



Promoting institutional inclusion and diversity in STEM undergraduate education

By Joëlle Walls

Kennesaw State University was one of 57 recipients of the Howard Hughes Medical Institute's (HHMI) grants from its Inclusive Excellence initiative to help schools find ways to significantly increase their capacity for inclusion. The goal is for students from all backgrounds – especially those from underrepresented groups in the scientific fields of study – to excel.

HHMI is a nonprofit science-based philanthropic organization focused on supporting biomedical research and science education for all. KSU was the only Georgia institution out of 594 colleges and universities nationwide to receive the \$1 million five-year award from the two rounds of competition.

HHMI aims to engage awardee institutions with the implementation of data-driven strategies to transform the science, technology, engineering and mathematics (STEM) culture at the institutional level, as well as sharing best practices with the other grantees through its Peer Implementation Clusters.

The organization also wants awardees to have meaningful and honest conversations at their schools about STEM inclusivity and diversity and to start making changes specific to the institutions' environments. As part of the initial efforts, KSU hosted two members of the HHMI staff in early November to facilitate an inclusion workshop for College of Science and Mathematics (CSM) leadership.

Efforts to transform the institutional culture within the STEM fields are led by CSM, which already has implemented various programs under its own student success initiative.

"Our Inclusive Excellence program is part of a larger College of Science and Mathematics strategic plan intended to improve student outcomes success, especially in foundational, gateway STEM courses. This program is particularly focused on creating a culture where all students, regardless of background, can excel," said Mark Anderson, CSM dean. "To this end, we are focused on looking holistically at our degree curricula, providing professional development to faculty around high impact teaching practices and classroom culture, and building a supportive community among students and faculty."

Scott Reese, CSM assistant dean for curriculum and associate professor of biology, explained one of the ways to transform the institutional culture is to focus on how professors view their classrooms since it is the most direct impact on student success.

That is why KSU is growing the number of CSM faculty learning communities to increase the use of inclusive pedagogies in course design and integrate scaffolded research experiences throughout the degree programs.

"Science is a way of discovery that crosses boundaries of the STEM disciplines," said Reese. "We would like faculty and departments to rethink curricula to show students how all the pieces fit together."

Other important features of KSU's programs include first-year seminars and student learning communities based on the STEM fields, as well as peer-led team learning exercises built into introductory gateway courses. These programs are geared toward creating a sense of belonging and community for students who may or may not be STEM majors yet. They also pave the way for creating networks of students who can help each other be resilient in the face of what can still be very difficult classes.