

2016 NISBRE WORKSHOP INFORMATION

Name, title, institution, and email address of each facilitator

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Session theme or topic:

Interdisciplinary STEM Undergraduate Research Curricula

Session format (lecture, facilitated discussion, panel discussion, Q&A):

Facilitated Discussion

Session title

Transformative Interdisciplinary and Collaborative STEM Undergraduate Research Program
Includes Informatics

Provide 3 anticipated participant learning outcomes:

1. Insights into curricular-design to include research in interdisciplinary STEM learning
2. Identify demonstrable goals for project-based experiential learning
3. Identify clear and specific assessment strategies for STEM experiential courses

Intended audience (INBRE, COBRE, CTR, students, faculty, PI's):

1. INBRE

2. Pls
3. Faculty
4. Students
5. Administrators

Abstract (200 Words):

Wesley College, a Delaware minority-serving primarily undergraduate institution, strengthened its academic environment to carry out its educational mission and better serve its high-need student-population. A critical piece was developing a four-year progressive core curriculum with freshman-level curricular materials that engage all students in STEM undergraduate research.

Coordinated, comprehensive intervention programs and activities such as first year seminars, common intellectual experiences, learning communities, undergraduate research, and extensive peer and faculty mentoring is having significant impacts on student success, particularly for those from underrepresented groups.

In addition, the College approved an informatics certificate program (9 credits) and a minor program in informatics (15 credits). Both programs require a college-level statistics background and two project-based experiential learning courses; a geographic information systems (GIS) course, and a statistical analysis systems (SAS) programming course. The two 300-level GIS and SAS courses are also incorporated in level 3 of the College core.

This curriculum helps foster a community of students with crucial quantitative, qualitative, and participatory credentials, that are required to move forward and delve deeper in future research projects.

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Additional Materials, Web Information or Additional Information:

1. Tips to diversify STEM fields: <https://www.nerdwallet.com/blog/loans/student-loans/diversity-in-stem-fields/>
2. Wesley Directed Research program: http://wesley.edu/wp-content/uploads/2015/07/p86-88_Malcom_DSouza.pdf; <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3269301/>; [http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4505611/?log\\$=activity](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4505611/?log$=activity)
3. Incorporation of undergraduate research in Wesley-STEM courses: http://wesley.edu/wp-content/uploads/2015/07/Malcolm_D_Souza_Intl_Innovation_135_Research_Media.pdf; <http://www.ncbi.nlm.nih.gov/pubmed/26185487>; <http://www.ncbi.nlm.nih.gov/pubmed/27064213>
4. Wesley College Cannon Scholar program: <http://www.insightintodiversity.com/wesley-cannon-scholars-program-provides-support-for-low-income-stem-majors/>