



**ACS Final Report Form**  
**Grant Cycle 9 - August 2022 – August 2023**

Name of project lead: Shane Pitts  
 Campus: Birmingham-Southern College  
 Project title: ACS Teaching Research Community  
 Today's date: October 18, 2022

<b>PROJECT PARTICIPANTS</b> (Please add rows if necessary.)				
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**I. Project summary**

Among the most impactful ways to teach science (e.g., statistics, methodology) is to do authentic science where the outcomes are unknown. Such opportunities are often available to the select few. CUREs (course-based undergraduate research experiences) offer one solution for expansion. However, due to constraints on available sample sizes, diversity of content and technological expertise, small college instructors often instead rely on canned projects where real discovery is mitigated. Herein we offer a low-cost, easy-to-implement solution: A web-portal wherein users may share populations (participants), content expertise (help guiding student projects for methods courses), and technological expertise (offering code or programs) by posting haves and needs. CUREs can result in cognitive, psychosocial, and behavioral gains for students and importantly, contribute to inclusivity and diversity by expanding significant research opportunities to all. Furthermore, the site may afford increased professional development and job satisfaction among faculty by making publishable sample sizes more accessible and

engendering authentic student–mentor research interactions and collaborations across faculty at different ACS institutions.

The three major goals of the project were to:

1. Create the web-portal under the ACS website framework for individuals to share haves and needs related to CUREs. ([access web-portal here](#))
2. Provide training/programming for piloting use of the web-portal at project participant institutions.
3. Plan for the use of the site in future semesters for evaluation of impact.

## II. Attainment of goals

### *Web-portal:*

The majority of the time spent during the funding period was used to plan and implement the [web-portal](#). We were successful in creating a form located on the ACS website that will collect relevant information for ‘haves’ and ‘needs’ and push this information to the project participants’ emails. This form was created by Doug Wofford after several iterations between project participants regarding the specific types of information that would be most useful for facilitating sharing/collaboration amongst users in terms of CUREs.

The web portal is still under development. While the basic form is functional, there are still several missing pieces that are needed to fully attain this goal. There are not supporting website materials that accompany the form, which is a major limitation. For example, there is no website location that: explains how the form is supposed to be used, no searchable table of projects, as well as other suggestions from feedback at local institutions. While Doug Wofford has mentioned that there has been some work on the back end in terms of storage, search, and display results from the form, these are unavailable in the current implementation. There is also no splash page that outlines any context (e.g., examples, how to use the site most effectively, how to search, etc.). Finally, we also expected to provide resources for teaching using a CURE approach, materials which still need to be uploaded and integrated into the overall website design. Thus, there is still quite a bit of work to be done here to make the project most impactful.

### *Training:*

Each of the project participants provided information about the web portal for feedback to individuals at their home institutions. Given the scope of the web-portal, most of the training resulted in additional suggestions to improve the website. That being said, these suggestions were forwarded to ACS late last semester (Spring 2022) but have yet to be implemented by the ACS IT team. Given that the trainings consisted of showing the web-portal and asking for feedback, we technically have accomplished this goal. But there is much work to be done here as well given the feedback received from potential users. Feedback is summarized below in bullet points.

- We may want a way to distinguish between more permanent resources and those with a more limited timeframe. If all we have is a page with haves/needs sorted from most recent to more distant, it will not be evident that some resources (haves/needs) may be more permanent. For example, perhaps someone has scripts they can post and those are for permanent use, while the teaching of joint CURE may be for only one term.

- What are the plans for maintenance and archiving? We probably do not want 3-year-old haves/needs cluttering the site.
- We may want some more formal way of validating entry data if we plan to have the site searchable by that item. For example, in the "timeframe" section, people might enter Fall 2022, F22, Fall '22, etc., resulting in numerous ways to search, which then may result in missing many items. If we had a way of limiting the way that info is entered it will make searching more fruitful.
- Others noted how having a broad discussion board feature would be very useful.
- Several faculty also noted that while it is helpful to have example haves/needs that having a brief list of 2-3 words for ideas of how the site might be used (like our current "Tags" area) will be quite useful. For example, one faculty noted that he would have never thought of using the site for a guest lecture if he had not seen that noted on the site.

It is also important to note that pilot testing for use of the site and further improvements should follow implementation of these suggestions along with the creation of the supporting website materials that will accompany the web-portal form. This goal was not achieved but could be with additional effort from project participants post award period along with implementation by ACS IT.

#### *Future Planning & Evaluation*

While there were not specific measurements to determine whether this goal was achieved, the project participants have outlined some additional future planning that needs to be implemented to ensure that the project is sustainable, used by members of ACS, and can be evaluated for impacts on different constituencies.

First, the implementation of the website materials and changes to the form need to be completed by ACS IT. Next, the site needs to run for some time in order to evaluate usage and impact. For usage, there embedded metrics on site traffic, number of posts, etc. that can be examined over time. Additionally, it would be helpful to complete the survey that will be sent to anyone who posts on the web-portal to evaluate outcomes (i.e., collaborations, impact on students, etc.). Finally, there are additional opportunities for evaluation in terms of which types of haves/need/collaborations emerge.

### **III. Impact of project**

This project will be impactful across many different stakeholders, however, the impact of the project (i.e., creation of the web-portal, supporting website, and surveys about use) will take some time to manifest. Thus, it is hard to judge the overall impact at the present time. In general, we expect that the more the site is used by ACS members, the larger the impact. Impact may come in the form of increased usage of CUREs which leads to increased belonging in STEM for students who belong to historically marginalized groups, collaborative activities and increased interaction amongst faculty that may not otherwise engage with one another, and (with the addition of some of the yet-to-be-implemented features) the creation of a centralized space to find pedagogical resources. Quantification of this impact will need to occur in the future.

### **IV. Consortial (ACS-wide) value of the project**

The value of the project is inherently ACS-wide given that the resources created are housed on the ACS website and specifically aimed at member use. As of this report, the full site (including all website materials and finalized web-portal) still needs to be completed, which limits the broad value of the project (for now). Once usage increases

and ACS members begin using the site more frequently, value will be easier to explicitly discuss. However, we hope that the website will become a go-to resource for ACS members who teach research-related classes.

## **V. Lessons Learned**

The primary lesson learned from this project was that the timeframe was too short. We expected that the implementation of the website (i.e., development and production) would be the easiest part of the project. This was not the case. While the project participants were able to create materials within the funding period and come up with the basic design, the production of the website was much slower than expected (i.e., it took 3 months to get the first iteration of the web-portal up and running after materials for the portal were sent for coding via ACS IT). Because the materials have yet to be completely implemented online, the other goals were pushed back further down the timeline. If we were to run this particular project again, we would have been more explicit in terms of timing and needs for website development (and perhaps added money into the budget to offset these costs).

In addition to the timing challenges we faced, we might have also considered how the project would continue post-award period. While the funding for the project's continuance (i.e., keeping the website under the ACS domain) will be absorbed by ACS, there is ongoing maintenance work to make the website and portal impactful and functional (i.e., triage of resources, sending and evaluating survey results, periodic updates, etc.). We did not plan for these activities in terms of effort post award, which has forced us to do so post-hoc. Given that one of the project participants has left their position in academia, we should have planned for this possibility in more detail at the outset of the project.

## **VI. Next Steps**

At a minimum, the next steps for this project are to help facilitate the final implementation of the website materials and portal changes that have already been sent to the web developer. Originally, we also expected to pilot collaborative projects to determine additional ways in which users might face challenges or want additional features from the site. At least one of the project participants expects to use the site when it is completed to help build usage.

It is unclear how to proceed in terms of maintenance and active engagement with the running of the site at the present time. It could be the case that the project participants continue to monitor, run, and improve the site over time. Alternatively, this project may get absorbed by ACS in some ways. These next steps are up in the air at the time of writing because the website and portal have yet to be completed by the developer, which prohibits use.