



UNIVERSITY OF
GEORGIA

University Council

October 9, 2026

UNIVERSITY CURRICULUM COMMITTEE – 2026-2027

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Graduate School – Stacey Neuharth-Pritchett

Ex-Officio – Interim Provost Ron Walcott

Undergraduate Student Representative – Christa Patterson

Graduate Student Representative – Samuel Siaw

Dear Colleagues:

The attached proposal from the College of Agricultural and Environmental Sciences for a major in Integrative Agricultural Sciences (Ph.D.) will be an agenda item for the October 16, 2026, Full University Curriculum Committee meeting.

Sincerely,

Rodney Mauricio, Chair

cc: Interim Provost Ron Walcott

Dr. Marisa Anne Pagnattaro



UNIVERSITY SYSTEM OF GEORGIA

USG Academic Degree Program Application

Fall 2025

Points of Contacts

Dr. Dana Nichols, Vice Chancellor for Academic Affairs & Student Success, dana.nichols@usg.edu

Dr. Laura Lynch, Associate Vice Chancellor for Academic Programs & Policies, laura.lynch@usg.edu

Additional guidance and templates as well as the change history for this document is available at https://www.usg.edu/academic_programs/new_program_review.

A. OVERVIEW

1. Institution Name: University of Georgia
2. School/College: College of Agricultural and Environmental Sciences
3. Academic Department: College of Agricultural and Environmental Sciences
4. Degree Name: Doctor of Philosophy
5. Degree Acronym: Ph.D.
6. Major: Integrative Agricultural Sciences
7. CIP Code (8 digit): 01110100

Please use 00 for the last 2-digit extension unless using the same CIP code for similar institutional program.

8. Delivery Mode: Mark all that apply.

- ☒ ON CAMPUS: A program of study leading to a degree completed with 50% or more of courses offered consistently on-site in a classroom setting at a campus, center or instructional site. (Consistent with SACSCOC requirements concerning notification of changes in delivery mode.)
- ☐ HYBRID: A program of study leading to a degree completed with more than 50% offered consistently online, but some courses in the program will require on-site attendance at a campus, center or instructional site.
- ☐ ONLINE: A program of study which can be completed entirely at a distance. No campus visits are required for coursework. Students may be required to attend program orientations or to complete coursework in a specified instructional setting (clinical, internship, practicum).

9. For On Campus or Hybrid programs, where will the program be offered? Mark all that apply.

- ☒ Main campus
- ☒ Branch Campus or other Off Campus Instructional site: Griffin, Tifton

10. Anticipated Semester and Year of Initial Student Enrollment: Fall 2027

- 10a. Program Description:

The proposed Ph.D. in Integrative Agricultural Sciences (IAS) is a unique interdisciplinary degree program between the UGA departments of Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology. The IAS Ph.D. is designed to provide graduates with expertise in two of the four agricultural disciplines represented by the departments through coursework, research, and faculty mentorship. The interdisciplinary expertise gained through the program will enable graduates to address the multidimensional grand challenges facing food and fiber production. The program ensures that program graduates will gain interdisciplinary expertise by requiring that enrolled students have faculty co-major advisors from two of the four participating departments, declare primary and secondary areas of emphasis that align with their co-advisors' disciplines, take a minimum of nine credit hours of coursework in each of the areas of emphasis, and conduct interdisciplinary research. Research will involve integrating methods, theories, and perspectives from two different disciplines to create a unified, synergistic, and blended approach to addressing a difficult research problem. Enrolled students will be guided and mentored throughout the program by their two co-advisors and the other members of their graduate advisory committee.

11. Describe disciplinary accreditation requirements associated with the program (if applicable, otherwise indicate not applicable).

Not applicable.

12. Specify SACSCOC requirements. Check with your SACSCOC Liaison and mark all that apply.

- ☐ Substantive change requiring notification only¹
- ☐ Substantive change requiring approval prior to implementation²
- ☐ Level Change³
- ☒ None

13. Enter the number of credit hours required to complete the degree program, excluding any institutional requirements such as physical education activity/basic health or orientation courses.

a. Required Program Hours: minimum of 30 hours

b. Are you requesting a credit hour requirement waiver (either below or above traditional credit hour length requirements) as prescribed by the University System of Georgia?

See the Academic and Student Affairs Handbook Section [2.3.5 Degree Requirements](#).

- ☒ No
- ☐ Yes (If yes, explain the rationale for the request in the space below)

B. PROGRAM ALIGNMENT

14. How does the program align with the [USG System Wide Strategic Plan](#)?

¹ See page 42 (Requiring Notification Only) of [SACSCOC Substantive Change Policy and Procedures document](#).

² See page 41 (Requiring Approval Prior to Implementation) of [SACSCOC Substantive Change Policy and Procedures document](#).

³ See page 20 (Level Change Application) of [SACSCOC Seeking Accreditation at a Higher or Lower Degree Level document](#) for level change requirements.

The USG strives to be recognized as the best system of higher education in the United States as it advances the prosperity of individuals, the state of Georgia, and the nation through education, research, engagement, and innovation. The goal of the proposed Ph.D. in Integrative Agricultural Sciences is to provide holistic solutions to address agriculture's grand challenge of developing sustainable and resilient food and fiber production systems in a rapidly changing world. Specific objectives are to 1) provide students in this program with the opportunity to discover and apply the fundamental knowledge to solve this grand challenge; and 2) provide them with the knowledge and skills for pursuing careers that address this grand challenge. The proposed program aligns directly with the strategic plan's goals of student success, responsible stewardship, economic competitiveness, and community impact because it will provide graduates with the interdisciplinary expertise to meet this grand challenge that is not offered by discipline-focused Ph.D. programs. In contrast to existing discipline-focused Ph.D. programs, interdisciplinary coursework and research are a requirement of the proposed Ph.D. in Integrative Agricultural Sciences. The proposed program will ultimately lead to improved competitiveness for Georgia's agricultural industry which is the state's largest economic sector. Furthermore, resilient food systems result in long-term economic and environmental sustainability. Since the state's agricultural production systems are in rural areas of the state, economic and environmental sustainability of Georgia's agricultural industry will have a significant positive community impact in parts of the state that are currently facing substantial economic difficulty.

15. How does the program align with your institutional mission, and the function of institutions in your institution's sector as outlined in [Board Policy 2.8](#)?

The University of Georgia is committed to excellence in public service, economic development, and technical assistance that addresses the strategic needs of the state. As Georgia's largest economic sector, agriculture demands a workforce equipped with interdisciplinary expertise to advance sustainable and resilient food and fiber production systems. The proposed Ph.D. in Integrative Agricultural Sciences directly supports this mission by preparing graduates with the skills needed to meet these evolving demands. This program builds on UGA's recent Integrative Precision Agriculture (IPA) cluster hiring initiative, which brought together strengths in agricultural science, data science, computer science, engineering, and public service to position UGA as a global leader in smart, resilient agricultural systems. By extending this momentum, the proposed degree will further strengthen UGA's leadership in this space. Additionally, the program will enhance and align with existing agricultural and engineering programs, particularly Biological and Agricultural Engineering (BAE). These complementary areas will work synergistically to address complex challenges through integrated agronomic and engineering solutions, amplifying both research impact and workforce development.

16. How does the program fit with the current strengths and overcome existing gaps of the department(s)/unit(s) that will coordinate this program? What was the impetus for this program? Consider current program offerings, course offerings, faculty expertise, and available resources.

The proposed program aligns well with all three strategic directions of the UGA 2025 Strategic Plan as well as the College of Agricultural and Environmental Sciences strategic plan, both of which call for: promoting excellence in teaching and learning; growing research, innovation, and entrepreneurship; and strengthening partnerships with communities across Georgia and around the world. The primary strength of the proposed Ph.D. in Integrative Agricultural Sciences is its multidisciplinary nature which leverages the research expertise of four highly successful UGA academic departments: Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology.

Promoting excellence in teaching and learning, growing research

The proposed program is foundationally based on the collaborative research and training infrastructure of four academic departments. Faculty in the four implementing departments have developed strong federal and privately funded research programs, which have provided training opportunities for hundreds of graduate and undergraduate scholars who are currently pursuing research and professional careers in various sectors of the agricultural and environmental sciences. Graduate courses taught by the faculty experts in the four departments range from ecotoxicology to remote sensing in agricultural systems. Doctoral students who are directly mentored by faculty are supported by generous stipends from federal agencies, private foundations, and institutional resources, which provides students dedicated time and resources for learning and to perform cutting-edge research in these disciplines. Unlike the existing discipline-focused Ph.D. programs offered by the participating departments, the proposed Ph.D. will allow students to leap across disciplines and develop unique academic portfolios that will allow them to pursue careers in emerging fields of the agricultural and environmental sciences. In the proposed Ph.D., multidisciplinary is required in both coursework and research.

The departments participating in this new Ph.D. program are developing a course which will emphasize interdisciplinary research among the four departments and with other UGA units. Other courses to be included in the program are already being taught by the participating departments or other UGA units. The proposed Ph.D. will add new students to the existing courses.

Growing research, innovation, and entrepreneurship

Research in the four participating departments is focused on bridging research, innovation, and entrepreneurship gaps for sustainably growing and protecting food and fiber crops. The faculty in these departments are leaders in these fields, having published high-impact research that has gained national and international attention. Research innovations have also led to the release of dozens of successful crop and ornamental plant cultivars ranging from peanuts to turfgrass and have also led to the formation of startup companies that are working with the UGA Innovation Gateway (<https://research.uga.edu/gateway/>) to facilitate the licensing and commercialization of these technologies. Graduate students are integral to the success of these efforts and new programs to engage the next generation of researchers are required to continue and enhance these efforts.

Strengthening partnerships with communities across Georgia and around the world

One of the goals of UGA's 2025 Strategic Plan is to "promote collaboration among academic units and between these units and external organizations to drive interdisciplinary research." The proposed Ph.D. program will increase collaboration among four departments in the College of Agricultural and Environmental Sciences (Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology) in an official capacity, as well as expand on existing partnerships between these departments and the Department of Agronomy, Food, Natural Resources, Animals and Environment at the University of Padova in Italy (UNIPD-DAFNAE).

C. NEED

17. The program service area is used as the basis for labor market supply and demand analysis. What is the program's service area (local, regional, state, national)? This should be based on enrollment patterns, local needs, and the labor market. If outside of the institution's traditional service area, provide a compelling rationale for the institution to offer the program.
 - *If the program is proposed to be online, the service area should be the entire state of Georgia.*
 - *Click [here to access the MEDLI tool](#) for identifying workforce demand within a 50-mile radius of the institution's main campus.*

Agricultural science focuses on discovering and applying the fundamental knowledge to grow the world's food and fiber. Agricultural scientists are essential to providing these necessities of human life. The

United Nations estimates that the world population will approach 9.8 billion by 2050, a 30% increase in less than 30 years⁴. We must feed and clothe this burgeoning population using the same land base in a sustainable and resilient manner in the face of unknown challenges as the planet's climate changes and extreme weather events become more common.

The University of Georgia is currently the only institution in the University System of Georgia to offer doctoral degrees in the agricultural sciences. Those currently offered are specific to agricultural disciplines such as crop and soil sciences, entomology, horticulture, and plant pathology. Although graduates of these doctoral programs are in high demand, they do not have the interdisciplinary background that will be needed to solve the emerging problems facing food and fiber production in the coming decades. These global grand challenges call for a more holistic systems approach to assure the resilience and sustainability of food and fiber production. Although the U.S. Bureau of Labor Statistics projects a 4.6% reduction in the number of farmers and ranchers in the U.S. by 2032, it projects a 4.9% increase in the growth of agricultural scientists⁵. This projection further emphasizes the importance of agricultural scientists as more food and fiber are expected to be grown by fewer people on the same or perhaps a smaller land base as productive agricultural lands are lost to urbanization, desertification, and rising sea levels.

The proposed Integrative Agricultural Sciences Ph.D. program is committed to addressing these grand challenges as well as addressing the strategic goals and critical needs of UGA, the State of Georgia, and the United States in integrative agricultural science research and education for workforce development. The program's service area is local (resolving specific agricultural problems), state (improving the resiliency and sustainability of Georgia's agricultural industry), and national (sharing solutions developed for Georgia with the nation).

Agriculture is the state's largest industry. In 2023, food and fiber production and related industries represented \$91.4 billion in output to Georgia's \$1.4 trillion economy and more than 381,200 jobs statewide and had more than a \$70 billion economic impact on Georgia⁶. While farming is the backbone of industry and contributes \$17.6 billion to the state's economy, the bulk of the income is from agribusiness and increasingly from agricultural technology companies. Because of this, the Georgia Center of Innovation (COI) has added Agricultural Technology (AgTech) to its specific areas of expertise to connect Georgia businesses working in this arena to insightful research, valuable partners in academia and business, and other helpful tools available like funding opportunities¹⁷. AgTech, ranging from controlled environment agriculture and data science to farm drones, is one of the hottest new areas in technology. The latest advancements in technology can be thought of as bringing agriculture from the Industrial Age into the Digital Age. One of the inhibiting factors in the development of the AgTech industry in Georgia is the lack of trained individuals who can translate university research in the agricultural sciences into viable products and services. The proposed Integrative Agricultural Sciences Ph.D. program will drive the growth of the AgTech sector in Georgia by providing graduates that can bridge the knowledge gap that currently exists between the technologists and engineers and their understanding of the agricultural sciences. The proposed Ph.D. program will work closely with the Georgia Center of Innovation to identify the needs of the sector and will partner with associated

⁴ United Nations, Department of Economic and Social Affairs. <https://www.un.org/en/desa/world-population-projected-reach-98-billion-2050-and-112-billion-2100>. Accessed July 2025.

⁵ U.S. Bureau of Labor Statistics, Employment Projections, <https://www.bls.gov/emp/tables/emp-by-detailed-occupation.htm>, Accessed December 2023.

⁶ The 2025 Georgia Ag Impact Report, The University of Georgia Center for Agribusiness and Economic Development, <https://discover.caes.uga.edu/georgiaagimpact/index.html>, accessed 18 July 2025.

⁷ Georgia Center of Innovation, Georgia Agriculture Technology, <https://www.georgia.org/center-of-innovation/coi-agtech-lp>, Accessed December 2023.

businesses and industries on Ph.D. research projects.

C1. WORKFORCE DEMAND

18. Based on the program's service area, what is the employment outlook for occupations related to the program. An Excel version of the CIP to SOC crosswalk is also available from NCES, but additional SOC codes can be selected with rationale. For each SOC Code/Occupation listed below, please specify if this degree will allow students to go directly into the occupation or if additional education is required before entering the occupation. If data for the service area is not available, then use state- or national-level data. **Only list the jobs for which the program actively prepares students for that career.**

Possible resources:

- Click [here](#) for US and Georgia occupation projections
- Click [here](#) for 2026 Georgia Department of Labor data projections for the State or Georgia Workforce Board Regions in Qlik (link to GDOL Projections); data is also available through the [GDOL Labor Market Explore Website](#)
- For a custom Georgia geography – request a Jobs EQ report from USG Academic Affairs office.
- Using [data from O*-Net](#), identify the median salary for the related occupations identified in question.

Labor Market/Career Placement Outlook/Salary:

SOC Code & Occupation	Additional education required for entry level?	Current Employment	Annual Openings	% Growth over Five Years	Median Salary (O-Net data)
19-1013 Soil and plant scientists	None	17,200	1,400	2.6	\$60,890 (GA) \$68,240 (US)
25-1041 Agricultural sciences teachers, postsecondary	None	10,100	800	2.0	\$101,450 (GA) \$85,260 (US)

Rationale for selected SOC Codes: SOC Codes should only be included if the proposed program will explicitly prepare students for such a career. Please address how the selected SOC Codes/Occupations will align with employment demand in the service area.

Based on U.S. Bureau of Labor Statistics Employment Projections, there are likely to be 2,200 national annual job openings for graduates of this program⁸. For openings that require a terminal degree (Soil and Plant Scientists and Postsecondary Agricultural Science Teachers), the projected annual demand is 3,800⁹. The Economic Development and Employer Planning System (EDEPS) estimate for openings that require a terminal degree is 3,400. The EDEPS projected employment growth for Postsecondary Agricultural Science Teachers between 2018 and 2028 is 4.5%. The corresponding rate for Soil and Plant Scientists is 7.8%¹⁰.

⁸ O*Net OnLine, Occupation Keyword Search, <https://www.onetonline.org/find/result?s=Agricultur>, Accessed May 2024.

⁹ O*Net OnLine, Occupation Keyword Search, <https://www.onetonline.org/find/result?s=Agricultur>, Accessed May 2024.

¹⁰ The Economic Development and Employer Planning System (EDEPS), Occupational Supply Demand, <https://www.edeps.org/SelectOccUA.aspx?st=ZZ>, Accessed December 2023.

The faculty believe that the mean salary data from O*-Net listed under question 25 underrepresents the current demand for graduates with M.S. or Ph.D. degrees in the agricultural sciences, especially in academia where faculty positions in related disciplines are increasingly difficult to fill. Over the past year, graduates with M.S. degrees from the implementing departments have been receiving job offers with starting salaries in the \$70,000+ range, while those with Ph.Ds. have been receiving job offers with starting salaries in the \$95,000+ range. The proposed Ph.D. program is different from existing Ph.D. programs in the College of Agricultural and Environmental Sciences and the College of Engineering as it is explicitly interdisciplinary and trains students in at least two of the disciplines of the agricultural sciences represented by the participating departments. The program was developed to meet both academic and industry needs for the future. Industry partners identified their hiring needs and the type of training future employees would require to be successful, as indicated in the attached letters of support. Because of this multifaceted expertise, for the medium term, the job outlook for occupations filled by students with this degree is excellent.

C2. SUPPLY

19. Target Market.

- a. Who is the target market/audience for recruitment into this program? Include any special populations this program may target, including alumni, non-traditional (e.g., working adults, veterans), and underrepresented populations of students.

The target markets and audiences for recruitment are students pursuing M.S. degrees in the agricultural, environmental, and related fields, as well as professionals working in these fields who wish to pursue a terminal degree which will allow them to leap across disciplines and develop unique academic portfolios that will enable them to pursue careers in emerging fields of the agricultural and environmental sciences. The recruitment scope is global.

- b. Who are the specific partners you are working with to reach your target market and create a career pipeline with this program. Describe the partnerships. (For example, internal pipelines, high schools, career academies, institutions of higher education, employers, community partnerships, professional associations).

Faculty from the participating departments are deeply involved with the research and education activities of institutes and centers at UGA, such as the Institute of Plant Breeding, Genetics, and Genomics and the Institute of Integrative Precision Agriculture, all of which have longstanding partnerships with industry, other universities, and various high school programs. For example, the college has established the Young Scholars Program (YSP), a paid five-week summer internship program for high school students interested in agricultural, food, and environmental sciences. Selected students work 30 hours per week actively engaged in research under the guidance of a faculty mentor on UGA's Athens, Griffin, or Tifton campuses. Upon completion of the program, students present their research during the poster session at the Young Scholars Pre-Collegiate Research Conference held the final three days of the program on the Athens campus. Frequently, graduates of the YSP pursue undergraduate degrees within the College of Agricultural and Environmental Sciences (CAES) and continue to graduate programs.

The Rising Scholars Internship is an opportunity for students from Fort Valley State University to conduct research with CAES scientists and reside on the UGA campus in Athens. This seven-week program is intended for students who have an interest in research and are planning to attend graduate school in agriculture and related sciences. Interns will receive a monthly stipend and housing and meal allowance. This is an excellent opportunity for students to receive hands-on research experience to better prepare themselves for graduate studies.

The Office of Industry Partnerships and Project-Based Learning within the college will facilitate participation in UGA's Innovation District Initiative. The Innovation District is envisioned as "a dynamic ecosystem of places, programs and people working together to foster innovation, entrepreneurship and experiential learning" at UGA.

The Department of Crop and Soil Sciences and the University of Padova currently offer a dual degree in Sustainable Agriculture (M.S.). Thirty-six students have graduated from the program since it began in 2017, and eight students are currently enrolled. Seventy percent of the graduates have gone on to pursue Ph.Ds. at U.S. and international institutions including UGA, U.C. Davis, Michigan State, Virginia Tech, ETH Zurich (Switzerland), University of Copenhagen (Denmark), University of Padova (Italy), etc. The partnership between UGA and the University of Padova has also attracted other students from Italy to pursue Ph.D. degrees at UGA, creating a steady pipeline of highly qualified international students. Most of these students have expressed a strong interest in pursuing an interdisciplinary Ph.D. program like the one proposed.

20. Are there any similar programs at your own institution? This includes programs with similar/same course content (beyond general education).

☒ No

☐ Yes *(Provide additional information below about the program(s) including the percentage of similar/same coursework and any opportunities there may be for synergy/collaboration between programs.)*

There are no competing programs at UGA. UGA offers single discipline programs in four areas, but not an interdisciplinary program which incorporates aspects of each degree. There are two additional programs that could be misunderstood to be competing. UGA recruits graduate students through the Integrated Plant Sciences program which is solely aimed at recruiting students to the multiple plant sciences graduate degree programs at UGA. It is not a degree-granting program (<https://ips.uga.edu/>). The faculty associated with the proposed Ph.D. in Integrative Agricultural Sciences will explore participating in the Integrated Plant Sciences program.

The Institute of Plant Breeding, Genetics, and Genomics (IPBGG) offers a Ph.D. in Plant Breeding, Genetics, and Genomics that focuses on developing improved plant cultivars and training the next generation of students in the latest plant breeding and genetics methods (<https://plantbreeding.caes.uga.edu/>). Because of its narrow focus, this program is not expected to compete with the proposed Ph.D. in Integrative Agricultural Sciences. The majority of the IPBGG faculty are from the implementing departments and thus are expected to actively participate in the proposed Ph.D. program.

21. Do any other USG higher education institutions in close proximity or sector service area offer a similar program? Look at 4-digit CIP Codes in the DMA to identify similar programs.

☒ No

☐ Yes *(Provide a rationale below for the institution to offer the program.)*

22. Using IPEDS data, list the supply of graduates in similar programs in the service area. Use the 4-digit CIP Code to identify similar programs, and include programs at your institutions, at USG institutions, and at non-USG institutions within the service area.

Consider also programs/institutions that recruit within your service area. If your institution is near a border, this may include programs/institutions in border states.

Similar Programs	CIP Code	Supply ¹¹ (Graduates/Completers)	Institutions
N/A (No similar or related programs)			

C3. ANALYSIS OF DATA

23. Based on the data provided above, discuss how this program will help address a need or gap in the labor market? To what extent does the program align with talent demand or workforce strategies for the service area?

If any workforce letters of support, surveys or other qualitative indicators are being supplied to support the need, this should also be addressed here.

As stated previously, the U.S. Bureau of Labor Statistics projects a 4.6% reduction in the number of farmers and ranchers in the U.S. by 2032 and a 4.9% increase in the growth of agricultural scientists. This projection emphasizes the importance of agricultural scientists as more food and fiber are expected to be grown by fewer people on the same or perhaps a smaller land base as productive agricultural lands are lost to urbanization, desertification, and rising sea levels. The proposed Ph.D. program will address acute shortages of advanced-level workforce that can enhance industry and academia partnerships in agriculture in the state of Georgia, the U.S., and beyond, with the required academic training in four agricultural science disciplines as well as high-level expertise in one of the disciplines.

Survey of Potential Students

To gauge student interest in the IAS Ph.D., a survey was conducted of all graduate students currently enrolled in M.S. or Ph.D. programs of the four participating departments. The primary question of the survey was, “If you were considering a Ph.D. program, would you be interested in the IAS Ph.D. program described above?” A total of 62 enrolled students completed the survey, of which 82% responded “Yes” to this question. Participants were also asked to explain the reason they would be attracted to the program or why they would not be interested in the program. The survey instrument and all participant responses are included as an attachment to the proposal in Appendix I. Below are representative comments from students who replied to the questions.

Selected comments from respondents interested in the program.

- The real world is extremely complex, and we need interdisciplinary approach to address many problem effectively so that they actually work in the field.
- Considering the requirement of working with a professor in 2 of the 4 CAES disciplines is what appeals to me the most. The collaboration opportunities and doors it would open could be extremely valuable.
- I think it's because these fields complement one another. When you visit a farm field, you don't only see plant diseases but also problems with insect pests and abiotic stresses. With the integration of these programs, it will train future PhD students to become more diverse scientists and are able to train them with more holistic approaches in solving agricultural problems.
- Acquiring cross-disciplinary skills and knowledge through coursework, research, and the interaction with faculty and students across departments. I would consider my current project to be interdisciplinary though I have felt limited as my department focuses on only one aspect of my research, so I am lacking in the other.

¹¹ Supply = Number of program graduates last year within the service area

- In today's world, interdisciplinary science provides a more comprehensive perspective for addressing complex problems and facilitates collaboration among experts from diverse fields to develop innovative solutions.
- Opportunity to have a bigger network and expand skills allowing students to be more eligible for jobs.
- Instead of focusing on a single aspect, we can develop integrated approaches to solve big problems.
- I can get diverse skills and perspective in agriculture. I have committee members from different departments but that is not helping me develop interdisciplinary research. This degree would actively help me to conduct research that involves diverse areas of research.
- The Integrative Agricultural Sciences Ph.D. program offers several advantages, including broader expertise across disciplines, increased competitiveness for interdisciplinary funding and industry roles, and the ability to address complex agricultural problems using a more holistic approach. However, it may also present challenges such as managing expectations from two advisors, balancing depth and breadth of knowledge without becoming too scattered, and clearly defining a focused research identity within an interdisciplinary framework.

Industry and Academic Support

This proposal and design of the curriculum were developed in consultation with alumni, employers, and community representatives. Industry partners identified their hiring needs and the type of training future employees would require to be successful. The flexible curriculum allows students to tailor their coursework to the evolving needs of industry. The faculty have shared the new program proposal with key stakeholders including industry representatives and colleagues at peer institutions for their review. Letters of support from the following industry and peer institution representatives are in Appendix II.

Industry

- Dr. Edward Barnes, Senior Director of Agricultural and Environmental Research, Cotton Incorporated
- Dr. Steve Brown, Executive Director, The Peanut Research Foundation
- Dr. Boris Castro, Enabling Science Leader, Corteva Agriscience
- Mr. Mike Marino, General Manager, Priva North America

Peer Institutions

- Dr. Richard Ferguson, Professor of Soil Science, University of Nebraska
- Dr. Chris Gunter, Professor and Chair, Department of Horticultural Sciences, University of Florida
- Dr. Hanu Pappu, Samuel H. Smith Distinguished Professor & Carl F. & James J. Chuey Endowed Chair, Department of Plant Pathology & Graduate Program in Molecular Plant Sciences, Washington State University

Departmental Support

The proposed Ph.D. program has been critically reviewed and approved by the faculty and department heads of the participating departments. Appendix II contains letters reaffirming strong support from the heads of the four departments listed below.

- Dr. Sonia Altizer, Department Head of Entomology
- Dr. Marin Brewer, Department Head of Plant Pathology
- Dr. Leonardo Lombardini, Department Head of Horticulture
- Dr. Jodi Johnson Maynard, Department Head of Crop and Soil Sciences

Comparable Degree Programs at Peer/Aspirant Institutions

Many peer and aspirational institutions offer interdisciplinary Ph.D. programs. Three are comparable to the proposed IAS Ph.D. Delaware State University offers a Ph.D. in Integrative Agricultural, Food, and Environmental Sciences. The program offers an interdisciplinary curriculum covering natural sciences, food technology, and environmental quality. Tufts University offers a Ph.D. in Agriculture, Food and the Environment, which focuses on the intersection of nutrition, policy, and environmental sustainability. The program most comparable to the one proposed is the Ph.D. in Integrated Plant and Soil Sciences (IPSS) which has been offered by the University of Kentucky since 2011. Four academic units participate in the program: Forestry and Natural Resources, Horticulture, Plant and Soil Sciences, and Plant Pathology. The Department of Plant and Soil Sciences manages the program. The mean enrollment in the IPSS program over the past five years has been 26.7 students. Expected enrollment for Fall 2026 is approximately 30 students. Over the past five years, the program averaged 6.6 graduates per year.

D. CURRICULUM

24. List program-specific goals (objectives) and specific student learning outcomes for the program.

This new major will be housed under the College of Agricultural and Environmental Sciences (CAES), which has the infrastructure, research, and education resources and experience to implement this new Ph.D. program. The college has recently added a new Associate Dean position in Graduate Affairs, Faculty Affairs, and Strategic Initiatives, which also has the staff support to manage the proposed IAS program.

The goal of the program is to address the grand challenges facing food and fiber production in the coming decades. Specific objectives are to 1) provide students in this program with the opportunity to discover and apply the fundamental knowledge to solve these grand challenges; and 2) provide them with the knowledge and skills for pursuing careers that address these grand challenges.

Student learning outcomes for the program are that graduates will demonstrate strong verbal and written skills, strong analytical skills, will demonstrate a comprehensive understanding of their specialty area, and will be able to design, conduct and analyze collaborative experiments using appropriate methods to achieve specific research objectives.

Specific learning outcomes (LO) are:

LO1: Graduates will demonstrate strong verbal and written skills.

LO2: Graduates will demonstrate strong analytical skills.

LO3: Graduates will demonstrate a comprehensive understanding of their specialty area.

LO4: Graduates will be able to design, conduct and analyze collaborative experiments using appropriate methods to achieve specific research objectives.

25. List the entire course of study required to complete the academic program.

At submission of their academic program of study, students must declare two of the four following areas of emphasis. One will be their primary area of emphasis and the other will be their secondary area of emphasis.

- Areas of emphasis: Crop and Soil Sciences; Entomology; Horticulture; Plant Pathology
- Each area of emphasis requires 9 hours of graduate-level courses in the declared area.

Integrative Agricultural Sciences (Ph.D.) – minimum of 30 hours, including courses described below.

- AESC 8100, Integrative Agricultural Sciences (3 hours) – **NEW**
- Graduate statistics course (minimum of 3 hours; can count as an area of emphasis course)
- Area of Emphasis 1 courses (minimum of 9 hours; some courses may be cross listed in both areas of emphasis)
- Area of Emphasis 2 courses (minimum of 9 hours; some courses may be cross listed in both areas of emphasis)
- Teaching practicum or pedagogy course (3 hours)
- AESC 9000, Doctoral Research (6 hours)
- AESC 9300, Doctoral Dissertation (3 hours) – **NEW**

The coursework must include 16 or more hours of 8000- or 9000-level courses in addition to AESC 9000, Doctoral Research (6 hours) and AESC 9300, Doctoral Dissertation (3 hours).

To ensure that students benefit from the interdisciplinary mentoring required to excel in the proposed program, they will be advised by two faculty members, one from each of the two departments that the student selects as areas of emphasis. The home departments of these two individuals will represent the disciplines included in the student's research program. Coursework will be selected jointly by the student's co-major professors and the student and approved by the student's advisory committee. The student's declared areas of emphasis must match the academic departments of their co-major professors.

To ensure the interdisciplinary nature of the program of study, no more than 9 hours of coursework may be taken in a single department, excluding doctoral research and dissertation courses and teaching practicum courses. Students are required to maintain a GPA of 3.5 and earn a grade of "C" (2.0) or better in each course. Coursework is required to be multidisciplinary.

26. Provide a curriculum map that aligns the program learning outcomes to the courses within the major (excluding Core IMPACTS and general electives). Specify if courses are required or elective.

Please see attached spreadsheet in Appendix IV which contains a curriculum map for the first sample plan shown under Question 31. A simplified version appears below.

Course	SLO 1	SLO 2	SLO 3	SLO 4
AESC 8100	X		X	
AESC 9000		X	X	X
AESC 9300	X	X	X	X
Statistics course		X	X	X
Teaching practicum course	X		X	
Area of emphasis courses	Varies	Varies	Varies	Varies

27. Describe the assessment plan for program learning outcomes. You may also describe other aspects of the overall assessment plan that will be used for ongoing program reviews.

Each degree program is required to evaluate as part of a [comprehensive program review process](#) the effectiveness of its academic programs to address the quality, viability, and productivity of efforts in teaching and learning, scholarship, and service as appropriate to the institution's mission. The review should occur at least every 7 years

for undergraduate programs and at least every 10 years for graduate programs. It should include both quantitative and qualitative data, including assessments of students in the program as well as after they graduate, such as employment and placement rates, student or employer surveys, or other assessments of graduate outcomes. The plan must also describe how this data will be used.

Each student's progress within the program will be assessed annually by their co-major professors and the program's Graduate Coordinator. A student evaluation form will be used to assess progress and will evaluate the student on achievements in coursework, progress toward the comprehensive exam, progress toward their dissertation proposal and research, achievements in teaching (e.g., course evaluations), achievements in scholarship (e.g., conference submissions/articles in review for publication), and attainment of the learning outcomes noted above. In addition, long-term learning outcomes and skills will be assessed via exit interviews with doctoral students. The IAS Program Coordinator will maintain all evaluation records.

Learning outcomes will be assessed as follows:

LO1: Graduates will demonstrate strong verbal and written skills.

Measurement 1: partial score related to oral presentation received in required Integrative Agricultural Sciences Survey course (80% of students will receive >80 points out of 100 points).

Measurement 2: at comprehensive exam, each committee member evaluates the student's verbal skills and written skills on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

Measurement 3: at dissertation defense, each committee member evaluates the student's verbal and written skills on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

LO2: Graduates will demonstrate strong analytical skills.

Measurement 1: at comprehensive exam, each committee member evaluates the student's analytical skills on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

Measurement 2: at dissertation defense, each committee member evaluates the student's analytical skills on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

LO3: Graduates will demonstrate a comprehensive understanding of their specialty area.

Measurement 1: at research proposal, each committee member evaluates the student's knowledge in his/her specialty area on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

Measurement 2: at comprehensive exam, each committee member evaluates the student's knowledge in his/her specialty area on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

Measurement 3: at dissertation defense, each committee member evaluates the student's knowledge in his/her specialty area on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

LO4: Graduates will be able to design, conduct and analyze collaborative experiments using appropriate methods to achieve specific research objectives.

Measurement 1: at comprehensive exam, each committee member evaluates the student's ability to design, conduct, and analyze collaborative experiments on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

Measurement 2: at dissertation defense, each committee member evaluates the student's ability to design, conduct, and analyze collaborative experiments on a scale of 1 (poor) to 10 (outstanding) (80% of students will have average scores > 8).

28. Using data from O*-Net, identify at least three technical skills and three Knowledge, Skills and Abilities (KSAs) associated with the primary SOC Code/Occupation. Choose ones that are more specific, appropriate, and important to the occupation (e.g., quality control analysis) and not general skills (e.g., reading comprehension). How will this program address those career skills? Specify courses and activities that will help students develop these career skills.

Primary SOC Code: 19-1013.00 (Soil and plant scientists)

Technology Skills and KSAs	Courses and Activities (Examples of Course Offering Technology and KSAs)
T1. Analytical or scientific software	FANR 6750-6750D, Experimental Methods in Forestry and Natural Resources Research (4 hours) – example graduate statistics course HORT 8111, Design, Analysis, and Interpretation of Horticultural Data (2 hours) – example analytics course PBIO(PATH) 8250, Experimental Design and Analysis in Field Plant Biology (3 hours) – an example experimental design course
T2. Database user interface and query software	CRSS 8030-8030L, Data Science and Statistical Programming Applied to Agriculture (3 hours) – example data science course
T3. Presentation software	AESC 8100, Integrative Agricultural Sciences (3 hours) – example course in which students are engaged in developing and presenting seminars
K1. Biology	HORT(CRSS) 6430, Plant Physiology (3 hours) – example course focusing on plant physiology CRSS 8050, Advanced Crop Production (3 hours) – example course focusing on plant biology PATH 8400, Host-Pathogen Interactions (3 hours) – example course focusing on pathogen biology
K2. Computers and Electronics	HORT 8160, Measurement and Control in Plant and Soil Science (3 hours) – example course focusing on using IT to collect data
K3. Mathematics	CRSS 8030-8030L, Data Science and Statistical Programming Applied to Agriculture (3 hours) – example course on using advanced mathematics for statistical analyses
S1. Active Learning	Examples include FANR 6750-6750D, HORT 8111, PBIO(PATH) 8250, CRSS 8030-8030L, AESC 8100, HORT(CRSS) 6430, CRSS 8050, PATH 8400, HORT 8160, and CRSS 8030-8030L which are described earlier in this table.
S2. Critical Thinking	AESC 9000, Doctoral Research – example course which involves conducting dissertation research and requires critical thinking
S3. Speaking	CRSS 9990, Supervised Teaching Practicum in Crop and Soil Sciences – example course in which students are engaged in developing and presenting seminars; Presentations at professional conferences, committee meetings, oral qualifying exams, and dissertation defense
A1. Deductive Reasoning	AESC 9000, Doctoral Research – example course which involves conducting dissertation research and requires deductive reasoning
A2. Inductive Reasoning	AESC 9000, Doctoral Research – example course which involves conducting dissertation research and requires inductive reasoning

A3. Information Ordering	Examples include FANR 6750-6750D, HORT 8111, PBIO(PATH) 8250, CRSS 8030-8030L, AESC 8100, HORT(CRSS) 6430, CRSS 8050, PATH 8400, HORT 8160, CRSS 8030-8030L, CRSS 9990, and AESC 9000 which are described earlier in this table.
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29. Which [High Impact Practices](#)¹² (HIPs) will faculty embed into the program? Mark all that apply.

High Impact Practice	Program Requirement	Program Elective
Capstone Courses and Projects		
Collaborative Assignments and Projects		
Common Intellectual Experiences		
Study Abroad/Study Away/Global Learning		
ePortfolios		
First-Year Seminars and Experiences		
Internships, Work Based Learning		
Learning Communities		
Service Learning, Community Based Learning		
Undergraduate Research		
Writing-Intensive Courses		

For each of the HIPs selected above, give specific examples of activities and/or assignments and when students will be expected to engage in them.

(i.e. “Students will be required to participate in an externship during their third year of enrollment, in order to develop skills in... etc.”).

N/A

30. Will other innovative pedagogies in the curriculum be used to make this program attract students and help them succeed (e.g., problem-based learning)? Provide specific examples of activities associated to these pedagogies.

The proposed Integrative Agricultural Sciences Ph.D. program is an advanced degree in a STEM field. Innovation will be at the core of the program. Students will be involved with using and developing cutting edge techniques and technologies as well as conducting novel discovery-driven research. An example would be applying computer vision and machine learning to determine plant health indicators in controlled environment aquaponics. Aquaponics is a sustainable food production system that combines aquaculture (raising aquatic animals) and hydroponics (growing plants without soil) and is one approach for building sustainable and resilient food production systems.

31. Provide a sample program map demonstrating how students will progress through the curriculum (e.g., first semester courses).

Four example programs of study corresponding to each of the Areas of Emphasis for the IAS Ph.D. program are provided below. Area of Emphasis courses are identified with an asterisk. Multidisciplinarity is clear in each program of study from the course selection. The makeup of the Ph.D. advisory committee is also expected to be interdisciplinary and as described earlier, will include co-major professors from two of the

¹² See Kuh (2008). High-Impact Practices: What They Are, Who Has Access to Them, and Why They Matter. *Association of American Colleges and Universities*, 14(3), 28-29).

four participating departments. The advisory committees are expected to include faculty members from at least two of the participating departments.

Example 1 – Areas of Emphasis in Crop and Soil Sciences and Plant Pathology

Course	Course Title	Credit Hours	Comments
AESC 8100	Integrative Agricultural Sciences	3	
CRSS 8010*	Research Methods and Design for Crop Science	3	Serves as advanced statistics course
CRSS 8050*	Advanced Crop Production	3	
CRSS 8220*	Advanced Topics in Crop and Soil Sciences	3	Crop modeling course
PATH 8240-8240L [#]	Plant Nematology	4	
PATH 8250 [#]	Experimental Design and Analysis in Field Plant Biology	3	
PATH 8400 [#]	Host-Pathogen Interactions	3	
ALDR 8210	Professional Writing Skills for Agricultural Scientists	3	
CRSS 9990	Supervised Teaching Practicum in Crop and Soil Sciences	3	
AESC 9000	Doctoral Research	6	
AESC 9300	Doctoral Dissertation	3	
Total		37	

*Crop and Soil Sciences Area of Emphasis courses; [#]Plant Pathology Area of Emphasis courses.

Example 2 – Areas of Emphasis in Horticulture and Crop and Soil Sciences

Course	Course Title	Credit Hours	Comments
AESC 8100	Integrative Agricultural Sciences	3	
HORT 6710*	Plant Phenotyping Technologies	3	
HORT 8150* [#]	Plant Growth and Development	3	Contributes to both Areas of Emphasis
HORT 8160*	Measurement and Control in Plant and Soil Science	3	
CRSS 8030 [#]	Data Science and Statistical Programming Applied to Agriculture	3	Serves as advanced statistics course
CRSS 8150 [#]	Case Histories in Crop Physiology	3	
CRSS 9990	Supervised Teaching Practicum in Crop and Soil Sciences	3	
AESC 9000	Doctoral Research	6	
AESC 9300	Doctoral Dissertation	3	
Total		30	

*Horticulture Area of Emphasis courses; [#]Crop and Soil Sciences Area of Emphasis courses.

Example 3 – Areas of Emphasis in Entomology and Crop and Soil Sciences

Course	Course Title	Credit Hours	Comments
AESC 8100	Integrative Agricultural Sciences	3	
ENTO 8010-8010L*	Insect Taxonomy	5	
ENTO 8250*	Insect Physiology	3	
ENTO 8900*	Problems in Entomology	1	
CRSS 6450 [#]	Crop Physiology	3	
CRSS 8050 [#]	Advanced Crop Production	3	
CRSS 8410 [#]	Advanced Topics in Sustainable Agriculture Management	3	
FANR 6750-6750D	Experimental Methods in Forestry and Natural Resources Research	4	Serves as advanced statistics course
CRSS 9990	Supervised Teaching Practicum in Crop and Soil Sciences	3	
AESC 9000	Doctoral Research	6	
AESC 9300	Doctoral Dissertation	3	
Total		37	

*Entomology Area of Emphasis courses; [#]Crop and Soil Sciences Area of Emphasis courses.

Example 4 – Areas of Emphasis Plant Pathology and Entomology

Course	Course Title	Credit Hours	Comments
AESC 8100	Integrative Agricultural Sciences	3	
PATH 8350*	Plant Virology	3	
PATH 8400*	Host-Pathogen Interactions	3	
PATH 8910*	Genetics of Host Plant Resistance to Disease	3	
ENTO 6350-6350L [#]	Crop-Specific Insect Management	4	
ENTO 8250 [#]	Insect Physiology	3	
ENTO 8050 [#]	Phylogenetics, Systematics, and Evolution	2	
PBIO 8250	Experimental Design and Analysis in Field Plant Biology	3	Serves as advanced statistics course
CRSS 9990	Supervised Teaching Practicum in Crop and Soil Sciences	3	
AESC 9000	Doctoral Research	6	
AESC 9300	Doctoral Dissertation	3	
Total		37	

*Plant Pathology Area of Emphasis courses; [#]Entomology Area of Emphasis courses.

32. What monitoring strategies and resources will you employ to ensure students, both traditional and non-traditional, will progress? (e.g., strategies for bottleneck courses, intrusive advising, supplemental instruction, tutoring, etc.)

Student progress within the program will be assessed annually by their co-major professors and the program's Graduate Coordinator. A student evaluation form will be used to assess progress and will evaluate the student on achievements in coursework, progress toward the comprehensive exam, progress toward their dissertation proposal and research, achievements in teaching (e.g., course evaluations), achievements in scholarship (e.g., conference submissions/articles in review for publication), and attainment of the learning outcomes noted above. In addition, long-term learning outcomes and skills will be assessed via exit interviews with doctoral students. The IAS Program Coordinator will maintain all evaluation records.

33. Prior Experiences.

- a. How many credits can students transfer in from other institutions, beyond general education?
9 hours

- b. Will there be opportunities for credit for prior learning, beyond general education? If yes, please explain.

Prior Learning is an umbrella term that includes things like [credit by examination](#) (e.g., AP, CLEP, DANTES) and credit earned through portfolio assessment for non-academic work such as work experience or microcredentials. [eCampus](#) and [Georgia Southern](#) have great webpages that describe these options.

Not applicable

34. Will the program offer courses from any USG collaboratives?

Mark all that apply. Provide a letter of support from applicable initiatives' leadership if your institution is not already part of the selected Collaboratives' MOU.

- | | |
|--|---|
| ☐ eCore | ☐ FinTech |
| ☐ eMajor Programs/Courses | ☐ Georgia Film Academy |
| ☐ USG Goes Global | ☐ Other: Specify Collaborative Here |

35. Explain how the design of the curriculum was informed by talking with employers or community representatives (e.g. meeting a persistent, new, or emerging demand for career-related knowledge, skills, and abilities).

This proposal and design of the curriculum were developed in consultation with alumni, employers, and community representatives. Industry partners identified their hiring needs and the type of training future employees would require to be successful. The flexible curriculum allows students to tailor their coursework to the evolving needs of the industry. Faculty have since shared the new program proposal with key stakeholders, including alumni, community representatives, and colleagues at peer institutions. Letters of support from the following are in Appendix II.

- Dr. Sonia Altizer, Department Head of Entomology
- Dr. Marin Brewer, Department Head of Plant Pathology
- Dr. Leonardo Lombardini, Department Head of Horticulture
- Dr. Jodi Johnson Maynard, Department Head of Crop and Soil Sciences

- Dr. Edward Barnes, Senior Director of Agricultural and Environmental Research, Cotton Incorporated
- Dr. Steve Brown, Executive Director, The Peanut Research Foundation
- Dr. Boris Castro, Enabling Science Leader, Corteva Agriscience
- Dr. Richard Ferguson, Professor of Soil Science, University of Nebraska
- Dr. Chris Gunter, Professor and Chair, Department of Horticultural Sciences, University of Florida
- Mr. Mike Marino, General Manager, Priva North America
- Dr. Hanu Pappu, Samuel H. Smith Distinguished Professor & Carl F. & James J. Chuey Endowed Chair, Department of Plant Pathology & Graduate Program in Molecular Plant Sciences, Washington State University

E. IMPLEMENTATION

36. Admissions requirements.

- Will there be any program-specific admission requirements, beyond the institution's minimum requirements? Please specify. (If none, skip to #37.)
Not applicable
- Are there any required courses a student must complete for program admission?
- Will there be competitive program admissions, where students who meet all requirements may not be admitted into the program? Please explain.
For bachelor's degrees, please also describe what program these students will pursue until they are admitted into this proposed program so that they can receive federal financial aid.

37. Interaction with other program offerings:

- If applicable, what off-ramp programs exist for students who are not successful, either at program admission or during the program?
(e.g., students who are not successful into a Bachelor of Science in Nursing may be advised to go to a Bachelor of Science in Health Science where the prerequisite nursing courses will still count)

Enrolled students who do not make acceptable progress towards completion will be provided with the option to pursue a master's degree in one of the participating departments.

- Is there opportunity to leverage other programs at your institution to bolster enrollment in this program?
(e.g., a program at a lower degree level, a program where this may serve as an off-ramp, or a potential dual degree)

The faculty associated with the Integrative Agricultural Sciences (Ph.D.) program will explore participating in the Integrated Plant Sciences program. The program offers graduate students pursuing doctoral degree opportunities to explore different areas of plant sciences research before selecting a major and research focus. A hallmark of this competitive UGA graduate program is its emphasis on interdisciplinary research by faculty and students.

- Is there opportunity to leverage programs at other institutions to bolster enrollment in this program?

Not applicable

38. Enrollment Projections.

In the budget spreadsheet, you will be required to make enrollment projections in the "Enrollment & Tuition Revenue" tab. In this section, please provide narratives to support those projections.

	Year 1 2027-2028	Year 2 2028-2029	Year 3 2029-2030	Year 4 2030-2031
Base Enrollment*	-----	5	10	15
Lost to Attrition (Should be negative)	-----			
New to Institution	5	5	5	5
Shifted from Other Programs within Institution				
Total Enrollment	5	10	15	20
Graduates				
Carry forward base enrollment for next year	5	10	15	20

*Total enrollment for year 1 becomes the base enrollment for year 2.

- a. Discuss the assumptions informing your enrollment estimates.
(i.e. for example, you may highlight anticipated recruiting targets and markets, if and how program implementation will shift enrollment from other programs at the institution, etc.)

The enrollment estimates for the program are informed by several factors. The faculty anticipate recruiting candidates from diverse academic backgrounds, including recent master's degree graduates in related fields and potential candidates from other institutions who are interested in interdisciplinary agricultural sciences. Additionally, the faculty anticipate attracting students through the existing partnership with the University of Padova in Italy, given their strong global ranking in agricultural sciences.

- b. If projecting a shift from other programs, discuss the potential impact on those programs.
(e.g., course scheduling, faculty/staff resources, etc.)

Not applicable.

- c. If projections are significantly different from enrollment growth for the institution overall, please explain. Include overall institutional enrollment growth at the undergraduate or graduate level (depending on the proposed program) for the past 3 years by comparison.

Not applicable.

- d. If projected program enrollment is not realized in year two, what actions are you prepared to take? This should include measures beyond additional marketing.

If the projected enrollment is not realized in the second year, the faculty will conduct a thorough review of recruitment strategies, admission criteria, and marketing efforts. The faculty will also seek feedback from current and potential students to identify any barriers or challenges they may have faced. Adjustments will be made as necessary to ensure the program's success and appeal to prospective students.

39. Discuss the marketing and recruitment plan for the program. This should go beyond general marketing/recruitment strategies by your institution. What resources have been budgeted for marketing the new program?

The marketing and recruitment plans for the proposed program are comprehensive and aim to reach a wide audience. The faculty will utilize various channels, including online platforms, specific social media created to advertise the program, attendance at relevant conferences, and partnerships with institutions and organizations in the field of agricultural sciences.

To attract adult learners and underrepresented populations, the faculty will implement targeted outreach efforts, such as hosting informational webinars and workshops tailored to their needs.

The faculty will allocate a budget for marketing and recruitment efforts, which includes advertising, promotional materials, and personnel dedicated to recruitment activities. Funding will be provided by the College of Agricultural and Environmental Sciences Associate Dean for Academic and Faculty Affairs.

F. RESOURCES

F1. Finance: Submit the Excel budget forms and the questions below.

(Do not cut and paste in the excel budget template into this document, submit the Excel budget templates separately.)

40. Are you requesting a differential tuition rate for this program? (*masters, doctoral, and professional programs only, or other BOR Approved differential tuition rates such as collaboratives*)

☒ No (*Move to answer question 41*)

☐ Yes (*If yes, answer questions 40a & 40b*)

- a. What is the differential rate being requested? The rate below should reflect the core tuition plus the differential, i.e. the tuition rate being advertised to the student.

In-State per Semester:

Out-of-State per Semester:

- b. Provide tuition and mandatory fee rates assessed by competitive/peer programs per full-time student per semester. Please complete the table below.

(Competitive/Peer programs are determined by the institution and may include institutions within or outside of Georgia.)

Institution name	Link to institution's tuition & fee website	In-state tuition	Out-of-state tuition	In-state fees	Out-of-state fees

41. Are there any additional financial costs, beyond tuition and mandatory institution fees, that students will have to take on as part of this program? If so, please describe these costs, benefits to the students, and what strategies you have considered to decrease the student's financial burden?

There will be no additional financial cost to students.

42. Reallocation of Existing Funds.

- a. If existing funds from programs/services across the institution are being reallocated, describe the impact and mitigation strategies.

Costs for the new course will be allocated by the college's Associate Dean for Academic and Faculty Affairs and the four participating departments. The costs will be offset by credit hour returns.

- b. If enrollment projections included shifts from other majors, the financial impact on those majors and mitigation plan should be addressed here.

Not applicable.

43. How does the institution plan for and fund increased indirect costs associated with the growth in students anticipated in the proposed program over the first four years? Consider costs such as student advisement, student support services, tutoring, career services, additional library materials, technology, or other infrastructure.

All resources needed for the program are pre-existing. The proposed Integrative Agricultural Sciences Ph.D. program will utilize the current resources (personnel, library, equipment, laboratory, and computing) available at the department, college, and university levels. Funding for a part-time program assistant will be provided by the college.

F2. Personnel and Workload

44. Discuss how existing courses may be incorporated into this new program:

- a. Course Development

	Number
Total courses in the curriculum	5
Existing courses to be part of the new program	4
Net new courses to be developed	1

- b. Comment on the costs and workload related to the new course development.

(Consider professional development, course development time buy out, overload pay, and re-training.)

One new team-taught course will be developed, and all incoming cohorts will be required to take the course. The course name is AESC 8100, Integrative Agricultural Sciences. The course outline and syllabus have already been developed. Costs for the new course will be allocated by the college's Associate Dean for Academic and Faculty Affairs and the four participating departments.

- c. Explanation of the costs and workload associated to new sections of existing courses needed as a result of this program's enrollment.
(Consider whether current section offerings have capacity for new students, or if additional sections will be needed to cover student demand.)

It is not expected that additional sections of courses will be needed to accommodate students of the proposed program.

45. Faculty.

In the budget spreadsheet, you will be required to specify new faculty as well as the redirection of existing faculty to this new program. In this section, please provide narratives to support those projections.

- a. Explain how the effort of existing faculty being reassigned to this new program will be replaced in other programs over the first four years.
(e.g., the previous department/program will increase overload pay, hire part-time faculty or a new faculty line in order to cover teaching or other workload).

Except for one new survey course that will be team-taught, no new courses are being developed that are specific to the proposed Ph.D. in Integrative Agricultural Sciences. Since the one new course developed specifically for this major will be team-taught, there will not be a significant additional teaching commitment required of any faculty. The four participating departments will internally redistribute teaching responsibilities to account for the new course. The program's Graduate Coordinator will be appointed by the college's Associate Dean of Academic and Faculty Affairs to a 3-year term. The college's Associate Dean of Academic and Faculty Affairs will select a faculty member from one of the four participating departments. Any related costs will be borne by the college's Associate Dean of Academic and Faculty Affairs.

- b. Explain your plan and rationale for new faculty for the program over the first four years.

No new faculty are needed.

46. Staff.

In the budget spreadsheet, you will be required to specify new staff as well as the redirection of existing staff to this new program. In this section, please provide narratives to support those projections.

- a. Explain how current staff will contribute to the program during the first four years.

Current staff are not expected to contribute significantly to the program except to share information with the program's part-time Program Coordinator, which will be a new position.

- b. Explain your plan and rationale for new staff for this program over the first four years?
(Consider staff needs and support services, such as advisement, faculty support, etc.)

One part-time Program Coordinator will be required to manage student applications, annual student evaluations, ensure students are meeting Graduate School requirements, and provide support to the program's Graduate Coordinator and faculty with students in the program. This part-time Program Coordinator will be provided by the college and will report to the Associate Dean for Academic and Faculty Affairs.

F3. Facilities

47. Can the program be accommodated using existing space based on the enrollment projections provided above?

- ☒ Yes, with no renovation
☐ Yes, with minor renovation
☐ Yes, with major renovation
☐ No, new space is required

48. Complete the table below. Provide the semester and year in which the space will be needed.

No new/additional space will be needed and only one new course will require classroom space each fall semester.

Space	Use Existing Space (as is)	Use Existing Space (Renovated)	New Space
<i>Example Row</i>	<i>4 offices total: 2 faculty offices by fall 2024</i> <i>2 faculty offices by fall 2025</i>	<i>50-seat classroom by fall 2025</i>	
Classrooms	1 classroom on the Athens, Griffin, and Tifton campuses each fall semester		
Wet Labs			
Dry Labs			
Other Specialized Instructional Spaces			
Offices			
Office Service and Support Spaces (incl. conf rooms, copy rooms, breakrooms, storage)			
Student Study Space			
Other (Specify)			

49. What building(s) will be used to accommodate these programs?

a. Please indicate specific building areas or room numbers where possible.

On the Athens campus, most instruction will take place in classrooms (e.g. MPS 3203), computer labs (MPS 1203), and teaching wet labs (e.g. MPS 3406) in Miller Plant Sciences.

On the Griffin campus classrooms (e.g. SLC 215) and computer labs (e.g. SLC 218) located in the Student Learning Center will be used. Teaching wet labs will be in other buildings on campus (e.g. Reading 275).

On the Tifton campus, most instruction will take place in classrooms (e.g. NESPAL South 333), computer labs (NESPAL South 601), and teaching wet labs (e.g. NESPAL North 201) in NESPAL South and NESPAL North.

- b. If new construction, leasing, or land acquisition is required, please describe those plans.

Not applicable.

- c. If the anticipated program includes labs or “other” specialized spaces, please describe specific requirements for these rooms, including equipment.

No additional labs or facilities are needed for this program. Enrolled students will be taking existing courses that are already assigned to teaching spaces on the three campuses.

- d. Are proposed existing spaces currently occupied? Describe what changes need to occur to make this space available for program use.

The existing facilities of the Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology departments on the Athens, Griffin, and Tifton campuses will be used to provide office and lab space for the Ph.D. students associated with this program. This includes existing graduate student office spaces, faculty research labs and field trials, and teaching spaces assigned to the departments on the three campuses.

50. What is the anticipated cost of facilities investments necessary during the first 4 years of the program?
What is the planned funding source for initial facilities needs?

No new facilities are needed.

F4. Technology

51. Identify any major equipment or technology integral to program start-up and operations. List any equipment or assets over \$5,000 (cumulative per asset) needed to start-up and run the program.

(insert rows as needed)

	Technology and Equipment	Start-up Costs	On-going Costs	Est. Start Date of Operations/Use
1	Not applicable			
2				
3				
4				
5				
6				
Total Technology Costs		0	0	

RISKS AND ASSUMPTIONS

52. In the table below, list any risks to the program’s implementation over the next four years (e.g., accreditation approval not received). For each risk, identify the severity (low, medium, high), probability of occurrence (low, medium, high), and the institution’s mitigation strategy for each risk.

Insert additional rows as needed. (e.g. Are faculty available for the cost and time frame).

Risk	Severity	Probability	Risk Mitigation Strategy
Low initial enrollment	Medium	Low	Increased recruiting activity

ADDITIONAL REQUIRED DOCUMENTS

- ☐ Signature page
- ☒ Budget Spreadsheet
- ☒ Attach your SACSCOC roster for the proposed program. Include in parentheses the individual with administrative responsibility for the program and whether listed positions are projected new hires and/or currently vacant.
- ☒ Letters of support, where relevant.
 - From USG Collaboratives the institution will participate in as part of this program if the institution has not previously been part of the MOU.
 - For doctorate programs, at least three external and one USG reviewer of aspirational or comparative peer programs. Provide information below.

Note: External reviewers must hold the rank of associate professor or higher in addition to other administrative titles. It is the responsibility of the institution proposing the doctoral degree program to attain external reviews and submit those reviews to their proposal.

External Reviewers (include name, title, institution, email, and phone number):

Chris Gunter
Professor and Chair
Department of Horticultural Sciences
University of Florida
cc.gunter@ufl.edu
(352) 294-6795

Richard B. Ferguson
Professor of Agronomy and Horticulture
Department of Agronomy and Horticulture
University of Nebraska
rferguson1@unl.edu
(402) 472-1144.

Hanu R. Pappu
Distinguished Professor
Department of Plant Pathology
Washington State University
hrp@wsu.edu

(509) 335-4852

USG Reviewer (include name, title, institution, email, and phone number):

Keith Howard

Provost and VP of Academic Affairs, VP of Economic Development and Land Grant Affairs, Dean,
College of Agriculture, Family Sciences and Technology

Fort Valley State University

keith.howard@fvsu.edu

(478) 827-3089

- ☐ If applicable, MOUs, which explain the collaboration and how partners will share or contribute resources, from other institutions for which this program will be part of a pathway (see #19b and 37)
- ☐ If referenced in the proposal, any additional letters of support such as industry professionals documenting workforce need
- ☒ If referenced in the proposal, any survey instruments with response rates

APPENDIX I– STUDENT SURVEY INSTRUMENT

IAS PhD Graduate Student Survey Instrument and Responses

Conducted 09-26 March 2026

Survey Questions

Hello: You are invited to participate in a survey to gauge general student interest in a new Ph.D. program that will involve four departments (Crop and Soil Sciences, Horticulture, Plant Pathology, and Entomology). The Ph.D. degree will be called Integrative Agricultural Sciences and will require students to 1) have co-major professors in two of the four departments, and 2) conduct interdisciplinary research in disciplines related to those two departments. The research will involve integrating methods, theories, and perspectives from two different disciplines to create a unified, synergistic, and blended approach to a research problem.

This survey will take approximately 5 minutes and your response will be anonymous. Thank you very much for your time and support. Please start with the survey now by clicking on the button below.

1. If you were considering a Ph.D. program, would you be interested in the Ph.D. degree described above?

Yes

No

2. If you selected YES, what is the main reason you would be attracted to this program?

3. If you selected NO, what would be the main reason why you would NOT be interested in this Ph.D. program?

62 students completed the survey – 82% YES, 18% NO

APPENDIX II – LETTERS OF SUPPORT

Letters of support from the following are included on the following pages.

- Drs. Sonia Altizer, Marin Brewer, Leonardo Lombardini, and Jodi Johnson Maynard, heads of the departments of Entomology, Plant Pathology, Horticulture, and Crop and Soil Sciences, respectively
- Dr. Edward Barnes, Senior Director of Agricultural and Environmental Research, Cotton Incorporated
- Dr. Steve Brown, Executive Director, The Peanut Research Foundation
- Dr. Boris Castro, Enabling Science Leader, Corteva Agriscience
- Dr. Richard Ferguson, Professor of Soil Science, University of Nebraska
- Dr. Chris Gunter, Professor and Chair, Department of Horticultural Sciences, University of Florida
- Mr. Mike Marino, General Manager, Priva North America
- Dr. Hanu Pappu, Samuel H. Smith Distinguished Professor & Carl F. & James J. Chuey Endowed Chair, Department of Plant Pathology & Graduate Program in Molecular Plant Sciences, Washington State University



**College of Agricultural &
Environmental Sciences**
UNIVERSITY OF GEORGIA

January 2, 2026

Dr. Dean Kopsell
Associate Dean for Faculty Affairs
College of Agricultural and Environmental Sciences
147 Cedar Street, Conner Hall
University of Georgia

Dear Dr. Kopsell,

We are writing jointly, as heads of the departments implementing the proposed Interdisciplinary Agricultural Sciences (IAS) PhD program, to express our collective support for this degree and its inclusion in the UGA graduate curriculum.

We believe the IAS PhD program will provide an important and valuable pathway for doctoral training that complements, rather than duplicates, the existing disciplinary PhD programs housed within our departments. The proposed program is designed to serve students whose research questions and academic preparation are inherently interdisciplinary and who would benefit from a structure that intentionally integrates expertise across multiple units.

Our departments remain fully committed to maintaining the strength and integrity of our existing PhD programs while also supporting the IAS PhD as a distinct, collaborative option that enhances graduate education, research innovation, and cross-departmental engagement within the College.

We appreciate the opportunity to contribute to the development of this program and are confident that, with appropriate oversight and coordination, the IAS PhD will be a positive addition to the College's graduate offerings.

Thank you for your consideration.

Sincerely,

Sonia Altizer
Department Head, Entomology

Leonardo Lombardini
Department Head, Horticulture

Marin Brewer
Department Head, Plant Pathology

Jodi Johnson Maynard
Department Head, Crop and Soil Sciences

December 20, 2024

Dr. George Vellidis
Director, Institute of Integrative Precision Agriculture
University of Georgia

Dear Vellidis,

This letter is in support of the proposal to develop a degree program titled "Integrative Agricultural Sciences (IAS)" at the University of Georgia. Cotton Incorporated is funded by U.S. growers of upland cotton and importers of cotton and cotton textile products and is the research and marketing company representing upland cotton. In the Agricultural and Environmental Research Division, we focus on improving production efficiency and the profitability of cotton farmers. I have been at Cotton Incorporated for 22 years and during that time seen how research and agricultural technology has kept our farmers in business.

A major challenge in agriculture is that farming is not a single factor experiment. There are complex interactions occurring between the soil, plant genetics, pest populations, and weather conditions. I am very excited about the curriculum you are proposing, as we need agricultural professionals who are equipped to use a systems-based approach to allow our farmers to continue to improve production practices and maintain resilient production systems as we begin to face more challenging climate conditions. I believe this program would be ideal to train extension professionals like cotton specialists, as they are called to address every problem facing a crop. Furthermore, such a degree program would also be ideal for training private consultants. I am not aware of any degree programs that would be more ideally suited to meet the needs of such professionals.

I believe that this program would continue to elevate the University of Georgia as a leader in agricultural education and I hope that you are able to proceed with this degree.

Sincerely,



Edward M. Barnes, Ph.D.
Senior Director
Agricultural and Environmental Research



6399 WESTON PKWY CARY, NC 27513 ☎ 919.678.2200 📠 919.678.2230 🌐 COTTONINC.COM
AMERICA'S COTTON PRODUCERS AND IMPORTERS COTTON. THE FABRIC OF OUR LIVES.



January 4, 2024

Dr. George Vellidis
Director, Institute of Integrative Precision Agriculture
University of Georgia

As the current Executive Director of the Peanut Research Foundation (PRF), and Emeritus Professor and Assistant Dean at the University of Georgia (UGA), I am proud to support the proposed Integrative Agricultural Sciences (IAS) Ph.D. program at UGA. My organization promotes and funds peanut research at numerous research institutions, including UGA. We are part of the American Peanut Council which represents all segments of the U.S. peanut industry, and we are concerned about the declining pool of qualified, applied scientists serving the needs of agriculture.

We like the fact that the proposed IAS Ph.D. program is by design an interdisciplinary program. The program is foundationally based on the collaborative research and training infrastructure of the Crop and Soil Sciences, Entomology, Horticulture, Plant Pathology departments – four highly successful academic departments at the University of Georgia. The program of study is designed to give participating students a truly interdisciplinary experience and will enable students to develop unique academic portfolios that will allow them to pursue careers in emerging fields of the agricultural and environmental sciences.

Although most universities offer doctoral programs in specific agricultural disciplines, the graduates of these programs may not have the interdisciplinary background that is needed to solve the emerging problems facing food and fiber production in the coming decades. Interdisciplinary Ph.D. programs like the IAS Ph.D. are needed because the emerging challenging agricultural problems require a holistic systems approach to assure the resilience and sustainability of food and fiber production. I fully endorse UGA's efforts to establish such a program as it will support the mission of the Peanut Research Foundation and the greater agricultural community.

Sincerely,

Steve Brown, Ph.D.
Executive Director
The Peanut Research Foundation



January 13, 2025

Dr. Ashfaq Sial
Member, UGA-Padova University Joint PhD Program Committee
Professor and IPM Coordinator
Department of Entomology, University of Georgia
Athens, GA 30602

Dear Dr. Sial,

It is a great honor for me to write this letter in support of the creation of a Ph.D. program in Integrative Agricultural Sciences (IAS), a joint interdisciplinary effort between the University of Georgia (UGA) and Padova University in Italy. My name is Boris A. Castro, global leader in Enabling Sciences within the Technical Knowledge Solutions team at Corteva Agriscience. This letter of support and comments within are my own and are based on my personal and professional experiences. I have witnessed in my projects and programs the value of an interdisciplinary, cross-geographic training curriculum, which has brought success to a broad range of academic and industry roles which I have had the honor to lead or participate. My training in Agronomy and Entomology started at the Universidad Nacional de Agricultura in Honduras and continued at the University of Florida and at Louisiana State University. I majored in Entomology and obtained minors in Nematology, Fruit Crops, Experimental Statistics, and Agricultural Economics, which I complemented with an MBA at the Craig School of Business in California. The integrative nature of my academic curriculum enabled me to develop strong programs during my earlier academic roles at three prestigious universities including the PanAmerican School of Agriculture (Zamorano College) in Honduras, LSU, and Texas A&M University. I have worked for the industry since 2008 and have led different regional and global projects and have lived in the U.S., Brazil, Argentina, and New Zealand. My earlier academic exposure to cross-departmental projects empowered me with a curious mindset that transcended beyond my chosen focus of Entomology. I have led industry projects on entomology, plant pathology, weed sciences, biotechnology, agronomy, communications, leadership development, learning strategies, and research gap analyses. My current role involves networking with different experts on artificial intelligence, gene editing and other modern sciences to create tools and strategies to address the world's most urgent needs for food production in a globalized economy.

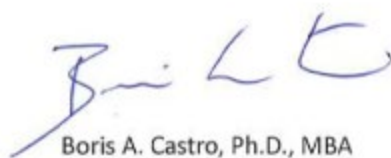
Corteva Agriscience uses a multidisciplinary approach to discover and advance scientific innovative solutions for agriculture and food production. Thus, Corteva has a strong need for highly trained scientists, and the interdisciplinary nature of the research that we do could benefit from talent educated with this holistic approach. I strongly believe the IAS Ph.D. program with its interdisciplinary, cross-departmental

curricula and joint university effort is a tremendous initiative that will offer students a unique exposure to multidisciplinary, cross-geographic approaches to problem-solving. Moreover, the program would plant in them the seed for a globalized mindset to develop integrated solutions, to create synergies across near or distant sciences, and to embrace new challenges that demand constant learning and reinvention beyond the disciplines we know today.

The world is facing significant challenges given by the accelerating population expansion, climate change, economic instabilities, and income inequalities. But science also is expanding, and scientific discoveries are accelerating. Modern technologies are emerging daily because of collaborative interdisciplinary efforts. The rigorous scientific training coupled with the cross-disciplinary approach will equip IAS Ph.D. students with the tools and skills needed to continue to advance the boundaries of science, to transform fundamental discoveries into much needed practical solutions, to test not only the efficacy of any new tool, but also their safety, sustainability, and environmental responsibility for potential implementation across the globe. Furthermore, one of the most precious learnings of a cross-disciplinary, multi-geographic learning curriculum is that it will create in the student a problem-solving approach no longer limited within one discipline, but an integrated solution developed across disciplines, departments, agencies, and countries. Addressing the urgent problems of food insecurity today requires nothing less than this type of holistic mindset and the ability to lead diverse teams that excel at international collaborative efforts to find global solutions. It is for these reasons, and the tremendous opportunity it offers, that I fully endorse the creation of the Ph.D. program in Integrative Agricultural Sciences.

I would love to learn more on the status of this great initiative as it develops and hope it will become a reality for your students to become part of the next generation of researchers and enablers. Let me know if I can be of any further assistance and please do not hesitate to reach out in case of any questions you may have.

Sincerely,

A handwritten signature in blue ink, appearing to read 'B. Castro', with a stylized flourish at the end.

Boris A. Castro, Ph.D., MBA
Enabling Sciences Leader
Technical Knowledge Solutions
Corteva Agriscience
E-mail: boris.castro@corteva.com
Mobile: 317-617-7495



January 6, 2025

Miguel L. Cabrera, PhD
Professor, Crop and Soil Sciences
University of Georgia

Dr. Cabrera,

I am writing in support of the proposed PhD program in Integrative Agricultural Sciences (IAS) at the University of Georgia. I have 30+ years of academic experience in soil fertility and precision agriculture at the University of Nebraska-Lincoln (UNL). I also served internationally for five years as Founding Vice Chancellor of the Rwanda Institute for Conservation Agriculture (RICA). It is my understanding that this new PhD program will provide students with the opportunity to conduct interdisciplinary research involving the departments of Crop and Soil Sciences, Horticulture, Plant Pathology and Entomology. In addition, the proposal plans to include an option for students to pursue a joint PhD between the University of Georgia and the University of Padova in Italy, which is a top European universities.

Most universities offer outstanding doctoral programs in specific agricultural disciplines, but the graduates of these programs may not have the interdisciplinary training that is needed today to address emerging problems in food and fiber production. Many of our current agricultural problems require a holistic systems approach to develop sustainable solutions. The proposed Ph.D. program in Integrative Agricultural Sciences is by design an interdisciplinary program based on the collaborative research and training infrastructure of four highly successful academic departments at the University of Georgia. The IAS Ph.D. will enable students to develop unique skills to further pursue careers in agricultural and environmental sciences.

The concept of interdisciplinary training to better prepare students for impactful careers in agriculture was central to the academic programs at the Institute I helped start in Rwanda. While RICA graduates are just now entering the workforce, they are in high demand due to the experiential, integrated education they have received. I fully support UGA's efforts to establish the Integrated Agriculture Sciences PhD program.

Sincerely,

Richard B. Ferguson, PhD
Professor of Soil Science



INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES
DEPARTMENT OF AGRONOMY AND HORTICULTURE

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University of Florida Institute of Food and Agricultural Science
Department of Horticultural Sciences

1251 Fifield Hall
PO Box 110690
Gainesville, FL 32611
352-392-1928

January 8, 2025

Dr. Rhuanito Ferrarezi
Associate Professor
University of Georgia

To: Dr. Ferrarezi

RE: Support for the Proposed Ph.D. Program in Integrative Agricultural Sciences (IAS)

I am writing to express my strong support for the proposed Doctor of Philosophy program with a major in Integrative Agricultural Sciences (IAS) at the University of Georgia's College of Agricultural and Environmental Sciences (CAES).

As described, the IAS Ph.D. program stands out for its comprehensive approach, bringing together the expertise of four key academic departments: Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology. The program's interdisciplinary nature will equip graduates with the ability to address complex agricultural challenges through collaboration and systems-level thinking, aligning the strategic goals of UGA, the state of Georgia, and the broader agricultural community. This innovative and interdisciplinary program will address critical needs in agricultural science education and research while preparing a highly skilled workforce for sustainable food and fiber production challenges of the future.

By integrating cutting-edge research and education, the IAS Ph.D. program will meet the increasing demand for advanced knowledge and innovation in agricultural sciences. This demand is underscored by global challenges such as climate change, population growth, and resource scarcity. The program's unique focus on both domestic and international collaboration, including plans for a joint Ph.D. emphasis with the University of Padova in Italy, positions it as a leader in cultivating globally minded agricultural scientists. In conclusion, I wholeheartedly support establishing the Ph.D. program in Integrative Agricultural Sciences. This initiative represents a vital step forward in addressing global agricultural challenges and preparing the next generation of leaders, researchers and professionals in this field.

Sincerely,

A handwritten signature in black ink that reads "Chris Gunter". The signature is fluid and cursive, with the first name "Chris" and last name "Gunter" clearly distinguishable.

Chris Gunter
Professor and Chair
Horticultural Sciences
UF/IFAS

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Zijlweg 3
2678 LC De Lier
Netherlands



Dr. Rhuanito Ferrarezi
Associate Professor
University of Georgia

To Dr. Ferrarezi,

Subject: Letter of Support for the Proposed Ph.D. Program in Integrative Agricultural Sciences

I am writing to express my strong support for the proposed Doctor of Philosophy program with a major in Integrative Agricultural Sciences (IAS) at the University of Georgia's College of Agricultural and Environmental Sciences (CAES).

The IAS Ph.D. program stands out for its comprehensive approach, bringing together the expertise of four key academic departments: Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology. The program's interdisciplinary nature will equip graduates with the ability to address complex agricultural challenges through collaboration and systems-level thinking, aligning perfectly with the strategic goals of UGA, the state of Georgia, and the broader agricultural community. This innovative and interdisciplinary program will address critical needs in agricultural science education and research while preparing a highly skilled workforce for sustainable food and fiber production challenges.

By integrating cutting-edge research and education, the IAS Ph.D. program will meet the increasing demand for advanced knowledge and innovation in agricultural sciences. This demand is underscored by global challenges such as climate change, population growth, and resource scarcity. The program's unique focus on both domestic and international collaboration, including plans for a joint Ph.D. emphasis with the University of Padova in Italy, positions it as a leader in cultivating globally minded agricultural scientists.

In conclusion, I wholeheartedly support establishing the Ph.D. program in Integrative Agricultural Sciences. This initiative represents a vital step forward in addressing global agricultural challenges and preparing the next generation of leaders, researchers and professionals in this field.

Sincerely,

Mike Marino
General Manager
Priva North America



December 14, 2024

Dr. Sudeep Bag
Associate Professor
Department of Plant Pathology
University of Georgia (UGA)

Dear Dr. Bag,

Subject: Letter of Support for the Proposed Ph.D. Program in Integrative Agricultural Sciences (IAS)

I am delighted to support the proposal for a PhD program in IAS at UGA. Please consider this letter as an expression of my unequivocal support for this proposal. I am a professor of plant pathology with research (60%) and teaching (40%) responsibilities. My research program focused on plant virology. I hold the Sam Smith Distinguished Professorship and the inaugural Chuey Endowed Chair in plant virology here at Washington State University. I served as department chair for six years with statewide administrative and programmatic oversight of plant pathology programs in research, teaching, and extension. I supervised 12 PhD students and more than 20 post-doctoral scientists in my career spanning >25 years at three land grant universities (University of Florida, University of Georgia, and now at Washington State University). I hired and mentored, and facilitated the professional advancement of post-doctoral fellows and tenure track faculty.

I am writing to express my enthusiastic support for the proposed Doctor of Philosophy program with a major in Integrative Agricultural Sciences (IAS) at the University of Georgia's College of Agricultural and Environmental Sciences (CAES). The IAS Ph.D. program aims to distinguish itself by its holistic approach, combining the expertise of four departments: Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology. This interdisciplinary nature empowers graduates to tackle complex agricultural issues through collaborative problem-solving and systems-level thinking. This seems to align the strategic objectives of UGA, the state of Georgia, and the wider agricultural sector.

The proposal looks very innovative and will not only address critical needs in agricultural science education and research but also cultivate a highly skilled workforce equipped to address the challenges of sustainable food and fiber production. By integrating cutting-edge research with rigorous education, the IAS Ph.D. program has the potential to meet the growing demand for advanced knowledge and innovation in agricultural sciences. This need has become urgent as well critical due to global challenges such as climate change, population growth, and resource scarcity. The program's unique emphasis on both domestic and international collaboration, including a planned joint Ph.D. with the University of Padova in Italy, positions it as a leader in nurturing globally minded agricultural scientists.



In conclusion, I wholeheartedly endorse the establishment of the Ph.D. program in Integrative Agricultural Sciences. This initiative would be a positive step toward addressing global agricultural challenges and preparing the next generation of leaders, researchers, and professionals in this field.

Sincerely,

Hanu R. Pappu, Ph.D.

Samuel H. Smith Distinguished Professor &
Carl F. & James J. Chuey Endowed Chair
Department of Plant Pathology &
Graduate Program in Molecular Plant Sciences
Washington State University

Email: hrp@wsu.edu

<https://plantpath.wsu.edu/people-directory/profile/?nid=hrp>

APPENDIX III – ROSTER OF FACULTY

The roster of University of Georgia faculty who teach graduate-level (6000+) courses from which students enrolled in the IAS Ph.D. will select for their program of study are listed beginning on the next page. Faculty are listed by participating department and alphabetically by last name.

Dr. Dean Kopsell, Associate Dean for Academic and Faculty Affairs, College of Agricultural and Environmental Sciences, has administrative responsibility for the program. He will appoint a faculty member to serve as the program's Graduate Coordinator.

Faculty Roster Form

Qualifications of Full-Time and Part-Time Faculty

Name of Institution: University of Georgia

Name of Primary Department, Academic Program or Discipline: Department of Crop and Soil Sciences

Academic Term(s) Included: Academic Years 2025-26 and 2026-2027

Date Form Completed: 7/23/2025

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
Basinger, Nicholas Tuschak (F)	Fall Semester CRSS 6340 Weed Science 3 (G) Spring Semester CRSS 6350 Herbicide Technology 3 (G)	Doctor of Philosophy Horticultural Science 2018 North Carolina State University Master of Science Horticultural Science 2015 North Carolina State University Bachelor of Science Exercise Science and Kinesiology 2009 Furman University	
Cabrera, Miguel L (F)	Fall Semester CRSS 6590 Soil Fertility and Plant Nutrition 3 (G) Fall, Spring Semesters CRSS 8100 Advanced Crop and Soil Science Seminar 1 (G) Spring Semester CRSS 8520 Advanced Soil Fertility 3 (G) Fall Semester CRSS 8650 Nutrient Cycling Models 3 (G)	Doctor of Philosophy Agronomy and Crop Science 1986 Kansas State University Master of Science Computer Science. 1990 Kansas State University Master of Science Agronomy and Crop Science 1982 Kansas State University Bachelor of Science Agronomy and Crop Science 1978 University of the Republic	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
Franklin, Dorcas H (F)	Spring Semester CRSS 6010 Principles of Sustainable Management 3 (G) Fall Semester CRSS 6050 Improving Nutrient and Energy Efficiency with Geographic Information Systems 4 (G) Spring Semester CRSS 8410 Advanced Topics in Sustainable Agriculture Management 3 (G)	Doctor of Philosophy Soil Science and Agronomy, General 2000 University of Georgia Master of Science Soil Science and Agronomy, General 1994 University of Georgia Bachelor of Science Forestry, Other 1981 Stephen F Austin State University	
Gaur, Nandita (F)	Spring Semester CRSS 6600 Soil Physics 3 (G) Spring Semester CRSS 8710 Watershed-Scale Modeling 3 (G)	Doctor of Philosophy Agricultural Engineering. 2015 Texas A&M University Doctor of Philosophy Agricultural Engineering. 2015 Texas Agricultural & Mechanical University Bachelor of Education Civil Engineering, General 2008 Punjabi University	
Habteselassie, Mussie Ykeallo (F)	Spring Semester CRSS 6580 Soil Erosion and Conservation 3 (G) Fall Semester CRSS 6610-6610L Soil Microbiology 4 (G)	Doctor of Philosophy Soil Science and Agronomy, General 2005 Utah State University Master of Science Soil Science and Agronomy, General 2000 University of Aberdeen Bachelor of Science	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Soil Science and Agronomy, General 1998 Asmara University	
Henry, Gerald M (F)	Spring Semester CRSS 6750 Environmental Turfgrass Science 3 (G)	Doctor of Philosophy Agronomy and Crop Science 2007 North Carolina State University Master of Science Botany/Plant Biology 2003 Rutgers The State University of New Jersey Bachelor of Science Plant Sciences, General 2000 Rutgers The State University of New Jersey	
Levi, Matthew (F)	Spring Semester CRSS 6540-6540L Pedology 3 (G)	Doctor of Philosophy Environmental Science 2012 University of Arizona The Master of Science Soil Science and Agronomy, General 2017 Auburn University	
Mendes Bastos, Leonardo (F)	Spring Semester CRSS 6280 Programming Precision Agriculture 3 (G) Spring Semester CRSS 8030 Data Science and Statistical Programming Applied to Agriculture 3 (G)	Doctor of Philosophy Agronomy and Crop Science 2019 University of Nebraska	
Missaoui, Ali M (F)	Spring Semester CRSS 6260 Forage Management and Utilization 3 (G)	Doctor of Philosophy Agronomy and Crop Science 2003 University of Georgia	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Master of Science Agronomy and Crop Science 1998 Texas Tech University Bachelor of Science Range Science and Management 1987 Oregon State University	
Nunes Lacerda, Lorena (F)	Fall Semester CRSS 6070 UAV Technology for Crop Sciences 3 (G) Spring Semester CRSS 6150 Principles of Remote Sensing for Agriculture Sciences 4 (G)	Doctor of Philosophy Agronomy and Crop Science 2021 University of Georgia	
Snider, John L (F)	Spring Semester CRSS 6450 Crop Physiology 3 (G) Summer Semester (Odd Years) CRSS 8050 Advanced Crop Production 3 (G) Spring Semester CRSS 8150 Case Histories in Crop Physiology 3 (G)	Doctor of Philosophy Agronomy and Crop Science 2010 University of Arkansas Master of Science Biology/Biological Sciences, General 2007 University of Central Arkansas Bachelor of Science Biology/Biological Sciences, General 2005 Henderson State University Associate Of Arts General Studies 2003 Rich Mountain Community College	
Thompson, Aaron (F)	Fall Semester (Odd Years) CRSS 8000 Soil Physical Chemistry 3 (G) Every Semester	Doctor of Philosophy Soil Science and Agronomy, General 2005 University of Arizona The	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
	CRSS 9990 Supervised Teaching Practicum in Crop and Soil Sciences 1-3 (G)	Master of Science Soil Science and Agronomy, General 1998 University of California, Riverside Bachelor of Science in Engineering Chemical Engineering 1995 University Of Michigan Ann Arbor	
Thompson, Jennifer Jo (F)	Spring Semester CRSS 6020S Social Sustainability in Agricultural and Food Systems 3 (G)	Doctor of Philosophy Anthropology, General 2010 University of Arizona The Master Of Arts Anthropology, Other 2000 Indiana University Bloomington Bachelor of Arts Anthropology, General 1996 University Of Michigan Ann Arbor	
Vellidis, George (F)	Spring Semester (Odd Years) CRSS 6060 Advanced Topics in Precision Agriculture 3 (G)	Doctor of Philosophy Agricultural Engineering. 1988 University of Florida Master of Science Agricultural Engineering. 1985 Virginia Polytechnic Institute & State University - Blacksburg Bachelor of Science Agricultural Engineering. 1983 Virginia Polytechnic Institute & State University - Blacksburg	
Vencill, William K (F)	Spring Semester CRSS 8300 Physiology of Herbicide Action 3 (G)	Doctor of Philosophy	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Plant Physiology 1988 Virginia Polytechnic Institute & State University - Blacksburg Master of Science Plant Physiology 1986 Virginia Polytechnic Institute & State University - Blacksburg Bachelor of Science Ecology 1984 The University of Virginia & College at Wise Associate of Science Biological and Physical Sciences 1982 Southwest Virginia Community College	
Wallace, Jason (F)	Fall Semester CRSS 8010 Research Methods and Design for Crop Science 3 (G)	Doctor of Philosophy Cell/Cellular and Molecular Biology 2011 Yale University Master of Science Cell/Cellular and Molecular Biology 2008 Yale University Bachelor of Science	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Biology/Biological Sciences, General 2006 Brigham Young University	

Name of Primary Department, Academic Program or Discipline: Department of Entomology

Academic Term(s) Included: Academic Years 2025-26 and 2026-2027

Date Form Completed: 7/23/2025

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
Abney, Mark R (F)	Spring Semester (Odd Years) ENTO 8820 Concepts in Integrated Pest Management 2 (G)	Doctor of Philosophy Entomology 2005 North Carolina State University Master of Science Entomology 2000 Middle Georgia College Bachelor of Science in Agriculture Agronomy and Crop Science 1998 University of Georgia	
Buntin, George David (F)	Spring Semester (Odd Years) ENTO 8820 Concepts in Integrated Pest Management 2 (G)	Doctor of Philosophy Entomology 1984 Iowa State University of Science & Technology Master of Science Entomology 1980 Iowa State University of Science & Technology Bachelor of Science Entomology 1977 University of Delaware	
Burke, Gaelen R (F)	Fall Semester (Even Years) ENTO 8570 Molecular Entomology 2 (G)	Doctor of Philosophy Ecology and Evolutionary Biology 2010 University of Arizona The Bachelor of Science Genetics, General 2005 University of Queensland The	ENTO 9000 Extensive Professional Experience in Teaching Discipline

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Bachelor of Science Microbiology, General 2005 University of Queensland	
Carruthers, Kelly (F)		Doctor of Philosophy Entomology 2022 University of Florida Master of Science Entomology 2012 University of Arkansas	
Champagne, Donald E (F)	Fall Semester (Even Years) ENTO 8570 Molecular Entomology 2 (G)	Doctor of Philosophy Biology/Biological Sciences, General 1989 University of British Columbia Master of Science Biology/Biological Sciences, General 1985 Ottawa University Bachelor of Science Biology/Biological Sciences, General 1981 University of Ottawa	
Gloss, Andrew D (F)	Spring Semester (Every Year) ENTO 8250 Insect Physiology 3 (G)	Doctor of Philosophy Entomology 2017 University of Arizona Bachelor of Science Entomology 2010 University of Notre Dame	
Hudson, William G (F)	Spring Semester (Odd Years) ENTO 8820 Concepts in Integrated Pest Management 2 (G)	Doctor of Philosophy Entomology 1985 University of Florida Master of Science	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Entomology 1981 Auburn University Bachelor of Science Zoology/Animal Biology 1978 Auburn University Bachelor of Science Mathematics, General 1972 Auburn University	
Mchugh, Joseph V (F)	Spring Semester (Even Years) ENTO 8050 Phylogenetics, Systematics, & Evolution 2 (G) Fall Semester (Every Years) ENTO 8010 Insect Taxonomy 5 (G)	Doctor of Philosophy Entomology 1995 Cornell University Master of Science Evolutionary Biology 1987 University of Connecticut Bachelor of Science Entomology 1984 Cornell University	
Oliver, Kerry M (F)	Every Semester ENTO 6000 General Entomology 4 (G)	Doctor of Philosophy Entomology 2005 University of Arizona The Bachelor of Science Biology/Biological Sciences, General 1998 University of Utah	MIBO 9000 Extensive Research in the Teaching Discipline
Rains, Glen C (F)	Spring Semester CRSS 6030 Sensors in Precision Agriculture 3 (G)	Doctor of Philosophy Agricultural Engineering. 1992 Virginia Polytechnic Institute & State University - Blacksburg Master of Science	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Agricultural Engineering. 1989 Virginia Polytechnic Institute & State University - Blacksburg Bachelor of Science in Agricultural Engineering Agricultural Engineering. 1987 University of Georgia	
Sial, Ashfaq Ahmad (F)	Spring Semester (Odd Years) ENTO 8820 Concepts in Integrated Pest Management 2 (G)	Doctor of Philosophy Entomology 2010 Washington State University Master of Science Agricultural Production Operations, General 2003 University of Greenwich Master of Science Entomology 2000 University of Agriculture Bachelor of Science Entomology 1998 University of Agriculture	
Snyder, William E (F)	Fall Semester (Odd Years) ENTO 8500 Insect Ecology 2 (G)	Doctor of Philosophy Entomology 1999 University of Kentucky Master of Science Zoology/Animal Biology 1995 Clemson University Bachelor of Arts Biology/Biological Sciences, General 1992 University of Delaware	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
Strand, Michael R (F)	Every Semester ENTO 6000 General Entomology 4 (G)	Doctor of Philosophy Entomology 1985 Texas A&M University Bachelor of Science Entomology 1980 Texas A&M University	
Vogel, Kevin J (F)	Fall Semester (Even Years) ENTO 8570 Molecular Entomology 2 (G)	Doctor of Philosophy Ecology and Evolutionary Biology 2012 University of Arizona The Bachelor of Science Molecular Genetics. 2005 Michigan State University	

Name of Primary Department, Academic Program or Discipline: Department of Horticulture

Academic Term(s) Included: Academic Years 2025-26 and 2026-2027

Date Form Completed: 7/23/2025

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
Cassity-Duffey, Kate	Spring Semester HORT 6010 Vegetable Crop Production 3 (G) Spring Semester HORT 6030S Sustainable Community Food Production 4 (G) Fall Semester HORT 6125-6125L Organic Agricultural Systems 4 (G)	Doctor of Philosophy Agronomy and Crop Science 2014 University of Georgia	
Ferrarezi, Rhuanito Soranz (F)	Fall Semester HORT 6050-6050L Greenhouse Management I with Lab 4 (G)	Doctor of Philosophy Horticultural Science 2013 Campinas State University	
Kirk-Ballard, Heather (F)	Spring Semester HORT 6030S Sustainable Community Food Production 4 (G) Spring Semester HORT 6090 Sustainable Landscape Management and Design 3 (G)	Doctor of Philosophy Natural Resources and Conservation, Other 2012 Louisiana State University and Agricultural and Mechanical College Master of Science Horticultural Science 2004 Louisiana State University and Agricultural and Mechanical College Bachelor of Science	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Soil Sciences 2001 Louisiana State University and Agricultural and Mechanical College	
Lowder, Sarah Rebecca (F)	Spring Semester HORT 6310 Vineyard Production and Management 3 (G)	Doctor of Philosophy Botany/Plant Biology 2022 Oregon State University	
Malladi, Anish (F)	Fall Semester HORT(CRSS) 6430 Plant Physiology 3 (G) Spring Semester HORT 8000 Horticulture Seminar 1 (G) Spring Semester HORT 8104 Advanced Plant Physiology 4 (G)	Doctor of Philosophy Horticultural Science 2005 Purdue University Master of Science Horticultural Science 2001 Purdue University Bachelor of Science Agriculture, General 1998 Andhra Pradesh Agricultural University	
Mcgregor, Cecilia E (F)	Spring Semester (Even Years) HORT 8390 Conservation of Plant Genetic Resources 1 (G)	Doctor of Philosophy Horticultural Science 2006 Louisiana State University & Agricultural & Mechanical College Master of Science Molecular Genetics. 1995 University of Stellenbosch Bachelor of Science	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Animal Physiology 1992 University of Stellenbosch Bachelor of Science Genetics, General 1992 University of Stellenbosch	
Nambeesan, Savithri U (F)	Spring Semester HORT 6210 Postharvest Biology and Technology of Horticulture Crops 3 (G) 3. Fall Semester GRSC 7001 GradFIRST Seminar 1 (G) Fall Semester HORT 8150 Plant Growth and Development 3 (G)	Doctor of Philosophy Horticultural Science 2009 Purdue University Master of Science Molecular Biology 2003 Tata Institute of Fundamental Research Bachelor of Science Biology/Biological Sciences, General 2000 St Xaviers College, Mumbai	
Ozias-Akins, Peggy (F)	Fall Semester HORT 6800 Agricultural Biotechnology 3 (G) Tifton campus ONLY	Doctor of Philosophy Botany/Plant Biology 1981 University of Florida Bachelor of Science Biology/Biological Sciences, General 1975 Florida State University	
Pennisi, Svoboda V (F)	Spring Semester HORT 6430E Plant Physiology 3 (G) Summer Semester	Doctor of Philosophy Horticultural Science 1999 University of Florida	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
	HORT 6770E Discover the Wonderful World of Plants and Pollinators and Your Place in It – Service Learning 3 (G)	Master of Science Horticultural Science 1996 University of Florida Master Of Agriculture Agriculture, General 1993 Agricultural University Plovdiv	
Ruter, John M (F)	Fall Semester HORT 6990 Current Issues in Horticulture 1 (G)	Doctor of Philosophy Applied Horticulture/Horticultural Operations, General 1989 University of Florida Master of Science Ornamental Horticulture 1986 University of Tennessee Bachelor of Science Ornamental Horticulture 1984 California Polytechnic State University	
Song, Zhihang (F)	Fall Semester HORT 8160 Measurement and Control in Plant and Soil Science 3 (G)	Doctor of Philosophy Agricultural and Biological Engineering, 2024 Purdue University Master of Science Agricultural and Biological Engineering, 2020 Purdue University	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Bachelor of Science Agricultural Engineering (Machine Systems), 2017 Purdue University Bachelor of Science Agricultural Engineering, 2017 China Agricultural University (CAU) Beijing, China	
Yu, Ping (F)	Fall Semester HORT 6630E Nursery Management 3 (G)	Doctor of Philosophy Applied Horticulture/Horticultural Operations, General 2021 Texas Agricultural & Mechanical University	

Name of Primary Department, Academic Program or Discipline: Department of Plant Pathology

Academic Term(s) Included: Academic Years 2025-26 and 2026-2027

Date Form Completed: 7/28/2025

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
Bag, Sudeep (F)	Fall Semester (Odd Year) PATH8350 Plant Virology 3 (G)	Doctor of Philosophy Plant Pathology 2013 Washington State University Master of Science Biotechnology 2001 Indira Gandhi Agricultural University Bachelor of Science Microbiology, General 1999 Guru Ghasidas University	
Bahri, Bochra, A. (F)	Fall Semester PATH8330: Population Genetics of Plant Associated Microbes 3 (G)	Ph.D. Life Sciences and Plant Pathology, University of Paris XI Orsay, France, 2008 M.S. Plant Protection and Environment, Agro-Paris-Tech, France, 2003 Dipl. Ing. Agr. Agricultural Sciences and Plant Protection, National Institute of Agronomy Tunis, Tunisia, 2002	
Brannen, Phillip M (F)	Fall and Summer Semester PATH8000: Field Plant Pathology 1 (Repeatable for maximum 2 hours credit) (G)	Doctor of Philosophy Plant Pathology/Phytopathology 1996 Auburn University Master of Science Plant Pathology/Phytopathology 1986 University of Georgia Bachelor of Science	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Plant Protection and Integrated Pest Management. 1983 University of Georgia	
Brewer, Marin Talbot (F)	Fall Semester PATH6200/6200L: Mycology 4 (G)	Doctor of Philosophy Plant Pathology/Phytopathology 2011 Cornell University Master of Science Plant Sciences, General 2003 University of Maine	
Chung, Anny (F)	Spring Semester PATH8250: Experimental Design and Analysis in Field Plant Biology 3 (G)	Doctor of Philosophy Biology, General 2017 University of New Mexico Bachelor of Arts Biology, General 2011 Washington University in St. Louis	
Culbreath, Albert K (F)	Fall Semester PATH6280-6280L: Diagnosis and Management of Plant Diseases 4 (G)	Doctor of Philosophy Plant Pathology/Phytopathology 1989 North Carolina State University Master of Science Plant Pathology/Phytopathology 1985 Auburn University Bachelor of Science Botany/Plant Biology 1982 Auburn University	
Ghimire, Bikash	Fall Semester PATH6360: Ornamental Pest Management 3 (G) Fall Semester PATH6280-6280L: Diagnosis and Management of Plant Diseases 4 (G)	Doctor of Philosophy Plant Pathology/Phytopathology 2022 University of Georgia Master of Science Crop Science 2017 Washington State University	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
	Fall, Spring and Summer Semester PATH8300: Clinical Plant Pathology 2 (G)		
Kemerait, Robert C (F)	Spring Semester PATH6250: Pesticides and Transgenic Crops 3(G)	Doctor of Philosophy Plant Pathology/Phytopathology 2000 University of Florida Bachelor of Science Chemistry, General 1989 University of Florida Bachelor of Science Biology/Biological Sciences, General 1987 Davidson College	
Kvitko, Brian Howard (F)	Spring Semester PATH8290-8290L: Plant Pathogenic Bacteria 4 (G) Spring Semester PATH8400: Host-Pathogen Interactions 3 (G)	Doctor of Philosophy Microbiology, General 2009 Cornell University Bachelor of Science Microbiology, General 2003 Ohio State University	
Mahmud, Md Sultan (F)	Fall Semester AESC 6200 Artificial Intelligence in Agriculture 3 (G) Fall Semester AESC 6100 Applied Agricultural Data Science 3 (G)	Doctor of Philosophy Agricultural Engineering 2022 The Pennsylvania State University	
Martinez-Espinoza, Alfredo D (F)	Fall Semester PATH6280-6280L: Diagnosis and Management of Plant Diseases 4 (G)	Doctor of Philosophy Plant Pathology/Phytopathology 1993 Montana State University - Bozeman	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Bachelor of Science Plant Pathology/Phytopathology 1984 National Autonomous University of Mexico	
Mitchum, Melissa G (F)	Spring Semester PATH8420-8420L: Plant Nematology 4 (G)	Doctor of Philosophy Plant Pathology/Phytopathology 2001 North Carolina State University Master of Science Plant Pathology/Phytopathology 1995 University of Nebraska Bachelor of Science Biology/Biological Sciences, General 1993 University of Puget Sound	
Severns, Paul (F)	Spring Semester PATH8310-8310L: Epidemiology of Plant Diseases 4 (G) Fall and Spring Semester GRSC 7001: GradFIRST Seminar Series 1 (G)	Doctor of Philosophy Botany/Plant Biology 2009 Oregon State University Bachelor of Science Molecular Biology 1998 Oregon State University	
Shelton, Kisha (F)	Spring Semester GRSC 7770: Graduate Teaching Seminar 1 (G) GRSC 7770e: Graduate Teaching Seminar 1 (G)	Doctor of Philosophy Adult Education 2015 University of Georgia Master of Science Plant Pathology/Phytopathology 2000 University of Georgia	
Smith, Shavannor Michelle (F)	Spring Semester PATH8910 Genetics of Host Plant Resistance to Disease 3 (G)	Doctor of Philosophy Genetics, General 2004 Kansas State University	

NAME	COURSES TAUGHT	ACADEMIC DEGREES & COURSEWORK	OTHER QUALIFICATIONS & COMMENTS
		Master of Science Biology/Biological Sciences, General 1997 Tennessee State University Bachelor of Science Biology/Biological Sciences, General 1994 Tennessee State University	
Tian, Miaoying (F)	Fall Semester PATH6200/6200L: Mycology 4 (G)	Doctor of Philosophy Plant Pathology/Phytopathology 2005 Ohio State University	
Yang, Li (F)	Fall and Spring Semester PATH8190: Molecular Plant-Microbe Interaction Seminar 1 (G)	Doctor of Philosophy Biology/Biological Sciences, General 2011 The University of Pennsylvania	
Yongduo Sun (F)	Fall Semester (Odd Years) PATH8350: Plant Virology 3 (G)	Ph.D. Plant Molecular and Cellular Biology, University of Florida, 2019 M.S. Genetics, University of Chinese Academy of Sciences, 2016 B.S. Plant Protection and Business Administration, Shandong Agricultural University, 2013	

INSTRUCTIONS 1. Insert your Department (Ex: English, Education, Biology, Criminology, etc.) 2. Insert your specific Degree Program (Ex: BA English, BSED Special Education, BS Biology, MA Criminology, etc.) 3. Under the "Courses" Column, list out the individual courses for your specific degree program. (Ex: ENGL 1101, SPED 3701, BIOL 2107, CRIM 6010, etc.)	Appendix IV. Integrative Agricultural Sciences (IAS) Ph.D. Curriculum Map							
	DEPARTMENT:	College of Agricultural and Environmental Sciences (CAES)			PL-SLO 1	PL-SLO 2	PL-SLO 3	PL-SLO 4
	PROGRAM:	Ph.D. in Integrative Agricultural Sciences (IAS)	COURSES For an Example Curriculum with the Crop and Soil Sciences and Plant Pathology Areas of Emphasis (1) = Required Course (2) = Required by Graduate School (3) = Example of Course Selected by Student and Advisory Committee (4) = Crop and Soil Sciences Area of Emphasis Course (5) = Plant Pathology Area of Emphasis Course		Graduates will demonstrate strong verbal and written skills.	Graduates will demonstrate strong analytical skills.	Graduates will demonstrate a comprehensive understanding of their specialty area.	Graduates will be able to design, conduct and analyze collaborative experiments using appropriate methods to achieve specific research objectives.
			1	AESC 8100 - Integrative Agricultural Sciences (1)	X		X	
			2	CRSS 8010 - Research Methods and Design for Crop Science (3, 4)		X	X	X
			3	CRSS 8050 - Advanced Crop Production (3, 4)			X	
			4	CRSS 8220 - Advanced Topics in Crop and Soil Sciences (3, 4)		X	X	
			5	PATH 8240-8240L - Plant Nematology (3,5)		X	X	
			6	PATH 8250 - Experimental Design and Analysis in Field Plant Biology (3,5)		X	X	X
			7	PATH 8400 -Host-Pathogen Interactions (3,5)		X	X	
			8	ALDR 8210 - Professional Writing Skills for Agricultural Scientists (3)	X			
			9	CRSS 9990 - Supervised Teaching Practicum in Crop and Soil Sciences (1,3)	X		X	
			10	AESC 9000 - Doctoral Research (2)		X	X	X
			11	AESC 9300 - Doctoral Dissertation (2)	X	X	X	X
INTRODUCED: Students are not expected to be								

	familiar with the content or skill at the collegiate level. Instruction and learning activities focus on basic knowledge, skills, and/or competencies and entry-level complexity.						
			PL-SLO ASSESMENT				
	REINFORCED: Students are expected to possess a basic level of knowledge and familiarity with the content or skills at the collegiate level. Instruction and learning activities concentrate on reinforcing and strengthen knowledge, skills, and expanding competency.	1	Comprehensive Exam	X	X	X	X
		2	Dissertation Defense	X	X	X	X
		3	Research Proposal Defense	X	X	X	
		4					
5. In the remainder of the spreadsheet, align where your Student Learning Outcomes (SLO's) are taught throughout your offered courses.		5					
	MASTERED: Students are expected to possess and advanced level of knowledge, skill, or competency at the collegiate level. Instructional and learning activities focus on the use of the content or skills in multiple contexts and at multiple level of competency.	6					
		7					
		8					
In the corresponding aligned box, mark the level of instruction for a SLO: Introduced "I", Reinforced "R", or Mastered "M" within the course.		9					
		10					
		11					
		12					
6. Go through and mark with an "A", which courses you will be collecting Assessment Data in.	**Please note: All assessment data may not be collected directly within a course. This step is only to highlight any courses that directly collect data. Other data may come from other sources such as surveys.	13					
		14					
		15					

* the stat indicates possible assessment, as the student decides which writing course assignment will be assessed.

Documentation of Approval and Notification

Proposal: Integrative Agricultural Sciences (Ph.D.)

College: College of Agricultural and Environmental Sciences

Department: College of Agricultural and Environmental Sciences

Proposed Effective Term: Fall 2027

School/College:

- College of Agricultural and Environmental Sciences Associate Dean, Dr. Dean Kopsell, 3/4/2025
- Graduate School Associate Dean, Dr. Anne Shaffer, 4/22/2025
- College of Agricultural and Environmental Sciences Graduate Affairs Committee Chair, Dr. Alexander Stelzleni, 2/21/2025
- Institute of Integrative Precision Agriculture Director, Dr. George Vellidis, 3/4/2025

Letters of Support:

- Head of the Department of Entomology, Dr. Sonia Altizer, 2/2/2026
- Senior Director of Agricultural and Environmental Research, Cotton Incorporated, Dr. Edward Barnes, 12/20/2024
- Head of the Department of Plant Pathology, Dr. Marin Brewer, 2/2/2026
- Executive Director, The Peanut Research Foundation, Dr. Steve Brown, 1/4/2024
- Enabling Science Leader, Corteva Agriscience, Dr. Boris Castro, 1/13/2025
- Professor of Soil Science, University of Nebraska, Dr. Richard Ferguson, 1/6/2025
- Professor and Chair, Department of Horticultural Sciences, University of Florida, Dr. Chris Gunter, 1/8/2025
- Head of the Department of Horticulture, Dr. Leonardo Lombardini, 2/2/2026
- Head of the Department of Crop and Soil Sciences, Dr. Jodi Johnson Maynard, 2/2/2026
- General Manager, Priva North America, Mr. Mike Marino, undated
- Samuel H. Smith Distinguished Professor & Carl F. & James J. Chuey Endowed Chair, Department of Plant Pathology & Graduate Program in Molecular Plant Sciences, Washington State University, Dr. Hanu Pappu, 12/14/24