CHIP DESIGN EXPERIENCES FOR TEACHERS TO STIMULATE SEMICONDUCTOR EDUCATION IN OKLAHOMA

Research Experiences for Teachers (RET)

This RET program will invite ten high school and community college teachers per year from Stillwater and Tulsa metropolitan area for three years for a six-week research experience on open-source, cyber-secure chip design at Oklahoma State University (OSU).

Teachers will then translate their research experience into inquiry-based and culturally relevant semiconductor curricula in Grade 9-14. The objectives of the RET project are:

1. Develop teacher's knowledge in semiconductors
2. Create innovative semiconductor curricula at grade 9-14 level
3. Build a long-term sustainable relationship between OSU, Tulsa Regional STEM Alliance (TRSA), participating school districts and community colleges to increase student interests and stimulate semiconductor education in Oklahoma.

The intellectual merit includes increasing awareness of cybersecurity issues related to hardware and lowering teachers' burden in developing new courses through open-source tools. The broader impacts include rapid semiconductor talent pipeline development in response to the CHIPS for America Act by increasing the interest levels for semiconductors among non-college grads, including minorities and underrepresented groups. The project will also help fill the semiconductor curriculum gap at Grade 9-14 levels and democratize chip design for everyone through open-source tools.

This project is jointly funded by the Division of Engineering Education and Centers (EEC) and the Established Program to Stimulate Competitive Research (EPSCoR).

This award reflects NSF's statutory mission and has been deemed worthy of support through evaluation using the Foundation's intellectual merit and broader impacts review criteria.

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