

What does the research team do?

The Research component of the CIDER team is focused on exploring three leadership-approved key questions:

Research Question 1	Research Question 2	Research Question 3
What role does evidence play in scaling the most promising engagement activities across the regional hub and the alliance overall?	How do the social interactions and resultant networks affect scaling?	What are the historic and operative frameworks of how gender, race and ethnicity, pathway opportunities and goal attainment are addressed?

Our Process

Those are broad questions, which could leave the door open for many areas of exploration. So, how do we decide where to focus our research?

First, we listen intently to the conversations within the Alliance, particularly looking for statements for “Do we know...” or “I wish we had time to look at how...” statements. Second, our team meets regularly to discuss what we have heard and observed within the Alliance as well as what is happening externally that might be impacting the Alliance and its ultimate goals. One hot topic issue, for example, is the new direction some states have taken with respect to DEI legislation and how this might impact recruiting and retention of Engineering departments in those states. We then consider if this exploration aligns with one or more of our core RQ’s and whether we have the time and resources to explore the research. We also consider existing data that the Alliance may also hold and how we could use that to further identify promising practices—which is why your KPS might occasionally get a request for data from us. We weigh this with the value return of the effort. How useful might the findings be for the alliance? How useful might they be for other alliances and the broader public when shared? For this, we discuss and reflect with CIDER and other KPSs that might have input or who might find the work valuable to them, then settle on meaningful topics of interest to pursue.

Finally, this work is done in close collaboration with the KPS’, especially Hubs, PEERs and leadership team where we have “liaisons” (Smith, Clark and Zarch respectively) keeping up with the discussion in those communities and with the CIDER team as a whole to coordinate our efforts with other data-driven initiatives.

To partner with the Engineering PLUS research team please reach out to Rebecca Zarch (rzarch@sagefoxgroup.com)

Years 1 and 2

In years 1 & 2, we primarily focused on the internal operations of the alliance to help inform the development of the collaborative infrastructure. This included these major areas of study:

	RQ1	RQ2	RQ3
Systems change processes and what is needed to make them successful. This qualitative study examined how elements of successful systems change processes (e.g., Collective Impact model) were being embedded into the alliance and where there could be room for growth. <i>Zarch, McGill</i>	X	X	
What models exist for supporting equity work that complement the ERC model embraced by Engineering PLUS? This study reviewed 13 models to ultimately identify GEAR as an appropriate framework for Eng+ <i>Zarch, McGill</i>		X	
How can GEAR be applied to Engineering PLUS? The research team developed and piloted a GEAR implementation strategy and subsequent toolkit <i>McGill, Maxey, Zarch</i>	X	X	

Year 3

In year 3 we are transitioning our work to support the work of promoting equity in engineering education. All of our research will include short, practitioner-focused summary presentations or practice briefs drawing from our research to be shared widely including with PEERs and Hub members. Our goal with this change is to identify meaningful topics of interest with different KPS's to help them achieve their goals. This may include co-defining the topics of interest with the Engineering PLUS community. Current themes under exploration include:

Question	Approach	Researchers	RQ1	RQ2	RQ3
What is the ADRP application and approval process?	This study will engage members of the ADRP community to understand the experience of preparing applications and making awards.	<i>Slaton, Maxey</i>	X		X
What is the transformational potential of the ADRP on engineering departments?	Engage a workgroup of early career scholars to critically examine the ADRP program	<i>Maxey, Slaton</i>	X	X	X
How does existing areas of expertise of ASEE membership support transformational potential of ADRP?	Systematic ASEE literature reviews based on emergent concerns shared by applicant institutions and workgroup	<i>Maxey, Slaton</i>	X	X	
How do Engineering education faculty and staff perceive the new legal landscape?	This study will use data gathered from participants in the newDEI webinar series to understand their perceptions.	<i>Smith</i>	X	X	X
How do PEERs use data in designing interventions and action plans?	Insights into how Engineering PLUS may further influence and support change efforts at the local level through data practices	<i>Smith</i>	X		
What are the models of summer bridge programs supporting engineering students?	This study will be a landscape of summer bridge program research as prelude to a deeper analysis of program impact.	<i>Smith</i>	X	X	
How have new DEI laws impacted recruitment and retention efforts?	How new DEI laws have impacted the ability for staff at post-secondary institutions to recruit and retain engineering students.	<i>Williamson, Smith, McGill</i>	X		X
What are the unique challenges facing Undergraduate engineering students who are primary caregivers to children and methods to support them?	Literature review	<i>Smith</i>	X	X	
Discourse and ideologies of equity in engineering education	Review of prevailing formations of "inclusion," "success," "resilience" and other common aims of Engineering DEI through critical theory frameworks and related policy studies of race and education.	<i>Slaton</i>			X
Engineering Society Studies	This historically-informed study gathers data on URM student experiences, staff perspectives, and leadership outlooks in multiple minority-serving societies to understand discourses and ideologies of equity.	<i>Maxey</i>		X	X
In what ways can new AI equity tools impact equity work in engineering education?	This study will explore ways that AI tools can be used in equity work and whether/how those uses comport with best practices for promoting equity and make recommendations.	<i>Smith and Williamson</i>	X		