

DART Syllabus

This coming year the work of your DART is intended to serve as a starting point for departmental colleagues to collaborate on the creation of a vision and implementable strategies to increase the success of persons excluded because of their ethnicity or race (PEER) students in STEM at Oberlin College. Although Oberlin has a higher number of PEER students participating in STEM than national averages, we still have a lower number of PEER students majoring in STEM than non-PEER students. The work that you will do in your DART and across DARTs is aimed to address this issue by taking an evidence-based approach to address the departmental and institutional systems that serve as barriers to student success. Ultimately, this work will lead to increased individual, departmental, and institutional capacity for equity and inclusion and positive transformation in the culture of STEM at Oberlin.

Learning Outcomes

DART participants will be able to do the following:

- assess and reflect on all aspects of the department, especially systems and leverage points in the context of diversity, equity, inclusion, and belonging
- describe PEER student experiences at Oberlin and larger cultural narratives (e.g., related to ethnicity or to smartness that shape student experiences and create barriers to participation and success in STEM)
- explain core social motives (esp. belonging), determinants of identity and explain strategies for increasing these factors

2021-2022 Timeline

Fall 2021: The product of the DART work in the fall semester is to **create a shared and comprehensive vision for departmental transformation** that will inform strategies for change in all aspects of your departments' practices, policies, and overall culture to support PEER students. The readings for the first seven weeks of the semester are designed to allow the DART members to deepen their understanding of the barriers and supports to PEER student success in STEM. The remaining time in the semester is designed to engage DARTS in the creative problem solving process of envisioning a target future and clarifying the specific challenges that need to be solved for the vision to be reached. Similar to any design or research process, creating a vision and subsequent challenges is an iterative process requiring expansion and revision of ideas.



This is also a time to bring non-DART members of your department into this process so that their wisdom is tapped and their support is nurtured.

Spring 2022: The spring semester is a time for DARTs to begin working on the design of their vision- and evidence- informed strategies. This design work can include members of the department outside of the DART.

Expectations for Participation

Creating a comprehensive vision, strategies, and re-culturing your department will require a committed effort. DARTs are expected to meet at least once a week to discuss readings and collaborate to complete the deliverables. Please note that this means that like our expectations of students, some of this work will need to take place between weekly meetings. DARTs are encouraged to use conversational strategies such as ORID, orbits, and jigsaws to structure conversations equitably and to tap the diversity of understandings and insights within the DART.

Submitting Deliverables

Each week one DART member will be responsible for posting the group's deliverables.

Engaging the whole department

DARTs are especially encouraged to involve non-DART colleagues in comprehending institutional and departmental data on students' experiences, as well as in envisioning the target future and clarifying the specific gaps and obstacles to be addressed for the vision to be achieved (weeks 12/13, 1/3, 1/10, and 1/17).

Cross-DART Collaboration and Community

Institutional change across STEM at Oberlin will require collaboration across departments. To support DART members in collaborating across departments, we will be providing opportunities for individual DART members to share resources, ideas, questions, and concerns with our community of change agents. These opportunities include all-DART meetings and continued opportunities through the Padlet platform where teams will share their deliverables and individual members are invited to respond to weekly discussion questions. Also, as we continue to build our capacity for change, this can also serve as a space for us to pose questions to and/or share resources with the community.



Schedule of Readings		
Week	Goal	Readings and Deliverables
<p>Week of 10/4: Assessing your department</p>	<p>The first steps to creating a departmental vision are to assess and reflect on all aspects of the department. This week's readings and deliverable are designed to support your individual and collective assessment of your departmental contexts.</p> <p>Success of the project requires that the entire department buy-in to the DART's outcomes. This will be easier if non-DART members are informed of what's going on during the year. Please work with your Chair to decide how the DART will keep the rest of the department informed: a 2 min summary of activities at weekly department meetings, a somewhat longer time (15 min?) each month, or something else you think would work for your group.</p>	<p>Readings:</p> <ul style="list-style-type: none"> • Meadows, "Leverage Points Places to Intervene in a System" • "Four Frames for Systemic Change in STEM Departments"; Ladson-Billings • <u>"Maria Klawe Won't Let Computer Science Remain a Boys' Club"</u> <p>Deliverable: Completed PULSE Rubric</p> <p>A plan as to how you will keep the non-DART members of the department informed for the period between now and mid Dec.</p>

<p>Week of 10/11: Understanding the student experience I</p>	<p>The goal of this project is to shift the culture of your department and STEM at Oberlin overall in support of the success of PEER students. This week’s readings allow you to have a greater understanding of PEER student experiences at Oberlin and the larger cultural narratives that shape student experiences in school.</p>	<p>Reading:</p> <ul style="list-style-type: none"> ● Summaries of listening sessions and climate surveys ● Nasir et al., “Racial Storylines and Implications for Learning” ● Seymour and Hunter <i>Talking About Leaving</i> - Chapter 3 <p>Deliverable: Post a summary of emergent themes and questions that arose from your discussion.</p>
<p>Week of 10/18: Making the implicit explicit</p>	<p>Creating a cultural shift requires a full understanding of the systems that uphold the barriers to success for PEER students. This week’s readings were selected to lift the veil on some of the ways that pervasive systems of oppression exist in our institution in ways that are evident and those that are more difficult to discern.</p>	<p>Readings:</p> <ul style="list-style-type: none"> ● Valencia, “Conceptualizing the Notion of Deficit Thinking” ● McGee, “Interrogating Structural Racism in STEM Higher Education” ● Cimpian and Leslie, “The Brilliance Trap”; ● Hatt, “Smartness as a Cultural Practice in Schools” <p>Deliverable: Post a summary of emergent themes and questions that arose from your discussion.</p>

<p>Week of 10/25: Growth mindset and Stereotype Threat</p>	<p>Learning is a cognitive and affective process that is impacted greatly by the learning environment and the large and small cues in a classroom. This week's readings were selected to (re)introduce DART members to the importance of two important affective factors-- growth mindset and stereotype threat-- that impact students in the classroom and other group settings.</p>	<p>Readings:</p> <ul style="list-style-type: none"> ● North and Fiske, <i>Driven to Exclude: How Core Social Motives Explain Social Exclusion</i> ● Rattan, Good, and Dweck, “It’s Ok — Not Everyone Can Be Good at Math’: Instructors with an Entity Theory Comfort (and Demotivate) Students” ● Canning et al., “STEM Faculty Who Believe Ability Is Fixed Have Larger Racial Achievement Gaps and Inspire Less Student Motivation in Their Classes” ● Beasley and Fischer, “Why They Leave: The Impact of Stereotype Threat on the Attrition of Women and Minorities from Science, Math and Engineering Majors.” <p>Deliverable: Post a summary of emergent themes and questions that arose from your discussion.</p>
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<p>Week of 11/1: Sense of Belonging and Science Identity</p>	<p>An inclusive and equitable culture in STEM supports students to feel a sense of belonging to the communities in their classes, department and STEM while also supporting the growth of their identity as scientists. This week’s readings explore these factors, their relationship to each other and to student success.</p>	<p>Readings:</p> <ul style="list-style-type: none"> ● Rainey et al., “Race and Gender Differences in How Sense of Belonging Influences Decisions to Major in STEM” ● Zumbrunn et al., “Support, Belonging, Motivation, and Engagement in the College Classroom: A Mixed Method Study” ● Eagan et al., “Accentuating Advantage: Developing Science Identity during College” ● Optional additional reading: Chen et al., “Am I a Science Person? A Strong Science Identity Bolsters Minority Students’ Sense of Belonging and Performance in College” <p>Deliverable: Post a summary of emergent themes and questions that arose from your discussion.</p>
<p>Week of 11/8: Understanding Student Experience II</p>	<p>This week you are provided with quantitative data to complement the qualitative data your DART discussed previously. This week’s readings are intended to work alongside the previous readings as you interrogate what about student experiences in your departments inform these outcomes.</p>	<p>Reading:</p> <ul style="list-style-type: none"> ● Quantitative departmental data about students ● Ladson-Billings, “From the Achievement Gap to the Education Debt: Understanding Achievement in U.S. Schools” ● Read and discuss the padlet posts from other DART groups. Feel free to leave a

		<p>comment, question, or share an idea with them.</p> <ul style="list-style-type: none"> • Optional additional reading: Svoboda Gouvea “Antiracism and the Problems with “Achievement Gaps” in STEM Education” <p>Deliverable: Post a summary of emergent themes and questions that arose from your discussion and a plan for how you will share the information about your DART’s work with the students in your department.</p>
<p>Week of 11/15: Developing Self Awareness</p>	<p>With an understanding of student experiences and academic outcomes, this week is designed to reflect on your individual and department's role in this system. The readings and group deliverable are designed to take a closer look at ourselves as leverage points in the larger institutional system.</p>	<p>Readings:</p> <ul style="list-style-type: none"> • Peifer, “Looking Back on a Life of Unacknowledged Privilege and a Call to Action” • Bell et al., “Knowing Ourselves as Instructors” <p>Deliverable:</p> <ul style="list-style-type: none"> • DART response to “Who are we?”
<p>Thanksgiving</p>		

Week of 11/29: Inter-DART Discussion

This is an opportunity to pick an area you are interested in (from a list that we will provide) to learn more about. You will then discuss this area with those from other teams.

Week of 12/6: All DART Meeting

This is an opportunity to check-in with the Leadership team and other Teams for shared reflection.

Week of 12/13:
Deeply engage
with non-DART
colleagues

DARTs are especially encouraged to involve non-DART colleagues in weeks 12/13, 1/3, 1/10, and 1/17, as uniting behind a shared vision is key. The week of 12/13 is devoted to clarifying the nature of the challenge by revisiting institutional and departmental data on students' experiences. One goal is to deepen non-DART colleagues' understanding of the situation, so that the compelling need for action is understood.

Reading:

- Fisher and Henderson, "Department-Level Instructional Change: Comparing Prescribed versus Emergent Strategies"
- Your initial PULSE rubric and any notes about identified leverage points and other conversations

Creative problem solving tool:

- A tool for assessing a situation by probing who, what, where, when why, and how (5Ws and an H)

Deliverable:

- A concise description (~75 words) of the situation (description will be added to Padlet)

Winter break 12/20-1/2

<p>Week of 1/3: Creating a shared vision</p>	<p>Creating a shared vision behind which all in the department unite is a critical step: the vision promotes coherence and unity and guards against abandoning the project when difficulties arise. This week the DART will engage the department in envisioning a target future. This is an opportunity to consider the question “Wouldn’t it be nice if…” without the confines of what may currently limit these possibilities. Using the initial draft of your vision, your team will begin to consider how your team, and department-at-large, will initially consider the ways that your department can work together to achieve your shared vision. This may also lead to refining your initial vision.</p>	<p>Creative problem solving tool:</p> <ul style="list-style-type: none"> • A tool for clarifying the vision through divergent and then convergent thinking <p>Deliverable:</p> <ul style="list-style-type: none"> • A vision statement (added to your team’s Padlet)
<p>Weeks of 1/10 and 1/17: Formulating specific challenges to be met</p>	<p>These two weeks focus on defining the gaps to be closed and the obstacles to be cleared if the department is to achieve its target future. The creative problem solving tools will help participants refrain from settling on a solution prematurely.</p>	<p>Creative problem solving tool:</p> <ul style="list-style-type: none"> • Tools for formulating specific challenges through divergent and then convergent thinking <p>Deliverable:</p> <ul style="list-style-type: none"> • A statement of one to five specific challenges, clearly stated in a way open to

		imaginative thinking on paths toward vision (on Padlet)
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