ZOO 6927: Ecological Niche Modeling  
Spring 2017 Syllabus

INSTRUCTOR INFORMATION:

Dr. Hannah Owens  
Postdoctoral Fellow, FLMNH  
Office: Rm 359 Dickinson Hall  
Office Hours: Tuesdays, 1 pm to 2.30 pm  
Telephone: (352) 294-2086  
Email: howens@flmnh.ufl.edu

Dr. Rob Guralnick  
Assoc. Curator, FLMNH  
Office: Rm 358 Dickinson Hall  
Lab: Rms 359,288,289 Dickinson  
Office Hours: Wednesdays, 1.45 to 2.30 pm  
Telephone: (352) 273-1980  
Email: rguralnick@flmnh.ufl.edu

CLASS LOCATION  
CHE 0316

CLASS DATE & TIME  
Wednesdays, 12:50 to 1:40 pm (6\textsuperscript{th} Period)

COURSE OBJECTIVES
At the conclusion of the course, students will be able to:
- Explain basic niche concepts and how they relate to observed species' distributions
- Design and implement niche modeling analyses according to best practices in the discipline
- Identify applications for niche modeling methods in ecology and evolutionary biology

FORMAT
Class periods will be a mix of lectures, exercises, and discussions. Students are advised to bring laptops on which they can run R, QGIS or ArcGIS, and Maxent, among others. We will cover acquisition and installation of programs during the first meeting of the course.

REQUIRED TEXTBOOK\textsuperscript{1}

ATTENDANCE AND MAKE-UP ASSIGNMENTS
Requirements for class attendance and make-up exams, assignments, and other are consistent with university policies that can be found at:  
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

\textsuperscript{1} We will discuss how to obtain a copy of this book in class on the first day.
SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Preparation Required</th>
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</thead>
<tbody>
<tr>
<td>Jan 2</td>
<td>Introduction, program &amp; package installation</td>
<td>Read syllabus, bring laptop</td>
</tr>
<tr>
<td>Jan 9</td>
<td>What is a niche?</td>
<td>Text pp. 7-22</td>
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<tr>
<td>Jan 16</td>
<td>What are you modeling, exactly?</td>
<td>Warren, 2012; Text pp. 23-47²</td>
</tr>
<tr>
<td>Jan 23</td>
<td>Getting and cleaning data</td>
<td>Text pp. 62-95; Install R</td>
</tr>
<tr>
<td>Jan 30</td>
<td>Algorithms (Presence-only)</td>
<td>Install Maxent</td>
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<tr>
<td>Feb 6</td>
<td>Algorithms (Presence-absence)</td>
<td>Install MASS R package</td>
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<tr>
<td>Feb 13</td>
<td>Projections</td>
<td>Owens et al., 2013</td>
</tr>
<tr>
<td>Feb 20</td>
<td>Validations</td>
<td>Text pp. 150-180</td>
</tr>
<tr>
<td>Feb 27</td>
<td>Modeling changes through time</td>
<td>Maiorano, et al. 2012</td>
</tr>
<tr>
<td>Mar 6</td>
<td>SPRING BREAK</td>
<td>Nothing!</td>
</tr>
<tr>
<td>Mar 13</td>
<td>Project prospectuses due</td>
<td>1 p written, 1 min. oral précis</td>
</tr>
<tr>
<td>Mar 20</td>
<td>Future of niche modeling</td>
<td>Current paper TBD</td>
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<tr>
<td>Mar 27</td>
<td>Niche modeling and comparative phylogenetics</td>
<td>Budic and Dormann, 2015</td>
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<td>Apr 3</td>
<td>Niche modeling and disease ecology</td>
<td>Escobar and Craft, 2016</td>
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<tr>
<td>Apr 10</td>
<td>Student Project Presentations Pt. 1</td>
<td>5 min. oral presentation</td>
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<tr>
<td>Apr 17</td>
<td>Student Project Presentations Pt. 2</td>
<td>5 min. oral presentation</td>
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<tr>
<td>Apr 24</td>
<td>Finals Week</td>
<td>Nothing!</td>
</tr>
</tbody>
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EVALUATION  GRADING SCALE

<table>
<thead>
<tr>
<th>Participation: 35%</th>
<th>A: 90-100</th>
</tr>
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<tbody>
<tr>
<td>Homework: 25%</td>
<td>B+: 88-89.9</td>
</tr>
<tr>
<td>Project Prospectus: 15%</td>
<td>B: 80-87.9</td>
</tr>
<tr>
<td>Final Project: 25%</td>
<td>C+: 78-79.9</td>
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<tr>
<td></td>
<td>C: 70-77.9</td>
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<tr>
<td></td>
<td>D: 60-69.9</td>
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<td></td>
<td>E: &lt;60</td>
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COURSE EVALUATIONS

Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at:

https://evaluations.ufl.edu/  Summary results of these assessments are available to students at:

https://evaluations.ufl.edu/results/

DISABILITY ACCOMMODATION

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

RELIGIOUS OBSERVANCE

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. The instructors will discuss accommodations on a case by case basis. Reasonable requests will almost always be granted.

² Text assignment optional, but potentially helpful.
STUDENT INTEGRITY

UF students are bound by the Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.” On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor(s).

TOLERANCE POLICY

The University of Florida policy on Discrimination and Harassment (http://hr.ufl.edu/manager-resources/policies-2/sexual-harassment/) will be adhered to strictly. Any student who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status can make a formal complaint report to the Institutional Equity and Diversity officer and/or to the Dean of Students Office/Student Conduct and Conflict Resolution (DSO/SCCR). Resources and reporting options can be found online at https://www.dso.ufl.edu/sccr/resources/victims/

U MATTER, WE CARE

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contactumatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.
<table>
<thead>
<tr>
<th>Health and Wellness</th>
<th>Academic</th>
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| **Counseling and Wellness Center:**  
  [http://www.counseling.ufl.edu/cwc/Default.aspx](http://www.counseling.ufl.edu/cwc/Default.aspx)  
  Telephone: 392-1575 | **Technical support:**  
  **E-learning:**  
  Telephone: 352-392-4357 (select option 2)  
  Email: Learning-support@ufl.edu  
  Web: [https://lss.at.ufl.edu/help.shtml](https://lss.at.ufl.edu/help.shtml)  
  **Library Support:**  
  [http://cms.uflib.ufl.edu/ask](http://cms.uflib.ufl.edu/ask) |
| **Sexual Assault Recovery Guide:**  
  **Teaching Center (General study skills and tutoring)**  
  Broward Hall, 392-2010 or 392-6420.  
  [http://teachingcenter.ufl.edu/](http://teachingcenter.ufl.edu/)  
  **Writing Studio (Help brainstorming, formatting, and writing papers)**  
  302 Tigert Hall  
  846-1138  
  [http://writing.ufl.edu/writing-studio/](http://writing.ufl.edu/writing-studio/) |
| **University Police Department:**  
  Telephone: 392-1111 (or 9-1-1 for emergencies)  
  [http://www.police.ufl.edu/](http://www.police.ufl.edu/) | **Career Resource Center:**  
  Reitz Union  
  Telephone: 392-1601  
  Web: [http://www.crc.ufl.edu/](http://www.crc.ufl.edu/) |
|  | **Student Complaints:**  