## Biochemistry authentic scientific inquiry lab (BASIL) provides flexible coursebased undergraduate research experience with computational and wetlab approaches to studying protein function.

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Course-based Undergraduate Research Experiences (CUREs) can broaden access to undergraduate research experiences for all students, and the pedagogy of an effective CURE remains a much-needed area of exploration. Learning through mentored undergraduate research does not easily scale to the classroom due to time and staffing constraints. The Biochemistry Authentic Scientific Inquiry Lab (BASIL) is a community of faculty working on CURE implementation, curriculum development, and pedagogy of biochemistry CUREs. We have developed an undergraduate biochemistry lab curriculum that combines computational and wet lab approaches to study proteins of known structure but unknown function. Students use a combination of sequence and structure alignment tools to study these structures with the goal of identifying possible enzymes. Students can produce the target enzymes in the lab using standard wet-lab biochemistry techniques for expression and purification, and they then perform kinetic assays with model substrates selected from their docking studies. The curriculum is modular and can be used as a whole or individual parts may be incorporated into an existing course - either lecture or lab. The course modules are freely available via GitHub (https://basilbiochem.github.io/basil/). We welcome new collaborators who are interested in adopting the curriculum in full or in part. We can offer synchronous support via virtual meetings and asynchronous support via Slack. This project was supported in part by NSF IUSE #1710538 and #1709170.

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