GENERAL INFORMATION

Program sponsor: Princeton Environmental Institute

Position number: B2RUB1

Project title: Impact of Grazing Regimes on Rangeland Quality and Wildlife and Livestock Use

Organization/research group: Mpala Research Centre (http://mpala.org) / Rubenstein Lab Group

Primary location(s) of internship: Nanyuki, Kenya (Mpala Research Centre)

Additional cities and/or countries to be visited (if applicable): n/a

Note: If this internship is located in a country with an International SOS risk rating of High or Extreme, final candidates must participate in a travel review process overseen by the Travel Oversight Group (TOG), and obtain safety guidance prior to departure. The University reserves the right to revoke support and funding for travel at any time there has been a significant deterioration in the safety and security conditions surrounding travel arrangements, or in the sector of the country, or countries, where travel is to occur.

FACULTY SPONSOR(s)/HOST INFORMATION

Name(s): Dan Rubenstein

University Department(s): EEB

E-mail: dir@princeton.edu

Website:

INTERNSHIP/RESEARCH PROJECT INFORMATION

Internship/project description:
This study will focus on how different grazing regimes affect habitat use by wildlife, especially zebras and livestock. Central to sustainable development in drylands where pastoralists live directly off the land, there is a move to try new grazing strategies to improve the growth and health of livestock.

Following the movements and grazing behavior of various livestock species under different grazing regimes will allow comparisons of the impacts of these husbandry strategies on: a) the diversity, abundance and quality of rangeland vegetation as well as carbon storage; b) rangeland use by and diets of wildlife and various livestock species. Depending on the magnitude and form of any differences that emerge, alternative grazing schemes can be planned and implementation can be discussed with pastoralist herders.

Student's role and responsibilities:
A variety of ecological variables will be measured: Percentage of vegetative cover, biomass, greenness and digestibility, species diversity and soil carbon levels. These will allow comparison of how different grazing regimes impact rangeland. Camera traps will be monitored regularly and images will be scored to measure wildlife of differently grazed areas while small GPS tags will be placed on livestock to characterize movement of various livestock species. Covariance of movements will be used to assess the impact of different grazing regimes on wildlife movements and subsequent movements by pastoralist herders.

Internship/project learning objectives:
Interns will learn how science connects to solve real world problems. Day to day guidance will prepare interns to frame questions to solve problem by designing observations, experiments and judicious comparisons to gather data for testing ideas. By the end of the internship, students will better understand how evidence can guide decision-making.
### PROGRAM REQUIREMENTS

**Academic background and any course pre-requisites:**
Sophomores or juniors interested in ecology; good with quantitative analysis

**Technical skills:**
Likes to camp; Loves outdoor action

**Additional training(s):**
Selected students will need to complete Health and Safety for Animal Workers (IACUC) training prior to the start of the internship.

**Equipment:** n/a

**Physical demands:**
Ability to withstand: heat, long hours driving between locations, bush camping

**Language abilities/competencies (if applicable):** n/a

**Additional information about the internship/project:**
The student will train two of the herders to continue recording body condition and milk yield for the rest of the dry season. The GPS collars will also remain and will be managed by the Conservancy. We are looking for an intern who is:
- highly self-motivated and independent
- works well with diverse cultures
- capable of living and working in a remote environment

The cost of international travel and room and board at the Mpala facility will be covered by the program. In addition, the interns will receive a stipend for the summer to defray incidental costs.

Because Kenya has a High risk rate according to International SOS, a student who is granted a placement must submit an addendum to the normal Terms and Conditions for Travel that must be signed by the intern and a guardian (post-selection). As in the case of all University-supported trips, the University reserves the right to withdraw sponsorship should conditions change in the country.

### INTERNATIONAL TRAVEL REQUIREMENTS (if applicable)

<table>
<thead>
<tr>
<th>Visa(s) required?</th>
<th>Research permit/pass required?</th>
<th>Immunizations required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes ☑  No</td>
<td>Yes ☑  No</td>
<td>Yes ☑  No</td>
</tr>
</tbody>
</table>

### INTERNSHIP/PROJECT SUPERVISOR(S)

**Name and title of primary supervisor:** Dan Rubenstein

**Email:** dir@princeton.edu  **Phone:**

**Name and title of additional supervisor, if applicable:** n/a

**E-mail:**  **Phone:**

### PROGRAM DATES AND FUNDING INFORMATION

**Weekly Stipend:** $75 (plus int'l travel award)  **Number of Positions Available:** 2

**Tentative Start Date (mm/dd/yyyy):** June  **Number of Weeks:** 8

**Tentative End Date (mm/dd/yyyy):** August  **Note:** PEI funding is for full-time work, 35 hours per week minimum, and for a period of at least 8 continuous weeks.

**Application deadline:** January 11, 2019