

## ChBE ARDEI Quarterly Update for Spring 2021

**Summary:** This quarter, we continued ARDEI work in the department, successfully establishing and launching our new website, administering a climate survey, hosting our first seminar, and developing curricula for both graduate and undergraduate students. We had 19 members this quarter (5 faculty, 1 staff, 8 grad students, and 5 undergraduate students). We are very grateful to our undergraduate seniors who joined us this quarter and congratulate them on their graduation! More specific summaries of each initiative follow.

**ARDEI Department Website:** We are excited to announce that we have launched an ARDEI department website: <https://www.mccormick.northwestern.edu/chemical-biological/about/ardei.html>. We currently have sections outlining our initiatives, links to these quarterly updates, and a comprehensive list of student groups across Northwestern that cater to a wide variety of interests, backgrounds and identities. Included in the website is a new ARDEI email address: [CHBE\\_ARDEI@northwestern.edu](mailto:CHBE_ARDEI@northwestern.edu). This email is monitored by the ARDEI committee and can be used to contact us about your questions, comments and concerns. Finally, we plan on rolling out additional sections of the ARDEI department website each quarter and would appreciate your ideas!

**Department Climate Survey:** This quarter we worked to analyze results from the climate survey. With the help of our climate survey consultants, Amy Hauenstein from Learning Designs, LLC and Xavier Ramey of Justice Informed, we are preparing an executive summary that we plan to share with the department community later this summer. The ARDEI committee is planning to dedicate time to read and reflect on the climate survey results over the summer, and use these results to draft an ARDEI strategic plan to focus our efforts.

**ARDEI Annual Seminar Series:** On June 3<sup>rd</sup>, 2021, we had our inaugural “Contextualizing Engineering” Seminar, hosting Prof. Patty Loew. The seminar took place on Zoom and was very well attended from multiple departments including ChBE. Prof. Loew gave a talk entitled “People, Pipelines, and Water Protectors: Native American Sacrifice Zones.” Her talk started a stimulating discussion during the Q&A, suggesting that the department would attend more seminars and opportunities focused on anti-racist topics. This annual seminar will usually take place in winter quarter. In the fall, we will assemble a small committee of undergraduate and graduate students to select our 2022 speaker, so if you are interested in joining, be on the lookout for an email at the start of the new academic year. Thank you to all who attended!

**Undergraduate ARDEI Resources and Course Development:** This quarter, the undergraduate ARDEI curriculum development team focused on taking ideas and feedback from the winter and honing in on a focus: incorporating anti-racism, diversity, equity, and inclusion into courses through incorporation into homework problems. An example of an ARDEI problem for separations is the calculating the absorption of pollutant H<sub>2</sub>S with a McCabe Thiele diagram out of a product stream and then probing the regulation and impact of H<sub>2</sub>S pollution on marginalized communities in Mon Valley, Pennsylvania. The aim of this idea was to meaningfully expose undergraduates throughout their four years to ARDEI content with real world context; at the same time, our goal is not to lengthen the homework problems but for ARDEI to be integrated into already existing questions or as new questions that will replace existing ones. With the rigorous ChBE courses, our intention is to neither increase course load on students nor on faculty teaching these courses.

After pitching this idea at a ChBE faculty meeting, we have decided to hold a summer workshop to help with problem development ahead of the fall. To support faculty in crafting ARDEI problems, we are asking faculty to bring past course problems and new ideas for intersecting these with ARDEI concepts. In return, we will provide helpful resources (scientific literature, data sets and tools, etc.), example problems we have written, and feedback on faculty’s problems, wherever they are at. In addition to workshop preparation, ongoing areas of work include researching how to avoid instigating harm through these problems, and developing a system and/or rubric to track effectiveness of these problems in presenting ARDEI concepts.

**Graduate ARDEI Course Development:** We have made considerable progress in determining logistics of the first-year graduate student course with the help of Prof. Snurr, including when it is offered, how many credits students, TAs, and faculty receive, and how the course should be rolled out.

One of our priorities is to ensure everyone involved is compensated accordingly, whether it be through funding or academic credits. The course in its full version will likely be incorporated with the standing Professional Development course, particularly because we believe anti-racist and DEI training and discussions are necessary for holistic careers.

The initial form of this course in Fall 2021 will replace two Professional Development classes and will go through basic definitions and step-by-step case studies. We are currently working on a complete syllabus in accordance with our finalized mission and objectives and will outline all classes with relevant materials, discussion questions, and other needs. We will ultimately present our plans to all ChBE faculty for additional input and suggestions. This initiative is moving successfully, and we are excited to continue developing it!

**If you are interested in joining our efforts, as always, fill out this interest form:**  
<https://forms.gle/hnE8cu8FasJehNgY6>