

# Fall 2024 Undergraduate Program Director (UPD) Report

Vaidik Patel - 11/16/2024 12:41:32 PM -05:00

## Received

Date:

By:

Comment:

## Instructions

This is a form for SEBS Governing Council major representatives. The purpose of this form is to encourage student engagement with faculty/department representatives and to identify academic issues that may be addressed by the council.

1. Talk to students in your major, ask around if there are any current academic issues (ex: class conflicts within the major, issues with professors or department, lack of resources).
2. Look at Degree Navigator, write down the course requirements
3. Formulate a list of things you would like to know about the program (corporate connections with the university, current research projects, opportunities for students to get involved, recent changes to the program)
4. Email Undergraduate Program Director and Arrange Appointment
5. Fill out this form and submit by 11:59pm on November 17th, 2024.

n/a

## General Information

Your Name

Vaidik Patel

Your Email

vtp22@scarletmail.rutgers.edu

Represented Major

Plant Science

Date of Meeting with UPD

11/15

Class Year

2028

UPD Name

Dr. Nrupali Patel

UPD Email

npatel@sebs.rutgers.edu

Major/Departmental Website Link (if applicable)

<https://plantbiology.rutgers.edu/>

## Major Information

Major Options -- What options are offered within the major? How do they differ?

When majoring for Plant Science, there are 3 different tracks you can take... (1) Major in Plant Science, Horticulture and Turf Industry(NB) - Focuses on turf and horticulture - Has mild requirements and is not very science heavy (2) Major in Plant Science, Natural Products (NB) - Focuses on linking natural products to human health and nutrition and agriculture. - Has mild requirements and is not very science heavy (3) Major in Plant Science, General Plant Biology Option (NB) - This is the general research track that students who aspire for grad school take - Very science heavy and covers many classes in the other two majors

Total Number of Students within the Major (estimate if unknown from UPD)

About 40, not exactly sure but a very small number.

Goals within the Major -- What are expectations of students post-graduation?

Here is each major and the specific goals that the students taking them may have... (1) Major in Plant Science, Horticulture and Turf Industry(NB) Goals - Agriculture(Science of growing plants for food) + Horticulture(Art and Science of growing plants for a variety of purposes.) - This major option provides students with a foundation in both disciplines, emphasizing the agricultural and horticultural industries that are most relevant to New Jersey and the Mid-Atlantic region. (2) Major in Plant Science, Natural Products (NB) Goals: - Study basic mechanisms of natural product mode of action and toxicity. - Discover, identify, and characterize bioactives from plant and fungi using multidisciplinary approaches. - Develop novel uses for natural products as medicines, foods, cosmetics, dietary supplements, and crop protection agents. - Integrate natural products into animal, nutrition, pharmaceutical, and clinical research. - Support natural product research in developing countries. (3) Major in Plant Science, General Plant Biology Option (NB) - The General Research option in the Plant Science major is designed for students intending to pursue graduate studies and/or careers in laboratory settings. - The curriculum is designed to give a strong foundation in the biological sciences while exposing students to various disciplines within Plant Biology. This program of study is also suitable for those interested in pursuing a career in the healthcare field. \*\*ALL information is cited from the plant biology website linked above\*\*

List Upper-Level major courses -- What is the goal of each course?

11:776:302 General Plant Pathology (3) - The nature of plant disease and its management are discussed - Topics: organisms and environmental conditions that cause disease in plants, the mechanisms by which these factors induce disease, the interactions between disease agents and their hosts, disease spread, prevention, and management, and the human and environmental costs of plant diseases. 11:776:382 Plant Physiology (4) OR 11:776:202 Applied Physiology of Horticultural Crops (3) - Topics: Understanding structure and function relationships, and interactions with the environment - The course introduction recap the evolutionary history of plants and plants as organisms. The second section delved into understanding the importance of water and mineral nutrients for plant growth and development. - The photosynthesis section focuses on how plants get their energy through photosynthesis and respiration. - The growth and development section focuses on how plants complete their life cycles. - The laboratories' main objective is to introduce plant physiology tools by running basic experiments, formulating and testing hypotheses, processing, analyzing, presenting results, and preparing a research report 11:776:391 Weeds, Diseases, and Insects (3) - Familiarize students with common weed, disease, and insect problems that occur during the production and maintenance of plants in settings such as in production fields, greenhouses and nurseries, residential properties, parks and recreational areas, and forested sites. - Students will gain a basic understanding of the biology and ecology of these pests and the management of biotic and abiotic problems within a plant health care or integrated pest management context. 11:776:406 Plant Breeding (3) - Describe the foundation (concepts, terminology and tools) of plant breeding (addresses program goals 1 and 2) - Explain and demonstrate the use various breeding techniques to improve plant traits (addresses program goals 1, 3, and 4) - Describe procedures for current commercial application in plant breeding (addresses program goals 3 and 4) 11:776:306 Weed Science and Management (3) - examines the impact of weeds in agricultural, turfgrass, and ornamental landscapes and the management options. - Agricultural areas include food crop production systems (corn, soybeans, vegetables, fruit trees, and small fruits); turfgrass including golf courses, athletic fields, and lawns and other urban and suburban landscapes; ornamental landscapes including nurseries (field and container) and non-turfgrass areas in a landscape; and aquatic sites.

## Student Issues

Are there concerns with classes within the major? Are there any suggestions for solutions to these concerns?

Yes, not exactly with the classes themselves but with the timings. From the limited amount of people that responded, some wanted classes to be earlier and complained the timings of events and other workshops conflicted with their class times. I talked to the director about this and we concluded that if I build a network with the students where we share our schedules and make sure to leave times open then it would work out.

From the perspective of the UPD or other major faculty members, what can currently be improved upon in the major or department? Are there any suggestions for solutions to these issues?

The director mentioned how scholarships were not being applied for at the rate that she would like. I mentioned how this might be because the external websites that scholarships have are very complicated and unclear of the requirements. For this reason, we are working to develop a module on the plant science website in which we can clearly list out the steps to complete a scholarships application. This would make it easier for the students to apply and also make them more likely to apply.

Are there any Visitor Events/Talks/Seminars/etc. going on within the major?

Yes, there are weekly workshops that Dr. Harna Patel conducts and also many research symposiums that are open to all science majors. Additionally, Rutgers Garden has speakers that come in bi-weekly who discuss many subjects that are related to the plant science major. All these opportunities are posted on the Plant Science Undergraduate canvas so all students have access.

Suggestions for students in this major (ex: organizations to join, news to pay attention to)

Dr. Harna Patel does a fabulous jobs posting all the events and scholarships on the major canvas. Students of this major are very fortunate to have all these opportunities in one place and should take that to their advantage. Additionally, there is a new class named Horticultural Topics, that is opening this Spring. That class is very important for all plant science students who aspire to find a career in the industry.

Changes within the major for the upcoming year

Building a scholarship module, creating a student network within the plant science major, creating events in which First-year students can meet juniors and seniors to gain insight and experience.

Any other suggestions, comments, concerns?

