Collaborating to Provide Student Support at Scale
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Agenda

• Building the case for campus-wide collaborative efforts (Barbara)

• Introducing *Foundations for Research Computing* (Mark)
  • Operationalizing and next steps

• Libraries and campus IT working in partnership (Halayn)
  • Other collaborations
Building the Case for Collaborative Action
Background

2017 Research Computing Executive Committee (RCEC) Meeting

- Faculty reported frustration with uneven computational skill-sets of students, and resulting challenges created for teaching

- Hypothesized that need is:
  - Wide-spread throughout the disciplines
  - Steadily increasing
  - Currently handled independently and inefficiently

- Multiple pilot projects already established appetite for training complementary to classes

- RCEC charges Shared Research Computing Policy Advisory Committee to address issues in new Training Subcommittee
Shared Research Computing

Governance Structure

- Research Computing Executive Committee (RCEC)
- Shared Research Computing Policy Advisory Committee (SRCPAC)
- Yeti Operating Committee
- Habanero Operating Committee

Current and Past Subcommittees
- Intercampus
- Cloud
- External Peer Survey
- RFP Committee
- Storage
- Education
Faculty Partnerships

Marc Spiegelman
Professor of Earth and Environmental Sciences
Chair of the Foundations Advisory Committee

And a number of others connected to Foundations through committees and co-sponsorships

Chris Marianetti
Associate Professor of Materials Science and Applied Physics and Applied Mathematics
Chair of the Shared Research Computing Policy Advisory Committee
Administrative Partnerships

Maneesha Aggarwal
AVP, Academic and Research Services

Victoria Hamilton
Executive Director, Research Initiatives

Marley Bauce
Manager of Research Initiatives
Key Survey Findings

Departmental versus Student Surveys
Problem-Solving Technologies
“What training formats would be best?”

Student Ideas

- Boot Camps prior to class in September and January
- Regular instruction meetings throughout the semester
- Online self-study tutorials
- Mediated/supervised self-study
- Other
Resourcing the Program

One-year pilot established: Resourced by **Office of Research, Campus IT, Libraries**

- Graduate School of Arts and Sciences,
- School of Engineering and Applied Sciences

**Pilot** funds coordinator position, Carpentries membership, Boot Camp operations, student salaries, lectures & symposium
Foundations for Research Computing
Foundation’s Goals

1. Address current needs, and demand for informal training in computational science to improve research capabilities
2. Provide a hierarchical training infrastructure to serve novice, intermediate, and advanced users
3. Develop and foster a Columbia-wide culture and community of research computing
4. Leverage existing University- and school-based investments in research computing infrastructure
Program Outline

• **Novice**
  - Institutional Membership with *The Carpentries* (Software, Data, Library Carpentry)
  - Pre-semester Boot Camps: ~200+ students per year
  - Refresher Monthly Workshops & Help Room Office hours

• **Intermediate**
  - Help Room Office Hours
  - Distinguished Lectures in Computational Innovation
  - Research Symposium
  - Monthly Workshops: Discipline-specific, use of advanced libraries

• **Advanced**
  - Coordination with departmental curriculum
The Carpentries and CU Instructors

Silver membership with The Carpentries established July 2018

Instructors Trained from CUIT, Libraries, Computer Science, and Business:

• Six trained in July 2018
• Another six trained October 2018
Fall 2018 Recap: Boot Camps

- August 27-28, 2018
- 462 registrations for 90 seats
- 90 seats filled in 4 Minutes
- 6 instructors from Campus IT, Libraries, the Departments
- 3 courses from the Software Carpentries
  - Programming in Python (x2)
  - R for Reproducible Scientific Analysis
Fall 2018 Recap and Spring Look-Ahead

Distinguished Lectures
• Campus visitors discussing topics in data science

Workshops
• Cohering distributed, smaller-scope instruction under program brand

Drop-In Office Hours
• Student internships to engage in peer consultation 2x weekly
Emergent Questions

Addressing latent needs:
Distribution of registrations & more suggests a much wider field of stakeholders

Passive vs Active engagement:
Efficacy of the ‘office hours’ construct

Tracking success:
Leveraging assessment to identify student engagement
Research Services in CUIT

• Research Administration Applications
• MyGrants Researcher Financial Dashboard
• Research Compliance Applications
• Shared HPC
• Secure Data Enclave (SDE)
• Cloud Consulting Services
• Secure Research data transfers - Globus
Collaborations

- Electronic Lab Notebooks with LabArchives
- Piloting Code Ocean - a service for researchers for code collaboration, publishing, and preservation.
- Foundations for Research Computing
Closing Remarks
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