THE UNIVERSITY OF ARIZONA

UNDERGRADUATE EMPHASIS (SUB-PLAN) REQUEST FORM
MAJORS WITHOUT EXISTING EMPHASES (SUB-PLANS)

Requests for the creation of a new emphasis requires approval from the school director/department head (managing administrator), college academic dean, Curricular Affairs, Undergraduate Council (UGC), and College Academic Administrators Council (CAAC). Complete this form (for each proposed emphasis) and submit to Martin Marquez (martinmarquez@email.arizona.edu), no later than January 31, 2020 to be considered for inclusion in the 2020-2021 Academic Catalog.

I. Requested by (College & School/Department):
College of Agriculture & Life Sciences / School of Plant Sciences

II. Proposer's name, title, email and phone number:
Rebecca Mosher, Associate Director, rmosher@email.arizona.edu, 520-626-4185

III. Degree, major and number of students currently enrolled in the major (include dual majors):
Bachelor of Science, Plant Science,- 43

IV. Total number of students that have completed the major in past 3 years:

Year	2016	2017	2018	2019	2016-2018
No. of graduates	7	8	6	7	21

V. Minimum number of units required to complete the major (do not include foundation, general education, general electives or supporting coursework):
50 total major units: 21 major core (shared), 29 emphasis (core and elective)

VI. Name of the proposed emphasis:
1. General (not to be included on the diploma)
2. Plant Health Sciences

VII. Campus and location offering-check the campus(es) and location(s) where this emphasis will be offered.

X Main	☐ UA Online	☐ Phoenix Biomedical	☐ Distance (type in location(s) below):

VIII. Provide a rationale for the proposed new emphasis. Survey your current majors to provide evidence of student interest in/demand for the proposed emphasis – attach the survey questions and results at the end of this proposal. Write a short summary of the findings of the survey. You may also include external data (Bureau of Labor Statistics, reports/letters of support from relevant bodies, etc.). Curricular Affairs can provide a job posting/demand report by skills obtained/outcomes of the proposed emphasis. Please contact Martin Marquez to request the report for your proposal.

The world's health relies on maintaining plant health, from crops and feedstocks to ornamentals and natural ecosystems. Globally, there is a growing disparity between food production and demand. At the same time, productivity gains are slowing for many important crops and there is rising awareness that current agricultural practices are not ecologically sustainable. There is also a need to ensure that the food we produce is not only safe, but nutritious. Understanding plant health is central to overcoming these challenges, and to produce more and better food on less acreage with fewer inputs.

Plant health faces many challenges, including pathogens, insects, competition, and adverse environments. Previously, biotic and abiotic stresses were considered separately, but we are increasingly understanding that they are interrelated and synergistic. We also have a growing understanding of how microbial and plant communalities can be exploited to increase plant health. Global climate change creates a need for crops that are resilient to new, harsher environments, and also means that pathogens are spreading to new territories and new crops, creating a need for professionals to diagnose and mitigate transmission.

We developed the Plant Health Sciences emphasis area to train students in both biotic and abiotic factors that impact plant health, ranging from the molecular to the microscopic to the macroscopic. Professionals working in Plant Health Science apply plant, microbial, and insect sciences to predict disease epidemiology, protect plant, environment and human health, and optimize plant growth or yields. Practitioners must understand species-specific insect, disease, and cultural practices, monitor disease transmission, analyze and interpret data, make diagnoses, and then develop recommendations aimed at improving plant performance.

Employment options include university or corporate research and development, management-, technical-, and consulting-services, for various associated industries including private commercial nursery and field producers, as well as regional-, state-, or municipal- governmental, commercial and non-profit organizations. The Bureau of Labor Statistics, US Department of Labor predicts employment in this area to grow 7% by 2028, (faster than the 5% average growth for all occupations and faster than the 6% growth of other life science occupations) as a consequence of population growth/food demand, as well as the consequences of climate change.

Students entering the School of Plant Sciences from 2010-2019 consistently expressed interest to the academic advisor in Plant Health-associated careers and, in a recent survey, 5 out of 7 Plant Sciences majors reported they were "moderately likely" (3) or "extremely likely" (2) to choose this proposed Plant Health Sciences subplan were it available now. Additionally, 2 out of 9 Sustainable Plant Systems majors surveyed said there were "moderately likely" (1) or "extremely likely" (1) to switch to the Plant Sciences major and choose this proposed Plant Health Sciences subplan were it available now, along with 1 student from another biological science major who responded to the survey. [Full survey questions and responses are appended.]

It is important to note that the core of our curriculum remains the same with no significant changes to Supporting Coursework and modest changes to the Major Core. Among these latter changes are: the omission of the PLS 195B Colloquium option in favor of the more frequently convened PLS 195A, the inclusion of PLP 305 as a required core rather than an elective so that we ensure all students have a basic understanding of plant disease, and the inclusion of an additional lab course (PLS 361) to ensure all students have hands on, relevant laboratory experience as part of their degree program. For the Plant Health Sciences Emphasis Core courses, we have included PLP 329A (Microbial Diversity) as a requirement, while it remains an elective for the general Plant Sciences sub-plan. Finally, the list of all other Plant Sciences Free Electives remains unchanged from our previous program (see below).

IX. At minimum, provide two unique learning outcomes for the proposed emphasis. Which courses in the emphasis will Introduce, Practice, and/or Assess the learning outcomes? Use the table below to provide the information. Add rows as needed. Delete example (EX) row before submitting:

Learning Outcome	Introduced	Practiced	Assessed
Describe the diversity, characteristics, and impacts of major lineages of organisms that influence plant health.	PLS 360 MIC 205	PLS 305	PLP 329A
Explain the consequences of biotic and abiotic stresses on plant physiology and describe the mechanisms that underlie these changes, including endogenous defense mechanisms.	PLS 240 ENVS 200 PLS 360	PLS 360 PLS 305 ENTO 300	ENVS 316 PLS 333 PLP 427
Diagnose biotic and abiotic factors that impact plant health and explain mitigation and/or control strategies to optimize plant health in the presence of biotic and abiotic stressors.	ENVS 200 PLS 305 ENTO 300	ENVS 316 PLS 305 ENTO 300	ENVS 316 PLS 305 ENTO 300

X. Requirements to meet 40% commonality across emphases. ABOR Policy 2-221-c. Academic Degree Programs Subspecializations requires all emphases within a major to share at least 40% curricular commonality across emphases (known as "major core"-courses counting towards major units and major GPA). List the required major core curriculum required of all emphases. Refer to your existing advisement report(s), if needed. Include the prefix, course number, course title and number of units. Add rows as needed. Delete example (EX) rows before submitting.

Requirement Title/Description	Courses (include prefix, number, title, units)	Minimum units needed to satisfy requirement
Supporting Coursework	1. Mathematics: MATH 113, MATH 122A+122B, or MATH 125 (3-5) 2. Science Communication: ENVS 408, ENVS 415, ENGL 307, ENGL 308, or COMM 312 (3) 3. Statistics: Math 263 (3) 4. PHYS 102, Intro Physics I, lecture (3) 5. CHEM 151, Gen Chem I, integrated lecture + lab (4) 6. CHEM 152, Gen Chem II, integrated lecture + lab (4) 7. CHEM 241A+243A, Organic Chem I, lecture + lab (4) 8. BIOC 384, Foundations in Biochemistry (3) 9. MCB 181R, Intro Biology I, lecture (3) 10. ECOL 182R, Intro Biology II, lecture (3)	33
Major Core	1. PLS 195A, Colloquium - How Will We Feed and Clothe 9-billion People in 2050? (1) 2. PLS 240, Plant Biology (4) 3. PLP 305, Introductory Plant Pathology (3) 4. PLS 312, Animal and Plant Genetics (4) 5. PLS 359, Plant Cell Structure and Function (3) 6. PLS 360, Plant Growth and Physiology (3) 7. PLS 361, Principles of Plant Physiology Lab (1) 8. PLS 498, Senior Capstone (2)	21
	Total major core upper division units required	16
	Total major core units required	21

The major core reflects small changes to the major as it currently stands to better align with new emphasis areas.

X. Requirements specific to the proposed emphasis. List the required emphasis core, electives, and any special conditions students must meet to complete the emphasis using the table below. Include the prefix, course number, course title, and units for each course. Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department. Highlight and label (NEW) any new courses that must be developed for the emphasis. Add rows as needed. Delete example (EX) rows before submitting.

Note: a proposed emphasis having similar curriculum with other plans (within department, college, or university) may require completion of a comparison chart. Total units required for each emphasis must be equal.

General Emphasis (reflecting small changes to the major as it currently stands)

Requirement Title/Description	Courses (include prefix, number, title, units)	Minimum units needed to satisfy requirement
Emphasis Core	PLS 307, Evolution of Food Plants (3) PLS 440, Mechanisms in Plant Development (3) PLS 448A, Plant Biochemistry and Metabolic Engineering (3) PLS 449A, Plant Genetics + Genomics (3) PLS 458, Plant Molecular Biology (3)	15
Emphasis Electives	Complete 14 units from the approved list of upper division electives.	14
	Total emphasis upper division units required	29
	Total major emphasis units required*	29

Plant Health Sciences Emphasis

Requirement Title/Description	Courses (include prefix, number, title, units)	Minimum units needed to satisfy requirement
Emphasis Core	ENVS 200, Introduction to Soil Sciences (3) ENVS 201, Soils Laboratory (1) ENTO 300, Insect Pest Management for Desert Cropping Systems (3) ENVS 316, Soil Fertility and Plant Nutrition (3) PLP 329A, Microbial Diversity (3)	13
Emphasis Core	Any two of the following: MIC 205A, General Microbiology (3) PLS 333, General Virology (3) PLP 427R, General Mycology (3)	6
Emphasis Electives	Complete 10 units from the approved list of upper division electives.	10
	Total emphasis upper division units required	29
	Total major emphasis units required*	29

***All emphases offered for this major must have the same minimum number of units required**

Plant Sciences Major Electives – courses taken for an Emphasis Core cannot be counted toward Emphasis Electives. Course required for the Emphasis Core of one Sub-plan may be taken as electives if the student is enrolled in the other Sub-plan. These courses are noted in the following list.

Course Title	Number	Units
Genetics and Genomics		
Evolution of Food Plants (Plant Health Sciences Sub-plan only)	PLS 307	3
Plant Genetics and Genomics (Plant Health Sciences Sub-plan only)	PLS 449A	3
Plant Molecular Biology (Plant Health Sciences Sub-plan only)	PLS 458	3

Genomics	ECOL 326	3
Evolutionary Biology	ECOL 335	4
Molecular Genetics	MCB 304	5
Bioinformatics and Genomic Analysis	MCB 416A	3
Problem Solving with Genetic Tools	MCB 422	3
Population Genetics	ECOL 426	3
Plant Growth and Development		
Mechanisms in Plant Development (Plant Health Sciences Sub-plan only)	PLS 440	3
Plant Biochemistry and Metabolic Engineering (Plant Health Sciences Sub-plan only)	PLS 448A	3
Cell and Developmental Biology	MCB 305	4
Cell Biology	MCB 410	3
Molecular Biology	MCB 411	3
Developmental Mechanisms	MCB 455	3
Plant Pathology and Microbiology		
General Microbiology	MIC 205	3
Microbial Physiology	MIC 328	3
General Virology	PLS 333	3
Microbial Diversity (General Sub-plan only)	PLP 329A	3
General Mycology	PLP 427R+L	3+2
Microbial Genetics	PLP428R+L	3+2
Antibiotics - A Biological Perspective	PLP 452	3
Plant Production		
Crop Science and Production	PLS 306	3
Plant Propagation, Production & Management	PLS 330	4
Soil and Plant Nutrition	ENVS 316	3
Insect Pest Management	ENTO 468	3
Water and Soils		
Soil and Plant Nutrition (General Sub-plan only)	ENVS 316	3
Irrigation Principles and Management	ENVS 404	3
Soil Genesis, Morphology & Classification	ENVS 431	3
Water Harvesting	ECOL 454	3
Soil and Water Resources Engineering	ABE 455	3
Irrigation System Design	ABE 456	3
Soil and Water Conservation	ENVS 461	
Controlled Environment Production Systems		
Introduction to Hydroponics	PLS 217	3
Nursery Systems Management	PLS 339	3
Advanced GH Crop Production	PLS 397B	3
Physiology of Crop Production in CEA	PLS 475A	3
Applied Instrumentation in CEA	ABE 479	3
Irrigation Engineering	ABE 455	3
Irrigation System Design	ABE 456	3
Engineering Biological Processes	ABE 481A	3
Controlled Environment Systems	ABE 483	3
GH Pest Management	ENT/ABE 497C	3
Irrigation Principles and Management	ENVS 404	3
Scientific Philosophy/Education		
Systematic Botany	PLS 472	4
Microbial Diversity	PLP 329	3
Evolution of Plant Form and Function	ECOL 340	3
Biodiversity and the Tree of Life	ECOL 345	3
Phylogenetic Biology	ECOL 465	3

Conservation Biology	ECOL 406R	3
Biotechnology		
General Microbiology	MIC 205	3
Introduction to Biotechnology	PLS 340R	3
Plant Biotechnology Lab	PLS424L	2
Recombinant DNA Methods & Appl.	MCB 473	4
Microbial Genetics	PLP428R	3
Antibiotics- A Microbial Perspective	PLP 452	3
Plant Biotechnology		
Introduction to Biotechnology	PLS 340	3
Plant Biotechnology	PLS424R	3
Plant Biotechnology Lab	PLS424L	2
Internship in Biotechnology	PLS392/492	3
Metabolic Biochemistry	BIOC 385	3
Plant Biochemistry and Metabolic Engineering	PLS448A	3
Computation		
Great Ideas of the Information Age	ISTA100	3
Statistical Foundations for the Information Age	ISTA 116	3
Computational Thinking and Doing	ISTA 130	3
Sequence Data: An Interdisciplinary Perspective	ISTA 310	3
Resource Management		
Economics, Ethics & Environmental Mgmt	AREC 350	3
Water, Environment and Society	GEOG 304	3
Vegetation Management of Wildlands	RAM 446	3
Field Botany	RNR 230R/L	3
Natural Resources Ecology	RNR 316	3
Natural Resources Measurements	RNR 321	3
Noxious, Invasive Plants of Arizona	RNR 400	3
Useful Wild Plants of Arizona	RNR 401	3
Sustainable Management of Arid Lands	ENVS 401	3
& Salt Affected Soils		
Air and Water	WSM 402	3
Natural Resources Management Practices	RNR384	3
Scientific Philosophy/Education		
Medicinal Plants	PLS 480	3
Philosophy of the Biol. Sciences	ECOL 421	3
Sonoran Desert Discovery	ECOL 464	3
Art of Scientific Discovery	ECOL 479	3
Additional Free Elective Courses		
Directed Research	PLS 392	1 to 5
Internship	PLS 393	1 to 5
Independent Study	PLS 399	1 to 5
Honors Independent Study	PLS 399H	1 to 5
Preceptorship or Honors Preceptorship	PLS 491 or 491H	1 to 5
Directed Research	PLS 492	1 to 5
Internship	PLS 493	1 to 5
Honors Thesis	PLS 498H	1 to 5
Independent Study	PLS 499	1 to 5
Honors Independent Study	PLS 499H	1 to 5

XI. Emphasis course/faculty information for existing courses. Complete the table below for all emphasis coursework. You can find information to complete the table using the UA course catalog or UAnalytics (Catalog and Schedule Dashboard> "Printable Course Descriptions by Department" On Demand Report; right side of screen). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department. Add rows as needed. Delete example (EX) rows before submitting.

Course prefix and number	Title	Course Description	Pre-requisites	Typically Offered (F, Sp, Su, W) and Frequency (every year, odd years, etc.)	Home Department	Faculty members available to teach the courses
ENVS 200	Introduction to Soil Sciences	Fundamental principles of soil science-origin, nature, and constitution of soils; their chemical, physical, and biological properties in relation to plant growth and the non-plant uses of soils.	CHEM 141 or CHEM 151 or CHEM 161	Fall, Spring	ENVS	Fidel
ENVS 201	Soils Laboratory	Laboratory exercises for ENVS 200.	none	Fall, Spring	ENVS	Fidel
ENTO 300	Insect Pest Management for Desert Cropping Systems	The course will focus on the principles and practices of insect pest management in agricultural crops. IPM concepts and management tactics will be discussed in detail. Case studies of successful pest management programs unique to SW desert cropping systems will be examined.	none	Fall Even Years	ENTO	Palumbo
ENVS 316	Soil Fertility and Plant Nutrition	Chemical and biological properties of soil as they affect soil nutrient availability and crop production. Principles of plant nutrition and nutrient acquisition also discussed. Additional topics: fertilizers and fertilization, irrigation water quality, soil salinity, environmental impacts of fertilizers, and principles of soil and plant tissue testing.	ENVS 200	Spring	ENVS	Walworth
PLP 329A	Microbial Diversity	Microbial diversity is a course offered to students in Microbiology, and to other majors with an interest in the remarkable genetic, species-level, phylogenetic, functional, and ecological diversity of prokaryotic and eukaryotic microorganisms.	none	Fall	SPLS	Arnold
MIC 205A	General Microbiology	Introduction to the diverse lifestyles of bacteria, viruses, fungi, and protozoan parasites, their importance in the biosphere, and their roles in human and animal diseases.	MCB 181R, CHEM101B or 103A	Spring	ACBS	Xiong
PLS 333	General Virology	This course will be offered every other year in the fall semester. The course will provide a general introduction to the field of Virology, inclusive of bacterial, animal, and plant viruses. Topics will include the history of virology, taxonomy and classification of viruses, introduction to virus structure and assembly, types of virus genomes and functions representative of the different types of virus groups, introduction general laboratory, virus-host interactions,	none	Spring Even years	SPLS	Brown

		virus-vector biology, and diagnostic methods ecology, and evolutionary aspects.				
PLP 427R	General Mycology	An exploration of the diversity of fungi and fungus like organisms covering general biology and roles as pathogens (of humans and plants), saprobes and symbionts. Fungi as models for eukaryotic molecular research and their uses in industry will be covered.	none	Fall	SPLS	Orbach

XII. Emphasis course/faculty information for NEW courses. Complete the table below. Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department. Add rows as needed. Add rows as needed. Delete example (EX) rows before submitting.

Course prefix and number	Title	Course Description	Pre-requisites	Status*	Anticipated first term offered	Typically Offered (F, Sp, Su, W) and Frequency (every year, odd years, etc.)	Home Dept.	Faculty members available to teach the courses

*In development (D); submitted for approval (S); approved (A)

XIII. Using the table below, list each faculty member who will contribute to the teaching of courses in this emphasis and the teaching FTE they will contribute. Add rows as needed. Delete example (EX) rows prior to submission.

Course(s)	Name	Department	Rank	Degree	Faculty/% effort
ENVS 200	Fidel	ENVS	Assistant Professor of Practice	PhD	90
ENVS 201	Fidel	ENVS	Assistant Professor of Practice	PhD	90
ENTO 300	Palumbo	ENTO	Professor	PhD	5
ENVS 316	Walworth	ENVS	Specialist/Professor	PhD	30
PLS 329A	Arnold	SPLS	Professor	PhD	20
MIC 205	Xiong	2450-ACBS	Associate Professor	PhD	20
PLS 333	Brown	SPLS	Professor	PhD	10
PLP 427R	Orbach	SPLS	Professor	PhD	20

XIV. **Special conditions for admission to/declaration of this emphasis** – explain in detail the criteria to declare this emphasis, including GPA requirements, completion of courses prior to declaration, application process, interviews, etc. These conditions must be approved by faculty governance to be enforced.

There are no special conditions for the emphasis area.

XV. **Emphasis productivity –** provide a detailed plan in the case the emphasis does not attract the number of anticipated students and/or the new courses have low enrollments. Will emphasis courses continue to be offered as described in Section XIII and XIV or will students be offered alternative courses from outside the emphasis as substitutions? Is the department/school/college committed to offering the courses regardless of the emphasis productivity?

All the core and emphasis-specific courses for this new emphasis are existing courses and no new courses have been proposed or implemented as part of this proposal. As such, we anticipate that we will continue to offer all the PLS courses listed even if the Plant Health Science emphasis does not attract the number of anticipated students. This is especially true of the core courses, because they are required for all Plant Sciences majors. If any courses required for the Plant Health Science emphasis are suspended or abandoned for any reason, the School of Plant Sciences Curriculum Committee (including the academic advisor for the Plant Sciences major) will endeavor to identify a similar course, preferably one offered the same semester as the suspended/abandoned course, that can substitute and will work with affected students to ensure that the course substitution will not delay their graduation plans.

XVII. **Do you want the emphasis name to appear on the transcript? ☒ Yes ☐ No**

XVIII. **Do you want the emphasis name to appear on the diploma? ☒ Yes ☐ No**

XIX. **Anticipated semester and year to launch the proposed emphasis:** Fall 2020

XX. **Number of new faculty hires required to deliver the emphasis:** none required

XXI. **Budgetary impact**– indicate new resources needed and source of funding to implement the proposed emphasis. If reallocating resources, indicate where resources will be taken from and the impact this will have on the students/faculty/program/unit.

No new resources are needed to initiate this emphasis area.

Decision process for approval will include:
1) efficiency of course offerings.
2) course offerings are appropriate and match the expertise of the faculty.
3) evidence of sufficient student demand.
3) no major conflict with existing programs.

XXII. Required signatures

Managing Unit Administrator (print name and title): Dr. Matthew Jenks, Director School of Plant Sciences

Managing Administrator's Signature:  Date: March 24, 2020

Managing Unit Administrator (print name and title): Dr. Michael Staten, Bart Cardon Associate Dean for Academic Programs

Managing Administrator's Signature: ___  _____ Date: March 25, 2020

Dean (print name and title): Dr. Shane Burgess, Charles Sander Dean of The College of Agriculture and Life Sciences

Dean's Signature:  Date: March 25, 2020

Dean (printed name and title):Dean's Signature:Date:

All programs that will be offered through distance learning and/or fully online must include the following signature. The signature of approval does not indicate a commitment to invest in this program. Any potential investment agreement is a separate process.

Joel Hauff, Associate Vice President Academic Initiatives and Student Success and Executive Director for Online and Distance Education Administration

Signature: _____ Date: _____

Note: In some situations, signatures of more than one unit head and/or college dean may be required.

For use by Curricular Affairs:

Committee	Approval date
Academic Programs Subcommittee	
Undergraduate Council	
College Academic Administrators Council	

☐ Create approval memo
☐ Send memo to college/dept and acad_org listserv
☐ Create emphasis code in UAccess, including secondary major emphasis code
☐ Upload approval memo and proposal documents to UAccess
☐ Notify acad_org of the plan code creation
☐ Notify ADVIP team, include proposers

Summary of Survey sent to students on the PLS and SPS email listserv, January 2020

Link to survey: https://uarizona.co1.qualtrics.com/jfe/form/SV_dmS6Invjc7k8SCV

Message sent to listservs (PLS undergraduates and SPS undergraduates):

> Dear PLS and SPS majors,
>
> The School of Plant Sciences is considering adding a new emphasis area* to the Plant Sciences major and would like to gauge student interest in this emphasis area. Could you please take our quick, 3-question (all clicks, no writing) survey to let us know what you think? We'd appreciate as many responses as possible, regardless of your current major. Please take the survey by the end of Wednesday (January 22nd), to allow us to include your response in our analysis.
>
> *Emphasis areas allow a deeper study of a specific subject area and students completing the coursework in the emphasis area would have a notation on their transcript indicating that they specialized in the emphasis area.
>
> Link to survey: https://uarizona.co1.qualtrics.com/jfe/form/SV_dmS6Invjc7k8SCV
>
> Thank you!
>
> The School of Plant Sciences Curriculum Committee

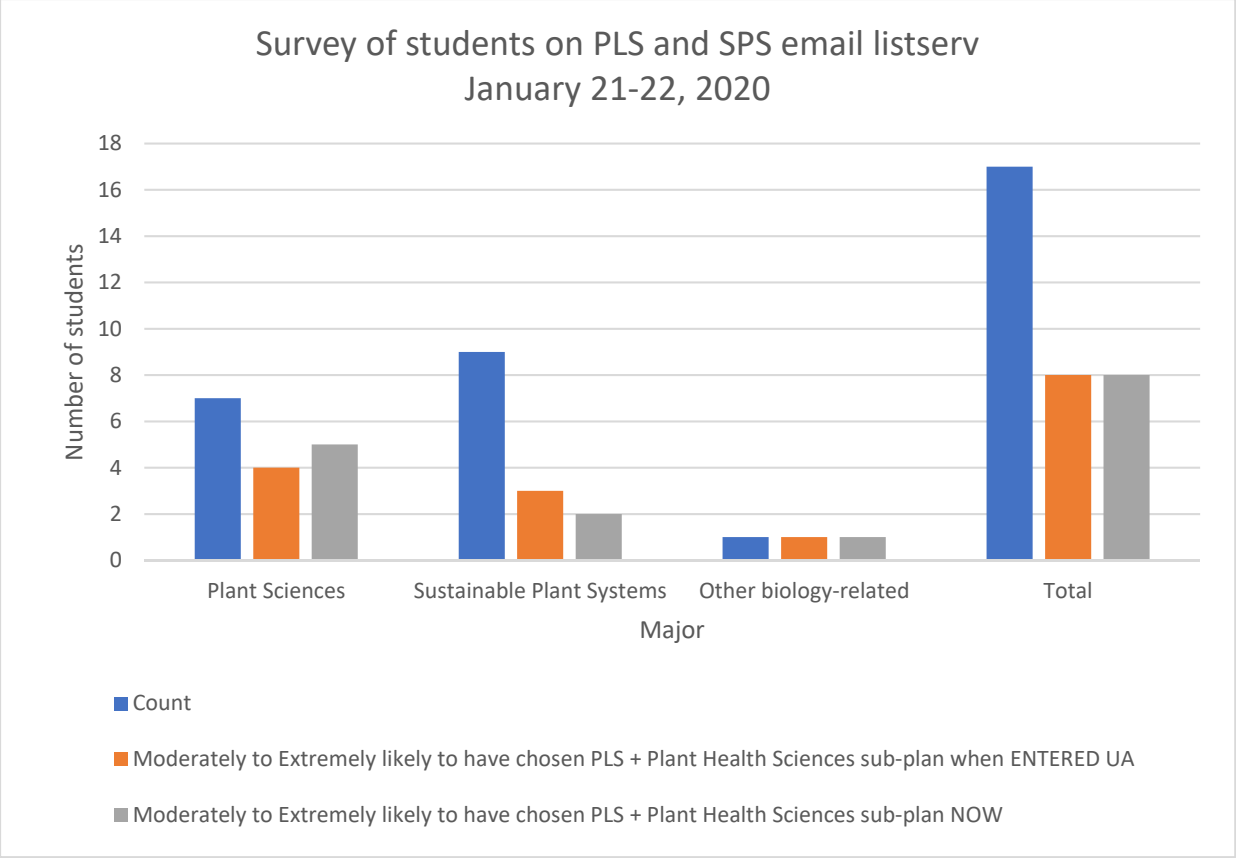
Survey questions:

1. What is your current MAJOR? You can select more than one answer. *[Check box list provided]*
2. Please read this description about a potential new emphasis area in the Plant Sciences major and then answer the questions that follow.

   Professionals working in Plant Health Sciences apply plant, microbial, and insect sciences to predict disease epidemiology, protect plant, environment and human health, and optimize plant growth or yields. A Plant Health Sciences emphasis area would provide students with training in both biotic (living) and abiotic (physical or chemical) factors that impact plant health, ranging from the molecular to the microscopic to the macroscopic, to prepare them for careers in this field.

   [Students choosing the Plant Sciences major would be able to choose the Plant Health Sciences emphasis area if they wanted to specialize in the field described above or no emphasis area, if they wanted to get a more broad training in Plant Sciences.]

   From this description, how likely would you have been to specifically choose the Plant Health Sciences emphasis area within the Plant Sciences major when you entered U. Arizona? *[Likert scale check boxes provided; extremely unlikely to extremely likely.]*
3. From the description of the Plant Health Sciences emphasis area in the previous question, how likely would you be to join the Plant Health Sciences emphasis area NOW, were it already available? [Note: if you are not currently a Plant Sciences major, this would require changing your major to Plant Sciences or adding an additional major in Plant Sciences.] *[Likert scale check boxes provided; extremely unlikely to extremely likely.]*



Major	Count	**Moderately to Extremely likely** to have chosen PLS + Plant Health Sciences sub-plan when ENTERED UA	**Extremely likely** to have chosen PLS + Plant Health Sciences sub-plan when ENTERED UA	**Moderately to Extremely likely** to have chosen PLS + Plant Health Sciences sub-plan NOW	**Extremely likely** to have chosen PLS + Plant Health Sciences sub-plan NOW
Plant Sciences	7	4	1	5	2
Sustainable Plant Systems	9	3	2	2	1
Other biology-related	1	1	0	1	0
Total	17	8	3	8	3

ENTO course in Plant Sciences emphasis area

Bruce Tabashnik <tabash@comcast.net> Mon, Jan 20, 2020 at 9:14 AM
To: Rebecca Mosher <rmosher@email.arizona.edu>
Cc: jpalumbo <jpalumbo@ag.arizona.edu>, "Goggy - (goggy) Davidowitz" <goggy@email.arizona.edu>, "Staten, Michael E - (statenm)" <statenm@email.arizona.edu>

Hi Becky,
That sounds great.

I approve of PLS students in the Plant Health emphasis taking ENTO 300, Insect Pest Management for Desert Cropping Systems, as part of the required coursework for the emphasis.

Thanks for asking and for including our course in your program.

Best wishes,
Bruce

On Jan 20, 2020, at 8:33 AM, Rebecca Mosher <rmosher@email.arizona.edu> wrote:

> Hi Bruce,
>
> I'm writing to request your support for a new emphasis area under the Plant Sciences major, focused on Plant Health. This emphasis area will cover both biotic and abiotic stresses and how they impact plant health, and will prepare students for work in a variety of jobs in agricultural, commercial, or governmental venues.
>
> We would like to include ENTO 300, Insect Pest Management for Desert Cropping Systems, as part of the required coursework for the emphasis. Please let me know whether you approve of PLS students in the Plant Health emphasis taking this ENTO course. A response to this email would be fine.
>
> Many thanks,
> Becky
>
> ---
> Dr. Rebecca Mosher
> Associate Director and
> Associate Professor
>
> The University of Arizona
> The School of Plant Sciences
> 303 Forbes Bldg.
> 1140 E. South Campus Dr.
> Tucson, AZ 85721-0036
> USA
>
> +1 520-626-4185
> rmosher@email.arizona.edu
> www.cals.arizona.edu/research/mosherlab

ENVS courses in Plant Sciences emphasis area

Chorover, Jon - (chorover) <chorover@email.arizona.edu> Fri, Jan 17, 2020 at 5:38 PM
To: "Mosher, Rebecca A - (rmosher)" <rmosher@email.arizona.edu>

Hi Becky,

Yes, I approve of this request.

Best wishes,
Jon

Sent from my iPhone

> On Jan 17, 2020, at 3:29 PM, Rebecca Mosher <rmosher@email.arizona.edu> wrote:
>
> Hi Jon,
>
> I'm writing to request your support for a new emphasis area under the Plant Sciences major, focused on Plant Health. This emphasis area will cover both biotic and abiotic stresses and how they impact plant health, and will prepare students for work in a variety of jobs in agricultural, commercial, or governmental venues. We would like to include three ENVS courses in the required emphasis coursework:
>
> ENVS 200 - Introduction to Soils Science
> ENVS 201 - Soils Laboratory
> ENVS 316 - Soil Fertility and Plant Nutrition
>
> These course are already electives for Plant Sciences students, and we hope that additional Plant Science students will enhance these classes and strengthen both units.
>
> Please let me know whether you approve of including these three ENVS courses in our emphasis area request. A response to this email would be fine.
>
> Many thanks,
> Becky
>
> ---
> Dr. Rebecca Mosher
> Associate Director and
> Associate Professor
>
> The University of Arizona
> The School of Plant Sciences
> 303 Forbes Bldg.
> 1140 E. South Campus Dr.
> Tucson, AZ 85721-0036
> USA
>
> +1 520-626-4185
> rmosher@email.arizona.edu
> www.cals.arizona.edu/research/mosherlab