IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences

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October 3, 2016

TO:　　　　Graduate Curriculum and Catalog Committee

FROM:　　　Charles V. Schwab, Chair – College Curriculum Committee

RE:　　　　Outcome of College Vote on New Area of Specialization

This memo conveys the outcome of the College of Agriculture and Life Sciences curriculum committee vote about the new area of specialization Predictive Plant Phenomics (P3) for Plant Breeding major. The College of Agriculture and Life Sciences curriculum committee reviewed the proposal and voted on September 7, 2016. The outcome of the vote was 15 – approved, 0 – disapproved, and 0 – abstained. One member of the committee was not present during the vote and not counted in the totals.

If you have any questions please contact me at 4-4131 or cvschwab@iastate.edu.

Agronomy Curriculum Committee Minutes

April 21, 2016

2:00 PM

Attendees: Burras, Hornbuckle, Knapp, Mullen, Singh, Stolt, Wiedenhoeft, Wolt

Meeting started at 2:10 pm

- Old Business

    a. Minutes from 2.04.16 through 3.04.16

Voting	Motioned to approve by Dr. Mullen, Burras second. All approved

    b. Catalogue update – Mullen

Overview	Stolt & Mullen worked on submitting course edits. Tried to make the "prerequisite" and "recommended" listings for courses uniform. These edits were what the Registrar's office suggested. Tried (per catalogue committee) to drop 490G, this was denied as it would drop all the 490 courses. Hornbuckle proposed his changes for 183 course title & description. Course plan was shared to clarify the changes. Committee brain stormed course titles. Basic Skills, Tools, and Methodologies for Agronomists or Basic Methodologies for Agronomists. Hornbuckle will finalize the title and submit tomorrow morning to get entered into the catalog editing system.

    c. Sophomore Year Classes

Overview	New sophomore class descriptions need to be shared with at tomorrow's faculty meeting. Burras proposed to give course description list to the faculty or possibility the link for the experimental courses. Changes in our minor could include the new courses and add "or equivalent". Communication with other departments for changes in our minor is being established. Knapp will share with the faculty tomorrow and the sophomore group will be present at the meeting to help answer questions. Suggestion of removing Agron 260 out of the 17-18 catalog.

Voting	Mullen moved to drop Dr. Burras' course, Agron 260. Wiedenhoeft second the motion. All approved, Burras abstain.

New Business

d. P3 specialization request – Plant Breeding

Overview	There is a predictive plant phenomics (P3) effort being supported by the NSF with the Plant Breeding.
Voting	Wolt motioned to approved, Mullen second motion. No discussion. All approved.

e. Hort 476x – Post Harvest Technology

Overview	Discussion whether there is overlap – none found
Voting	All approved

- Standard Reports

a. Freshman Year Courses – Mary Wiedenhoeft

Overview	Committee meets again during finals week.

b. Sophomore Year Courses – Lee Burras

Overview	Nothing new.

c. CALS Curriculum Committee – Hornbuckle

Overview	In Cy-Box, next meeting Monday, April 25

d. Assessment Report – Wiedenhoeft

Overview	N/A

e. Advising – Mullen

Overview	Classes filling up has been an issues mostly the second half part of registration. Agronomy advisor survey will be going out soon to students. Advisor meeting coming up April 29 to get ready for orientation.

Announcements:
- Agron 354L C for Fall 2016 will be taught by Ibrahim Mostafa.

- Ranae Dietzel has started the paperwork so she can be instructor of 590 for fall.

- Faculty retreat will initially be targeted for August 12 or 15, 2016.
a) Possible discussion
    i) Report by freshman group
    ii) Report by sophomore group
    iii) Discussion of junior and senior year based on i and ii.

Meeting dismissed 3:38 pm.

(Check one)

☐
Request for New Specialization

The following describes the material which should be included in a proposal for a new area of specialization in an existing graduate degree or for a change in an existing area of specialization. Areas of specialization are recognized on a student's permanent record (transcript). Approval is required by the department or program curriculum committee, the College Curriculum Committee, the GCCC, Graduate Council, and by the Graduate Dean. The proposal should be sent to the Graduate Curriculum and Catalog Committee (GCCC) with documentation of approvals by the department and college:

> Graduate Curriculum and Catalog Committee
> 1137 Pearson Hall
> Iowa State University
> Ames, IA 50011-2206

CALSCC approved the specialization on 3 October 2016. See attached file from C.V. Schwab, Chair of CALSCC.

1. Name of the area of specialization. **PREDICTIVE PLANT PHENOMICS (P3)**

2. Name of the major.   **Plant Breeding**

3. Graduate degrees to which it applies.   **Ph.D.**

4. Name of the department(s) or program.
   Plant Breeding

5. What is the change you are requesting? (Answer only if you checked the Change box)
   N/A

6. Other existing areas of specialization for the same major and same degree.
   None

7. Are areas of specialization optional or required? (Can a student choose the major without selecting an area of specialization?)
   OPTIONAL

8. Reasons for proposing the new area of specialization or change in the area of specialization.

Faculty at Iowa State University received NSF NRT Research Traineeship Funding at the Ph.D. level entitled, "Predictive Plant Phenomics" (also known as P3) – see grant number DGE 1545453: NRT-DESE: P3 – Predictive Plant Phenomics. Students within this specialization will be trained in Engineering, Plant Sciences and Data Sciences. See www.predictivephenomicsinplants.iastate.edu for more details.

The NSF NRT P3 Trainees will be predominantly majoring in Agricultural and Biosystems Engineering, Bioinformatics and Computational Biology, Electrical and Computer

Engineering, Genetics and Genomics, Mechanical Engineering, Plant Biology, and Plant Breeding.

Value to the Ph.D. student: Valuable training experience in predictive plant phenomics. Recognition of intensive and innovative training on their transcript.

Value to the program: Recruitment of plant breeding students who will be trained to address major agronomic challenges of the 21st century.

Value to Iowa State University: This specialization is designed to encourage the development and implementation of bold, new, potentially transformative, and scalable models for STEM graduate education training including one NSF priority interdisciplinary research theme—Data-Enabled Science and Engineering (DESE)."

Value to the world: Broaden the thinking on how to solve growing populations and climate change; and adapt agriculture to meet global needs (i.e., food security).

9.   Requirements for the area of specialization (how are the requirements different for this area of specialization compared to other areas of specialization or to the major without an area of specialization). (For new specialization only.)

<u>Predictive Plant Phenomics Area of Specialization:</u>
Course requirements for PB students taking this specialization shadow PB PhD course requirements quite closely. Additional course requirements include a P3 graduate seminar for 3 semesters, a one-time P3 core course with lab for T-Base Common Core (ME/BCB/GDCB 585x to be offered Fall 2016 for the first time) and a one credit course, BRT 507 Tech-Led Entrepreneurship.

Note: The P3 Graduate Seminar (ME 600 P3) is an existing seminar course (ME 600), in which a special section (P3C) is added to the P3 students. We require the P3 students to attend at least 4 seminars per semester that are given through several programs to help broaden their experience. This course ME 600 P3 is an 'R' course, so students do not receive credit but it is still required.

10.   Estimate the number of students who will graduate with this major and degree each year and the number who will graduate with this area of specialization. (For new specialization only.)

PLANT BREEDING Ph.D.: 6
PREDICTIVE PLANT PHENOMICS SPECIALIZATION: 2

11   What resources (faculty, courses, research facilities, library facilities, etc) are available to support the area of specialization? (For new specialization only.)

NSF NRT Ph.D. TRAINEESHIP AWARD #1545453 AUGUST 13, 2015
http://www.nsf.gov/awardsearch/showAward?AWD_ID=1545453
$2,866,938.00

Grant PI's and team members are dedicated to the success of this specialization through several different majors at Iowa State University:
http://www.predictivephenomicsinplants.iastate.edu/team.html
http://www.predictivephenomicsinplants.iastate.edu/homepage.htm

Courses: Most coursework exists. P3 Core with Lab for T-Base Common Core is ME/BCB/GDCB 585x to be offered Fall 2016 for the first time.

12.   What future financial support will be needed? (For new specialization only.)

After NSF NRT grant ends, funding would likely be necessary to provide for introductory course which includes lab elements (P3 Core with Lab for T-Base Common Core, ME/BCB/GDCB 585x to be offered Fall 2016 for the first time). Funding could be provided by the program or passed onto graduate students as course lab fees. This course would be available to students not enrolled in the specialization and depending upon yearly enrollment, offered in alternate Fall semesters. Students will be admitted into the program for the first year on fellowships or TAships.

All other courses exist and will serve students inside and outside of the specialization.