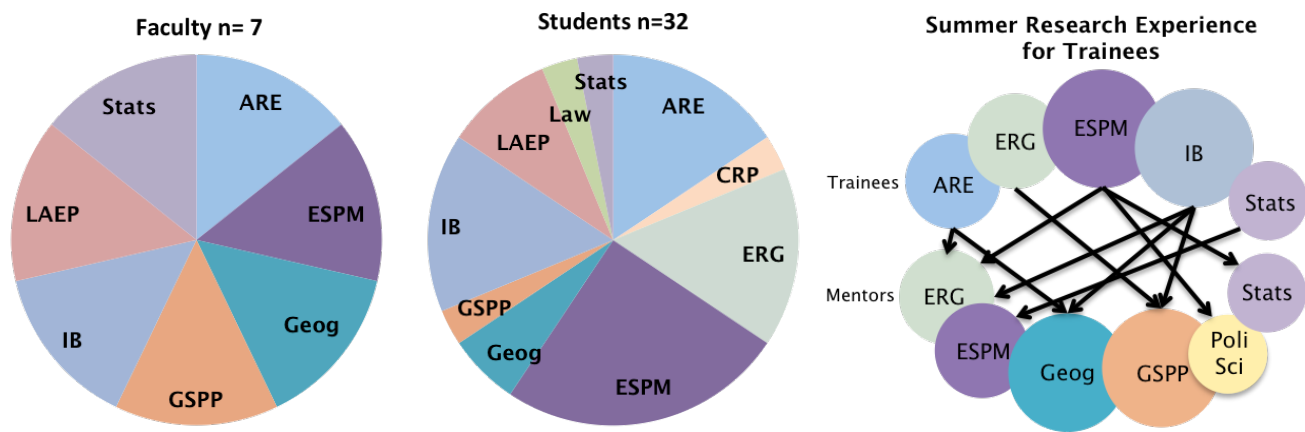


DS421 2016 Annual Report

Environment and Society: Interdisciplinary Graduate Training in Data Science
([NSF Research Traineeship Program](#), 2015–2020)

Data Sciences for the 21st Century (DS421) brings together researchers in natural and social sciences with leaders in computer science and statistics to train a new generation of Master's and PhD students for careers in and out of academia at the intersection of the global environmental change and data science. The program is broadly interdisciplinary, serving students from 10 departments across campus.



Accomplishments:

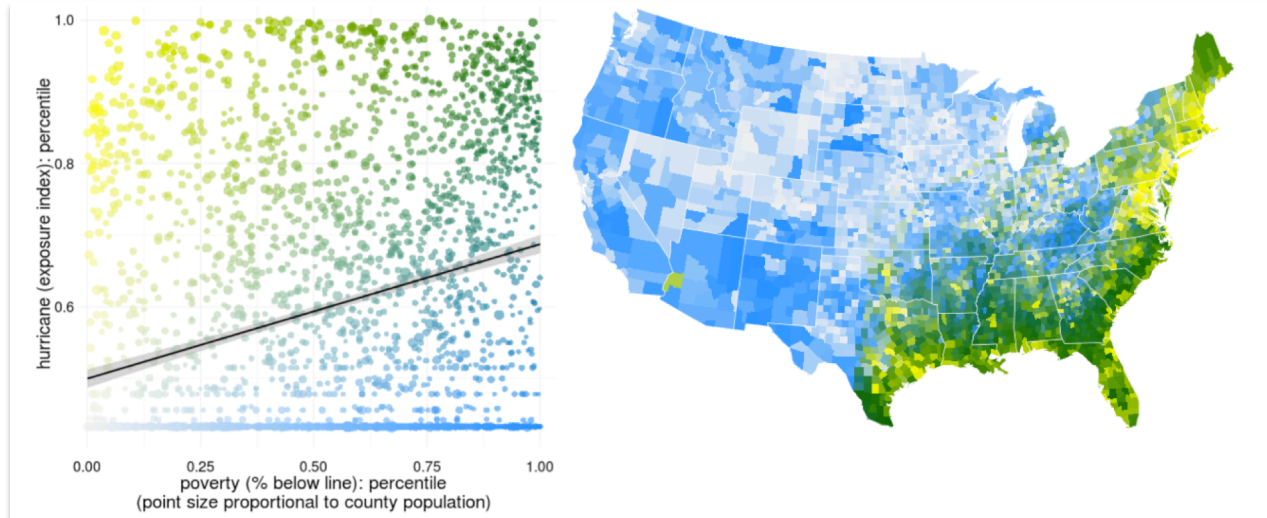
Trainees: In April 2015, we admitted the first cohort of 14 students from 9 departments. In April 2016, we admitted the second cohort of 18 students from 10 departments. To date, we have granted 17 \$32,000 fellowships. Students have completed their first year of training:

- First year colloquium: building community, 'faculty on parade', literature discussions
- Completed [software carpentry workshop](#) hosted by [BIDS](#) fellows, and course in [Reproducible and Collaborative Statistical Data Science](#)
- Designed reproducible analysis of U.S. population vulnerability to fire and drought
- Presented projects to new students and external partners
- Attended talks and seminars in departments across disciplines
- Conducting research project outside their area of expertise in Research Experience for Trainees (summer 2016)

Curriculum: New courses designed for DS421

The DS421 curriculum is designed to introduce students to the multifaceted issues surrounding rapid environmental change and how to develop a framework for testing hypotheses with reproducible statistical analyses. For fall 2016, DS421 faculty and evaluator are designing a problems and solutions course to be co-taught by four faculty.

Hurricane Exposure Risk Versus Poverty: Reproducible Analysis and data visualization by DS421 students



External Partners

Next spring will culminate in final projects working closely with external partners. These collaborations are important industry and nonprofit connections for the DS421 students as well as UC Berkeley.

- California Academy of Sciences
- Center for Clean Air Policy
- Climate and Ecosystems Science, LBNL
- Climate Readiness Institute
- iNaturalist
- Institute for Scientific Computing, LLNL
- Intel
- KQED Science
- NASA Earth Exchange
- Natel Energy
- Rhombus Power
- ROpenSci
- Stamen Design
- USGS Core Science

Evaluation

NSF stresses the importance of evaluation of graduate training programs and our team includes an internal evaluator, Cheryl Schwab (PhD, Berkeley Graduate School of Education). Cheryl was awarded a supplemental grant to bring together the evaluators, PIs and program coordinators from 18 other NSF training programs in the STEM fields. [This workshop](#) took place at the end of May this year. Outcomes from the workshop include ongoing working groups, improved cross program communication and potential publications.

For more information, please visit our website: <http://ds421.berkeley.edu/>

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