THE STEM TEACHER LEADERSHIP PROGRAM sponsored by Honeywell at Georgia Tech

In the coming decade, job growth in the computer science and information technology sectors is predicted to exceed that of all other occupations, as basic computing skills are increasingly required in various fields outside the realm of computer science. Yet, only 2% of U.S. students study computer programming, and only 62% of schools offer access to any computer science courses at all; this figure drops to 26% in higher poverty areas. Even further, an alarming number of students are taught computer science by teachers who have very little training in the subject.

The **STEM Teacher Leadership Program** seeks to close these gaps in computer science education by providing superior teacher professional development and engaging middle and high school students in high-quality curricular opportunities in computational thinking and software engineering.

PROGRAM GOALS:

- Create a professional network of Metro Atlanta middle and high school teachers to serve as instructional leaders in computer science.
- Strengthen computation aspects of STEM curricula and pedagogy in Metro Atlanta public schools.
- Enhance middle and high school student interest and achievement in STEM subjects and software engineering.

PROGRAM COMPONENTS:

A cohort of 20 selected teachers will (1) participate in a 4-week summer training at Georgia Tech from June 3rd - June 28th, Monday - Friday. These teachers will learn in-depth computer science (CS) principles and how to incorporate CS into core content areas, which will enable them to implement innovative CS instructional practices in their classes to boost academic engagement for their students. Through their training, and in preparation for the upcoming school year, teachers will (2) use the knowledge gained during the summer training to revise their existing courses of study and create unit plans that reflect both curricular and pedagogical modifications. Additionally, teachers will (3) be equipped to guide their students' participation in a STEM challenge - with the assistance of a Honeywell mentor - that will require students to create software-based solutions to real world problems. Finally, teachers will (4) participate in a culminating symposium where they will share lessons learned throughout the year.

This program seeks to leverage the resources and expertise of Georgia Tech to provide intensive professional development in software engineering and computing. Successfully doing so will strengthen teachers' understanding of both simple and complex computer science concepts, thereby enhancing their ability to teach computer science, even in core content areas, at a rigorous level. Furthermore, exposure to cutting edge computing research will provide the exciting and thought-provoking examples of real-world connections to computer science that are necessary to dramatically increase student engagement in this area.

For further information contact our team at stlp@ceismc.gatech.edu.