

Faculty Staff Diversity Mini-Grant Application. Electronic submission is required. A signature page signed by each team member is required; please include a scanned/digitized copy with your submission or send the signature page separately to the Diversity and Inclusion Office.

Project Title (up to 25 words)

Social Justice in STEM

List the members of the team and indicate their roles on the project. One member should be identified as Team Leader.

1 (required) Anil Venkatesh_____ Role on team: Team Leader_____

2 (required) David Griffith_____ Role on team: Liaison to Biology Programs_____

3 (required) Sean McCormick_____ Role on team: Liaison to Physical Sciences and Shimadzu Core Lab

4 (optional) Nathan Leatherman_____ Role on team: Liaison to CET Diversity Committee_____

5 (optional) Angie Mishler_____ Role on team: Liaison to CET Student Affairs_____

Add additional lines as necessary to list all team members

Contact Information for Team Leader:

anilvenkatesh@ferris.edu

231-591-2573

Project Summary (150-200 words). If the application is approved the project summary will be posted on the Diversity and Inclusion Office website.

The purpose of this project is to highlight issues of social justice in science, technology, engineering, and mathematics, and to stimulate a conversation in the Ferris community on supporting and furthering diversity and inclusion in these disciplines. Taking place one week before Ferris hosts the Equity Within the Classroom conference, this project will bring mathematician and social justice advocate Dave Kung to campus. Dr. Kung will present a data-driven analysis of exclusion and discrimination in STEM fields, followed by a discussion of specific pedagogies that are demonstrably more equitable than the traditional lecture format. Attendees who are new to the topic of social justice in STEM will learn about the factors that lead to marginalization of women and under-represented minorities in these fields. Those who are already familiar with these issues will be engaged by the discussion of the social justice

ramifications of teaching methods. In sum, Dr. Kung's visit will serve both to raise awareness of diversity and inclusion shortcomings in STEM, and to stimulate a discussion of equity in STEM pedagogy at Ferris.

Project Narrative. Please be Concise. Structure your narrative as follows. Do not omit any section.

1. Discuss the need for this project;
2. Provide a detailed description of the project, including how it will be implemented and the specific roles of each member of the team;
3. Provide the timeline for the project. Be sure to specify at what point the grant will be considered complete;
4. Describe the target audience and indicate how many participants are expected. Discuss how the project will be publicized and promoted and, if appropriate, how participants will be selected.
5. Discuss specifically how the project will address at least one FSU core value, at least one FSU strategic initiative, and at least one FSU Diversity plan goal;
6. List at least 3 measurable outcomes for this project/event. For each outcome, identify how it is connected with the values, initiatives, and goals that the project is meant to address and include a description of how the outcome will be assessed;
7. Describe how the results of the assessment will further the diversity goals of the university.

Mathematics education in the US is in a time of great need. One of the most shocking statistics is that 60% of two-year college students are placed in remedial math, of fully 75% of those students fail or drop the courses and leave college without completing their degree¹. The situation at Ferris is similar: our remedial math courses (e.g. MATH 110 and 115) have some of the highest D-W-F rates at the university. As a country, we must find a way to engage our students and help them to develop the mathematical skills that they will need as citizens and adults. As a university, we must recognize that students who place into our remedial courses need a new take on mathematics, not the same pedagogical principles that did not serve them well in high school.

The project is to bring mathematician and social justice advocate Dave Kung to Ferris for a day. Anil Venkatesh will be in charge of arranging travel, accommodations, scheduling, and catering for the event. He will also oversee the creation of promotional materials and publicize the event through the Mathematics Department and the Senate Diversity Committee which he chairs. David Griffith will be in charge of promoting the event through contacts in the Department of Biological Sciences, including outreach to students in Pre-Optometry, Pre-Med, Pre-Dentistry, and Pre-Pharmacy. Sean McCormick will be in charge of promoting the event through contacts in the Department of Physical Sciences and through his director position at the Shimadzu Core Lab. Nathan Leatherman and Angie Mishler will be in charge of promoting the event through contacts in the College of Engineering Technology, through their respective connections in the CET Diversity Committee and Student Academic Affairs. The event will

¹ See http://www.theatlantic.com/education/archive/2013/11/the-stereotypes-that-distort-how-americans-teach-and-learn-math/281303/?utm_source=atlib for source on math drop-out statistics.

take place in the University Center in the evening of Wednesday, March 15. Dr. Kung will deliver a talk on social justice in STEM that will serve to educate the Ferris community about problems with diversity and inclusion in STEM fields from a data-driven standpoint, and initiate a conversation about the role of active learning pedagogies in combating discrimination in education.

The project centers on the evening lecture by Dr. Kung on Wednesday, March 15. Attendees will be given surveys to fill out to measure the impact of the event on social justice awareness. The final report will summarize the results of these surveys and will be submitted no later than March 29.

There are at least two target audiences for this event. Firstly, we hope to reach members of the Ferris community who are not yet well versed in the issues of social justice in STEM and who will learn about sources of systemic discrimination in these fields. Secondly, we hope to reach experienced educators who are already well informed about social justice in education, for the purpose of stimulating a discussion about the possible role of active learning pedagogies in furthering diversity and inclusion initiatives in STEM education. Attendance of 100-150 is expected at the event. The project will be heavily promoted in the classroom, through various diversity committees at Ferris, and through the office of Multicultural Student Services.

The project directly addresses the Ferris core value of Diversity. In order to develop a campus that is supportive of all our students, we must tackle the problem of traditional teaching methods that may represent an obstacle to the promotion of diversity and inclusion in STEM fields. Within the Ferris strategic focus area of Diversity, this project supports the focus area of Inclusion, Civility, and Respect by promoting a focus on pedagogies that are more inclusive of underrepresented minorities in STEM. The Ferris Diversity Plan states that we must continue to evaluate courses with high D-W-F rates and work to improve student success through changes in pedagogy. The project supports this plan by bringing Dr. Kung to Ferris in order to improve our educators' understanding of the role active learning techniques can play in furthering diversity and inclusion in STEM courses.

The three outcomes that will be assessed are: increased awareness of social justice issues in STEM, increased awareness of the connection between active learning pedagogies and social justice, and the formation of a faculty learning community on active learning in STEM. The first two outcomes will be assessed by surveying the attendees of the event. The third outcome will be assessed in the final report, stating whether the event generated sufficient interest in this topic for a learning community to be formed. All three outcomes address the Core Value of Diversity, the Strategic Focus on Inclusion, and the Diversity Plan's focus on D-W-F rates, as explained in the previous paragraph.

The results of the assessment will further the diversity goals in the following ways. By assessing awareness of social justice issues in STEM, we will determine whether further awareness initiatives are needed, and what specific areas to target with these initiatives. By assessing awareness of the role of active learning pedagogies in social justice, we highlight a key way to target high D-W-F rates at Ferris. By targeting the formation of a faculty learning community, we aim to make strides in reducing the D-W-F rate through collaboration between faculty members.

Budget and budget Justification. Use the attached budget form. Required components are:

1. Itemized list of expenses with a brief explanation of each;
2. Itemized list of funds anticipated from other sources;
3. Amount requested from the Faculty and Staff Diversity Mini-Grant.

Cost Type	Estimate	Explanation
Room Reservations	\$50	UCB 202A reservation
Catering and Speaker Meals	\$500	UCB catering for 150 attendees and speaker dinner

Airfare	\$300	BWI to GRR estimate
Car Rental	\$150	Three days in West Michigan*
Promotional Materials	\$100	Includes posters from Media Production
Honorarium	\$1,000	Dr. Kung's standard honorarium
Lodging	\$300	Three nights at Prince Conference Center*
TOTAL COST	\$2,400	

Funding Source	Amount Anticipated
Ferris Mathematics Department	\$250 (toward catering and meal)
Ferris College of Arts and Sciences	\$250 (towards catering and meal)
Calvin College	\$600 (toward honorarium and lodging)
Hope College	\$300 (toward honorarium)
TOTAL ANTICIPATED	\$1,400

TOTAL REQUESTED	\$1,000
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*The event is part of a three-day lecture series that is jointly funded by Calvin College and Hope College. For logistical reasons, the speaker will have a rental car during the event and will stay in Grand Rapids at Calvin College's Prince Conference Center.

See the Mini Grant Rubric for additional guidance. If required components of the grant are missing, the grant will be returned.

Final Report.

A final report is required. Failure to submit the final report will exempt all team members from future mini-grant funding.

Expected completion date: March 29, 2017

The final report is due 90 days after the expected completion date. Final reports should be submitted to the Diversity and Inclusion Office.

Budget Overview			
	Requested	Funding	TOTAL

	Grant Funds	from other sources	BUDGET
STIPEND			
HONORARIA	\$1000	\$600	\$400
TRAVEL	\$600	\$300	\$300
FOOD	\$500	\$500	\$0
RENTALS	\$150	\$0	\$150
PRINTING & DUPLICATING	\$100	\$0	\$100
PROMOTION			
SUPPLIES & POSTAGE			
RESOURCE MATERIALS			
ASSESSMENT TOOLS			
OTHER	\$50	\$0	\$50

TOTAL	\$2400	\$1400	\$1000
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Faculty Staff Diversity Mini-Grant Application

Title: Social Justice in STEM

Applicant: Anil Venkatesh

Contact: anilvenkatesh@ferris.edu

Affiliation: Mathematics Department

Proposed Starting and Completion Dates: March 15, 2017 to March 29, 2017

Signature: Anil Venk

Anil Venkatesh

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Sam P Melnick

Ange Miller