As part of the West Virginia University Board of Governor's Rule 2.2 Program Review process, the WVU Provost's Office required that a single Program Review Self-Study Form be completed on behalf of all identified programs in the department or unit. This Program Review Self-Study Form was to be submitted to the Provost's Office by end of day on August 1, 2023. The Provost's Office reviewed the submitted Program Review Self-Study Forms in early August.

Self-Study content is unvetted by the Provost's Office. As such, the WVU Provost's Office cannot attest to the accuracy of any data, analyses, or statements provided within. Also, redactions were made where warranted for the protection of individual identities around sensitive information.

Q1.1. BOG Program Review Self-Study Form

This is the self-study form that will be completed in support of the summer 2023 academic transformation program portfolio review.

Only one program review self-study is to be submitted per unit; all of the unit's *programs* will be covered by one self-study.

Q1.2. Select the appropriate academic unit under review.

College	Davis College of Agriculture, Natural Resources, and Design \checkmark
Department or School	Plant and Soil Sciences 🗸

Q1.3. List all of the unit's programs.

Example:

BA Biology BS Biology MS Biology PhD Biology BS Environmental Microbiology Biology BS Environmental, Soil, and Water Sciences BS Agr. Sustainable Food and Farming BS Agr. Horticulture MS Applied and Environmental Microbiology MS Entomology MS Genetics & Developmental Biology MS Horticulture MS Plant and Soil Science MS Plant Pathology PhD Genetics & Developmental Biology PhD Plant and Soil Sciences

Q1.4. Name and Email of the person completing the self-study

Name

Email Address

Sven Verlinden
sverlind@wvu.edu

Q1.5. How were faculty given the opportunity to contribute to, review and provide feedback on this self-study?

Faculty were alerted to the Provost's Office request for self-evaluation of undergraduate programs on Monday, July 10, 2023, via e-mail. On July 12, 2023, the Division of Plant and Soil Sciences leadership requested additional input through an e-mail asking for ideas and thoughts on how to respond to the request of self-evaluation. We prepared our response with the data provided to us by the Provost's Office, APS, and faculty input. Input was also solicited from the Division's associate directors of academic affairs and graduate education. The self-study was circulated on July 17 for comment followed by a faculty meeting on July 21 to discuss the draft. Based on those comments and comments from Dean Donahue and Associate Dean for Academic Affairs Dr. Kim Barnes, we revised and submitted the final document on July 31, 2023.

Q2.1. Explain how the unit and its programs contributes to WVU's mission.

This response is limited to 7500 characters, approximately 2 single spaced pages.

The Division of Plant and Soil Sciences (PSS) is housed in the Davis College of Agriculture, Natural Resources and Design, which is one of WVU's founding colleges and a pillar of the land-grant mission of our institution. The Morrill and Hatch Act specifically established and funded universities to create new knowledge in agriculture, mechanical sciences (engineering) and the military sciences, and disseminate that knowledge to its citizenry. We therefore have one of the longest-standing traditions at WVU of serving students in those disciplines. Our faculty have expertise in entomology; plant pathology; biochemistry; genetics; environmental, soil and water science; horticulture; agronomy; and microbiology and thus are well suited to solving complex scientific problems for WV citizens and educating the next generation of scientists and practitioners. We also collaborate closely with the WVU Extension Service by assisting in training extension agents, applying research in our farmers' fields, participating in extension activities with farmers and agents, and supporting students' involvement in extension activities. Consequently, we provide a direct service to the state. Example state and regional collaborative projects include but are not limited to mine land reclamation and bioenergy crop production with Dr. Jeff Skousen (PSS/Extension), cider apple production with Drs. Mira Danilovich (Extension) and Michael Gutensohn (PSS), improvement of the tomato resistance to pests with Drs. Mafuz Rahman (Extension) and Vagner Benedito (PSS), high tunnel vegetable production with Dr. John Jett (Extension) and Dr. Nicole Waterland (PSS), and involvement in Chesapeake Bay phosphorus pollution dynamics with Dr. Eugenia Pena-Yewtukhiw (PSS), Thomas Basden (Extension), and Dr. Louis Mcdonald(PSS). All these projects involve undergraduate students as contributors alongside faculty as researchers in addressing these applied issues facing today's agriculture. We educate highly specialized professionals necessary for communities to manage their agricultural and natural resources (forests and other ecosystems). Our faculty have garnered international, national, and university recognition for their work with students, research, and service. Highlights of our applied work include new plant variety development; restoration of post-mining, drilling, and other disturbed landscapes; organic and urban agricultural production; studying forest pests with remote sensing; developing decision-support tools to guide forest restoration; evaluating climate change effects on crop production; and sustainable grazing management. Several of our faculty, because of their teaching and research programs, are active globally. Dr. Jeff Skousen (PSS/Extension) is an internationally recognized expert in acid mine drainage treatment and land reclamation, Dr. Louis McDonald (PSS) taught soil and reclamation sciences and assisted with research projects four times in China (pre-COVID), Dr. Jim Thompson was part of a global consortium of scientists that collaborated to make a new digital soil map of the world using state-of-the-art and emerging technologies, Dr. Yong-Lak Park (PSS) is a fellow of the equivalent to the National Academy of Sciences in South Korea and Dr. Vagner Benedito is an adjunct professor at two Brazilian universities and frequently hosts students from Brazil in his lab. We pride ourselves in the generation of knowledge (through research) and the dissemination of that knowledge (through teaching/outreach). Extramural monies (2.5 million dollars in 2022 with approximately \$500,000 in F&A) fund much of this work. Each of our tenure-track faculty and four of our five non-tenure track faculty have extramural funding to support applied and fundamental research. Agriculture, fossil fuel extraction, and their associated environmental issues are important to the WV economy. We need to educate students from WV and neighboring states to manage those issues. There is enormous growth projected in jobs related to these areas. For example, the USDA-NRCS and private environmental consulting firms are hiring thousands of employees in the next few years to help manage our soil and water resources following changes in US and global environmental policies. Our Environmental Soil and Water Sciences graduates have consistently found jobs with Federal and State agencies and private companies in and out of West Virginia. All our Horticulture students have found work, including in emerging industries, such as the cannabis industry and urban agriculture, as well as traditional horticulture fields. We have a nearly 100% placement of graduates from our programs and based on projected growth in this sector of the economy, we will continue to have such strong placement of our graduates as our enrollment continues to increase. If we want to maintain our status as a land-grant institution that is respected by our peers, we must retain and strengthen the disciplines that are fundamental and essential to the land-grant mission and the training of new agricultural professionals and environmental scientists. The faculty and staff in the Division of Plant and Soil Sciences work continually to align our programs with the overall university mission and needs of our students. As a result of annual retreats (even virtually during COVID) and subsequent discussions during regular faculty meetings, we have made substantial changes to our courses and curricula. Most notably, we developed the Environmental, Soil and Water Sciences (ESWS) major, which has seen increased enrollment during an otherwise challenging time. We have initiated other significant changes (described later in this document) and are confident will help us build on those successes. The Davis College mission states that "We envision a world sustainably fed, clothed and sheltered," and the teaching, research, and outreach within the Division of Plant and Soil Sciences directly supports this mission. We are leaders in transforming society through engagement, high impact teaching, and the development of new knowledge with broad applications. We have proven track record of creating a diverse and inclusive academic environment that includes three Latinx faculty and recruiting efforts in urban farming that engages with diverse clients. Our foreign-born faculty have leveraged their relationships into global engagement including linkages with China, Brazil, South Korea, Japan, Venezuela, Belgium, and Germany.

Q3.1. Revenue, and Expenses

The purpose of this section is to ensure the accessibility and adequacy of the unit's infrastructure and resources and its financial viability.

Responses in this section are limited to 7500 characters or approximately 2 single spaced pages.

Q3.2. Has the unit experienced significant issues with any of the following during the past five years?

By "significant," we mean issues that interfere with either the unit's ability to deliver its programs to its students or the students' ability to complete those programs in a timely manner.

	Yes	No
Ability to schedule required classrooms	0	۲
Access to adequate technological infrastructure	0	۲

Access to adequate technological support	0	۲
Access to adequate physical infrastructure (labs, performance spaces, etc.)	0	۲

Q3.3. Describe the issues the program has faced in the area(s) identified above.

This question was not displayed to the respondent.

Q3.4. Data have been provided on the unit's last three years of tuition revenue, expenses, and net revenue. Address any negative net revenue or any significant changes (positive or negative) to unit's net position.

Revenue by department is the actual tuition revenue, net of any discounting, paid by students taking courses in course subject codes affiliated with the department.

Expense by department is the actual unrestricted, operating expenditures by department within the functions of instruction and academic support.

Net revenue is the revenue minus the expense.

We have a deficit in our operating budget; however, not all the expenditures listed in the table supplied by the Provost's Office can be attributed to the functions of instruction and academic support. Specifically, the numbers listed in the tables provided to us include Hatch funds, which are, in fact, research expenditures that by law must be used specifically for land-grant-associated research. These are funds that benefit the state's population and beyond. If research overhead and Hatch were considered as revenue our deficit would be smaller. Our revenue has changed very little in the past two years and reflects natural fluctuations in income from year to year. The transformation table provided shows a decrease in revenue by \$33,975 in 2022 compared to 2020, but also \$173,640 increase in revenue from 2021 to 2022, a result of higher student enrollment and SCH generated. From the available data, we suspect that these year-to-year changes can be expected in a dynamic environment such as a unit with increasing and decreasing student population, faculty, and changing out-of-state student to in-state student ratio, staff, and operating expenses. Our expenses went up as we added five faculty lines in the past three years (one spousal hire in Environmental Sciences; a position in Community Agriculture partially funded by the Provost's Office; one part-time Research Assistant professor in grazing management; and two tenure track faculty, one in biochemistry and one in entomology). All hires were in growing fields and necessary for us to deliver our undergraduate and graduate programs. Other than those faculty lines, we have had a decreasing operating budget from year to year in the past 3 years. We also note that PSS has lost four faculty lines over the past 5 years (all four left the university between 2018 and 2020). The net result of these changes appears as one more faculty in PSS over the past 3 years. We will continue to explore ways to decrease FTEs without sacrificing the quality of programming. We concede that our net revenue has decreased. We also understand that this is mostly due to an increase in expenses (additional FTEs). Such a deficit will be managed with increased efficiencies, such as sustaining increased student enrollment in our programs and natural faculty attrition over the next few years (see below). We will continue to explore ways to decrease our expenses such as offering fewer low-enrolled or resource intensive courses, exploring new and popular course offerings, writing more grants to federal agencies and foundations to support teaching and research, and solicit donations to support academics.

Q4.1.

Faculty Composition and Productivity

Responses should be concise but also specific and supported by evidence. Responses in this section are limited to 7500 characters or approximately 2 single spaced pages.

Specific data definitions for these metrics are available on the <u>Academic Transformation</u> webpage.

Q4.2. Data have been provided on the unit's faculty full-time equivalency (FTE) to the median of all majors for fall 18 to fall 22.

Address any differences in the unit's student to FTE ratio and the institution's student-to-faculty ratio of 18-to-1 per IPEDS reporting for academic year 2021-2022. Although our current faculty to student ratio is below the university median, we offer the following points and solutions First, our unit also is responsible for 25% of the intercollegiate biochemistry major. When those students are considered, our faculty to student ratio improves from 1:7 to 1:9.5. This point is especially relevant since several of our faculty, including one recently hired tenure-track faculty, exclusively or partially teach within this program. With respect to Faculty: student ratio, if we consider the natural attrition of faculty that will occur in the next 2-3 years (see below) and continued growth in our undergraduate programs as demonstrated over the recent years, we expect to further improve our faculty to student ratio to 1:14, much closer to the median of 1:18. We continue to work with the departments of Chemistry, Biology, and Division of Animal and Nutritional Sciences to attract, retain and graduate high performing biochemistry students. Students that struggle will be mentored to find alternative majors at WVU including other programs in the Davis College and Plant and Soil Sciences. Second, our unit supports other units with courses such as General Microbiology, Principles of Soil Science, and Principles of Plant Science in addition to several upper-division classes (e.g. Forest Pest Management, Reclamation of Disturbed Soils, Environmental Sampling and Analysis, and Hazardous Waste Training) that enroll students outside of our majors. Many of these courses enroll over 50% of students outside our majors (courses enrolling 25 or more students have on average 78% of students outside of our programs; APS). Although this does not change our financial situation as we capture these SCH, it does show that we are an integral part of the education of students across the college and university. In addition, we also support two highly enrolled minors (Horticulture and Pest Management). We will continue to analyze our support of other programs on campus and try to increase enrollment in these service courses. Third, many of our courses have associated labs, an essential endeavor but demanding in terms of faculty time and division resources. We do not work with teaching assistants in most of our upper-level courses, and the faculty responsible for the course is directly responsible for the lab activities. Our contact hours per student are therefore also higher than a unit that only teaches lecture-based courses. The hands-on, practical aspects, and skills acquisition associated with our courses are integral to an excellent education in the sciences. This lab-based approach also requires lower-enrolled courses of 25-35 students (also constrained by space and safety considerations). To increase efficiency, we can increase average enrollment by offering courses only once a year or every other year and reducing the number of courses with labs. This will also help us to absorb natural attrition of faculty (see below). Fourth, a well-rounded education in agriculture and environmental sciences requires multiple disciplines that are highly specialized. This requires highly specialized faculty that cannot teach subjects outside of their expertise (an entomologist cannot teach soil science, nor a horticulturist teach microbiology). However, if we are going to train students that can take on complex, inter- and trans-disciplinary problems we must provide a broad education that consist of multiple disciplines. For example, students in horticulture take Plant Pathology, Entomology Genetics, Soil Science, Biology, Animal Sciences, Agricultural Economics, and Plant Science courses, making them probably some of the best and well-rounded students in the university. ESWS is no different as students take soil physics, soil chemistry, environmental health and safety, environmental microbiology, and freshwater ecology. In addition to training students, we need to retain this broad ranging expertise at a land-grant university as it is also fundamental to solving complex and interdisciplinary research questions for the benefit of WV and beyond. We contend that we need to keep most of these disciplines at the university. However, we may not need two or more faculty in each of these disciplines. For example, horticulture currently has three or four faculty associated with the major. Attrition and workload adjustments could reduce the total number of faculty and therefore improve our faculty: student ratio. Lastly are especially proud of our contributions in undergraduate research and have several faculty recognized nationally and at the university level for their effort in working directly with students. In the last four years we have had three faculty, Dr. Dan Panaccione (2020), Dr. Matt Kasson (2021) and Dr. Ember Morrissey (2023), won the university Faculty Award for Distinction in Mentoring Undergraduates in Research. These students and faculty have garnered extramural funding (NIH), awards, and scholarships to support these efforts, in addition to publishing their work in peer-reviewed journals. Our low faculty to student ratio allows us to mentor exceptional students that serve as ambassadors and enhance the visibility and prestige of undergraduate research at WVU, preparing and helping them apply for advanced degrees including medical school and various Ph.D. programs. Our high-level undergraduate student involvement in research is evident in awards and special recognitions for undergraduate student presentations at national and international meetings, including those hosted by the Agronomy/Soil Science Society (ASA-CSSA-SSSA), the Phytochemical Society of North America, the American Society of Plant Biologists, the American Phytopathological Society, and the International Mycological Congress. Among our recent undergraduate researchers are three NSF Graduate Research Fellows, two Beckman Scholars, a Udall Scholar, a Goldwater Scholar, and two American Society for Plant Biology Research Fellows. We acknowledge the urgency of our current situation. We have a proven track record of being proactive in reworking our curricula. Specifically, our new Environmental Soil and Water Sciences major has a 3-year growth rate of 9.8% (Source APS), a rate we expect to further increase now that Environmental Microbiology has been incorporated as an Area of Emphasis (we have 25 FTF deposits for Fall 2023 admittance). Recently, Horticulture and Sustainable Food and Farming were combined into a single major, Horticulture and Crop Science; a program we believe is well-positioned to attract additional students with offerings such as agricultural biotechnology without the need for additional faculty or resources. As with Environmental Soil and Water Sciences, Horticulture is a growing major that has 16 total students (re-admits, transfers, and FTF) admitted for Fall 2023, showing continued year over year increases in our UG programs. Although combining majors will not immediately improve our faculty to student ratios, it will make the curricula more attractive to FTF and transfer students and allow us to absorb future reductions in faculty lines through attrition. These changes will certainly increase our student to faculty ratio over the next several years. Finally, we note that when redesigning both new programs, the new curricula was tailored to maximize articulations/transfer completion.

Q4.3. This question is optional and required only if a unit's doctoral programs are under review.

Data have been provided on the unit's tenure-track / tenured FTE to doctoral student headcount ratio across all of the unit's doctoral programs.

Address any differences in the unit's doctoral student to tenure-track and tenured faculty FTE ratio to the institutional expectation of 2-to-1.

Q4.4. Data have been provided that show the changes to the unit's total number of faculty over the review period. Data have also been provided that show the total student headcount enrolled in all of the unit's programs over the same period of time as well as a three-year trend in student credit hour (SCH) production.

Explain the relationship between the change in the number of faculty in the unit and the change in the units total headcount enrollment and SCH production trends.

In 2018, the Division of Plant and Soil Sciences was home to 17 tenure track and 4 non-tenure track faculty. Between 2018 and 2023, 3 tenure-track and one non-tenure track faculty left the University and, subsequently, those positions were lost. More recently, we added two tenure track faculty; one service assistant professor to lead the university campus food garden project and another teaching assistant professor to support our growing Environmental Soil and Water Sciences program (spousal hire). Due to the brief time in their positions, changes in headcounts are not clear; however, the high potential of creating new courses, lines of research, and undergraduate certificates will improve our numbers in the next few years. Despite declines in tenure-track faculty (from 17 to 16), our Ph.D. program has seen increases in enrollment and our research expenditures have remained high. Graduate education does not support SCH but it does support R1 status and the university mission. Looking toward the future, we have already begun to anticipate three retirements in the next couple of years (mathematicate the remaining faculty. We also expect the retirement of one Teaching to the their teaching programs to the remaining faculty. We also expect the retirement of one Teaching

FIE by 3, we already have plans to redistribute their teaching programs to the remaining faculty. We also expect the retirement of one Teaching Assistant Professor (Horticulture) in the next few years and possibly one more tenure track faculty. These retirements can be absorbed by re-distributing teaching loads and decreasing the number of courses we teach.

Q4.5. Data have been provided that shows the unit's research expenditures per the Higher Education Research and Development Survey (HERD).

Does this data capture all of the unit's research expenditures? If not, explain the difference here and provide evidence of additional research expenditures below.

Some of our faculty carry out research supported with WVU Foundation funds. This work is not captured in the unit's research expenditures. On average \$50,000 is spent from WVU foundation funds in PSS for research every year. We have also supported the university's financial position in the past year by using WVU Foundation funding to support research, teaching, and service that normally is funded by state monies. We have committed to spend \$500,000 of Foundation funds to support our core mission of research, teaching, and outreach in the academic year 2023-2024 (operating and salary lines). These funds will come from the Jim McClelland greenhouse fund and the Marsh-Dye Professorship fund.

Q4.6. Upload evidence of research expenditures here.

FY22 Research Expenditures.xlsx 14.6KB application/vnd.openxmlformats-officedocument.spreadsheetml.sheet

Q5.1. Student Enrollment and Graduation History

Responses in this section are limited to 7500 characters (approximately 1.5 single spaced pages). Responses should be concise but also specific and supported by evidence.

Specific data definitions for these metrics are available on the <u>Academic Transformation</u> webpage.

Q5.2. Data have been provided on all of the unit's program's student enrollment trends.

That data includes:

4-year median fall enrollment (fall 18 through fall 21); Fall 2022 change from 4-year median (in headcount and in percentage).

Units should address any programs with enrollment below the median for the program level or which has experienced a negative change in enrollment.

The letter to the Division incorrectly identified us as having six undergraduate majors. In the catalog years 18/19 to 22/23, the Division of Plant and Soil Sciences has had four undergraduate majors: BS Ag. Horticulture, BS Ag. Agroecology or Sustainable Food and Farming, B.S. Environmental Soil and Water Sciences, and B.S. Applied and Environmental Microbiology. During this period, enrollment in these four majors increased by an average of 27% (median 20%) or approximately 10 students per year, even through COVID. The average three-year trend in student credit hours also increased by 27% during this period (median 21%). All our programs have experienced from 18 to 80% growth over the past 3 years, and we are now graduating double the number of students of just 4 years ago. We have addressed our approach of combining majors with low but growing enrollment (Environmental Microbiology and Sustainable Food and Farming) in our most successful majors (ESWS and Horticulture, respectively). We intend for these stronger, more diverse majors to be highly attractive and effective means of delivering content to students interested in Plant and Soil Sciences. These changes to our curriculum will also allow us to absorb faculty attrition through retirements. We are especially proud of our ESWS major which has seen tremendous growth and is poised to enroll over 100 students by next Fall semester. Although the absolute numbers are low in some other majors, the increases in enrollment represent a significant contribution, especially in a decreasing total WVU student population. Since this growth has occurred recently, SCH have increased only slightly over the same period as many of these students are taking general education courses and are not enrolled in our major courses yet. We expect SCH to follow the increases in student enrollment in the next few years.

Q5.3. Data have been provided on the unit's three-year trend in student credit hour (SCH) production.

Units should address any programs with a negative trend in SCH production.

Student credit hours increased by 27% during 2020-2023 (median of our majors 21%). As mentioned before, now that it makes budgetary sense, we will bring back or start offering courses that were very popular. These include Vines to Wines, Barley to Beer, and Seed to Weed. Based on previous offerings, these courses can conservatively and respectively add 300, 100, and 100 SCH, and if offered in both Fall and Spring semester close to 1000 SCH. We have plans to do this, even with decreasing FTEs. In short, we are poised for growth both in student numbers and SCH generated and have a track record of proactive adjustments to our curricula and portfolio of faculty.

Q6.1. Assessment of Learning and Program Improvement

The Provost's Office will review the self-studies from the most recent Board of Governor's five-year program reviews for this section.

Units may provide updated information below if they so choose.

Q6.2. Provide the unit's plans or ideas to make significant changes to its operations, structure, offerings, or personnel in order to reduce its costs or improve its efficiency.

Provide any significant changes to the department's program curricula, its assessment of learning practices, or any other improvements that have been made since the department's programs completed their most recent Board of Governor's five-year review.

Given that Applied and Environmental Microbiology will be an Area of Emphasis in the B.S. Environmental, Soil and Water Science major, and Horticulture and Sustainable Food and Farming will be merged into a single BS Ag major to be called Horticulture and Crop Science, both programs will integrate their assessment plans during their fall semester meetings. Although these changes have been submitted in CIM, they have not been approved, but have no reason to think they won't be. As part of our effort to increase efficiencies we have spent considerable time and energy over the past year working on combining our four majors into two. Environmental Microbiology will become an AOE in Environmental Soil and Water Sciences and Sustainable Food and Farming will merge with Horticulture creating two majors: ESWS and Horticulture and Crop Science. Each major will have higher enrollment and two low enrollment majors will be eliminated. Although this will not immediately affect the total number of students in the Division of Plant and Soil Sciences it will allow us to absorb retirements without replacing those positions as we re-distribute teaching efforts among the remaining faculty. Growth of the combined majors over time, coupled with reduction in faculty by planned attrition (outlined elsewhere in this document) over the next two to three years will lead to a higher faculty: student ratio soon. We will continue to look for ways to increase student enrollment through targeted recruiting campaigns coordinated with the Davis College recruitment office, thorough yearly assessment of our programs, emphasizing the many opportunities and benefits of PSS. This will include a robust undergraduate research program, study abroad, independent study, and the benefits of a low faculty to student ratio. We will explore possible new offerings in regenerative agriculture, urban farming, and agricultural biotechnology. We will also continue to explore cross-division (Animal and Nutritional Sciences and Plant and Soil Sciences) and cross-college programs (we are collaborating across campus with the newly formed Sustainability and Earth Sciences on marketing and delivering sustainability programs more broadly; and as significant partners in the Intercollegiate Biochemistry major). The Davis College recently converted academic advising from faculty professional advisors separating out the transactional aspects of advising from mentoring. We will institute a robust mentoring program that will follow up with students (together with their academic advisor), connect those students with faculty and their student cohort, provide easy access to resources and opportunities such as internships, scholarships, campus jobs, research experiences, independent study, student clubs, and build relationships with industry folks. We believe a multi-pronged approach of heavy recruiting of non-traditional and transfer students, combined with intense mentoring, can keep our programs growing. These approaches will directly influence retention and therefore faculty to student ratio, SCH and revenue. In the next two to three years, we will not replace 3 faculty lines (15% of our FTEs), reduce our staff by a technician, work to reduce our operating budget by using fewer adjunct-taught courses, and reduce the number of teaching assistants from 3 to 2. We will also start teaching popular course offerings again in Fall and/or Spring such as Vines to Wines, Barley to Beer, Seed to Weed and investigate other innovative courses to improve our SCH generated. Some of these courses generated a substantial number of credit hours in the recent past but were dropped in favor of an emphasis on increasing the number of enrolled majors and offering courses to support those students. We believe that reworking some of the faculty workload and working towards a 2 and 2 course load, can help us absorb a few more courses without affecting the quality of our teaching and/or research portfolio.

Q6.3. The program may provide additional evidence of program improvement here.

Q7.1. The unit may provide any additional context or information about the unit's programs here.

We would like the emphasize the following points: The Division of Plant and Soil Sciences has a proven track record of positioning its programs for growth. In the past 15 years we have launched new majors, renamed majors, changed curricula, and deleted majors. Our record of accomplishment therefore shows growth in student numbers, and will soon in SCH generated and revenue. Although our absolute enrollment numbers are low, we believe that capitalizing on current enrollment growth, a decrease in FTEs, changes in faculty workloads will positively affect faculty to student ratios, SCH and revenue. We continue to supply a high-quality undergraduate experience that will be leveraged in recruiting and retention efforts.

Q7.2. You may use this section to provide any additional evidence referenced in the program review.

Executive Summary.docx 13.3KB application/vnd.openxmlformats-officedocument.wordprocessingml.document

Q7.3. You may use this section to provide any additional evidence referenced in the program review.

Q7.4. You may use this section to provide any additional evidence referenced in the program review.

Q8.1.

Thank you for completing your self-study for the West Virginia University Board of Governors program review. You may now submit the survey and your self-study will be passed on to the Provost's Office for review.

