**Beyond C-Core: Addressing Barriers**

Below are the most common barriers to STEM education reform in higher education identified in the National Research Council report, Reaching Students, <http://www.nap.edu/catalog/18687/reaching-students-what-research-says-about-effective-instruction-in-undergraduate> Chapter 6, “Overcoming Challenges.”

With your collaborative group, please choose the two most important barriers you feel like you can do something about. Read the pages from Reaching Students that discuss each barrier and discuss steps you can take to address those barriers with your colleagues.

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| **Barrier** | **Reading** | **Ways to address barrier** |
| **Taking Time for Reform**  “Finding time to learn about research-based approaches and to redesign courses is one of the greatest challenges to implementation. . . Although [faculty] may be interested in research findings about effective teaching and learning, most cannot afford to spend an unspecified amount of work time figuring out how to apply these findings to their own practices. . .” (p. 157). | 157-159 |  |
| **Focusing on Important Content** “Some instructors fear that if they shift to more student-centered instructional approaches, their students will miss exposure to important content, including content they need to know to be prepared for upper-level courses. . . other instructors may worry that the content taught through student-centered activities will be less rigorous than that covered in a traditional lecture” (p. 160). | 160-162 |  |
| **Helping Students Embrace New Ways of Learning and Teaching** “What you are asking students to do in a research-based classroom is not necessarily easy. . . Many students have grown comfortable with being told facts to memorize, and some pushback from students is understandable. Sometimes the greatest resistance to change comes from the highest achievers. . . who have succeeded to date through traditional approaches. . .” (p. 162). | 162-167 |  |
| **Concerns that a different strategy will not work as well, especially if it impacts tenure** “The ability to handle challenges generally improves as instructors gain more experience and knowledge. . . many instructors have collaborated with more experienced colleagues and participated in faculty development. . . These modes of self-improvement are not just for novices at research-based teaching and learning; they can also benefit instructors who are well underway with implementation and want to learn new strategies or master approaches they have already tried” (p. 168). | 168-171 |  |
| **Departmental norms about teaching methods and other expectations** “The attitudes of one’s peers and the culture of a department can facilitate or impede efforts to implement research-based strategies. . . it is easier for instructors to use research-based methods if other members of their department are also doing so, but it is much more difficult if traditional methods are the norm.” | 172-174 |  |

Discipline(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Institution(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PLC Members: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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After completing this sheet, please give to C-Core leadership for scanning, so that we can monitor the types of activities proposed and support requested, and help you facilitate change.

1. Describe the next step your collaborative group will take toward diffusing improved STEM teaching practices beyond C-Core.
2. What support will you need from your collaborative group for enacting broader change in your department, division, and/ or institution?
3. What support will you need from your department, division, and/ or institutional leadership to enact these changes?