Honors Opportunities
Polytechnic Campus

http://barrettpoly.asu.edu

The College of Letters and Sciences

Science and Mathematics Faculty and Barrett, the Honors College work together to provide their student's academic advising, research and internship opportunities, scholarship information and access to distinguished lectures and other special events. By taking [ABS/BIO/CHM/MAT/PHY] courses under an honors designation, honors students work on special projects that provide them an expanded understanding of the course subject matter. Often, these courses have a lower student-to-faculty ratio, allowing the students to work on exciting research with faculty members. Such experiences distinguish honors students from other students and help them gain entrance to graduate programs or garner sought-after jobs. Honors students receive special invitations to various events, including meeting industry, faculty, and staff. They can also gain funding for research or travel to conferences held in other cities.

Offerings for Honors Enrichment Contracts

ABS 130 Intro to Environmental Science
ABS 207 Applied Plant Taxonomy
ABS 270 Sustainable Biological Systems
ABS 350 Applied Statistics
ABS 355 Ecology and Adaptations of Vertebrates
ABS 362 Plant Propagation
ABS 370 Ecology
ABS 373 Vegetation Measurements
ABS 380 Wildlife and Restoration Plants
ABS 440 Ecological Restoration Techniques
ABS 460 Organic Gardening
ABS 470 Mammalogy
ABS 479 Ecosystem Management Planning
ABS 482 Ecology and Planning for Restoration
ABS 494 Various topics including Laser Optics, Fire Ecology, Sustainable Desert Horticulture
ABS 560 Ecological Modeling
BCH 361 Biochemistry
BIO 100 The Living World
BIO 360 Animal Physiology
BIO 480 Methods of Teaching Biology
CHM 231 Elementary Organic Chemistry
CHM 233/234 General Organic Chemistry I and II
CHM 435 Medicinal Chemistry
ETM 301 Environmental Management
ETM 302 Water and Wastewater Treatment
ETM 502 Environmental Regulatory Framework
ETM 520 Sustainability and Sustainable Development
MAT 170 Precalculus
MAT 210 Brief Calculus
MAT 211 Mathematics for Business Analysis
MAT 243 Discrete Math Structures
MAT 251 Calculus for Life Sciences
MAT 265 Calculus for Engineers I
MAT 266 Calculus for Engineers II
MAT 267 Calculus for Engineers III
MAT 275 Modern Differential Equations
MAT 343 Applied Linear Algebra
PHY 111-112 General Physics
PHY 121 University Physics I: Mechanics
PHY 131 University Physics II: Electricity and Magnetism
PHY 331 Principles of Modern Electromagnetism
PHY 456 Laser Optics
PLB 414 Plant Pathology
STP 226 Elements of Statistics
STP 420 Introductory Applied Statistics
## CSE/CPI Honor Theses

<table>
<thead>
<tr>
<th>Thesis Title</th>
<th>Thesis Director</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum development – advanced laser laboratory for engineering students</td>
<td>Maxim Sukharev</td>
<td>Fall 2012</td>
</tr>
<tr>
<td>Physical aspects of refractive index measurements using Michelson interferometer</td>
<td>Maxim Sukharev</td>
<td>Spring 2014</td>
</tr>
<tr>
<td>Applications of Evolutionary Games; the Spatial Majority Rule Model for Social Science</td>
<td>Yun Kang</td>
<td>Spring 2011</td>
</tr>
<tr>
<td>The Effects of <em>Lysobacter gummosus</em> on Amphibian Biofilms</td>
<td>Heather Bateman</td>
<td>Spring 2011</td>
</tr>
<tr>
<td>Whiptail (<em>Aspidoscelis</em>) body size and reproductive output</td>
<td>Heather Bateman</td>
<td>Spring 2011</td>
</tr>
<tr>
<td>Wildlife strikes on aircraft</td>
<td>Heather Bateman</td>
<td>Spring 2014</td>
</tr>
</tbody>
</table>

## CS/CSE Faculty and Thesis Options

Students looking for faculty members to supervise their honors theses can review the following list. Students may work with others, as well, and this list is intended as a starting point only.

Faculty members who encourage Honors work in the area of Biology, Chemistry, Mathematics and Physics include:

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Email</th>
<th>Research Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eddie Alford</td>
<td><a href="mailto:Eddie.Alford@asu.edu">Eddie.Alford@asu.edu</a></td>
<td>Plant ecology, effects of fire/grazing and plant community interactions</td>
</tr>
<tr>
<td>Daniel Allen</td>
<td><a href="mailto:daniel.c.allen@asu.edu">daniel.c.allen@asu.edu</a></td>
<td>Stream or riparian ecology with particular interest in the functioning of these ecosystems along gradients urbanization or streamflow permanence</td>
</tr>
<tr>
<td>Heather Bateman</td>
<td><a href="mailto:Heather.L.Bateman@asu.edu">Heather.L.Bateman@asu.edu</a></td>
<td>Wildlife biology and ecology. I am a field biologist interested in how land management and urbanization affects birds and reptiles. <a href="http://hbateman.faculty.asu.edu/">http://hbateman.faculty.asu.edu/</a></td>
</tr>
<tr>
<td>Doug Green</td>
<td><a href="mailto:DM.Green@asu.edu">DM.Green@asu.edu</a></td>
<td>Riparian ecology; distribution of soils and effect on vegetation</td>
</tr>
<tr>
<td>Yun Kang</td>
<td><a href="mailto:Yun.Kang@asu.edu">Yun.Kang@asu.edu</a></td>
<td>My research is integrated with biological experiments and mathematical models. The topics of Honor thesis can rang from how disease spreads, how social animal interact with each other, how cooperation in social insects work, etc. The focus of the thesis can be either experiments or theoretical analysis.</td>
</tr>
<tr>
<td>Chris Martin</td>
<td><a href="mailto:Chris.Martin@asu.edu">Chris.Martin@asu.edu</a></td>
<td>My research program in landscape horticulture involves both basic and applied studies of the physiology and ecology of exotic, desert-adapted, and desert-native plants. <a href="http://www.public.asu.edu/~camartin/Martinresearch.htm">http://www.public.asu.edu/~camartin/Martinresearch.htm</a></td>
</tr>
<tr>
<td><strong>Faculty Name</strong></td>
<td><strong>Email</strong></td>
<td><strong>Research Interest</strong></td>
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</tr>
<tr>
<td>David Oakes</td>
<td><a href="mailto:David.Oakes@asu.edu">David.Oakes@asu.edu</a></td>
<td>Biological modeling, evolution, and functions of real variables</td>
</tr>
<tr>
<td>Xiaohong Peng</td>
<td><a href="mailto:Xihong.Peng@asu.edu">Xihong.Peng@asu.edu</a></td>
<td>Our research group at ASU Polytechnic Campus performs first-principles electronic structure calculations to study properties of materials in multidisciplinary fields such as Physics, Chemistry, Material Science and Engineering.</td>
</tr>
<tr>
<td>Ryan Penton</td>
<td><a href="mailto:crpenton@asu.edu">crpenton@asu.edu</a></td>
<td>environmental microbiology/microbial ecology; microbial diversity and bioinformatics</td>
</tr>
<tr>
<td>Igor Shovkovy</td>
<td><a href="mailto:Igor.Shovkovy@asu.edu">Igor.Shovkovy@asu.edu</a></td>
<td>Theoretical physics with applications in many sub-fields of physics, e.g., condensed matter, nuclear, particle physics and astrophysics.</td>
</tr>
<tr>
<td>Kelly Steele</td>
<td><a href="mailto:Kelly.Steele@asu.edu">Kelly.Steele@asu.edu</a></td>
<td>Genome, chromosome and molecular evolution of the flowering plant genus <em>Medicago</em> which includes the important legume forage crops alfalfa and bur-clover</td>
</tr>
<tr>
<td>Jean Stutz</td>
<td><a href="mailto:jstutz@asu.edu">jstutz@asu.edu</a></td>
<td>Diversity and community ecology of arbuscular mycorrhizal fungi in arid, riparian and urban ecosystems; use of mycorrhizal fungi in restoration and horticulture; plant diseases of urban and riparian trees and innovative teaching and learning</td>
</tr>
<tr>
<td>Maxim Sukharev</td>
<td><a href="mailto:Maxim.Sukharev@asu.edu">Maxim.Sukharev@asu.edu</a></td>
<td>Computational (involving parallel super-computers) and experimental (utilizing hands-on laser laboratory) investigations of optical properties of various nanomaterials.</td>
</tr>
<tr>
<td>Michelle Zandieh</td>
<td><a href="mailto:zandieh@asu.edu">zandieh@asu.edu</a></td>
<td>Research in undergraduate mathematics education with a focus on teaching and learning of topics in calculus and linear algebra. Qualitative research methods to analyze data from written surveys, interviews with students or in class videos of small group or whole class discussion.</td>
</tr>
</tbody>
</table>
Guidelines/Checklist for honors theses in the College/Major*

*The following provides general guidelines. Please check with the Barrett Honors College guidelines for updated information:

- Prior to pursuing a thesis or advisement complete a thesis workshop, either in person or online. See http://barretthonors.asu.edu/academics/thesis-and-creative-project/getting-started/ for more details.
- Make sure you meet with your Barrett Advisor, Brady Hamilton, for your mandatory junior advising to go over the thesis process.
- The student is responsible for formulating the thesis topic, for requesting faculty to serve on the committee, to submit the necessary forms to the Honors College, and to inform the chair of the committee of all Honors College requirements and deadlines.
- Thoroughly review the Thesis/Creative project handbook and reference it throughout your project. Be aware of the deadlines and expectations of the project.
- Brainstorm ideas for your topic. Think of topics that you have a passion for and that may assist you with future goals. The students can start thinking of thesis topics as early as their freshman and sophomore years. The students should definitely have a clear plan of the thesis topics or research by their junior year.
- Investigate the research areas of the faculty in your department or in a related field and create a list of questions and topic ideas to discuss with a potential thesis director.
- Set up a meeting with a potential thesis director. Refer to the Faculty Honors Advisor in your department, if you need additional assistance.
- Once you have a confirmed thesis director, register for the appropriate thesis course(s) (XXX492 and/or XXX493) through your director’s department.
- Select the second reader in collaboration with your thesis director.
- Write your prospectus, have it reviewed and signed by your director and second reader.
- Submit your prospectus to the Barrett Advising office by the appropriate deadline.
- Meet regularly with your thesis director and second reader on the progress of your thesis/creative project.
- Schedule your thesis defense.
- Complete and file (if appropriate) the thesis reimbursement application.
- Finalize your manuscript with the guidance of your committee, and prepare for your defense.
- Plan to give your committee members a hard copy of your manuscript at least two weeks prior to the defense.
- Present at your oral defense and have your Signature page correctly formatted and signed by your committee.
- Submit your final unbound manuscript to the Barrett Advising office with correctly formatted Signature page containing original signatures (not photocopied) of all committee members, as well as an electronic copy of your thesis. See Final Copy Submission/Formatting section for campus specific emails.
- Confirm that your thesis/creative project director submitted a grade for the completed project and changed the Z grade if one was submitted in a prior semester (for 492).
- Remember to submit the Barrett Graduation form online through MyASU during your final semester. This form is used to RSVP for Barrett Convocation and to declare your intent to complete all Barrett graduation requirements.