

The completed and signed proposal should be submitted by the Dean's Office to: curriculumplanning@asu.edu. Before academic units can advertise undergraduate concentrations or include them in their offerings as described in the university catalogs, they must be recommended for approval by the Senate Curriculum and Academic Programs Committee and approved by the University Provost.

Definition and minimum requirements:

A concentration is a formalized selection of courses within a major.

- A concentration requires a minimum of 15 semester hours of which at least 9 semester hours must be upper division. Specialized concentrations (e.g., BIS Concentrations) may have additional or different requirements.
- A concentration is offered by a single unit and is intended exclusively for students pursuing a particular major. If a concentration consists of courses from more than one college the approval of each college Dean is required.

College/School/Institute: New College of Interdisciplinary Arts and Sciences

Department/Division/School: School of Mathematical and Natural Sciences

Proposing Faculty Group (if applicable):

If this is an official joint degree program? No, this is not a joint degree program

If "Yes" List all the additional college(s)/school(s)/institute(s) that will be involved in offering the degree program and providing the necessary resources. Note: All units offering this program must have collaborated in the proposal development and completed the appropriate unit and college/school approvals.

Existing Degree and Major under which this concentration will be established: Biology, BS

Proposed Concentration Name: Pharmacology/Toxicology

What is the first catalog year available for students to select on the undergraduate application for this this program? 2016-17

Delivery method: On-campus only (ground courses and/or iCourses)

Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

Campus/Locations: indicate all locations where this program will be offered.

- Downtown Phoenix Polytechnic Tempe West Other:


Proposal Contact

Name: Pamela A. Marshall **Title:** Associate Professor
Phone number: 602-543-6143 **Email:** pamela.marshall@asu.edu

DEAN APPROVAL(S)

This proposal has been approved by all necessary unit and College/School levels of review. I recommend implementation of the proposed organizational change.

College/School/Division Dean name: Marlene Tromp

Signature  **Date:** 5/5/2015

College/School/Division Dean name: _____
(if more than one college involved)
Signature _____ **Date:** / /20

Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.

1. OVERVIEW

- A. Provide a brief description of the new concentration (including the specific focus of the new concentration, relationship to other concentrations in this degree program, etc).

This concentration is designed to provide a core of classes in pharmacology and toxicology. The concentration articulates a series of class that builds strength in the fields of chemistry, biochemistry and cellular biology. The concentration culminates in a pair of core class, namely Fundamentals of Pharmacology and Principles of Toxicology. These two courses, which are unique to this program, provide the conceptual foundation for understanding the interactions of chemicals in the biological system. The pharmacology segment of the concentration will cover the basic principles of dose-response, adsorption processes, and metabolism pathways. The pharmacology class will also cover the mechanism of action for some of common pharmaceuticals. The toxicology focus will focus on lethal-dose (LD) estimates, types of toxic action and common poisons/pollutants. Taken together, the concentration builds a strong background needed for the Pharmacology and Toxicology classes.

- B. Explain the unit's need for the new concentration (e.g., market demand, research base, direction of the discipline, and interdisciplinary considerations). How will the new concentration complement the existing degree program?

This degree program would be the only bachelor's level program in Arizona with an emphasis on pharmacology and toxicology. Undergraduate pharmacology/toxicology programs are also rather rare around the United States since these are very intensive programs that require extensive class work prior to the culminating classes in Pharmacology and Toxicology. The program is primarily designed to serve the needs of three groups of students. The first set is the students that plan to attend a pharmacy program (PharmD). While the extensive and laboratory-focused course work outlined in this concentration is not required for admission, the course work would dramatically increase the competitiveness of our graduates to be admitted to a pharmacy program. Furthermore, a strong and extensive background provided by this concentration will enhance the success of the students admitted into a pharmacy program by introducing them to many of the concepts that they will encounter. The second group of students served by this concentration is those students who have aspirations of attending a medical program who are looking for a competitive advantage by thoroughly understanding the biochemistry and pharmacology of drugs in humans. The defined concentration will also give recognition to students who have accepted a more challenging undergraduate degree. The last main group of students served by this program is students who intend to continue on to graduate school and conduct research in biochemistry, pharmacology or toxicology. Students taking this path are not limited to medical research, but they can also pursue research in environmental chemistry (e.g. effects of pollution), natural products chemistry and forensics, among many opportunities to perform bench-based research. An additional population of students who may be interested in this laboratory-intensive degree are those who wish to directly after graduation begin working in a lab environment. This degree, with its hands on approach to learning science, is an excellent choice for these students as well.

2. Support and Impact

- A. Provide a supporting letter from the chair of the academic unit verifying that the proposed concentration has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the concentration as presented in the proposal, without impacting core course resources.

Attached

- B. Identify other related ASU programs and outline how the new concentration will complement these existing ASU programs. (If applicable, statements of support from potentially-affected academic unit administrators need to be included with this proposal submission.)

This BS concentration will complement the existing BS in biology degree programs in the School of Mathematics and Natural Sciences. Students will have a variety of choices in their major, including specializing in degrees with differing concentrations, such as the pharmacology and toxicology concentration, or students can earn a general BS in biology. This degree program with a concentration in pharmacology and toxicology will complement existing programs at ASU, as there are no degree programs with this specialization at the University, and this will give students more choices than exist currently. This degree program could be attractive to students who wish to pursue professional degrees in health related fields, such as pharmacy or medicine, and this concentration will give students a deep understanding of pharmacology and toxicology with a lab-intensive curriculum. We attach a letter of support for this program from ASU Pre-Health Advising.

- C. Provide a supporting letter from each college/school dean from which individual courses, or the entire concentration, are taken.

Attached

3. Academic Curriculum and Requirements

- A. List the knowledge, competencies, and skills (learning outcomes) students should have when they complete this proposed concentration. Examples of program learning outcomes can be found at (<http://www.asu.edu/oue/assessment.html>).

Graduates with a concentration in pharmacology and toxicology will demonstrate knowledge of the principles of pharmacology and toxicology, which include dose-response relationships, metabolism pathways and mechanism of action for common pharmaceuticals and poisons.

- B. Provide the admissions criteria for the proposed concentration. If they are identical to the admission criteria for the existing major and degree program under which this concentration will be established, please note that here.

The admissions criteria are identical to the existing BS in biology degree, which are general ASU undergraduate admissions criteria.

- C. Provide the curricular structure for this concentration. Be specific in listing required courses and specify the total minimum number of hours required for the concentration.

Required Core Courses for the Degree/Major				
Prefix	Number	Title	Is this a new Course?	Credit Hours
BIO	181	General Biology I	No	4
BIO	182	General Biology II	No	4
BIO	320	Fundamentals of Ecology	No	3
BIO	353	Cell Biology	No	3
BIO	354	Cell Biology Laboratory	No	1
CHM	113	General Chemistry I	No	4
CHM	116	General Chemistry II	No	4
CHM	233	General Organic Chemistry I	No	3
CHM	234	General Organic Chemistry II	No	3
CHM	237	General Organic Chemistry Laboratory I	No	1
CHM	238	General Organic Chemistry Laboratory II	No	1
LSC	322	Fundamentals of Ecology Laboratory	No	1
LSC	347	Fundamentals of Genetics	No	3
LSC	348	Fundamentals of Genetics Laboratory	No	1
MAT	210	Brief Calculus	No	3
PHY	111	General Physics	No	3
PHY	112	General Physics	No	3
PHY	113	General Physics Laboratory	No	1
PHY	114	General Physics Laboratory	No	1

STP	226	Elements of Statistics	No	3
			<i>Section sub-total:</i>	50

Required Concentration Courses				
Prefix	Number	Title	Is this a new Course?	Credit Hours
BCH	371	Modern Concepts in Biochemistry	No	3
BCH	372	Modern Concepts in Biochemistry Laboratory	No	1
BIO	201	Human Anatomy and Physiology I	No	4
BIO	202	Human Anatomy and Physiology II	No	4
BIO	360	Animal Physiology	No	3
LSC	359	Animal Physiology Laboratory	No	1
LSC	432	Fundamentals of Pharmacology	No	3
LSC	475	Principles of Toxicology	No	3
LSC	362	The Human Environment	No	3
MIC	443	The Microbial Universe	No	3
MIC	444	The Microbial Universe Laboratory	No	1
<i>Section sub-total:</i>				29
Elective Concentration Courses				
Prefix	Number	Title	Is this a new Course?	Credit Hours
<i>Section sub-total:</i>				
Other Concentration Requirements				Credit Hours
<i>E.g. – Capstone experience, internship, clinical requirements, field studies, foreign language skills as applicable</i>				
<i>Section subtotal:</i>				
Total minimum credit hours required for concentration				79

- D. A minimum residency requirement: How many hours of the concentration must be ASU credit? 12 hours must come from courses taught by New College of Interdisciplinary Arts and Sciences
- E. Provide a brief course description for each new course.

Note: All new required courses should be submitted in Curriculum ChangeMaker and ready for Provost's Office approval before this concentration is put on the CAPC agenda.

4. Administration and Resources

- A. How will the proposed concentration be administered (including admissions, student advisement, retention, etc.)?

The program will be administered by the School of Mathematical and Natural Sciences in the New College of Interdisciplinary Arts and Sciences. Admissions will be handled by the usual ASU admissions procedures; there will be no special admission requirements for this program. Advising for this program will be provided by academic advisors in our School (currently, there are three). These advisors currently serve the five majors in our School: Applied Computing, Applied Mathematics, Forensics, Life Sciences, and Statistics. Teaching schedules and course offerings by semester are determined by the School Director in consultation with the Associate Director, faculty, and advisors. Technology support will be provided by ASU's UTO office and the New College technology support staff.

- B. What are enrollment projections for the next three years?

	1st Year	2nd Year (Yr 1 continuing + new entering)	3rd Year (Yr 1 & 2 continuing + new entering)
Number of Students (Headcount)	25	50	75

- C. What are the resource implications for the proposed concentration, including any projected budget needs? Will new books, library holdings, equipment, laboratory space and/or personnel be required now or in the future? If multiple units/programs will collaborate in offering this concentration please discuss the resource contribution of each participating program. Letters of support must be included from all academic units that will commit resources to this concentration.

Existing resources are adequate for this proposed concentration and no new courses are proposed. Lab fees will generate sufficient resources to support lab courses.

D. Please list the primary faculty participants regarding this proposed concentration. For interdisciplinary concentrations, please include the relevant names of faculty members from across the University.

Name	Title	Area(s) of Specialization as they relate to proposed concentration
Dr. Pamela A. Marshall	Associate Professor	Pharmacology and Genetics
Dr. Thomas Cahill	Associate Professor	Toxicology and Analytical Chemistry
Dr. Lara Ferry	Associate Professor	Physiology
Dr. Todd Sandrin	Associate Professor	Microbiology
Dr. Ty Hoffman	Instructor	Physiology and Biochemistry
Herb Wildey, M.S.	Instructor	Anatomy and Physiology

5. Additional Materials

- A. Prepare and attach a Major Map. Please use the "proposed map" function to create a Major Map in BAMB. This feature is explained in the training document available on help.asu.edu.
- B. *Complete and attach the Appendix document.*
- C. Attach other information that will be useful to the review committees and the Office of the University Provost.

**APPENDIX
OPERATIONAL INFORMATION FOR UNDERGRADUATE CONCENTRATIONS**

(This information is used to populate the Degree Search/catalog website.
Please consider the student audience in creating your text.)

Proposed Concentration Name: Biology (Pharmacology/Toxicology)

1. Program Description (150 words maximum)

The intricate connections among biology, chemistry and physics form the basis of the biology curriculum. The BS in biology emphasizes experiential learning, and all required core courses have laboratories. By learning in an integrative environment that emphasizes the connectedness of disciplines, students gain a better understanding of larger scientific concepts and can view these concepts from multiple perspectives. Undergraduates have the opportunity to conduct independent research under the mentorship of faculty members or in internships outside the school.

The pharmacology and toxicology concentration approaches the study of these disciplines from both the physiological as well as the biochemical perspective, with an emphasis on both the molecular and physiological components of drug and body interactions.

2. Contact and Support Information

Office Location (Building & Room): FAB N115
 Campus Telephone Number: 602-543-6050
 Program email address: mns@asu.edu
 Program website address: <https://newcollege.asu.edu/mns/degrees/naturalsci/life-sciences-program>

3. Additional Program Description Information

- A. Additional program fee required for this program? Yes No
- B. Does this program have a second language requirement? Yes No

4. Delivery/Campus Information

Delivery

- On-campus only** (ground courses and/or iCourses) (check campus(es)/locations below)
- ASU Online only** (all courses online)*
- Both on-campus and ASU Online***

** Note: Academic units must obtain prior approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) to offer programs through ASU Online.*

Campus(es) and/or Locations Check all locations where the program will be offered.

- Downtown - Polytechnic - Tempe - West
- Other (*please specify*)

Operational information:

Once students select a campus or On-line option, students will not be able to move back and forth between the on-campus the ASU Online option.

5. Career Opportunities & Concentration(s)

Provide a brief description of career opportunities available for this degree program with the proposed concentration.

The bachelor's in biology with a concentration in pharmacology and toxicology prepares students for possible careers as a:

- laboratory researcher
- pharmacist
- physician
- physician's assistant
- veterinarian

Graduates may work at governmental agencies or at private companies in areas such as:

- clinical trials
- product safety evaluation
- regulatory affairs
- teaching

6. Additional Admission Requirements

If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.) None

7. Keywords

List all keywords used to search for this program. Keywords should be specific to the proposed program.

Pharmacology, Pharmacy, Pre-Health, Toxicology, Toxics, Biochemistry, Health, Pre-Medicine, Veterinary Medicine

8. Advising Committee Code

List the existing advising committee code associated with this degree. UGNC02, UGNCMS

Note: If a new advising committee needs to be created, please complete the following form:

Proposal to create an undergraduate advising committee

9. Western Undergraduate Exchange (WUE) Eligible:

Has a request been submitted to the University Provost by the Dean to consider this degree program as eligible for [WUE](#)

Yes, approved by Provost Page on 5/5/2015. See attached PDF of email.

Note: No action will be taken during the implementation process with regards to WUE until approval is received from the University Provost.

10. First Required Math Course List the first math course required in the major map. MAT 210**11. Math Intensity**

- List the highest math required on the major map. (This will not appear on Degree Search.) MAT 210
- What is the math intensity as indicated by the highest math required on the major map? Math intensity categorization can be found here: <https://catalog.asu.edu/mathintensity> Moderate

12. CIP codes

- a. Identify CIP codes that should be displayed on Degree Search. CIP codes can be found at: <http://www.onetonline.org/crosswalk/CIP/>.

26.1001	26.1004
26.1002	26.1005
26.1007	26.1006
26.1099	60.0316
51.2506	60.0535

- b. Are any specific career codes (SOC/ONET codes) to be omitted from the CIP codes selected above? (i.e. “Omit 25-10312.00 Engineering Teachers, Postsecondary from CIP code 14.0501 Bioengineering and Biomedical Engineering.”)

No

13. Area(s) of Interest

- A. Select one (1) primary Area of Interest from the list below that applies to this program.

- | | |
|--|--|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Health & Wellness |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Humanities |
| <input type="checkbox"/> Business | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Communications & Media | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Computing & Mathematics | <input type="checkbox"/> STEM |
| <input type="checkbox"/> Education & Teaching | <input checked="" type="checkbox"/> Science |
| <input type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Exploratory | |

- B. Select any additional Areas of Interest that apply to this program from the list below.

- | | |
|--|--|
| <input type="checkbox"/> Architecture & Construction | <input checked="" type="checkbox"/> Health & Wellness |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Humanities |
| <input type="checkbox"/> Business | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Communications & Media | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Computing & Mathematics | <input checked="" type="checkbox"/> STEM |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> Science |
| <input type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Exploratory | |



2015 - 2016 Major Map

Biology (Pharmacology/Toxicology) , (Proposed)

CMAITNR

Term 1	0 - 15 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
BIO 181: General Biology I (SQ) OR BIO 182: General Biology II (SG)			4	C	<ul style="list-style-type: none"> An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses ASU Mathematics Placement Test score determines placement in Mathematics course ASU 101 or College specific equivalent First Year Seminar required of all freshman students IAS 300 (3 credit hours) is required for all transfer students in place of IAS 191
CHM 113: General Chemistry I (SQ)			4	C	
ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition			3	C	
IAS 191: New College Freshman Seminar			1	C	
MAT 210: Brief Calculus (MA) OR STP 226: Elements of Statistics (CS)			3	C	
Term hours subtotal:			15		

Term 2	16 - 30 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
BIO 181: General Biology I (SQ) OR BIO 182: General Biology II (SG)			4	C	
CHM 116: General Chemistry II (SQ)			4	C	
ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition			3	C	
MAT 210: Brief Calculus (MA) OR STP 226: Elements of Statistics (CS)			3	C	
Elective			1		
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).					
Term hours subtotal:			15		

Term 3	31 - 45 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
PHY 111: General Physics (SQ) AND PHY 113: General Physics Laboratory (SQ)			4	C	
BIO 201: Human Anatomy and Physiology I (SG)			4	C	
CHM 233: General Organic Chemistry I AND CHM 237: General Organic Chemistry Laboratory I			4	C	
Literacy and Critical Inquiry (L)			3		
Complete BIO 181, BIO 182 course(s).					
Complete CHM 113, CHM 116 course(s).					
Complete Mathematics (MA) requirement.					
Term hours subtotal:			15		

Term 4	46 - 60 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
PHY 112: General Physics (SQ) AND PHY 114: General Physics Laboratory (SQ)			4	C	
BIO 202: Human Anatomy and Physiology II (SG)			4	C	

CHM 234: General Organic Chemistry II AND CHM 238: General Organic Chemistry Laboratory II	4	C
Humanities, Arts and Design (HU)	3	
Term hours subtotal:	15	

Term 5 ★	61 - 76 Credit Hours	Necessary course signified by	Hours	Minimum Grade	Notes
★	LSC 347: Fundamentals of Genetics AND LSC 348: Fundamentals of Genetics Laboratory		4	C	• IAS 300 (3 credit hours) is required for all transfer students in place of IAS 191
	LSC 362: The Human Environment		3	C	
	Upper Division Literacy and Critical Inquiry (L) OR IAS 300: Adult Career Development (L or SB)		3		
	Cultural Diversity in the U.S. (C)		3		
	Social-Behavioral Sciences (SB)		3		
	Term hours subtotal:		16		

Term 6 ★	77 - 90 Credit Hours	Necessary course signified by	Hours	Minimum Grade	Notes
★	BIO 320: Fundamentals of Ecology AND LSC 322: Fundamentals of Ecology Laboratory		4	C	
★	BIO 353: Cell Biology AND BIO 354: Cell Biology Laboratory		4	C	
	Historical Awareness (H)		3		
	Social-Behavioral Sciences (SB)		3		
	Term hours subtotal:		14		

Term 7 ★	91 - 104 Credit Hours	Necessary course signified by	Hours	Minimum Grade	Notes
★	BCH 371: Modern Concepts in Biochemistry AND BCH 372: Modern Concepts in Biochemistry Laboratory		4	C	
	ASB 353: Death and Dying in Cross-Cultural Perspective ((HU or SB) & G) OR SOC 353: Death and Dying in Cross-Cultural Perspective ((HU or SB) & G) OR Upper Division Humanities, Arts and Design (HU) AND Global Awareness (G)		3-4		
	MIC 443: The Microbial Universe AND MIC 444: The Microbial Universe Laboratory		4	C	
	Upper Division Language and Cultures: Requirement satisfied through the following: * Completion of six semester hours of upper-division courses that have a Global Awareness (G) or Cultural Diversity (C) designation, in addition to the courses used to meet the University General Studies requirements or four (4) sequential semesters of one foreign language or two (2) semesters of a current computer language. Adjustment to upper division hours is required if lower division courses are used.		3	C	
	Term hours subtotal:		14-15		

Term 8 ★	105 - 120 Credit Hours	Necessary course signified by	Hours	Minimum Grade	Notes
★	LSC 432: Fundamentals of Pharmacology		3	C	
	BIO 360: Animal Physiology AND LSC 359: Animal Physiology Laboratory		4	C	
	LSC 475: Principles of Toxicology		3	C	
	Upper Division Language and Cultures: Requirement satisfied through the following: * Completion of six semester hours of upper-division courses that have a Global Awareness (G) or Cultural Diversity (C) designation, in addition to the courses used to meet the University General Studies requirements or four (4) sequential semesters of one foreign language or two (2) semesters of a current computer language. Adjustment to upper division hours is required if lower division courses are used.		3	C	
	Humanities, Arts and Design (HU)		3		
	Term hours subtotal:		16		

Hide Course List(s)/Track Group(s)**Total Hours:** 120**Upper Division Hours:** 45 minimum**Major GPA:** 2.00 minimum**Cumulative GPA:** 2.00 minimum**Total hrs at ASU:** 30 minimum**Hrs Resident Credit for****Academic Recognition:** 56 minimum**Total Community College Hrs:** 64 maximum**Total College Residency Hrs:** 12 minimum**General University Requirements Legend**

General Studies Core Requirements:

- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Arts and Design (HU)
- Social-Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed on the major map are current for the 2015 - 2016 academic year.



May 29, 2015

Re: Letter of Support for Biology (Pharmacology/Toxicology), BS

The healthcare industry continues to be one of the fastest growing career fields in the United States. Even during times of economic recession, these job opportunities remain stable. As scientific advances continue to be made and the population continues to age, the need for pharmacists, doctors and researchers will continue to grow as well. According to the Bureau of Labor Statistics, employment of pharmacists and other medical professionals will experience projected growth of 14% through 2022.

As the need for healthcare professionals continues to increase, student competition for limited seats in medical and pharmacy schools will also increase. In order to better prepare the ASU student for the challenges that lie ahead, it is my pleasure to write a letter of support for the proposed degree program of the Bachelor of Science in Biology with a concentration in Pharmacology/Toxicology for the New College of Interdisciplinary Arts & Sciences.

The proposed degree program focuses on a comprehensive foundation in biological and chemical laboratory sciences, culminating with lecture courses in toxicology and pharmacology. The program aptly prepares the student not only for opportunities to advance their education in areas medicine or pharmacy, but also for graduate school or laboratory careers. Students achieving masters or doctoral degrees could lead to careers in medical research or drug development as well. In fact, pharmacy and medical school programs located in Arizona encourage students to participate in hypothesis driven scientific inquiry as part of their academic experience.

Midwestern University's College of Pharmacy in Glendale Arizona states their mission to be, "*to prepare pharmacists who will provide exceptional patient care, participate in critical inquiry and scientific research, and advance public health and wellness.*"

The University of Arizona College of Pharmacy in Tucson, AZ offers a number of dual degree programs and graduate research tracks that not only prepare students for a career in pharmacy, but also opportunities in the research industry. Research tracks include emphasis in pharmacology & toxicology, drug discovery & development, and pharmaceuticals & pharmacokinetics.

Giving ASU undergraduate students the opportunity to pursue a lab intensive, academically rigorous program can only be viewed as beneficial in a highly competitive and growing industry.

Sincerely,


Sue Lafond

Assistant Director, Academic Services - Medical & Health Professions Advising
School of Mathematical & Natural Sciences, NCIA
Arizona State University

April 15, 2015

To: Marlene Tromp, Dean
New College of Interdisciplinary Arts and Sciences

From: Roger L. Berger, Director and Professor *Roger L Berger*
School of Mathematical and Natural Sciences

Re: New Pharmacology/Toxicology concentration for BS Biology

Attached please find the Proposal to establish a new pharmacology/toxicology concentration for the BS in Biology. This proposal was prepared by a faculty committee including Pam Marshall and Tom Cahill. It was approved by the MNS Curriculum Committee and the entire MNS faculty.

Please approve this proposal and forward it for further approvals.

Stacey Kimbell

From: Marlene Tromp
Sent: Tuesday, May 05, 2015 1:20 PM
To: Stacey Kimbell
Subject: FW: WUE status Pharmacology/Toxicology

Excellent news! Please move this forward!

Sincerely,
Marlene

--

Dr. Marlene Tromp, Vice Provost and Dean
New College of Interdisciplinary Arts and Sciences
4701 W. Thunderbird Rd., Glendale, AZ 85306-4908
P.O. Box 37100, M/C 1251, Phoenix AZ 85069-7100
Arizona State University
Office: 602-543-7000 Fax: 602-543-7070
marlene.tromp@asu.edu
newcollege.asu.edu

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From: Robert Page <Robert.Page@asu.edu>
Date: Tuesday, May 5, 2015 at 11:32 AM
To: Marlene Tromp <marlene.tromp@asu.edu>
Subject: Re: WUE status Pharmacology/Toxicology

I am ok with that.

Sent from my iPhone

On May 5, 2015, at 11:01 AM, Marlene Tromp <Marlene.Tromp@asu.edu> wrote:

Dear Provost Page,

The School of Mathematical and Natural Sciences is currently developing the BS in Biology with a concentration in Pharmacology and Toxicology for a proposed Fall 2016 launch. I would like to formally request WUE eligibility for this program. I believe that WUE eligibility is important to the success of this program, and it will serve to bring additional out-of-state students to the West campus.

If I may supply any additional information as you consider this request, please let me know.

Sincerely,
Marlene

--

Dr. Marlene Tromp, Vice Provost and Dean
New College of Interdisciplinary Arts and Sciences
4701 W. Thunderbird Rd., Glendale, AZ 85306-4908
P.O. Box 37100, M/C 1251, Phoenix AZ 85069-7100
Arizona State University
Office: 602-543-7000 Fax: 602-543-7070

madene.tromp@asu.edu
newcollege.asu.edu

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From: [Stacey Kimbell](#)
To: [Curriculum Planning](#)
Cc: [Jennifer Malerich](#); [Katie Jensen \(Provost Office\)](#); [Todd Sandrin](#); [Lara Ferry](#)
Subject: Statement of support for the New College BS Biology, Pharmacology/Toxicology Concentration
Date: Wednesday, October 21, 2015 12:27:22 PM

Good afternoon,

Below please find the statement of support from SOLS for our proposed BS Biology, Pharmacology/Toxicology Concentration, as requested in your email yesterday. If you have any questions, please let me know.

Thank you!

Stacey Kimbell

Executive Assistant to Vice Provost & Dean Marlene Tromp
Curriculum Coordinator
Arizona State University West campus / New College of Interdisciplinary Arts & Sciences
Vox: (602) 543-6150 Fax: (602) 543-4565

From: Lara Ferry
Sent: Wednesday, October 21, 2015 12:14 PM
To: Stacey Kimbell <kimbell@asu.edu>
Subject: Fwd: BS Biology (Pharmacology/Toxicology) Concentration

Begin forwarded message:

From: Michael Angilletta <Michael.Angilletta@asu.edu>
Date: October 21, 2015 at 12:12:44 PM MST
To: Lara Ferry <Lara.Ferry@asu.edu>
Subject: RE: BS Biology (Pharmacology/Toxicology) Concentration

Dear Lara,

SOLS has no objection to the proposed concentration on Pharmacology and Toxicology at ASU West.

Best regards,
Mike

Michael J. Angilletta Jr.

Professor & Senior Sustainability Scholar
Associate Director of Undergraduate Programs

School of Life Sciences
Arizona State University
Tempe, AZ 85287

From: Lara Ferry
Sent: Tuesday, October 20, 2015 4:30 PM
To: Michael Angilletta <Michael.Angilletta@asu.edu>
Cc: Todd Sandrin <Todd.Sandrin@asu.edu>
Subject: Fwd: BS Biology (Pharmacology/Toxicology) Concentration
Importance: High

Hi Mike-

Might you be able to provide a letter of support for the Pharmacology and Toxicology concentration that we are adding to the Biology BS? I sent out an email in August. It might have gone into the ether. The Provost would like us to include some indication of potential conflict (or not) so that this can go on to ABOR and go live for the 16-17 academic catalog. They need to hear back from us by October 30.

Thank you!

-----Original Message-----

From: Lara Ferry
Sent: Monday, August 10, 2015 4:05 PM
To: Bertram Jacobs <bjacobs@asu.edu>;
Michael Angilletta
<Michael.Angilletta@asu.edu>
Cc: Todd Sandrin
<Todd.Sandrin@asu.edu>; Lara Ferry
<Lara.Ferry@asu.edu>; Stacey Kimbell
<kimbell@asu.edu>; Connie Borrer
<conni@asu.edu>
Subject: Request for Impact Statement:
Pharm/Tox concentration

Dear Drs. Jacobs and Angilletta,

We are designing a new concentration in

Pharmacology and Toxicology as part of our Biology Degree.

As you are likely aware, we are required to include impact statements from programs that may be impacted by this degree. I attach the major map and proposal for this degree.

Might you be able to provide a brief impact statement by Aug 17?

Of course, I am happy to answer any questions you might have.

Best regards,

Lara Ferry, PhD
Associate Director & Professor, School of
Mathematical & Natural Sciences Honors
Faculty, Barrett The Honors College
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