FREE INSTITUTE OF SCIENCE

Spring 2019

BOTANY SERIES

**Extreme Plants: Radical Adaptations in the Vegetable Kingdom**

Professor Jordan Teisher

This course will be held at the **Pennsylvania Horticultural Society**, 100 N. 20<sup>th</sup> Street (20<sup>th</sup> and Arch Streets), Philadelphia, PA.

**Dates:** 6 Tuesdays, March 26 – April 30, 2019

Time: Lectures are held from 6:30 to 7:30 PM

**This course requires pre-registration. To sign up, click on the link on the Wagner's course schedule webpage or call 215-763-6529 x23.**

## Course Description

Plants live in all but the most inhospitable environments. As a result of being immobile, they have had to evolve creative strategies to perform the basic tasks of acquiring food, regulating temperature, reducing water loss, and reproducing. This course will examine some of the most dramatic examples of plant adaptations, including carnivory, parasitism, mimicry, and drought tolerance. By exploring the biology underlying these extreme evolutionary innovations, students will gain an understanding of the basic challenges facing all plants and a greater appreciation for the diversity and ingenuity of plant form and function.

## Course Schedule

- 1. Tuesday, March 26, 2019 – Introduction to Plant Physiology**  
The basic needs of plants for water, nutrients and light; introduction to flower structure, pollination and reproduction.
- 2. Tuesday, April 2, 2019 - Water**  
Adaptations to aquatic and desert habitats; floating plants; succulents; modifications of photosynthesis; resurrection plants.
- 3. Tuesday, April 9, 2019 - Nutrients**  
Carnivorous plants and nutrient-poor soils; parasitic plants.
- 4. Tuesday, April 16, 2019 - Light**  
Chemical warfare between plants and the fight for light.
- 5. Tuesday, April 23, 2019 - Temperature**  
Fire-adapted species; serotiny; arctic plants.
- 6. Tuesday, April 30, 2019 - Reproduction**  
Insect mimicry in orchids; corpse flowers; pheromones.

Tuesday, May 7, 2019 – make-up class (if needed)

### **Recommended Reading**

There is no text covering all material included in this course, but any general introductory botany text would be a useful accompaniment to the lectures. In particular, sections on photosynthesis, transpiration, and reproduction would be helpful in reviewing the terms presented in the first lecture and used throughout the course.

Suggested text:

Raven Biology of Plants by Peter H. Raven, Ray F. Evert & Susan E. Eichhorn (8<sup>th</sup> edition, W. H. Freeman/Palgrave Macmillan, 2014 but any edition is good).

### **About the Professor**

**Dr. Jordan Teisher** is the Collection Manager in Botany at the Academy of Natural Sciences of Drexel University. He has a PhD in Evolution, Ecology and Population Biology from Washington University in St. Louis. His research focuses on the systematics of grasses. This is his second course for the Wagner.