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### Title

Supporting Research Workflows with Online Collaborative LaTeX Writing Tools

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# Supporting Research Workflows with Online Collaborative LaTeX Tools

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**SUPPORTING RESEARCH WORKFLOWS WITH ONLINE COLLABORATIVE LATEX WRITING TOOLS**  
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**Research Lifecycle**  
In the Engineering & Physical Sciences Division of the UC Berkeley Libraries we have shifted our outreach and instruction efforts towards our researchers' workflows.

**Survey Results**  
To better understand which collaborative writing tools to support in the library, we conducted an informal survey of our engineering and physical sciences graduate students in 2016. In total, 187 students completed the survey.

**Overleaf Usage and Feedback**  
Overleaf usage has grown steadily since our subscription began in January 2017. A significant spike in usage occurred when the Overleaf and ShareLaTeX platforms merged in September 2018.

**Feedback**  
Faculty, Staff and Students in our departments were invited to give feedback on the initial pilot of ShareLaTeX and Overleaf. Feedback was overwhelmingly positive.

**Timeline**  
The timeline below outlines our evolving approach to LaTeX instruction intended for engineering and physical sciences students.

**Exercise Demonstration**  
ACRL Poster: Compil...

**Next Steps**

- Extend our instruction to other parts of the research lifecycle, tailoring sessions to specific groups.
- Integrate open science and open tools more into our outreach and instruction.
- Connect our updated dissertation template to our dissertation support series.

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## Extended Abstract

After many years of declining attendance at traditional instruction sessions, the engineering and physical sciences librarians at a major research university sought new inroads to support our students and researchers. We began to transform the content of our instructional program from bibliographic focused searching to productivity and research tool management tools. These latter sessions elicited more interest and further encouraged us to assess needs and offer more holistic support of the entire research lifecycle.

We surveyed engineering and physical sciences graduate students in the fall of 2016 about the tools they use for collaborative writing. Survey results demonstrated the popularity of and interest in LaTeX software. LaTeX, a document markup system, is traditionally used in mathematics and science and utilizes syntax consisting of commands and actions to provide formatting. Although we had considered offering LaTeX sessions in the past, we had been discouraged by the perceived difficulty of learning and troubleshooting LaTeX source files and desktop editors. The emergence of online collaborative tools allowed us to cross a hurdle to support LaTeX, and similarly allowed many of our students an easier path to writing in LaTeX.

Our first pilot session took place in the fall of 2016. High attendance demonstrated a clear need, particularly as campus-supported LaTeX workshops had tapered off, but we quickly learned that the range of topics desired necessitated a different approach. As a result, since Spring 2017, we have offered a three part LaTeX workshop that covers more content and appeals to different sub-groups. The sessions, *Basics and Bibliographies*, *Tables and Figures*, and *Equations and Formulas*, offer an introduction to the key features of typesetting in LaTeX using the collaborative online writing tool, Overleaf. These sessions have now been offered four times with improvements made each time based on assessment feedback.

Library instruction sessions often stand alone, but this proactive approach to supporting the research life cycle has led to new relationships and programs that have allowed liaisons to reinvent our roles within our respective departments. Important outcomes include:

- Administrative staff charged with preparing grants and publications have also attended our sessions in addition to students and researchers.
- We have worked with the vendor to develop new templates for presentations and dissertations.
- Using data available through the vendor dashboard, we were able to contact users by department and organize a working group meeting. Feedback from this group led us to discover the importance of other cloud-based tools such as GitHub that researchers pair with Overleaf.
- Although some undergraduates attend our current sessions, we are developing a more targeted, condensed version focused on the needs of undergraduate participating in a campus research program.
- Librarians involved in supporting the workshop series used Overleaf to write our own article, further enhancing our own understanding and instructional practices.

Our success with collaborative writing has dovetailed naturally with data analysis, citation and project management skills and led us to pilot new workshops that address the research lifecycle comprehensively.