THE UNIVERSITY OF ARIZONA.

FORM TO REQUEST SUBSTANTIAL CHANGES TO AN EXISTING UNDERGRADUATE MAJOR

A request for substantial changes to an existing program requires approval from the school director/department head (managing administrator), college academic dean, Curricular Affairs, Undergraduate Council (UGC), and College Academic Administrators Council (CAAC). Additional approvals may be required, depending on the requested changes. Complete this form and submit to Martin Marquez (martinmarquez@email.arizona.edu) no later than October 25, 2019 to be considered for inclusion in the 2020-2021 Academic Catalog.

I. Requested by (College & School/Department):

Department of Pharmacology & Toxicology, College of Pharmacy

II. Proposer's name, title, email and phone number:

Richard Vaillancourt, Ph.D
Associate Professor, Pharmacology & Toxicology
Director of Undergraduate Studies, College of Pharmacy
vaillancourt@pharmacy.arizona.edu
626-4374

III. Degree, major and number of students enrolled in the major. If you have emphases (sub-plans), list the number of students enrolled by emphasis:

Degree: Bachelor of Science
Major: Pharmaceutical Sciences (BSPS)
Current Enrollment: 298 (47 Pharmaceutical Sciences, 251 Pre-Pharmaceutical Sciences)

IV. Describe proposed changes to the major. Provide a rationale and explanation for making changes to the major and include any relevant supporting data. Are the changes proposed a result of Annual Program Review (APR) and/or a result from the assessment of programmatic outcomes? If you are requesting a name change, please indicate if the subject code (course prefix) will also change. Include requested new prefix code and description.

We are requesting four changes to the Pharmaceutical Sciences major. Details can be found below.

1. Elimination of Pre-Major, establishment of Advanced Standing
2. Elimination of ECOL 182R+L requirement
3. Movement of BIOC 384 to Foundation Coursework instead of Major Requirements
4. Addition of BIOC 462A as a hidden option to fulfill biochemistry requirement

1. Elimination of Pre-Major, establishment of Advanced Standing

We seek approval to eliminate the pre-major from this program. Current admission to the major is non-competitive, requiring only a 2.0 cumulative and major GPA after completion of a set of foundation courses. The pre-major was designed to ensure that foundation coursework is completed in a timely fashion. Although the pre-major has served that purpose, it has also served as an unnecessary hoop for students to jump through; applicants are required to submit resumes and personal statements, but admission decisions have been based solely on foundation course completion. The current pre-major has also been an unnecessary source of confusion for constituents who frequently mistake "pre-pharmaceutical sciences" for "pre-pharmacy."

The department is still interested in enforcing timely progress through foundation coursework, but believe that an Advanced Standing status will be more effective than a pre-major. Advanced Standing will ensure that students complete foundation coursework early in their academic careers, but will not require a formal major application.

All requirements currently defined as "pre-major coursework" should instead be defined as "Pharmaceutical Sciences Foundation Coursework."

2. **Elimination of ECOL 182R+L requirement**

The BSPS major (including foundation science) currently has a very high unit count, leaving limited room for students to pursue minors, take electives, or engage in research.

The BSPS executive committee reviewed current requirements in order to determine whether all courses are truly necessary. The committee decided that ECOL 182R+182L is not an essential foundation for this degree, and has voted to eliminate the ECOL 182R + 182L requirement.

3. **Movement of BIOC 384 to Pharmaceutical Sciences Foundation Coursework instead of Major Requirements**

BIOC 384 was never intended to be calculated into the major GPA. This was an administrative oversight when developing the original program proposal.

4. **Addition of BIOC 462A as a hidden option to fulfill biochemistry requirement**

BIOC 384 is the standard course used to fulfill the biochemistry department; however, BIOC 385 and BIOC 462B are also currently allowed as hidden options to fulfill the requirement. We would like BIOC 462A to be added as a hidden option on the advisement report as well.

V. **Comparison Chart**–complete the chart below using your existing academic advisement report. You may not need to complete all portions. Highlight row(s) indicating the proposed significant changes. You can find course information to help complete the chart below by using the UA course catalog or UAnalytics (Catalog and Schedule Dashboard> "Printable Course Descriptions by Department" On Demand Report; right side of screen). Proposed changes resulting in similar curriculum with other plans (within department, college, or university) may require completion of an additional comparison chart. Delete Example columns before submitting.

	Existing Major Requirements	**Requirements For Modified Major**
Major, emphasis (if applicable) and degree *	BS, Pharmaceutical Sciences	BS, Pharmaceutical Sciences
CIP Code –lookup here or contact Martin Marquez for assistance, if needed	51.2010 Pharmaceutical Sciences	51.2010 Pharmaceutical Sciences
Total units required to complete the degree*	120	120
Upper -division units required to complete the degree	*42*	42

Total CC transfer units that may apply to this degree*	*64*	64
Foundation courses		
Math	Moderate Strand	Moderate Strand
Second Language	Second Semester Proficiency	Second Semester Proficiency
General Education		
Tier I GE Requirements (150, 160, 170)	2- Tier 1 150 (INDV) 2- Tier 1 160 (TRAD) 0- Tier 1 170 (NATS)	2- Tier 1 150 (INDV) 2- Tier 1 160 (TRAD) 0- Tier 1 170 (NATS)
Tier II GE Requirements (Arts, HUMS, INDV, NATS)	3 units -Tier II Arts 1-Tier II Humanities 1- Tier II Individuals and Societies 0-Tier II Natural Sciences	3 units-Tier II Arts 1-Tier II Humanities 1- Tier II Individuals and Societies 0-Tier II Natural Sciences
Pre-major? (Yes/No)	Yes	No
List any special requirements to declare or gain admission to this major (completion of specific coursework, minimum GPA, interview, application, etc.)	Completion of pre-major coursework with grades of C or higher. Cumulative UA GPA and major/pre-major GPA of 2.0 or higher Completion of major application, including resume and statement of objectives.	None
Minimum # of units required in the major (units counting towards major units and major GPA)	35	32
Minimum # of upper-division units required in the major (upper division units counting towards major GPA)	35	32
Minimum # of residency units to be completed in the major	18	18
Required supporting coursework (courses that do not count towards major units and major GPA, but are required for the major). Courses listed must include prefix, number, units, and title. Include any limits/restrictions in place/needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.	MATH 113 Elements of Calculus (3) or MATH 122B Functions for Calculus (4) or MATH 125 Calculus I (3) PHYS 102 & 181 Intro Physics I and Intro lab (4 units) or PHYS 141 Intro Mechanics (4) CHEM 151 or 141&143 or 161&163 General Chemistry I (4)	MATH 113 Elements of Calculus (3) or MATH 122B Functions for Calculus (4) or MATH 125 Calculus I (3) PHYS 102 & 181 Intro Physics I and Intro lab (4 units) or PHYS 141 Intro Mechanics (4) CHEM 151 or 141&143 or 161&163 General Chemistry I (4)

	CHEM 152 or 142&144 or 162&164 General Chemistry II (4 units) CHEM 241A or 242A or 246A Lectures in Organic Chemistry I (3) CHEM 243A (1) or 247A (2) Organic Chemistry Laboratory I CHEM 241B or 242B or 246B Lectures in Organic Chemistry (3) CHEM 243B (1) or 247B (2) Organic Chemistry Laboratory II MCB 181R/L Introductory Biology I and Introductory Biology Lab I (4) ECOL 182R/L Introductory Biology II and Introductory Biology II Lab (4) MIC 205A General Microbiology (3) MIC 205L Biology of Microorganisms Lab (1) PSIO 380 Fundamentals of Human Physiology (4) (may also be fulfilled with PSIO 201 Human Anatomy & Physiology I (4) AND PSIO 202 Human Anatomy & Physiology II (4), hidden line)	CHEM 152 or 142&144 or 162&164 General Chemistry II (4 units) CHEM 241A or 242A or 246ALectures in Organic Chemistry I (3) CHEM 243A (1) or 247A (2) Organic Chemistry Laboratory I CHEM 241B or 242B or 246B Lectures in Organic Chemistry (3) CHEM 243B (1) or 247B (2) Organic Chemistry Laboratory II MCB 181R/L Introductory Biology I and Introductory Biology Lab I (4) MIC 205A General Microbiology (3) MIC 205L Biology of Microorganisms Lab (1) PSIO 380 Fundamentals of Human Physiology (4) (may also be fulfilled with PSIO 201 Human Anatomy & Physiology I (4) AND PSIO 202 Human Anatomy & Physiology II (4), hidden line) BIOC 384 Foundations in Biochemistry (3 units) (may also be fulfilled with BIOC 385 Metabolic Biochemistry (3) or BIOC 462A Biochemistry (4) or BIOC 462B Biochemistry (4), hidden line)
Major requirements. List all major requirements including core and electives. If applicable, list the emphasis^ requirements. Courses listed count towards major units and major GPA. Courses listed must include prefix, number, units, and title. Mark new coursework (New). Include any limits/restrictions in place/needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses being added and are not owned by your department. Recommend ordering requirements in the same order as your advisement report.	BIOC 384 Foundations in Biochemistry (3 units) (may also be fulfilled with BIOC 385 Metabolic Biochemistry (3) or BIOC 462B Biochemistry (4), hidden line) PCOL 305 Scientific Writing for Health Sciences (3) PCOL 310 Drug Approval: The 3 Billion Dollar Bet (2) PCOL 350 ADME: How the Body Changes Drugs (3) PCOL 355 Drug Delivery Systems (3) PCOL 390 Biomarkers: Analysis of Drug Effect & Toxicity (3) PCOL 406 Comprehensive Human Pharmacology (5)	PCOL 305 Scientific Writing for Health Sciences (3) PCOL 310 Drug Approval: The 3 Billion Dollar Bet (2) PCOL 350 ADME: How the Body Changes Drugs (3) PCOL 355 Drug Delivery Systems (3) PCOL 390 Biomarkers: Analysis of Drug Effect & Toxicity (3) PCOL 406 Comprehensive Human Pharmacology (5) PCOL 410 Integrated Medicinal Chemistry (5) PCOL 440 Rigor & Reproducibility (2)

	PCOL 410 Integrated Medicinal Chemistry (5) PCOL 440 Rigor & Reproducibility (2) PCOL 473: Pharmacogenomics (3 units) PHCL 460 Designing Drugs: From Chemistry to Cure (3)	PCOL 473: Pharmacogenomics (3 units) PHCL 460 Designing Drugs: From Chemistry to Cure (3)
Internship, practicum, applied course requirements. (Yes/No). If yes, provide description.	No	No
Senior thesis or senior project required (Yes/No). If yes, provide description.	No	No
Additional requirements (provide description)	N/A	N/A
Minor (optional or required)	Optional	Optional

*May require Arizona Board of Regents (ABOR) approval

^Emphases are officially recognized sub-specializations within the discipline. ABOR Policy 2-221 c. Academic Degree Programs Subspecializations requires all undergraduate emphases within a major to share at least 40% curricular commonality across emphases (known as "major core"). Total units required for each emphasis must be equal.

VI. **Peer institution comparison-** describe how your modified major requirements are similar and different from major requirements of two peer institutions. Select peers from (in order of priority) ABOR approved institutions, AAU members, and/or other relevant institutions recognized in the field.

UC Irvine and The Ohio State University are peer institutions offering undergraduate Pharmaceutical Sciences degrees. Although both universities do require a "biology II course," neither requires microbiology. Our new foundation requirements will include the same number of biological science units as our peer institutions, but our curriculum will place a greater emphasis on microbiology rather than ecology.

Neither UC Irvine or The Ohio State University include a pre-major or application process in their undergraduate programs. UC Irvine does require completion of certain foundation requirements (such as English composition and chemistry) prior to progression into upper-division major courses, which is reflective of an advanced standing model. The Ohio State University does not use a pre-major or advanced standing.

VII. **Faculty impact-** indicate if new faculty hires will be required to deliver the proposed modified/new curriculum.

These curricular changes will have no impact on faculty work load.

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

These curricular changes will not require any new resources, and will have no budgetary impact. Advanced standing progression will be managed by existing advising staff who currently oversee the major admission process.

IX. Required signatures

Managing unit administrator (print name and title): **Xinxin Ding, PhD**

Department Head, Pharmacology & Toxicology

Managing administrator's signature: _____ Date: 9/27/19

Managing unit administrator (print name and title): **Richard Vaillancourt, PhD**

Director, Pharmaceutical Sciences Undergraduate Programs

Managing administrator's signature: _____ Date: Sept 26, 2019

Dean (print name): **Rick Schnellmann, PhD**

Dean, College of Pharmacy

Dean's signature: _____ Date: 9/30/19

Dean (print name):

Dean's 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	
Arizona Board of Regents (if applicable)	

☐ Notify proposers of approval
☐ Upload proposal documents to relevant UAccess tables
☐ Notify ADVIP team and proposers

If ABOR approval required :
☐ If applicable, create approval memo
☐ Send memo to college/dept and acad_org listserv.
☐ If applicable, create new plan code (secondary too)
☐ If applicable, update emphases
☐ If applicable, add last admit term to prior plan code(s)
☐ Upload proposal docs to relevant UAccess table values
☐ Notify ADVIP team and proposers