

Building Shared Vision to Advance Diversity, Equity, and Inclusion Systemic Change in Engineering Education

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Dr. Julia M. Williams is Professor of English at Rose-Hulman Institute of Technology. Her research areas include technical communication, assessment, accreditation, and the development of change management strategies for faculty and staff. Her articles have appeared in the Journal of Engineering Education, International Journal of Engineering Education, IEEE Transactions on Professional Communication, and Technical Communication Quarterly, among others.

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Cara Margherio is the Assistant Director of the UW Center for Evaluation & Research for STEM Equity (CERSE). Cara manages the evaluation of several NSF- and NIH-funded projects, primarily working with national professional development programs for early-career academics from groups underrepresented in STEM. Her research is grounded in critical race and feminist theories, and her research interests include community cultural wealth, counterspaces, intersectionality, and institutional change.

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Dr. Sriram Mohan, Rose-Hulman Institute of Technology

Sriram Mohan is a Professor of Computer Science and Software Engineering at Rose-Hulman institute of Technology. Sriram received a B.E degree in Computer Science and Engineering from the University of Madras and M.S and Ph.D. degrees in Computer Science from Indiana University. During his time at Rose-Hulman, Sriram has served as a consultant in Hadoop and NoSQL systems and has helped a variety of clients in the Media, Insurance, and Telecommunication sectors. In addition to his industrial consulting activities, Sriram maintains an active research profile in data science and education research that has led to over 30 publications or presentations. At Rose-Hulman, Sriram has focused on incorporating reflection, and problem based learning activities in the Software Engineering curriculum. Sriram has been fundamental to the revamp of the entire software engineering program at Rose-Hulman. Sriram is a founding member of the Engineering Design program and continues to serve on the leadership team that has developed innovative ways to integrate Humanities, Science, Math, and Engineering curriculum into a studio based education model. In 2015, Sriram was selected as the Outstanding Young Alumni of the year by the School of Informatics and Computing at Indiana University. Sriram serves as a facilitator for MACH, a unique faculty development experience, aimed at helping faculty and administrator develop a change agent tool box



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Eva Andrijcic serves as the Associate Professor of Engineering Management at Rose-Hulman Institute of Technology. She received her Ph.D. and M.S. in Systems and Information Engineering from University of Virginia, where she worked at the Center for Risk Management of Engineering Systems. She received a B.S. in mathematics from Randolph-Macon Woman's College. Her major interests are in the areas of risk analysis and management, critical infrastructure management and protection, interdisciplinary engineering education, and risk education.

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Abstract

This interactive workshop focuses on helping faculty, staff, and administrators develop as diversity, equity, and inclusion (DEI) change leaders on their campuses through learning how to build shared vision. Embracing stakeholders as full partners through sharing vision is a proactive way to bridge connections and incorporate a variety of viewpoints into the change process. Building shared vision requires broad stakeholder engagement and infuses the DEI change project with both personal agency and effective participation. Based on our experience working with university change agents funded through the NSF Revolutionizing Engineering Departments (RED) Program, this workshop translates social science research findings to actionable strategies for developing and sustaining shared vision.

Background

Developing "shared vision" is an often repeated recommendation for effective and sustainable change from organizational consultants (Kania and Kramer, 2011) and scholars of higher education (Henderson, Beach, and Finkelstein, 2011). Embracing stakeholders as full partners through sharing vision is a proactive way to bridge connections and incorporate a variety of viewpoints into the change process. Building shared vision requires broad stakeholder engagement and infuses the change project with both personal agency and effective participation. Shared vision is a useful concept that can be made more accessible and actionable through social science research on how change-making teams engage and empower stakeholders to collaborate on their projects.

Sharing vision can amplify success, increase participation, and erode the divide between project leaders and constituents. While desiring stakeholder cooperation, change agents often focus on acquiring "buy-in" from stakeholders, but this concept is quite limiting for change projects, especially those focused on DEI. The very language of buy-in predisposes change leaders to favor informational communication in order to get stakeholders excited about decisions, rather than formational communication that involves them in decision-making.

NSF funded our collaboration called RED Participatory Action Research (REDPAR), to support the work of RED teams and to conduct research with the RED teams on the change process across project sites. Our work as REDPAR investigates research questions related to systemic change projects while also facilitating connections across teams and providing customized faculty development curriculum. Based

on our experience working with university change agents funded through the NSF RED (Revolutionizing Engineering Departments) Program, this workshop shares strategies for developing and sustaining shared vision. As the RED projects progressed, teams adjusted to meet challenges and expanded to include more stakeholders; the teams have learned from their experiences and adopted new strategies targeted at improving inclusion and empowerment of constituents to solve specific problems they did not identify at the outset of their projects. We find that teams establish shared vision with stakeholders through appealing to a range of motivations, honoring what has come before them, engaging stakeholders via strategies of co-orientation and integration, and sharing the labor of change. This workshop will help attendees understand their own contexts and develop actionable plans to build shared vision into their projects.

Sharing vision as a process is an equity focused strategy that can be used to create strong impact in making inclusion-focused change projects. The process of sharing vision is an inclusive approach to creating change, embedding equity into the very means of change itself. Shared vision invites everyone to participate and contribute, which is inclusive. Shared vision is not hierarchical and values contributions from all stakeholder groups, which is an equitable standpoint. Ultimately, shared vision can engage stakeholders who may not have been willing to work on a project, but are now invested in the outcomes because they helped to create the vision and the plan.

For more information about our research and findings related to shared vision, read a pre-print of our paper at <u>https://osf.io/f7jgn/</u>. This is a hands-on workshop based on those previously shared research findings.

Workshop Goals

As a result of this session, attendees will:

- Understand the concept of shared vision, and how it differs from buy-in;
- Assess the current practices on their campuses/departments/organizations that support the development of shared vision around DEI;
- Apply and adapt effective shared vision practices to their own contexts;
- Develop a plan of action for cultivating shared vision to improve DEI on their campuses.

Workshop Activities Brief overview of activities that will take place during the session:

The activities and workbook will help attendees understand their own professional contexts and to what degree they are currently cultivating shared vision for DEI activities. As participants inventory their own practices, we will provide examples of campus practices that we have collected from the RED projects. These examples can be revised and adapted to the attendees' contexts.

The workbook will include a full copy of the REDPAR Shared Vision Tip Sheet, which is also included at the end of this paper. The workshop is organized around the Tip Sheet, which describes key themes that came out of our research.

Opening, Land Acknowledgement, & visioning exercise (5 minutes)

What does shared vision look like and why is it useful for DEI change projects? (5 minutes)

- a. Briefly present research findings, how it is different from buy-in
- b. Share a sample shared vision document

What Does Shared Vision Look Like?

Change agents embrace a broad conception of shared vision, including common language, shared expectations, shared sense-making, meaningful roles for all participants, and shared products. By speaking about issues with the same terms, identifying how all can contribute, and sharing the credit for impacts and outputs, change agents can shepherd the vision development process.

Whom do change agents engage? (10 minutes)

- a. Activity on brainstorming potential stakeholders & network connections
- b. Briefly present research findings
- c. Group share-out

Whom Do Change Agents Engage?

Successful change agents engage a broad array of stakeholders, including faculty and instructors of all stripes, students, staff, advisory boards, local professionals, support offices, administrations, alumni, and more. The effort it takes to engage these stakeholders early in the change process is repaid through better ideas, increased engagement, and both tacit and explicit support.

Why should stakeholders participate in shared vision? (15 minutes)

- a. Activity on brainstorming what motivates your potential stakeholders, and how this impacts how you will engage with them
- b. Briefly present research findings
- c. Group discussion

Why Should Stakeholders Participate in Shared Vision?

Change agents can build a broad coalition for change by understanding the reasons individuals have for engaging in your change effort. Nontraditional incentives, the opportunity to engage in an open and participatory process, support from institutional leadership, and compelling evidence of the need for change all contribute to the desire for stakeholders to participate in developing shared vision. Change agents can highlight different benefits of participation as stakeholders reveal their interests.

What strategies encourage shared vision? (15 minutes)

- a. Activity on identifying short-term wins
- b. Briefly present research findings
- c. Group share-out

What Strategies Encourage Shared Vision?

The work needed to create shared vision is significant in time invested, scope, mental effort, and impactful on the other work of change agents. Given that fact, specific, ongoing effort is needed to implement the strategies that promote shared vision. Consider brainstorming sessions, regular co-working times, collaborative management, and communication efforts as opportunities for shared vision development.

Group discussion and Q&A (10 minutes)

Any opinions, findings, and conclusions or recommendations in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.



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CREATING SHARED VISION A Tip Sheet from REvolutionizing engineering and computer science Departments (RED) Participatory Action Research

S hared vision is a foundation for transformational and sustainable change. Shared vision brings a group of people into alignment as a coalition and force for change. Shared vision is inclusive and empowering. Rather than focus on buy-in, successful change agents create opportunities for the coalition to develop goals and plans together. This tip sheet presents approaches used to create successful partnerships, using research findings resulting from focus group discussions and conference calls with NSF's RED grantees. The quotes from research participants highlight these findings. For more information, contact us at redpar@rose-hulman.edu.

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TIP: During a team meeting, create a master list of every member's professional relationships, with both people and groups, being a specific as possible. In other words, name names. Thinking broadly, identify which of these people and groups are stakeholders in the change effort or could otherwise participate in the vision process. Make a schedule to reach out to these stakeholders on a regular basis.

"I just want everyone to think about long lasting organizational change, you have to hear the voice of every person in that environment, the staff, the TAs, the administration, so while faculty are the drivers of the change, it will only be sustainable if everyone is on board."

"What we call the naysayers are a critical part of our social network, we want them to be naysayers. When we were writing the proposal they would come forward and criticize and help us find any potential drawbacks so we can improve them together. They may resist change, but they're part of the intended structures. We want them there, we want them to speak up, we want to hear them so we can see the problem from various angles."

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TIP: Create a living document that captures stakeholders, their needs and interests, and benefits resulting from the shared vision process. Be specific and bold in developing this list. Listen carefully and ask for clarification when stakeholders identify a new need or a new benefit.

"In my department, I made sure the first time I evaluated everyone I carefully considered their teaching evaluations. It is clear that success in teaching is important for their advancement in their career and will be part of their evaluation. Most people welcome that and said they like that we pay attention to teaching evaluations. We are also accounting for these activities in their workload. Changing the teaching style now counts as a new course."

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TIP: Allow team members to specify what they expect, what they can offer, and what they need to be successful. Put all those cards on the table. When people see the entire picture of the team context, they are more apt to be creative and inclusive about solutions and promoting the team's interests. Continue these conversations so that people's roles and contributions can evolve if outside commitments change.

"I think we've all learned a lot about what those words mean. We used social justice, humanitarian, sustainability, peace, in the proposal, but we didn't have a common understanding of what those words meant. I'm not sure any of us had an understanding of what that would really look like in engineering. We've spent some time around trying to discuss now what we think those terms mean. Certainly my understanding of them is different now...I think some of that has also influenced what we think success looks like or what the kinds of things are that we're going to do."

"Some research-interested faculty got involved in thinking about this change as a research problem: How do you make prep work better? When is the in-class time? What sessions can you develop to test this? So turning the teaching into a research problem has gotten some of the faculty interested."

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TIP: Few professionals respond to being told what they should think, while many respond to telling others what they think. Facilitate scenarios that allow for opportunities to share thoughts, ideas, and perspectives. Even skeptics can participate in a change effort when change agents cheerfully request "tell me what you think," followed by solution generation and opt-in ways to continue the engagement.

"What I remember from our retreat, it was the first time the team's vision was shared with a larger group. I was surprised with how many people gave us feedback that it wasn't revolutionary enough. There were more boundaries to push. So, some ideas came out of the retreat that weren't part of the initial plan."

"I think that having everyone in the room, and having everyone feel included, really helped gain traction and gain momentum more so than we would have in other ways."

For more information on creating shared vision, see Developing a Shared Vision for Change: Moving toward Inclusive Empowerment (preprint manuscript) at https://osf.io/f7jgn. For more information on the RED program, see Making Academic Change Happen at academicchange.org.

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