1. **Barnard College and the Empirical Reasoning Initiative**

Barnard College is the liberal arts college for women of Columbia University in New York City. The college furthers the advancement of women through an interdisciplinary liberal arts approach, providing them with the tools necessary to think critically and innovatively in their education and beyond. Women's colleges exist in dwindling numbers in the United States, but the importance of these institutions persists; Barnard remains devoted to empowering extraordinary women and non-binary students to thrive in academia and beyond.\(^2\) Within this framework of a liberal arts college for women, the integration of empirical methods in the curriculum is especially salient.

In 2013, the Empirical Reasoning Initiative (ERI) was developed and implemented at Barnard in order to embed “empirical reasoning” across the undergraduate curriculum. By empirical reasoning, we simply mean “thinking critically with data,” both qualitative and quantitative. At the most basic level, it embraces the capacity to comprehend and evaluate

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\(^1\) Formerly an ERC undergraduate, and then graduate, fellow

varied kinds of empirical arguments/evidence and to write precisely and cogently with data. At the other end, it encompasses the successive steps in developing and carrying out an independent research project including the formulation of an empirical question; collection (or even production) of the relevant data; specification and implementation of the appropriate methods of analysis; interpretation and presentation of the results; and, the management and preservation of data over time.

The importance of quantitative reasoning (QR) and literacy (QL) for students in all disciplines within the liberal arts curriculum is increasingly apparent, as the ubiquity of data and analytical softwares continues to increase (Gaze 2014). A number of institutions have integrated their QR/QL initiatives into different organizational structures, to address the issue that QR/QL simply does not fit into a single department or discipline, but is inherently interdisciplinary (Bok 2006). Models for incorporating a centralized QR/QL support structure in the liberal arts context have developed recently and spread rapidly, albeit among a small number of liberal arts institutions overall (Karaali et al. 2010).

The initial Empirical Reasoning Lab (ERL), which stemmed from the ERI, was a collaboration between Barnard faculty members and the Barnard Library and Information Services (BLAIS). Co-PIs Professor David Weiman (Economics) and Lisa Norburg (Dean of BLAIS at that time) established the lab as a key element of the library’s research and instructional services unit. The intended purpose of the initiative was to provide foundational and advanced support to enable students and faculty to use empirical approaches in both curricular and research projects. Initially, the lab was placed organizationally within the Barnard Library in
an effort to strategically centralize data-support services outside of a potential disciplinary silo (see also: Frith 2012 for further case evidence supporting this organizational approach).

The organizational position of the ERL as an interdisciplinary center adjacent to an academic library centralizes empirical reasoning in the research process, and encourages undergraduate students to incorporate empirical reasoning into existing research practices. The emphasis on empirical reasoning instead of the more commonly used QR allows for the inclusion of qualitative and spatial data analysis. This distinction not only widens the breadth of our impact, but also makes empirical analysis more approachable to students majoring in historically non-quantitative disciplines. There was an understanding that Barnard, along with peer institutions, would need to take steps to ensure that students were graduating with an understanding of how to synthesize and interpret the data around them, and how to use those data as the foundation of argument, which is already a key skill embedded within the liberal arts curriculum. In this way, empirical reasoning is meant to enrich the liberal arts curriculum with important strategies and tools for critical thought.

The ERL evolved into the Empirical Reasoning Center (ERC), which currently provides students and faculty with centralized data-related support services. It operates a conventional drop-in help desk currently staffed by undergraduate fellows and graduate assistants and maintains an online tutorial web page. Additionally, ERC staff collaborate with faculty in developing curricular content for their classes and instructional workshops. Workshops are most often taught in conjunction with curricular innovations but have also been tailored to meet students’ more specialized research interests, to train undergraduate research assistants especially in the sciences, and to equip students with the skills to navigate their lives “Beyond Barnard.”
This paper provides a case study of the development and expansion of the ERC and the lab’s resources over the first five years of its existence. We report on internal assessment and evaluation data which demonstrates our growth over time in terms of walk-in support and workshop offerings, as well as our expansion into the humanities in particular. We highlight and discuss the following strategies for successfully implementing empirical support services targeted at undergraduates and scaling services across the curriculum, which are unique to the Barnard case:

- Centralize undergraduate-focused data-related support services
- Collaborate with faculty to develop new discipline-specific courses that incorporate an empirical focus
- Collaborate with faculty to incorporate empirical training into existing courses via in-class workshops or required attendance at workshops outside of class time
- Collaborate with librarians and/or other support staff at adjacent centers/resources to develop research pipelines
- Train undergraduate staff to develop and teach workshops
- Conduct outreach to the broader community by offering open workshops (staff, alumnae, Columbia University undergraduates, etc.)

2. **Scaling Up: Strategies for Developing Undergrad-Focused Data-Related Support Services**

When the lab was established through a generous cost-sharing grant from the Mellon Foundation,³ it was initially staffed by a Data Librarian, a Faculty Director, three undergraduate

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³ In September 2011, the Andrew W. Mellon Foundation granted $700,000 over 5 years to Barnard College in support of Critical and Empirical Approaches to Problem Solving in the Liberal Arts Curriculum (CEAPS).
lab assistants, and two graduate assistants. The first iteration of the physical space for the lab was established in a small corner of the library behind the stacks and included five computers (3 PCs and 2 Macs) cordoned off by a wall panel.

In the first 2 years of the lab’s existence, the Data Librarian partnered with key faculty members to pilot strategic curricular interventions. For example, in 2012 the Barnard Chemistry department underwent a curriculum review regarding the introductory General Chemistry laboratory course. Prior to the review, students in the lab course would draw data visualizations for their lab notebooks by hand. This practice often resulted in poor and illegible graphs. A newly appointed lab instructor worked with the ERC to develop a stand-alone one hour workshop on creating charts in Microsoft Excel. Students in the General Chemistry lab were required to attend an ERC Excel workshop within the first 3 weeks of the fall semester. If students did not attend the workshop, they were given a failing grade in the lab course. The ERC offered around 20 sessions to accommodate all the students as the ERC was teaching workshops, at that time, in the library instruction lab which housed 20 computer stations (the General Chemistry lab enrolls 150 - 200 students each fall semester and is one of the largest courses that is taught at Barnard). The ERC adapted the workshop over time in response to a longitudinal assessment study conducted with the lab course instructor, and continues to offer these workshops for the General Chemistry lab course.

In 2016, the College implemented a new curriculum (“Foundations”), which incorporates two relevant components for the ERC’s role on campus, “Thinking Quantitatively and Empirically” and “Thinking Technologically and Digitally”, into its general education requirements (GERs), marking a shift toward the institutionalization of prioritizing empirical
reasoning as a core tenant of critical thought. The adoption of the new curriculum provided a serendipitous opportunity for the ERC to establish itself as infrastructure in support of these key requirements. In this way, the ERC was able to capitalize on the timing of the implementation of the new curriculum to work with faculty from the beginning in developing new courses. This experience highlighted the strategic importance of working with faculty to develop courses in partnership.

At the onset of the adoption of the new curriculum, the ERC collaborated mostly with economics, urban studies, and natural sciences courses. Increased training for faculty allowed more courses to incorporate empirical components that would not previously have done so, particularly in the humanities. As a part of our effort to expand our curricular reach, we have helped faculty to develop a number of empirically focused humanities seminar courses. With small class sizes and an emphasis on the integration of quantitative, qualitative, and spatial data with writing and presentation, these courses empower students to interrogate their research questions interdisciplinarily.

We also began a campaign to push for a campus-wide adoption of open source tools for data analysis. We offered a series of training sessions in R for faculty members who have historically relied on proprietary software (e.g. SPSS, Stata, etc.). During these faculty training sessions, we also discussed and workshopped the pedagogy of working with open source software and helped faculty redesign courses and assignments, that had previously relied on proprietary software, using open source versions.

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4 For more information about Barnard’s new Foundations curriculum, see https://barnard.edu/provost/teaching-curriculum/curricula
In addition to the implementation of a new curriculum, the College had also begun a new building construction project that would house the ERC along with six new centers. By 2018, the number of full-time ERC staff members had increased from one to three (including an Associate Director, Lab Coordinator, and Post-Baccalaureate Fellow), and the number of undergraduate fellows increased from 3 to 17. In 2018, the ERC moved into the newly constructed Milstein Center for Teaching and Learning, with a dedicated lab space of 26 computer stations and three office spaces. The increase in terms of space, staff, and an expanded budget, was a joint effort between the Associate Director and the Faculty Director to scale the center to the growing need for empirical support in curricular and research capacities.

Since its inception, the ERC has expanded rapidly across the curriculum in the social sciences (Economics, Political Science, Sociology and Urban Studies) and sciences (Chemistry, Environmental Science, Physics, and Psychology). More recently, ERC staff has worked closely with faculty in Classics, History, and Religion to develop “digital humanities” approaches to their research and teaching. For example, in the Fall of 2017, the ERC worked with two History faculty members to develop two new courses: 19th Century NYC, A Spatial History; and, Mississippi Semester. For the 19th Century NYC course, the ERC developed a series of 5 workshops on historical GIS methods that we taught during five class sessions. For the Mississippi Semester, the class partnered with a local non-profit advocacy organization, the Mississippi Low-Income Child Care Initiative (MLICCI), and were asked to develop an economic security index for women in Mississippi by county. The ERC developed a series of training sessions in GIS and Excel and taught the students how to construct the

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5 The Design Center (a makerspace), a Digital Humanities Center, a Computational Science Center, a Media Center and Post-Production Lab, a Movement Lab, and a Center for Engaged Pedagogy
6 For a list of workshops along with step-by-step guides, see: https://erc.barnard.edu/workshops/nycspatialhist19
index using US Census data. These courses meet the technological/digital requirement in the Foundations curriculum, but are unique in that they allow for humanities students to meet the this requirement by applying such methods to subjects aligned with their academic interests.

As the ERC began to work with more and more courses, we had to address a capacity issue. For the first couple of years, the Data Librarian (which became the Associate Director) was the only full-time staff member and was teaching the majority of the workshops with graduate assistants teaching the remaining workshops. However, as the number of courses that the ERC supported increased, it became clear that a more creative solution would be necessary to keep up with the increasing demand. Thus, the Associate Director began to train the undergraduate fellows staffing the walk-in help desk to also develop and teach workshops. This model has been extremely successful and has allowed undergraduates to gain teaching experience in addition to demonstrating to their peers that any student should be capable of learning data analysis methods and approaches.

In addition to curricular expansion, the ERC has facilitated the proliferation of empirical reasoning skills throughout the Barnard community. Beginning in the fall of 2016, we collaborated with Barnard’s Alumnae Relations office to offer basic, introductory, and intermediate data analysis in Excel trainings for alums. Led by current ERC fellows and recent ERC alumnae, these workshops provided especially effective cross-generational opportunities for Barnard alumnae to connect with the ERC. The alumnae workshops highlight one of our efforts to scale up and serve as a resource for the broader Barnard/Columbia community, including alumnae and staff.

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7 See Nadasen et al. 2019 for more details about the Mississippi Semester course. For a list of workshops along with step-by-step guides, see: https://erc.barnard.edu/node/86641
In 2018, the ERC offered “open” workshops for the first time (i.e. workshops that are not attached to a specific course), which is an effort to engage any members of the Barnard/Columbia community with critical thinking through data analysis. In the Spring 2018 semester, open Excel workshops were offered in conjunction with Beyond Barnard, a new initiative to prepare students for their post-graduate paths. In the Fall 2018 semester, open workshops were expanded to include instruction in R, Python, and GIS for any members of the community who were interested in gaining new skills. This initiative’s success indicates a growing interest in the use of empirical reasoning tools from students of all academic backgrounds, even outside of their coursework.

3. Assessment and Evaluation: Methodology

In order to evaluate the impact and improve the services of the ERC, we collect data in a variety of ways. Starting in 2013, the ERC began collecting data on workshop attendance, help-desk visits, and course collaborations. As the Center has scaled to accommodate a growing number of courses that incorporate empirical components, the importance of data collection and analysis remains vital to iterating on our successes. Walk-in help-desk data provide us with insights into who uses our services, for what, and when, which gives us the opportunity to improve and expand our resources. Workshop attendance and feedback provides an understanding of the curricular impact we are having, and shows room for improvement in training and instruction.

The collection of data both motivates and complicates the scaling of the ERC. As we have grown, the intricacies of our data collection and analysis strategies have increased, but they have also been a vital tool for the demonstration of our value as a data analysis center devoted to
supporting undergraduate research. In order to measure curricular impact, we collect data on the students that come to our walk-in help-desk, and attempt to track repeated visits over time. This allows us to understand the academic background of the students we are serving, and to see the long-term impact we are having on their academic experience with regard to their data-related courses or projects. However, as we have grown, the task of collecting information on every single student visit has proven challenging, and we are continuing to improve our data collection processes and methods.

Beginning in the 2013-14 academic year, the walk-in data collection strategy was to record each walk-in visitor as a row in a table on a sheet of paper. We recorded some identifying information about the walk-in visitor, as well as assigned a survey identification number to that visitor (see Appendix 1). Undergraduate fellows would input the information from this table into a spreadsheet every two weeks. Visitors would then complete a digital exit survey in Qualtrics using the survey identification number to link the two results (see Appendix 2). The exit survey asked students what program they needed help in, what course (if any) the help was related to, and whether or not the student had visited the ERC before. The process of linking the two surveys across physical and digital collection strategies proved unsustainable in the growth of the ERC, which led to a reevaluation of collection methods.

The next strategy used was a digital sign-in form via Google Forms, in the 2015-16 academic year. The form asked most of the same questions that the previous paper and Qualtrics survey combination had asked, but attempted to make the process entirely digital (see Appendix 3). This process saved labor, and ensured more accurate and legible answers than if students were writing quickly on a sheet of paper. However, it was difficult to ensure that all students
visiting the center completed the survey, and students complained about the time it took to complete the survey. In addition, the early version of the lab only contained 5 computer workstations, which were often occupied by students working with data using specialized software or programs. In order to fill in the digital sign-in sheet, a student working on the computer would have to pause and wait for another student to fill out the form.\footnote{Due to budgeting and security issues, we were not able to use a tablet or dedicated laptop for this purpose at this time.} This simply did not work at all. We started taking a head count midway during the semester just to have a way of estimating how many sign-in sheets we were “losing” when students refused to stay and wait to fill them out on the computer. We found that about 25% of our walk-in visitors were not filling out the form. Additionally, because students filled out the form at any point during their visit, and the time of the form completion was automatically recorded by Google Forms, we lost the ability to track accurate departure times. This removed a vital part of our analysis, which was to understand the patterns in visit durations and to identify busy periods in order to staff the lab appropriately.

Thus, beginning in the 2016-17 academic year, we took a different approach by switching to a completely analog sign-in process, with a streamlined single-page paper form that each visitor completed in order to ensure that each visitor was recorded (see Appendix 4). The forms were then digitally recorded to a Qualtrics survey by our undergraduate fellows. This process allowed students to work on the form throughout their visit, include feedback on their visit, and record the time that their visit ended. We have sustained this method because it has saved us time and energy on the analysis side, but as we scale up, we continue to look to other options to
reduce our environmental impact, hours of student labor, and the general confusion about why we are using antiquated methods of data collection.

The questions on our sign-in forms have also evolved as a consequence of prior analyses. Prior to 2016, we asked students to check off options from a list of items that they had received help with during their visit. Those items included both software programs, such as R, Stata, Excel, and GIS, as well as research methods such as research design, finding data, and qualitative analysis. As we expanded our reach and services, this question was split into two items. We now ask which software or program the student needed help with, and then we also ask our undergraduate fellows to indicate the nature of the student’s question or problem. These options range from data visualization to research method and statistics. This has allowed us to better understand what statistical programs students are using for specific parts of the research and learning process.

We also have collected data on the workshops that we offer in conjunction with courses across the liberal arts curriculum, in an attempt to measure our impact related to the curriculum. One of the central ways that we demonstrate our value is by tracking the number of people who attend our workshops, because this measure is the clearest way of portraying how faculty have relied on this relatively new academic resource for instructional support.

4. Assessment and Evaluation: Results

We report on five years of assessment data, which show an upward linear trend from the first full year of operation, 2012-13, in which the ERC provided 218 walk-in consultations. In the 2017-18 academic year, the ERC provided 948 walk-in consultations, a 335% increase. Workshop participation has also grown, from 128 participants in 2012-13 to 1,416 participants in
2017-18, approximately a 1000% increase (see Figure 1). Additionally, we have attempted to measure the amount of unique students who visit the ERC, and to understand how many times students return. In the 2017-18 year, we estimate that of the 948 visits, 439 were unique students. This indicates that students are returning to the ERC several times throughout the academic year, which means that students are working on longer-term empirical projects or are using the services of the ERC for multiple assignments or courses.

Figure 1: ERC Walk-In Visits and Workshop Attendance, 2013-2018.

Not only has our number of walk-in visits grown, but we have also continued to diversify our services. In 2014-15, the first year that we collected information on the number of visits by
software program, 40% of visits were devoted to Excel, with Stata and SPSS following as the next two most commonly used software. In 2017-18, 30% of visits were dedicated to Excel, with GIS methods making up nearly 25% of visits, followed by R and Stata (see Figure 2). Although we continue to offer instruction and training with Excel, we are also seeing an increase in more sophisticated data analysis tools, and also more open source programs, among undergraduate students.

Figure 2: ERC Walk-In Visits by Software Program, 2017-2018.

In beginning to record students’ academic majors, we have found that the majority of students visiting the ERC’s walk-in help-desk are Social Science majors (see Figure 3). However, we also see that there were slightly more students with a major in the Humanities than with a major in Science, Technology, Engineering, and Math (STEM), indicating that students
from traditionally non-quantitative backgrounds are using empirical reasoning in their academic work as a part of the liberal arts curriculum.

**Figure 3: ERC Walk-In Visits by Major Category, 2017-18.**

As a part of our effort to further the proliferation of empirical methods across the curriculum, we have also offered course support and instructional workshops to an increasingly interdisciplinary pool of courses. The proportion of workshops in STEM fields has steadily decreased, from 67% of workshops in 2013-14 down to 35% in 2017-18. Meanwhile, we have increased our outreach in the Arts and Humanities as well as Social Sciences. In 2013-14, Social Sciences made up 33% of our workshop sessions, and in 2017-18 that number increased to 57% of more than 50 total workshops. The variety of Social Science fields also increased in that time, going from almost exclusively Economics courses in our first years to a mix of History, Urban Studies, and Economics in more recent academic years. Overall, the number of workshop
sessions offered between 2013-14 and 2017-18 increased from 12 to 54, an increase of over 300%.

5. **Conclusion**

The substantial growth of the ERC is both a result and a cause of the increase in full-time and undergraduate staff members, the expansion of our physical and technological resources, the centralized nature of the ERC organizationally, and our strategic goals related to partnering with faculty in course development. The role of the library as a partner to the ERC was also critical in realizing our strategic vision, as it emphasized the connections between the research lifecycle and the role of empirical approaches.

Internal assessment has been an important tool in demonstrating the impact and value of the ERC and greater empirical curricular changes to the College. The observed increases in ERC walk-in visits and workshop attendance speaks to an increase in awareness among Barnard students of the importance of empirical reasoning in their academic and professional paths. The ERC has helped to proliferate this awareness across the Barnard curriculum by encouraging faculty to incorporate more complex empirical assignments and lessons, with the reassurance that the ERC has the resources to support faculty in these endeavors. This trend is especially apparent in arts, humanities and social science disciplines such as Architecture, Urban Studies, and History. Faculty have increased the presence of empirical work in their existing curricula, but have also developed new courses in partnership with the ERC that centralize empirical research practices. This shift is apparent in the increase in the proportion of ERC workshop sessions devoted to arts, humanities, and the social science courses.
The increase in ERC visits for R, Stata, and GIS as the proportion of Excel visits decreases speaks to the increasing complexity of student work in empirical research. With the availability of training, Barnard students have demonstrated that they are willing to go above the basic requirements regarding engaging with data. This demonstrates that there is a substantial demand for support in advanced analytical software programs at the undergraduate level. The increased number of open-source software visits such as R, Python, and QGIS is also promising, as it gives students the tools to continue their empirical inquiry beyond Barnard’s gates.

In our first five years as an exclusively undergraduate-focused program for data services, we have seen tremendous growth. Barnard’s case study as a liberal arts college dedicated to women’s education offers a particularly important opportunity for the curricular emphasis on empirical reasoning and methods. As a part of Barnard’s mission to encourage students to think critically, we are working to empower them to demand evidence when doing so, and evaluate the empirical arguments they may encounter in the classroom, but also in their lives in general. The services we provide to students empower them to use data to think critically and passionately in courses across disciplines.

References


Frith, V. (2012). “Quantitative Literacy Interventions at University of Cape Town: Effects of Separation from Academic Disciplines,” *Numeracy* 5, Iss. 1, Article 3. DOI: http://dx.doi.org/10.5038/1936-4660.5.1.3


Appendices

Please note: forms and surveys in the below appendices have been reformatted out of concern for space.

Appendix 1: ERL Sign-In Sheet, 2013-15

<table>
<thead>
<tr>
<th>Walk-In ID</th>
<th>Name (optional)</th>
<th>Email (optional)</th>
<th>School (i.e. BC)</th>
<th>Date</th>
<th>Time-In</th>
<th>Time-Out</th>
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</tbody>
</table>

Appendix 2: ERL Exit Survey from Qualtrics, 2013-15

The following is an exit survey in which we would like you to reflect on your experience at the Empirical Reasoning Lab. Please answer each question to the best of your ability. Your responses are anonymous and confidential. Thank you.

Please write your walk-in ID number. Your ID number can be found on the sign-up sheet in the ERL.

________________________________________________________________

Is this your first visit to the ERL?

- Yes
- No
Skip To: Q13 If Is this your first visit to the ERL? = No
Skip To: Q2 If Is this your first visit to the ERL? = Yes

How many times have you been to the ERL?
________________________________________________________________

What brought you to the ERL for this visit?

- Thesis
- Assignment for Class
- Research Outside of Class
- Other ________________________________________________

Please select which of the following you were helped with at the ERL.

- ArcGIS
- Excel
- Finding Data
- General Statistics
- Literature Review/CLIO
- Other Statistical Software
- Qualitative Analysis
- Research Design
- SPSS
- Stata
- Data Visualization/Charts
- Geospatial Analysis
- Mathematica
- Matlab
- Other GIS Software
- R
- Textual Analysis

How would you rate your overall satisfaction with the ERL?

- Very Satisfied
- Satisfied
- Somewhat Satisfied
- Neutral
- Somewhat Dissatisfied
• Dissatisfied
• Very Dissatisfied

Based on your experience today, how likely are you to return to the ERL?
• Very Likely
• Likely
• Somewhat Likely
• Undecided
• Somewhat Likely
• Likely
• Very Likely

How likely are you to recommend the ERL to your friends?
• Very Likely
• Likely
• Somewhat Likely
• Undecided
• Somewhat Unlikely
• Unlikely
• Very Unlikely

What class are you coming to the ERL for?
Who is your professor in that class?
________________________________________________________________

What college do you attend?
• Barnard College
• Columbia College
• SEAS
• General Studies
• Other ________________________________________________

Do you have any further comments, or could you explain anything that may have improved your experience at the ERL?
________________________________________________________________
Appendix 3: ERC Sign-In Form from Google Forms, 2015-16

Uni: ____________________________________________________________
First Name: _____________________________________________________
Last Name: _______________________________________________________
Class Year: ______________________________________________________
School: _________________________________________________________

Course
Which course(s) brings you here today?
__________________________________________________________________

Program
- Arc-GIS
- Data Visualization/Charts
- Excel
- Finding Data
- General Statistics
- Geospatial Analysis
- Literature Review/CLIO
- Mathematica
- Matlab
- Other GIS software (CartoDB, Social Explorer, etc.)
- Other statistical software (SAS, etc.)
- Qualitative Analysis
- R
- Research Design
- SPSS
- STATA
- Textual Analysis
- Tiki Toki
- Other: _________________________________________________________

Question Type
- Data analysis
- Interpretation
- Method
● Other: __________________________________________________________________________

Brief description of the question:
______________________________________________________________________________

**Subject Area**

● Social Sciences
● Sciences
● Arts
● Humanities
● Other: _________________________________________________________________________

Is this your first visit to the ERC?

● Yes
● No

Comments: ________________________________________________________________________
### Appendix 4: ERC Sign-In/Out Form, 2016-Present

<table>
<thead>
<tr>
<th>Your Name:</th>
<th>UNI:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the ERC fellow or grad assistant who helped you:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>❑ Alisa R.</td>
<td>❑ Fatima K.</td>
<td>❑ Rachael D.</td>
</tr>
<tr>
<td>❑ Anna S.</td>
<td>❑ Mariam R.</td>
<td>❑ Shannon G.</td>
</tr>
<tr>
<td>❑ Carolyn S.</td>
<td>❑ Natalie K.</td>
<td>❑ Trish K.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School:</th>
<th>Major or Department:</th>
<th>Primary Affiliation:</th>
<th>Class Year (if applicable):</th>
</tr>
</thead>
<tbody>
<tr>
<td>❑ BC</td>
<td>❑ Student</td>
<td></td>
<td>❑ First Year</td>
</tr>
<tr>
<td>❑ CC/SEAS/GS</td>
<td>❑ Faculty</td>
<td></td>
<td>❑ Second Year</td>
</tr>
<tr>
<td>❑ Other</td>
<td>❑ Staff</td>
<td></td>
<td>❑ Third Year</td>
</tr>
<tr>
<td></td>
<td>❑ Other</td>
<td></td>
<td>❑ Fourth Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>❑ Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program (e.g. Excel, ArcGIS, etc.):</th>
<th>Is this your first visit to the ERC?:</th>
<th>Have you attended an ERC workshop before?:</th>
<th>How did you hear about the ERC?:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>❑ Yes</td>
<td>❑ Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>❑ No</td>
<td>❑ No</td>
<td></td>
</tr>
</tbody>
</table>

How did we do? We want to know your thoughts about your experience today at the Empirical Reasoning Center's walk-in hours. Please use the space below to respond:
For the ERC Staff Member to fill out:

<table>
<thead>
<tr>
<th>Course name / number:</th>
<th>Nature of the question (select all that apply):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Finding Data</td>
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<tr>
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<td>□ Research Design</td>
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<td>□ Data Analysis</td>
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<td>□ Data Visualization / Charts</td>
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<td>□ Interpretation</td>
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<td>□ Qualitative Analysis</td>
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<td>□ Other:</td>
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Comments / Notes: