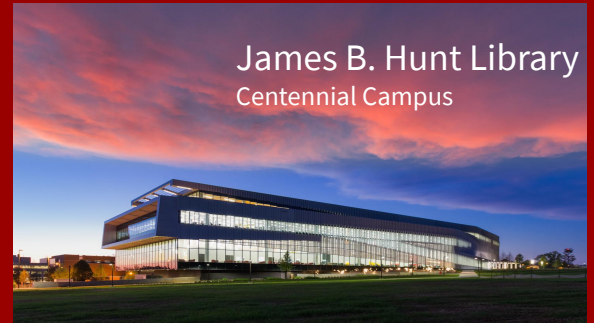# Research Training for Undergraduate STEM Researchers, at Their Convenience

Kristy Borda (she/hers) Research Librarian for Sciences, Engineering, & Biotechnology
Michelle Leonard (she/hers) Research Librarian for Engineering

North Carolina State University
Raleigh, NC

NC STATE University Libraries
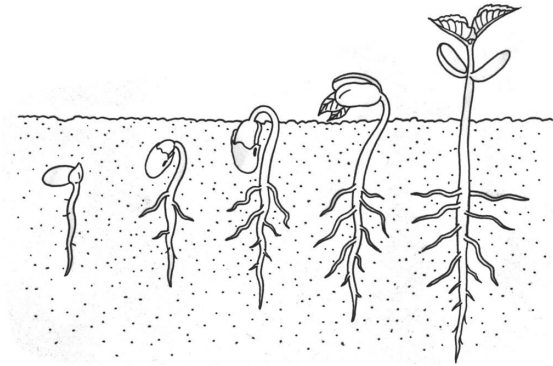
James B. Hunt Library
Centennial Campus

NC STATE UNIVERSITY

Leading Public R1 Research University

- Powerhouse in science, technology, engineering and math

- Multiple undergraduate research programs to support high-impact education experiences

How the project started

Our Listening Tour

- Invited faculty members across all nine engineering departments
  - Zoom appointments
  - Email
  - Google forms
- Tremendous interest in our proposal
- Due to the pandemic, research had shifted out of university's laboratories

Listening tour themes

Faculty Requests

- Library resources
- Information searching
- Literature reviews
- Synthesizing information
- Citation management
- Data and visualization skills

Designing the Modules

Sections include videos, downloadable resources, links, and assessments

- Introduction to Library Resources
- Searching the Literature
- Becoming a Member of the Scholarly Community
- Scientific Communication
- Patents and Standards
- Data and Visualization

Our Website

Can be used in two ways:
- Complete instructional series
    - Self-reported knowledge check at beginning/end
    - Assessments throughout
    - Final assessment

- A learning scaffold we share with students for deeper or refresher learning

Part One: Introduction to Library Resources

Part Two: Searching the Literature

Part Three: Becoming a Member of the Scholarly Community

Part Four: Scientific Communication
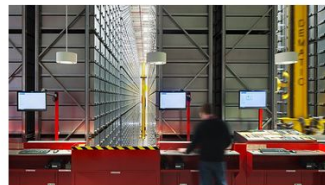
Part Five: Patents & Standards

Part Six: Data & Visualization

Assessment

Take this test to earn your certificate of completion!

Searching for Literature

Snapshot of the types of topics covered

Becoming a Member of the Scholarly Community

Snapshot of the types of topics covered

Final Assessment

Certification
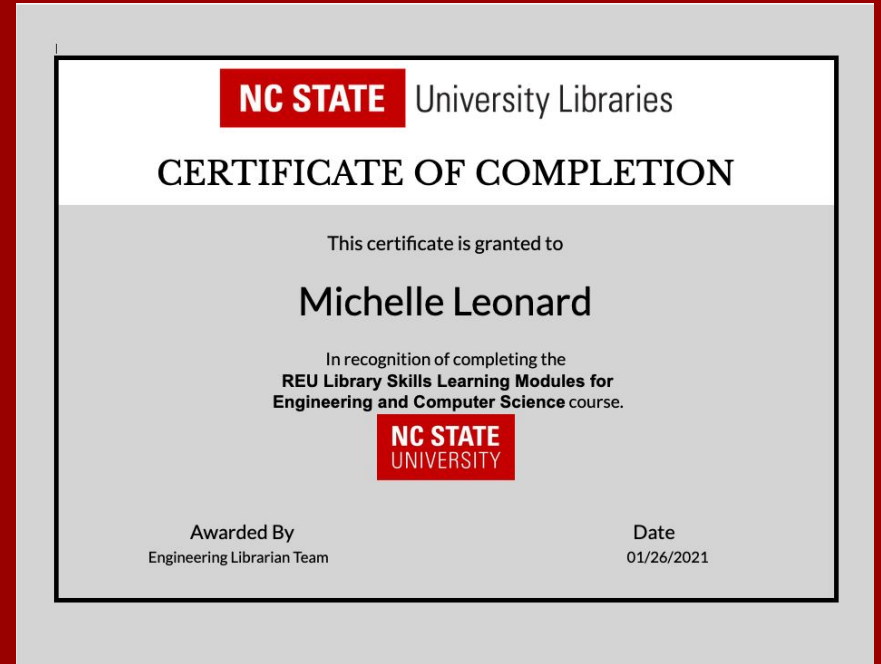
29 certificates earned
(27 of those were in summer 2021)

Feedback

from faculty

"It captures everything that a new researcher would need to know."
Dr. Kanton Reynolds, Park Faculty Scholar and ISE Director of Undergraduate Programs

"The Undergraduate Researcher Library Skills modules look like a fantastic resource. I will definitely share it with undergraduate research assistants in my department. "
Dr. Lucie Guertault, Assistant Professor in Biological & Agricultural Engineering

"We'd like to direct entry-level grad students, in addition to our UG researchers, to these resources."
Dr. Ranji Ranjithan, CCEE Associate Head and Director of Graduate Programs

Feedback

from students

"Before going through these modules, I was unaware of all the resources that are available to us for free. Now I know that there is help in case I need it."

"There is a vast amount of knowledge at student's fingertips, and I will definitely begin using this to the best of my ability."

"I had no idea that the Libraries offered so many resources! I wish that ALL students would learn more about it."

Partingerships

Required for REU programs in:

- ○ Biotechnology
- ○ Industrial & Systems Engineering
- ○ Civil, Construction, & Environmental Engineering
- ○ Computer Science

Unexpected implementations!

- ○ Graduate Writing Center Certificate

Future Plans

responding to feedback

Improvements to the website will include

- Adding videos
- "Humanizing" the platform
- Improve accessibility & universal design

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Future Plans

Full launch in Fall 2021

Continuous assessment & improvement

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Questions?

Get in touch!

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Modules Link