EVOLUTION, ECOLOGY, AND BEHAVIOR, PHD

for the degree of Doctor of Philosophy in Evolution, Ecology, and Behavior

The Department of Evolution, Ecology, and Behavior administers several graduate degree programs. Areas of training include the broadly defined disciplines of Animal Behavior, Biomechanics, Comparative Anatomy, Conservation Biology, Ecology, Evolution, Genetics/Genomics and Physiology. Students are expected to develop expertise in three of these six areas.

Admission

Acceptance for graduate study in the Department of Evolution, Ecology, and Behavior is based on the applicant's research potential and academic achievement. An undergraduate degree in the life sciences is the usual preparation, but students majoring in mathematics, computer science, or the physical and social sciences are also considered. Students should have taken courses in at least two of the following six areas: evolution, ecology, genetics, behavior, conservation, physiology/morphology. Students lacking one or more of these courses may be admitted with the provision that such deficiencies be completed in addition to the normal graduate course load. A grade point average of at least 3.0 (A = 4.0) for the last two years of undergraduate work in a four-year undergraduate degree program or the last three years of a five-year undergraduate program and for any graduate study is required or the candidate will have to petition for an exception. Considerable emphasis is placed on a student's interest and ability in research as demonstrated by previous work and letters of recommendation. Applications are typically only considered for fall admission unless special arrangements are made with the Department. The deadline for application materials is December 15. A minimum paper-based Test of English as a Foreign Language (TOEFL) score of 613 (257 on the computer-based version, 103-104 on the internet-based version) is preferred for international applicants.

Financial Aid

Financial aid is available in the form of fellowships and teaching and research assistantships for qualified students.

Master's degrees are not required for admission, but Master's level requirements must be met (additional 32 hours). No qualifying exam is required. Successful completion of a preliminary exam is required for candidacy. In addition, a written research proposal, a verbal scientific presentation to the department (in year 3-4), a written dissertation, an exit seminar presenting the dissertation research, and a final dissertation exam are required. Dissertation deposit is also required. Minimum hours for graduation is 64.

Experience in Teaching is required as part of the academic work of all PH.D. candidates in this program. The minimum GPA is 3.0. For additional details and requirements refer to the department and the Graduate College Handbook.

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For additional details and requirements refer to the department (https://sib.illinois.edu/eeb/student_resources/) and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook/).

Entering with an approved BS/BA degree

Code	Title	Hours
EEB Colloquium (to be taken each semester of enrollment; minimum 6 hours)		**6**
IB 546	Topics in Ecology & Evolution	
Thesis Hours Required (48 hours min, 76 max applied toward degree)		**48-76**
EEB 599	Thesis Research	
One course chosen from the following list of statistics and/or computational methods courses		
IB 476	Environmental Remote Sensing	
IB 501	Programming for Genomics	
IB 505	Bioinformatics & Systems Biol	
IB 506	Applied Bioinformatics	
IB 517	Analysis of Biological Data in R	
CPSC 440	Applied Statistical Methods I	
CPSC 540	Applied Statistical Methods II	
NRES 421	Quantitative Methods in NRES	
NRES 593	Statistical Methods in Ecology	
NRES 595	Advanced Quantitative Techniques for Ecology and Conservation	
Additional electives chosen from the following list to meet the 96-hour minimum		
IB 401	Introduction to Entomology	
IB 405	Evolution of Traits and Genomes	
IB 407	Plant Diversity and Evolution	
IB 411	Bioinspiration	
IB 416	Population Genetics	
IB 420	Plant Physiology	
IB 421	Photosynthesis	
IB 426	Env and Evol Physl of Animals	
IB 431	Behavioral Ecology	
IB 432	Genes and Behavior	
IB 433	Insect Physiology	
IB 435	Critical Evaluation of Herbal Remedies	
IB 436	Evolutionary Neuroscience	
IB 438	How Organisms Move	
IB 439	Biogeography	
IB 440	Plants and Global Change	
IB 442	Evolution of Infectious Disease	
IB 444	Insect Ecology	
IB 451	Conservation Biology	
IB 452	Ecosystem Ecology	
IB 453	Community Ecology	
IB 461	Ornithology	
IB 462	Mammalogy	
IB 463	Ichthyology	
IB 464	Herpetology	
IB 467	Principles of Systematics	
IB 468	Insect Classification and Evol	
IB 471	Fungal Diversity and Ecology	

IB 472	
IB 473	
IB 476	Environmental Remote Sensing
IB 478	Advanced Plant Genetics
IB 479	Plant Growth and Development
IB 481	Vector-borne Diseases
IB 482	Insect Pest Management
IB 484	Paleoclimatology
IB 490	Independent Study
IB 491	Biological Modeling
IB 494	Theoretical Biology + Models
IB 496	Special Courses
IB 497	Science Communication
IB 499	Discussions in Integrative Biology
IB 501	Programming for Genomics
IB 502	Biological Networks
IB 504	Genomic Analysis of Insects
IB 505	Bioinformatics & Systems Biol
IB 506	Applied Bioinformatics
IB 507	Statistical Genomics
IB 512	Plant Metabolomics
IB 513	Plant Science Seminar
IB 516	Ecosystem Biogeochemistry
IB 517	Analysis of Biological Data in R
IB 524	Plant Biochemistry
IB 526	Seminar in Entomology
IB 542	Environmental Plant Physiology
IB 546	Topics in Ecology & Evolution
IB 590	Individual Topics
IB 592	Career and Skill Development in Integrative Biology
Total Hours	**96**

Entering with an approved MS/MA degree

Code	Title	Hours
EEB Colloquium (to be taken each semester of enrollment; minimum 6 hours)		**6**
IB 546	Topics in Ecology & Evolution	
Thesis Hours Required (48 hours min, 55 max applied toward degree)		**48-55**
EEB 599	Thesis Research	
One course chosen from the following list of statistics and/or computational methods courses		
IB 476	Environmental Remote Sensing	
IB 501	Programming for Genomics	
IB 505	Bioinformatics & Systems Biol	
IB 506	Applied Bioinformatics	
IB 517	Analysis of Biological Data in R	
CPSC 440	Applied Statistical Methods I	
CPSC 540	Applied Statistical Methods II	
NRES 421	Quantitative Methods in NRES	
NRES 593	Statistical Methods in Ecology	
NRES 595	Advanced Quantitative Techniques for Ecology and Conservation	
Additional electives chosen from the following list to meet the 64-hour minimum		
IB 401	Introduction to Entomology	
IB 405	Evolution of Traits and Genomes	
IB 407	Plant Diversity and Evolution	
IB 411	Bioinspiration	
IB 416	Population Genetics	
IB 420	Plant Physiology	
IB 421	Photosynthesis	
IB 426	Env and Evol Physl of Animals	
IB 431	Behavioral Ecology	
IB 432	Genes and Behavior	
IB 433	Insect Physiology	
IB 435	Critical Evaluation of Herbal Remedies	
IB 436	Evolutionary Neuroscience	
IB 438	How Organisms Move	
IB 439	Biogeography	
IB 440	Plants and Global Change	
IB 442	Evolution of Infectious Disease	
IB 444	Insect Ecology	
IB 451	Conservation Biology	
IB 452	Ecosystem Ecology	
IB 453	Community Ecology	
IB 461	Ornithology	
IB 462	Mammalogy	
IB 463	Ichthyology	
IB 464	Herpetology	
IB 467	Principles of Systematics	
IB 468	Insect Classification and Evol	
IB 471	Fungal Diversity and Ecology	
IB 472		
IB 473		
IB 476	Environmental Remote Sensing	
IB 478	Advanced Plant Genetics	
IB 479	Plant Growth and Development	
IB 481	Vector-borne Diseases	
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IB 484	Paleoclimatology	
IB 490	Independent Study	
IB 491	Biological Modeling	
IB 494	Theoretical Biology + Models	
IB 496	Special Courses	
IB 497	Science Communication	
IB 499	Discussions in Integrative Biology	
IB 501	Programming for Genomics	
IB 502	Biological Networks	
IB 504	Genomic Analysis of Insects	
IB 505	Bioinformatics & Systems Biol	
IB 506	Applied Bioinformatics	
IB 507	Statistical Genomics	

IB 512	Plant Metabolomics	
IB 513	Plant Science Seminar	
IB 516	Ecosystem Biogeochemistry	
IB 517	Analysis of Biological Data in R	
IB 524	Plant Biochemistry	
IB 526	Seminar in Entomology	
IB 542	Environmental Plant Physiology	
IB 546	Topics in Ecology & Evolution	
IB 590	Individual Topics	
IB 592	Career and Skill Development in Integrative Biology	
Total Hours		**64**

Other Requirements

Code	Title	Hours
Minimum hours required at the 500-level in IB or EEB		12
Other requirements may overlap		
Minimum GPA		3.0
Masters Degree Required for Admission to PhD?		No
Qualifying Exam Required?		No
Preliminary Exam Required?		Yes
Verbal scientific presentation to Department Required?		Yes
Dissertation Presentation to Department (i.e., Exit Seminar) Required?		Yes
Written Dissertation Deposit and Exam Required?		Yes
Teaching required?		Yes (2 semesters minimum)
Must submit 1 paper for publication prior to graduating		
Research Proposal?		Yes

for the degree of Doctor of Philosophy in Evolution, Ecology, and Behavior

1. Design and implement independent research which integrates and applies core knowledge of evolution, ecology and/or behavior. PhD students take course work that is relevant to their studies and design/execute multiple experiments in those areas.
2. Learn the rigorous statistical/analytical methods that typify their area of study. PhD students are required to take a course in statistics and/or computational methods and apply those skills to multiple scientific studies.
3. Write and publish research. PhD students are required to submit at least one manuscript to a journal for peer review before defending. A typical PhD thesis involves at least three publishable studies.
4. Develop professional skills typical for researchers. PhD students gain skills in the areas of data management, citation management, mentoring, ethical conduct of research, and Networking.
5. Teach others (usually undergraduates) in the fields of evolution, ecology, and behavior. PhD students lead discussions/lab activities, present information/lecture, provide meaningful feedback to students, show concern for all students.
6. Apply for grants to support their independent research. PhD students apply for (and often receive) grants from both internal and external sources.
7. Present research verbally at internal venues and at scientific conferences. PhD students are required to give two verbal presentations to the department; one presentation is their public exit seminar; another is a presentation of work given at the EEB Colloquium or similar venue.

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Head of Department: Dr. Becky Fuller
Director of Graduate Studies: Dr. Phil Anderson
Director of Admissions Committee: Dr. Phil Anderson
Evolution, Ecology, and Behavior News website (http://sib.illinois.edu/eeb/)
Evolution, Ecology, and Behavior News faculty (https://sib.illinois.edu/eeb/faculty/)
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(217) 333-7801
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Admissions
Overview of Grad College Admissions & Requirements (https://grad.illinois.edu/admissions/apply/)

College of Liberal Arts & Sciences
College of Liberal Arts and Sciences website (https://las.illinois.edu/)