
Jessica G. Benner, Matthew R. Marsteller, Sarah Young, and Xiaoju (Julie) Chen
University Libraries, Carnegie Mellon University, Pittsburgh PA.

• This research is part of a larger project conducted across several institutions by Ithaka S+R.
• This study focuses on understanding the research practices of faculty in the Civil and Environmental Engineering field.
• A series of semi-structured interviews were conducted with faculty researchers.
• Qualitative research methods (Grounded Theory approach) were used to analyze results from the interviews.

Introduction

CEE at CMU

• Carnegie Mellon University (CMU) is a private institution that is known for its programs in science and technology.
• The CEE department offers Bachelor of Science (BS), Master of Science (MS), and PhD degrees.
• The department is known for:
  • intelligent infrastructure systems
  • water and air quality science and engineering
  • resilient engineering materials
  • sustainable engineering practices
• U.S. News and World Report ranks CEE:
  Environmental Engineering program 8th
  Civil Engineering 10th

Research Process and Key Findings

Project start
Recruit
Grounded Theory Approach
Interview
Open Coding
Identified Themes:
• Collaboration
• Interact w/ data
• Interact w/ published information
• Scholarly communication

Codebook examples:
Interact w/ data
• Types of data
• Management
• Data sharing
• Data access

Scholarly communication
• Research outputs
• Open Access
• Social media
• Venue

Findings were arranged in various ways to finalize the themes and the code book.

Next Steps

• Write a local report as part of the broader Ithaka S+R project.
• Draft an independent journal article with our research findings.
• Use the same approach to conduct similar research in other science and engineering fields.
• Write a book chapter on the collaboration process

Key findings:
• Most CEE researchers are doing interdisciplinary research.
• There is significant collaboration between faculty across and within CEE at CMU. No one works in a silo.
• All researchers interact with data, either as products or an information source. The size of data vary from 20-30 entries per project to terabytes data per week.
• Researchers tend to publish in open access when it is required or meets their quality/audience criteria, but most felt constrained by traditional metrics of scholarship.

N=9
Recruit
Semi-structured interviews

Recruiting results

Some research data is stored on the server.

Old ideas are kept for a long time.

White board in an interviewee’s office

Data Server in an interviewee’s office

Environmental Engineering program
Civil Engineering