

# Integrating Research & International Experiences for Undergraduates

Examples from Norway 2017



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**WILLIAM & MARY**

CHARTERED 1693

# Geology at William & Mary

Two unique aspects of the Geology Department curriculum:

**(1) All seniors complete a research project**

- 4 credits over two semesters
- Based on independent research
- In collaboration with tenure-eligible faculty (3-6 students/faculty)

**(2) Regional Field Geology courses**

- Field intensive courses
- Involving travel (western U.S., Hawaii, Bahamas)

In promoting the new College Curriculum we have been using these field courses as a model to develop new COLL 300 offerings.

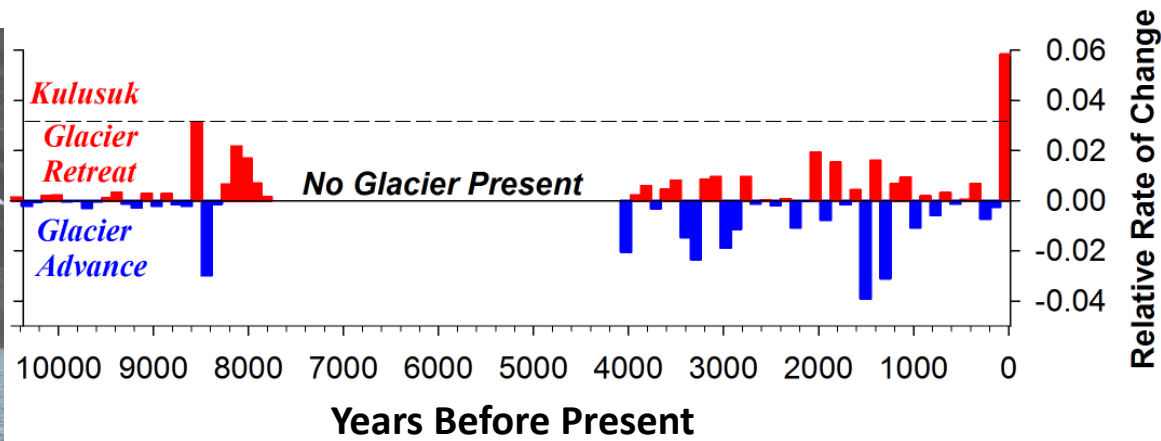
*One approach has been to try and integrate them with faculty research.*

# My Research: Paleoclimatology

## *Reconstructing Earth's climate history using geologic archives*



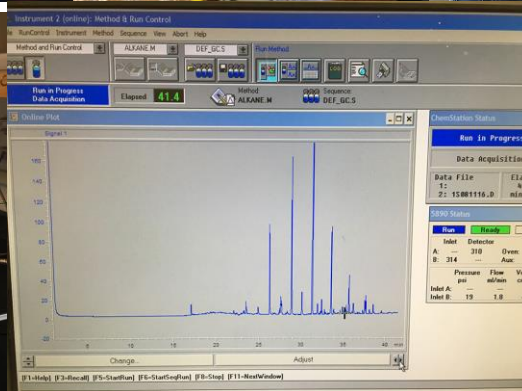
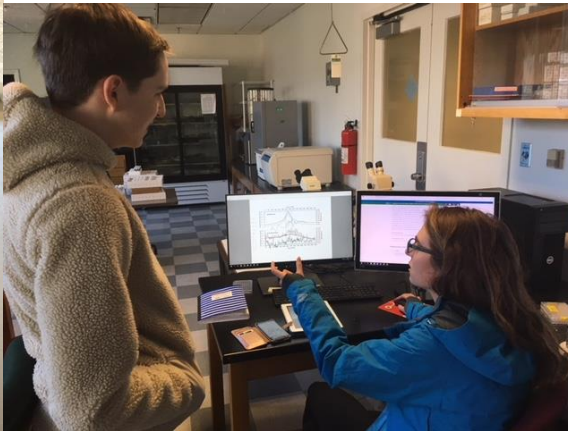
*Focus: Lake sediments records of past environmental changes, and how they can directly extend instrumental climate data*





# My Research: Field & Laboratory Work

- *In the laboratory, a variety of geochemical techniques are applied to sediment core samples.*
- *Students are exposed to data collection/analysis techniques and sophisticated analytical instruments*

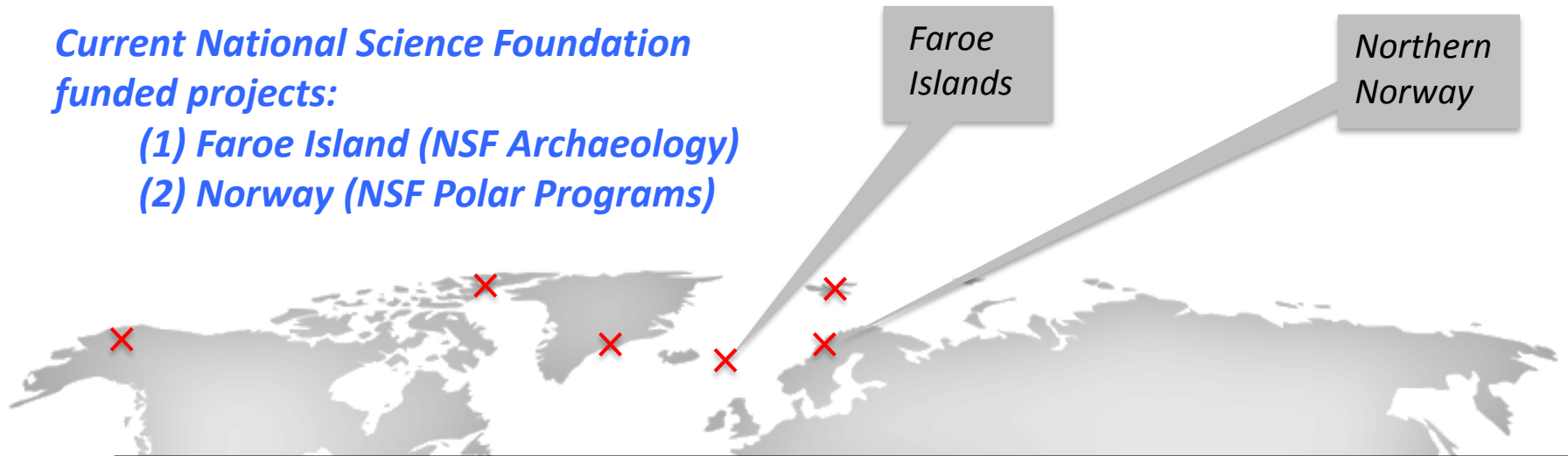


# Research Focus:

## Arctic Climate & Environmental Change

*Current National Science Foundation  
funded projects:*

- (1) Faroe Island (NSF Archaeology)*
- (2) Norway (NSF Polar Programs)*



### Efforts to integrate research and teaching:

- How can I continue to incorporate students in international activities (and stay competitive for external funding)?*
- Are there ways to integrate research with COLL curriculum (COLL 300) to increase opportunities for students?*

# Integrating Research & International Experiences for Undergraduates:

## Examples from Norway, 2017:

- NSF-Funded Field Research  
*conducted with W&M students*
- COLL 300 Field Geology Course  
*involving 16 W&M students*



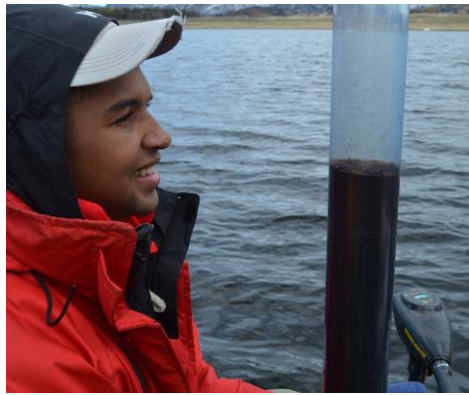


# Past Human-Environment Interactions

## Lofoten Islands, Norway

*Multi-institution, international collaborative research project.*

*Funding: NSF Polar Programs*



### W&M Students:

- Moussa Dia ('18)
- Eve Pugsley ('18)



# GEOL 310: Regional Field Geology

## Objectives:

- (1) Provide students an overall understanding of the geology and geologic history of a region
- (1) Develop students' skills in scientific observation & data collection in "the field"

## Lofoten Islands, Norway

- Co-Taught with Chuck Bailey (Geology)
- 16 undergraduate students
- COLL 300 credit
- Biweekly meetings during semester
- 14 day trip to Lofoten, May 2017



*Supported, in part, by funding from W&M Charles Center*



# GEOL 310: Norway

*Through several project-based exercises students gained insight into the geologic, glacial, and climate history of the region.*





# GEOL 310: Norway

## COLL 300 Objectives:

- Ability for students to live/travel/work in a foreign county
- Interactions with Norwegian scientists
- Guided history of local archaeological sites
- Exposure to modern history and local fishing industry



# Integrating Research & International Experiences for Undergraduates

## *Perspectives & Challenges*



# Where to next?

- Planned field research and students*
- Future COLL 300 course locations?*

