#12

COMPLETE

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Q1 Please select the School(s) that are represented with this project.

Columbia , **College**

Graduate School of Arts and Sciences

Q2 MOTIVATION, BACKGROUND AND OVERVIEWPlease provide background and description of the project. Why is this project being proposed?

Animals use different strategies to explore their environment. Some prey species are more willing to explore open areas and others avoid these open, threatening spaces. I have tracked the exploratory behavior of 1600 hybrids of two species of deer mice with extreme differences in exploration and genotyped each hybrid at 0.5 million positions of the genome. The goal of this project is to use the data from the videos to characterize behavior in detail and then perform quantitative genetic analyses to uncover the genetic basis of these behaviors.

Q3 DATASETName/Description:

Results of video tracking of 1800 behaving mice.
Genome-wide genotypes (0.5 million SNPs) of 1600 mice.

Q4 Data Type: Public data is data made available by a third party and is available to the general public. Novel data is data that has been recently published by the proposer or will be made public as part of this project. Private data is data that can not be made available after the project ended. Please check all that apply.

Uses Novel Data

Q5 How will the datset be made available? (CSV/XLS file, remote database, raw images or documents, REST endpoint etc.)

CSV, raw documents.

Q6 RESEARCH GOALSWhat is the goal of this project? What questions do you want answered? What has been done already to achieve this goal?

1. To characterize exploratory behaviors of two species of deer mice
2. To analyze the behaviors of 1600 interspecific hybrids
3. To discover the genetic basis of the analyzed behaviors

Q7 OUTCOME What deliverables do you expect from this project?	**Report,** **Software**
Q8 SKILLSWhat skills should students expect to learn throught his project? Check all that apply.	**Project planning and scoping** , **Data acquisition and scraping** , **Data cleaning,** **Combining data sources,** **Exploratory data analysis and visualization** , **Establishing evaluation metrics** , **Working with text data** , **Working with image data,** **Working with time series data,** **Working with tabular data,** Other (please specify): Quantitative trait locus (QTL) analysis
Q9 Are international students on a F1 or J1 student visa eligible to work on this project?	**Yes**

Q10 Mentor 1:

Name:	**Andres Bendesky**
Title:	**Assistant Professor**
Department:	**Zuckerman Mind Brain Behavior Institute / Ecology, Evolution and Environmental Biology**
Email Address:	▆▆▆▆▆▆▆▆
Phone Number:	▆▆▆▆

Q11 Please provide a link to your research page or upload a PDF of your current CV below.

https://zuckermaninstitute.columbia.edu/andres-bendesky-md-phd

Q12 Current CV - Upload	**Respondent skipped this question**
Q13 Mentor #2 Information (optional)	**Respondent skipped this question**
Q14 Mentor #2: Please provide a link to your research page or upload a PDF of your current CV below.	**Respondent skipped this question**
Q15 Mentor #2: Current CV - Upload	**Respondent skipped this question**
Q16 Are you willing to work with two teams of students?	**No**
Q17 If yes, please indicate how the project may be appropriate to engage two teams.	**Respondent skipped this question**