

**ARIZONA STATE UNIVERSITY  
PROPOSAL TO ESTABLISH A NEW GRADUATE DEGREE**

This template is to be used only by programs that have received specific written approval from the Provost's office to proceed with internal proposal development and review. A separate proposal must be submitted for each individual new degree program.

**DEGREE PROGRAM**

**College/School(s) offering this degree:** [College of Liberal Arts and Sciences](#)

**Unit(s) within college/school responsible for program:** [School of Life Sciences \(SoLS\)](#)

**If this is for an official joint degree program, list all units and colleges/schools that will be involved in offering the degree program and providing the necessary resources:**

**Proposed Degree Name:** PhD in [Animal Behavior](#)

**Doctoral Degree Type:** [PhD-Doctor of Philosophy](#)

**If Degree Type is Other, provide proposed degree type:**

**and proposed abbreviation: (Ph.D.)**

**Proposed title of major:** [Animal Behavior \(AB\)](#)

**Is a program fee required?** Yes  No

**Requested effective term:** [Fall 2010](#)

(The first semester and year for which students may begin applying to the program.)

**PROPOSAL CONTACT INFORMATION**

(Person to contact regarding this proposal)

**Name:** [Kevin McGraw/Ron Rutowski](#)

**Title:** [Assistant professor/Professor](#)

**Phone:** [480-965-5518](#) and [480-965-4369](#)

**email:** [kevin.mcgraw@asu.edu](mailto:kevin.mcgraw@asu.edu)  
[ronald.rutowski@asu.edu](mailto:ronald.rutowski@asu.edu)

**DEAN APPROVAL**

This proposal has been approved by all necessary unit and College/School levels of review, and the College/School(s) has the resources to offer this degree program. I recommend implementation of the proposed degree program. *(Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.)*

**College Dean name:** Sid Bacon

*(See attached CLAS approval)*

**College Dean signature** \_\_\_\_\_ **Date:** \_\_\_\_\_

**College Dean name:**

(if more than one college involved)

**College Dean signature** \_\_\_\_\_ **Date:** \_\_\_\_\_

**ARIZONA STATE UNIVERSITY  
PROPOSAL TO ESTABLISH A NEW GRADUATE DEGREE**

This proposal template should be completed in full and submitted to the University Provost's Academic Council [<mailto:curriculum@asu.edu>]. It must undergo all internal university review and approval steps including those at the unit, college, and university levels. A program **may not** be implemented until the Provost's Office notifies the academic unit that the program may be offered.

**DEGREE PROGRAM INFORMATION**

**Doctoral:** [PhD-Doctor of Philosophy](#)

**Proposed title of major:** [Animal Behavior \(AB\)](#)

**1. PURPOSE AND NATURE OF PROGRAM**

- A. Brief program description** (This is a catalog type description of no more than 250 words. Include the distinctive features of the program that make it unique. Do not include program or admission requirements.)

[Animal Behavior \(AB\)](#) is a graduate degree program that will provide Ph.D.-level training in mechanistic and functional approaches to understanding behavior in a variety of animal taxa. The study of behavior is at the interface of several scientific disciplines (i.e. physiology, ecology, evolution), and good research in this area requires diverse but specialized training and skills. This program will unify and coordinate graduate training in an area of real strength in research and education at ASU in the behavioral sciences. The majority of AB faculty at ASU is affiliated with the School of Life Sciences, but potential faculty participants are found in multiple ASU academic units and centers (see pages 4 and 5). Major institutions in the state all have pockets of strength in AB, in departments such as Ecology and Evolutionary Biology as well as Psychology at the University of Arizona. However, no campus has made an effort to unify behavior research and education as we propose to do at ASU. This program will complement the trans-disciplinary Ph.D. in Neuroscience program that is currently in place at ASU and will have applied scientific value, in areas such as mental and behavioral health in humans and veterinary science. The ecological focus in the program (i.e. behavioral ecology, conservation biology) will feed into Valley, state, and global issues in ecosystem and resource sustainability.

- B. Total credit hours required for the program:** 84

- C. Are any concentrations to be established under this degree program?**  Yes  No

- 2. PROGRAM NEED.** Explain why the university needs to offer this program (include data and discussion of the target audience and market).

[This program will promote interdisciplinary education and research and prioritize societal impacts, both regionally and globally. Especially via government-grant-mandated "broader impact" programs \(i.e. through the National Science Foundation\), research conducted by mentors and Ph.D. students in this program will reach the community at all societal levels and improve local understanding of the sensitivities and needs of our local wild animals, pets, livestock, as well as humans. ASU will continue its development as an international leader in animal behavior research through the establishment of this program and the coordination of faculty members and research programs spread across the ASU campuses.](#)

- 3. IMPACT ON OTHER PROGRAMS.** List other academic units that might be impacted by the proposed program and describe the potential impact (e.g., how the implementation of this program might affect student headcount/enrollment, student recruitment, faculty participation, course content, etc. in other programs). Attach letters of collaboration/support from impacted programs.

This degree program will involve faculty from several units, and thus will promote new collaborative research and instructional opportunities. It will interdigitate nicely with the existing Ph.D. in Neuroscience program and the Ph.D. in Environmental Life Sciences program. We expect that the AB graduate program will attract highly competitive students to the participating units. Furthermore, two new core courses will be formed which will be a significant enrichment to the spectrum of courses available to graduate students of the participating units.

**4. PROJECTED ENROLLMENT** How many new students do you anticipate enrolling in this program each year for the next five years? Please utilize the following tabular format.

We expect that some of the first year PhD students in existing PhD programs in the participating units will matriculate into the AB PhD degree program. Hence, we project that 5 incoming students and 10 current students would enroll in the first year. Given vigorous recruitment, we anticipate increasing the size of the program by 8 students each year thereafter and exceeding 45 total students within 5 years. For comparison, after nearly a decade in existence, the Center for the Integrative Study of Animal Behavior (CISAB) at Indiana University, Bloomington currently contains 47 affiliated faculty members and 56 graduate students.

<b>5-YEAR PROJECTED ANNUAL ENROLLMENT</b>					
	<b>1<sup>st</sup> Year</b>	<b>2<sup>nd</sup> Year</b> (Yr 1 continuing + new entering)	<b>3<sup>rd</sup> Year</b> (Yr 1 & 2 continuing + new entering)	<b>4<sup>th</sup> Year</b> (Yrs 1, 2, 3 continuing + new entering)	<b>5<sup>th</sup> Year</b> (Yrs 1, 2, 3, 4 continuing + new entering)
Number of Students Majoring (Headcount)	15	23	31	39	47

**5. STUDENT LEARNING OUTCOMES AND ASSESSMENT**

**A. List the knowledge, competencies, and skills** students should have when they graduate from the proposed degree program. (You can find examples of program Learning Outcomes at (<http://www.asu.edu/oue/assessment.html>)).  
-See below-

**B. Describe the plan and methods to assess** whether students have achieved the knowledge, competencies and skills identified in the Learning Outcomes. (You can find examples of assessment methods at (<http://www.asu.edu/oue/assessment.html>)).

**1. Outcome:** Core competency in the concepts and content that define the discipline of Animal Behavior .

**1. Assessment:** Students must receive a 3.0 or better in the 4-credit core course (ANB 535) and passing grades in each of the times (minimum four) that they enroll in the 1-credit Animal Behavior Journal Club (ANB 536). In addition, they must maintain a cumulative 3.0 GPA in the courses on their plan of study. This capability will also be critically assessed in the comprehensive oral exam for qualification to candidacy.

**2. Outcome:** Ability to independently conduct research in science, including planning experiments, mastery of skills needed to execute the plans and interpretation of results.

**2. Assessment:** The assessment of this status will be through the dissertation advisor on a continuous basis. In addition, the student will organize and present their research progress to their dissertation committee meetings annually. The dissertation advisor will prepare an annual evaluation of the student's progress that incorporates committee input; this evaluation will be given to the student for comment, and then the report and any student comments will be provided to the AB executive committee.

As a part of the comprehensive exam, students will prepare a research proposal and be evaluated on it. The final assessment will be the final oral defense of the dissertation.

3. **Outcome:** The students will learn how to present and publish their research project results in a manner that makes a significant contribution to science.
3. **Assessment:** The student's research will be required to be submitted for publication in one or more peer-reviewed journals (actual publication may occur after graduation). The student's contribution may be part of a large report, but the aspect that the student contributed should be clearly identifiable and represent independent research. The total accomplishment of the student will be presented in a written dissertation that will be evaluated by the dissertation committee.
4. **Outcome:** Ability to function productively in an interdisciplinary scientific endeavor. This includes the ability to make critical evaluations of the relative merit of research projects in regard to animal behavioral research.
4. **Assessment:** As part of the core course sequence, students will be presented with problems in interdisciplinary research and asked to evaluate literature and presentations in diverse areas. They will be graded on this ability. In addition, students will be engaged in dissertation projects that explicitly involve interdisciplinary research and will be evaluated on it. The dissertation committee will judge how well the student's research proposal is designed and justified.
5. **Outcome:** The student will learn to effectively communicate scientific principles and issues.
5. **Assessment:** Student written communication skills will be assessed by examining their written products in courses, in program exams, and in the dissertation. Oral communication skills will be evaluated by observations of presentations in the current issues course, in laboratory meetings, in required works-in-progress annual presentations to the dissertation committee, and at national/international meetings.

6. **ACCREDITATION OR LICENSING REQUIREMENTS (if applicable).** Provide the names of the external agencies for accreditation, professional licensing, etc. that guide your curriculum for this program, if any. Describe any requirements for accreditation or licensing.

N/A

## 7. FACULTY, STAFF AND RESOURCE REQUIREMENTS

### A. Faculty

- i. **Current Faculty.** List the name, rank, highest degree, area of specialization/expertise, and estimate of the level of involvement of all current faculty who will teach in the program.

#### By level of involvement

#### Level 1 (High: Member of current planning committee, likely teaching core course, supervising graduate students)

Jennifer Fewell, Professor, SoLS, PhD, behavioral ecology and evolution of social insects,  
Juergen Gadau, Associate Professor, SoLS, PhD, genetics of sociality in hymenoptera,  
Bert Hoelldobler, Professor, SoLS, PhD, mechanisms and evolution of sociality in insects,  
Manfred Laubichler, Professor, SoLS, PhD, phenotypic evolution in social insects,  
Juergen Liebig, Assistant Professor, SoLS, PhD, chemical communication in social insects,

Kevin McGraw, Assistant Professor, SoLS, PhD, color communication in animals  
Stephen Pratt, Assistant professor, SoLS, PhD, group interactions and decision making in insects,  
Ron Rutowski, Professor, SoLS, PhD, insect vision, visual signals and reproductive behavior,  
Brian Smith, Professor, SoLS, PhD, neuroethology of sensory processing,  
Brian Sullivan, Professor, DMNS, PhD, evolution and behavior of reptiles and amphibians

**Level 2 (Intermediate: Graduate faculty member, teaching elective, supervising students)**

Gro Amdam, Associate Professor, SoLS, PhD, pathways of social organization in insects,  
Heather Bimonte-Nelson, Assistant Professor, DoP, PhD, animal learning and memory,  
Cheryl Conrad, Associate Professor, DoP, PhD, stress and cognition in animals,  
Pierre Deviche, Professor, SoLS, PhD, vertebrate physiology, endocrinology, behavior,  
Dale DeNardo, Associate Professor, SoLS, PhD, environmental physiology,  
Carsten Duch, Associate Professor, SoLS, PhD, neuron development and function in insects,  
Leah Gerber, Associate Professor, SoLS, PhD, conservation biology, marine population ecology,  
Jon Harrison, Professor, SoLS, PhD, ecological and evolutionary physiology of insects,  
Stephen Helms Tillery, Assistant Professor, SBHSE, PhD, neurobiology of sensorimotor learning,  
Kim Hill, Professor, SHESC, PhD, human behavioral ecology and evolution,  
Chad Johnson, Assistant Professor, DMNS, PhD, behavior, ecology, and evolution of spiders,  
Peter Killeen, Professor, DoP, PhD, learning, motivation, perception  
Leanne Nash, Professor, SHESC, PhD, primate behavioral ecology,  
Robert Page, Professor, SoLS, PhD, evolution of honey bee social behavior,  
Federico Sanabria, Assistant Professor, DoP, PhD, cognition, perception, & analysis of behavior  
Andrew Smith, Professor, SoLS, PhD, conservation and population biology of mammals,  
Kathleen Woolf, Assistant Professor, DoN, PhD, human nutrition, exercise, and disease

**Level 3 (Low: Graduate faculty member, teaching elective, no student supervision)**

Mary Burleson, Associate Professor, DSBS, PhD, neurobiology of stress  
Carlos Castillo-Chavez, Professor, SMSS, PhD, dynamic social processes and disease evolution,  
Doug Kenrick, Professor, DoP, PhD, evolution of sociality and memory,  
Steve Neuberg, Professor, DoP, PhD, social psychology and preferences in humans,  
Miles Orchinik, Professor, SoLS, PhD, neurophysiology of stress,

Academic unit abbreviations

**SHESC**, School of Human Evolution and Social Change

**SoLS**, School of Life Sciences

**SMSS**, School of Mathematical and Statistical Sciences

**DoP**, Department of Psychology

**DoK**, Department of Kinesiology

**SBHSE**, School of Biological and Health Systems Engineering,

**DMNS**, Division of Mathematical and Natural Sciences (NCIAS)

**DSBS**, Division of Social and Behavioral Sciences (NCIAS)

**DoN**, Department of Nutrition (College of Nursing and Health Innovation)

- ii. **New Faculty.** Describe the new faculty hiring needed during the next three years for sustaining the program and list the anticipated schedule for addition of these faculty.

No need for new faculty, as currently there are a large number of faculty members with expertise in Animal Behavior in SOLS as well as across the university.

- iii. **Administration of the program.** Explain how the program will be administered for the purposes of admissions, advising, course offerings, etc. Discuss the available staff support.

Executive Committee: The activities and requirements for this program will be determined and overseen by an Executive Committee. The Executive Committee will include representatives from all participating units. An acting Director of the program will be voted on by the participating faculty. After the approval of the degree program, the official director will be appointed by the University Vice Provost and Dean of the Graduate College. An acting Working Committee has been formed from faculty volunteers across the participating units by the acting director and will constitute the future Executive Committee if approved by the University Vice Provost and Dean of the Graduate College.

#### Responsibilities of the Executive Committee

- oversee the effort of recruitment of new students, recommend admission of new students in consultation with participating units, approval of and subsequent oversight of student's plans of study (POS) and progress, oversight of interdisciplinary composition of supervisory committees. In the future, as the program expands, we anticipate that a separate Graduate Committee will be formed, which will oversee student progress, and will be chaired by a member of the executive committee who will report to the Director and the Executive Committee.
- oversee the content and execution of the core courses. We expect that there will be a need for constant updating of material and organization of the courses. These courses will be essential for introduction not only of advanced concepts and techniques in animal behavior, but also for introduction of students to a broad spectrum of research. Thus an emphasis will be placed on highlighting the kinds of teamwork necessary for building a successful environmental life sciences research program.

#### Administrative support

Administrative staff support for the administration of the program will be provided by the School of Life Sciences. The program will be overseen by an Executive Committee of Faculty representing the units involved.

Student support will primarily come from block grants distributed to the units by the graduate college, research grants by the faculty advising the students, departmental teaching opportunities and fellowships established through private donations, see Memorandums of Understanding (MOUs). Students will have the opportunity to choose any laboratory in the program.

**B . Resource requirements to launch and sustain the program.** Describe any new resources required for this program's success such as new staff, new facilities, new library resources, new technology resources, etc

No new resources are needed. This is a continuation of the existing expertise and resources in SOLS as well as university wide.

### **8. CURRICULAR STRUCTURE OF THE PROPOSED PROGRAM**

**A. Admission Requirements** The requirements listed below are Graduate College requirements. Please modify and/or expand if the proposed degree has additional admissions requirements.

- i. **Degree.** Minimum of a bachelor's degree (or equivalent) or a graduate degree from a regionally accredited College or University or of recognized standing in life sciences or a related field such as Psychology or Anthropology.

Modify or expand, if applicable: N/A

- ii. **GPA.** Minimum of a 3.00 cumulative GPA (scale is 4.0=A) in the last 60 hours of a student's first bachelor's degree program Modify or expand, if applicable: [Graduate College policies apply.](#)
- iii. **English Proficiency Requirement for International Applicants.** If applicable list any English proficiency requirements that are higher than and/or in addition to the Graduate College requirement. (See Graduate College policy and procedures <http://graduate.asu.edu/admissions/international.html#proficiency>): [Graduate College policies apply.](#)
- iv. **Required Admission Examinations.**  
 GRE     GMAT     Millers Analogies.
- v. **Application Review Terms.** Indicate all terms for which applications for admissions are accepted and the corresponding application deadline dates, if any:
  - Fall      Deadline (month/year): [15 December 2009 and yearly thereafter](#)
  - Spring      Deadline (month/year):
  - Summer      Deadline (month/year):

**B. Degree Requirements.** Below provide the curricular requirements for the proposed degree program.

- i. **Total credit hours (cr hrs) required for the degree program:** [84](#)
- ii. **Core courses.** List all required core courses and total credit hours for the core (required courses other than internships, thesis, dissertation, capstone course, etc). Omnibus number courses can not be used as core courses. Permanent numbers must be requested by submitting course proposal to ACRES for approval.

**Total cr hrs for required core courses:** [8](#)

Course prefix & number	Course title	Credit hours	New course?
<a href="#">ANB 535</a>	<a href="#">Research Strategies in Animal Behavior (currently BIO 435)</a>	4	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
<a href="#">ANB 536</a>	<a href="#">Current Issues in Animal Behavior *</a>	1	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
	<i>*journal club must be taken 4x during tenure in the program</i>		

(Please expand table as needed. Right click in white space of last cell. Select "Insert Rows Below"

**Omnibus courses associated with new degree:**

Course prefix & number	Course title	Credit hours	New course?
			Y <input type="checkbox"/> N <input type="checkbox"/>
			Y <input type="checkbox"/> N <input type="checkbox"/>
			Y <input type="checkbox"/> N <input type="checkbox"/>
			Y <input type="checkbox"/> N <input type="checkbox"/>
			Y <input type="checkbox"/> N <input type="checkbox"/>

(Please expand table as needed. Right click in white space of last cell. Select "Insert Rows Below"

**iii. Elective Courses**

1. At least two courses selected from two different broad categories of:

[Physiology](#)

Neuroscience  
 Psychology  
 Ecology (Environmental Life Sciences)  
 Evolutionary Biology  
 Statistics

**Total cr hrs for program electives: 9**

Provide a sample list of elective courses (only 6 cr hrs of 400 level courses from the list below can be put on student plan of study.):

Course prefix & number	Course title	Credit hours	New course?
BIO 411	Quantitative Conservation Biology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 415	Biometry	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 423	Population and Community Ecology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 425	Animal Ecology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 431	Genes, Development, and Evolution	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 436	Sociobiology and Behavioral Ecology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 464	Photobiology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 465	Neurophysiology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 461	Comparative Animal Physiology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 462	Endocrine Physiology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 494	Topic: Marine Conservation Biology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 494/598	Topic: Ecological Stoichiometry	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 522	Populations: Evolutionary Ecology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 524	Ecosystems	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 526	Quantitative Ecology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 561	Environmental Physiology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 598	Topic: Soil Ecology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 598	Topic: Urban Ecological Systems	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
BIO 591/ ASM 591	Topic: Dynamic Modeling in Social and Ecological Systems	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 420	Analysis of Behavior	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 424	Genetic Psychology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 425	Biological Bases of Behavior	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 426	Neuroanatomy	4	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 512	Advanced Learning	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 524	Advanced Physiological Psychology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 528	Sensation and Perception	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 529	Correlation and Psychometric Theory	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
PSY 530	Intermediate Statistics	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
ASB 530	Ecological Anthropology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
ASM 401	Health and Human Biology	4	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
ASM 454	Comparative Primate Anatomy	4	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
ASM 455	Primate Behavior Lab	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
ASM 543	Primatology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
CHM 460	Biological Chemistry	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
CHM 598	Topic: Chemical Biology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
ASB/SSH	Topic: Ethnographic Research Methods	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>



<b>500</b>			
<b>ASB 591/ MAT 598</b>	Topic: Agent-Based Modeling	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>ASB 598 / BIO 598 /POS 598</b>	Topic: Science, Technology, and Societal Outcomes	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>GLG 598</b>	Topics in Paleobiology and Evolution	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>KIN 414</b>	Electromyographic Kinesiology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>KIN 440</b>	Exercise Biochemistry	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>KIN 494</b>	Comparative Biomechanics	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>KIN 510</b>	Introduction to Biomechanical Research Methods	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>KIN 512</b>	Biomechanics of the Skeletal System	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>MAT 451</b>	Mathematical Modeling	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>MAT 598</b>	Mathematical Ecology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>PLB 420</b>	Plant Ecology: Organisms and Populations	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>PLB 583</b>	OTS: Fieldwork in Tropical Biology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>PLB/CBS 494/591</b>	Topic: Phylogenetic analysis	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>STP 530</b>	Applied Regression	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>STP 531</b>	Applied Analysis of Variance	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>STP 532</b>	Applied Nonparametric Statistics	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
<b>STP 535</b>	Applied Sampling Methodology	3	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>

(Please expand table as needed. Right click in white space of last cell. Select "Insert Rows Below")

iv. **400-Level Courses.** No more than 6 credit hours of 400-level coursework can be included on graduate student plan of study.

1. Are 400-level ASU courses allowed on student plan of study for this degree?  Yes  No

2. If yes, how many credit hours? **6**

v. **Additional Requirements (if applicable).** Provide a brief description of any additional requirements (e.g. internships, clinicals, field study, etc.) **N/A**

**Total cr hrs for other required courses: N/A**

List course info for any additional requirements (e.g. internships, clinicals, field study, etc.)

Course prefix & number	Course title	Credit hours	New course?
			Y <input type="checkbox"/> N <input type="checkbox"/>

(Please expand table as needed. Right click in white space of last cell. Select "Insert Rows Below")

vi. **Total cr hrs required for research and other elective courses under the advisement of the dissertation advisor and supervisory committee (if applicable): 55**

vii. **Culminating experience** for the proposed program (please check all that apply and provide requested information):

	Required?	Brief description of the applied project or the capstone course, as applicable.	Course prefix and number	Credit hours
<b>Dissertation (doctoral only)</b>	<input checked="" type="checkbox"/>	List course prefix and number ANB 799		12 cr hrs

(Please expand table as needed. Right click in white space of last cell. Select "Insert Rows Below")

viii. **Master's program comprehensive exams, please check all that apply** (Please note: for doctoral programs, a written and an oral comprehensive exam are required.) *N/A*

- Written comprehensive exam required
- Oral comprehensive exam required
- No comprehensive exam required

ix. **For Doctoral Degrees, indicate the Master's Degree Credit Allowance:** If approved by the student's supervisory committee, does the program allow up to 30 credit hours from a previously awarded master's degree to count towards the degree requirements for this doctoral program?  Yes or  No

x. **Committee:** Required Number of Thesis or Dissertation Committee Members (must be at least 3 including chair or co-chairs): 5

xi. **Foreign Language Exam.**

Foreign Language Examination(s) required?  Yes  No

If yes, list all foreign languages required:

xii. **Course Prefix(es)** Provide the following information for the proposed graduate program.

a. Will a new course prefix(es) be required for this degree program?

Yes  No

b. If yes, complete the [Request for establishment of a new prefix](#) for each prefix and submit to Nancy Kiernan in the Office of the Provost.

**New Courses Required for Proposed Degree Program.** Provide course prefix, number, title, and credit hours and description for any new courses required for this degree program.

### **ANB 535 Research Strategies in Animal Behavior**

We propose a 4-credit core course, ANB 535, which will be a modification and extension of a course in the current ASU catalog, BIO 435 Research Techniques in Animal Behavior (3 credit hours: 6 hours of lab and one hour of lecture per week). 4 credit hours will be earned for ANB 535 through participating in 6 hours of lab and 2 hours of lecture per week. The lab hours and one lecture hour will be taken concurrently by students in BIO 435 and ANB 535 but one additional hour of lecture will be exclusively for students in the Animal Behavior graduate program. This course will be offered every fall semester and so available for incoming students to take.

This course has at least three goals. The first is to introduce students to the interdisciplinary diversity of procedural, technological, and conceptual strategies used to answer descriptive and causal questions about the behavior of animals, including humans. This will be done through a series of 4 to 8 carefully crafted field or laboratory exercises (1-2 weeks/lab, 6 hrs/week). This course will culminate in a 4-week-long individual project that is of each student's conception, design, and execution.

The exercises will feature a diversity of taxa and conceptual approaches used in the study of animal behavior. Here are examples of past exercises that cover this diversity.

- 1) Chemical communication in insects
- 2) Mating system structure in insects
- 3) Social foraging in ants and birds
- 4) Visual communication in birds
- 5) Learning in mammals

## 6) Human mating strategies

The second goal is to provide in the first hour of lecture (BIO 435 and ANB 535 students) background and information on procedures and strategies used in the study of behavior across a number of disciplines that there is not time to cover in the lab exercises during the semester. These may include physical characterization of light, chemical, and sound signals, basic statistical applications, rigorous comparative analyses of behavioral diversity, tools used in the study of learning, information theory, and the techniques used in the recording and analysis of sequences of behavior.

The final goal is to introduce students in the second hour of lecture (ANB 535 students only) to the diversity of study systems and cutting edge interdisciplinary approaches taken in the study of animal behavior at ASU and elsewhere. This will be done through a series of lectures by ASU researchers.

Grading will be based on the following items

- 1) Lab reports on each of the lab exercises
- 2) Individual project reports that will include both written and oral presentations
- 3) 2-4 quizzes on the material covered in lecture

### **ANB 536 Current Issues in Animal Behavior**

This course will be offered every semester and all students in the program will be required to enroll in this one-credit-hour course in at least 4 of the semesters they are in residence during their PhD degree program. The goals of this class include the following:

- To build a community of graduate students engaged in disciplinary and interdisciplinary research on animal behavior.
- To build familiarity with the contemporary scientific literature on animal behavior.
- To motivate and exercise the skills needed to address questions about animal behavior using techniques and concepts from multiple disciplines and then to integrate those results from multiple disciplines to produce a comprehensive understanding of animal behavior.
- To provide opportunities for students to select the focal topics for the journal club.

The key activities that will be used to achieve these goals may include the following:

- Discussions of current literature on some focused and contemporary topic in the study of behavior.
- Presentations by each of the participants describing the conceptual framework and results of their dissertation research.
- Discussion of career options and strategies in the behavioral sciences.
- Discussion of responsible conduct in research
- Discussion of effective strategies in publication and grantsmanship

Grading will be based on written reports on current issues and on the quality of presentations made by the students. ANB 536 is modeled after the current journal club course structure developed under the new Neuroscience PhD program.

Attachment(s):

CLAS Support Approval Letters

**College of Liberal Arts and Sciences**

**PhD in Animal Behavior**

**From:** Sid P. Bacon [mailto:spb@asu.edu]  
**Sent:** Wednesday, September 23, 2009 4:46 PM  
**To:** curriculumplanning@asu.edu  
**Cc:** Jenny Smith; Roxann Gonzales  
**Subject:** Curriculum proposals ... Natural Sciences in CLAS

The attached curriculum proposals (BA in Physics and PhD in Animal Behavior within the School of Life Sciences) were approved by the CLAS Curriculum Committee and Senate. I endorse these proposals.

Thank you.

**SID P. BACON**

Dean of Natural Sciences

**College of Liberal Arts and Sciences**

Arizona State University | P.O. Box 876505 | Tempe, Arizona 85287-6505  
480.965.4795 | Fax: 480.965.1093 | e-mail: [Sid.Bacon](mailto:Sid.Bacon)

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**From:** Jenny Smith  
**Sent:** Wednesday, September 23, 2009 4:00 PM  
**To:** Sid P. Bacon  
**Cc:** Filiz Ozel; Denise Campbell; Ronald Rutowski; Sabrina Mathues  
**Subject:** Curricular Proposals  
**Importance:** High

Sid,

The attached curricular proposals were approved by the CLAS Curriculum Committee and Senate. Would you please forward them with your endorsement to [curriculumplanning@asu.edu](mailto:curriculumplanning@asu.edu)?

Thank you,  
Jenny

**JENNY SMITH**

Executive Assistant

**College of Liberal Arts and Sciences**

Arizona State University | P.O. Box 876605 | Tempe, Arizona 85287-6605  
480.965.6506 | Fax: 480.965.2110 | e-mail: [jenny.smith@asu.edu](mailto:jenny.smith@asu.edu)

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## Department of Psychology Impact Statement

The below email was forwarded from Psychology and serves as their letter of support for this program. Thanks, Kevin

Begin forwarded message:

From: Keith Crnic <[Keith.Crnic@asu.edu](mailto:Keith.Crnic@asu.edu)>  
Date: September 24, 2009 12:46:07 PM GMT-07:00  
To: Kevin McGraw <[Kevin.McGraw@asu.edu](mailto:Kevin.McGraw@asu.edu)>  
Subject: FW: FW: requesting brief email reply (impact statement) for two courses in proposed ASU PhD program in Animal Behavior

Kevin, here is the approval e-mail that was sent.

Keith

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

From: Laurie Chassin [<mailto:lchassin@asu.edu>]  
Sent: Sunday, September 06, 2009 2:03 PM  
To: Keith Crnic  
Cc: Cheryl Conrad; Kevin McGraw; Federico Sanabria  
Subject: Re: FW: requesting brief email reply (impact statement) for two courses in proposed ASU PhD program in Animal Behavior

Dear Dr. McGraw,.

As Director of Graduate Studies for Psychology, I am responding to your request for an impact statement. Our faculty have reviewed the syllabi for the proposed classes ANB535 Research Strategies in Animal Behavior and ANB 536 Current Issues in Animal Behavior.

The proposed curriculum for these two courses will not negatively affect or courses in our department.

We hope that our students can join these classes and believe that they will benefit from their enrollment.

If you require any further information, please contact me at [laurie.chassin@asu.edu](mailto:laurie.chassin@asu.edu)

Best of luck with the new curriculum.

Laurie

Keith Crnic wrote:

Hi Laurie,

Can you check these out and let me know whether we have any conflicts or concerns? I'm copying it to Cheryl Conrad as well, as BN area head.

Keith

-----  
\*From:\* Kevin McGraw [<mailto:kevin.mcgraw@asu.edu>]  
\*Sent:\* Monday, August 31, 2009 12:22 PM  
\*To:\* Keith Crnic  
\*Subject:\* requesting brief email reply (impact statement) for two courses in proposed ASU PhD program in Animal Behavior

Dear Keith:

I am writing to request from you, as chair of the Department of Psychology, an "impact statement" for two proposed courses associated with the start of a new Graduate Degree program in Animal Behavior. These new offerings will have content related to the courses that your faculty teach or content that your graduate students might want to know about.

\*ANB 535\*\* \*\*Research Strategies in Animal Behavior\*

\*ANB 536 Current Issues in Animal Behavior\*

\* \*

To this message, I have attached proposed course syllabi for these two offerings.

To provide an "impact statement" that will be included in the curriculum proposal, please reply to this email using either of the two following statements:

=====

1) The proposed curriculum in the Animal Behavior graduate program will not negatively affect or duplicate a course in my department.

OR

2) The proposed curriculum in the Animal Behavior graduate program will negatively affect or duplicate a course in my department, as explained below.

=====

It would be great if we could have the impact statement returned to us as soon as possible, because the college needs these to move forward on the establishment of this new program.

Thank you very much for your time and collaboration,

--

Drs. Kevin McGraw and Ron Rutowski  
Planning committee co-chairs, Animal Behavior graduate program  
School of Life Sciences  
Arizona State University  
Tempe, AZ 85287-4501

August 19, 2009

College of Liberal Arts Curriculum Committee  
Attention: Jenny Smith

Dear Committee:

Our school is pleased to endorse the proposal for a PhD program in Animal Behavior. The program appropriately involves several School of Human Evolution & Social Change faculty who are deeply engaged in these issues, and who will as noted be supervising students and providing electives. Please contact me if you need any additional information.

Sincerely,



Alexandra Brewis  
Professor & Associate Director





21 August 2009

To Whom It May Concern:

I am writing to express my enthusiastic support of the proposal for a new PhD degree program in Animal Behavior.

One of the main research strengths of the School of Life Sciences is behavior and related fields. This new program will build on that strength and extend our ability to attract the best graduate students to ASU. We expect a significant number of our faculty to be actively involved. I look forward to helping as the process moves forward. Please feel free to contact me if there are any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Elser". The signature is written over a light gray rectangular area, likely a placeholder for a stamp or a redaction.

Jim Elser  
Regents' Professor and Parents Association Professor  
Ecology, Evolution, and Environmental Science  
Associate Director, Research and Training Initiatives  
Acting Director  
School of Life Sciences, Arizona State University

MAIN CAMPUS

**COLLEGE OF LIBERAL ARTS AND SCIENCES**

**School of Life Sciences**

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