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Collaborative Research: Advancing Semiconductor Education through Expansion and Diversification (ASEED)

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The Chips & Science Act, while focused on strengthening U.S. semiconductor manufacturing, also creates critical opportunities for workforce development. However, chip design and manufacturing demand advanced facilities and interdisciplinary STEM expertise, posing significant challenges for small institutions. These challenges include limited access to training resources, difficulty sustaining expensive infrastructure, and constraints in assessing community impact.

In response, Prairie View A&M University, Central State University, and Alabama A&M University launched the NSF-funded ASEED project under the INCLUDES program to develop shared solutions and raise national awareness of these systemic challenges. The ASEED leadership also serves as lead investigators on major industry-supported initiatives, including Apple NSI and Intel-SERP, establishing a strong, multi-state foundation for semiconductor education and research.

Building on this foundation, ASEED seeks to expand collaboration among small institutions and strengthen infrastructure across the full chip design pipeline. The project emphasizes broad access and industry-relevant skill development through integrated research and educational thrusts in materials science, IC design, and fabrication and characterization. ASEED also delivers diverse training pathways: seminars, workshops, certificates, and graduate credentials while engaging community colleges and high schools. The project aims to share its outcomes broadly to foster feedback, partnership, and scalable impact nationwide.

Academic or Professional Status

Faculty

Author: CUI, Suxia (Prairie View A&M University)

Co-authors: Prof. HADIZADEH, Mohammadreza (Central State University); XIAO, Zhigang; ZHAI, Lujun; KHAN, Mubbashar; ZHAO, Xiang; BUDAK, Satilmis; YUAN, Qunying; YANG, Shujun

Presenter: CUI, Suxia (Prairie View A&M University)

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