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REACH UNIVERSITY LAUNCHES COMPULSORY COMPUTER SCIENCE (CS) REQUIREMENT FOR ALL PRESERVICE TEACHERS

199 REPRESENTATIVE CANDIDATES ENROLLED IN REACH'S INAUGURAL CS COHORT, RESULTING IN 93% ACHIEVING MASTERY & IMPROVED CONFIDENCE IN TEACHING CS

(OAKLAND, California) – December 8, 2023 – Reach University, the accredited non-profit university dedicated to advancing job-embedded degrees and credentials, today announced the implementation of an undergraduate computer science (CS) requirement for all preservice teachers. The inaugural CS cohort, comprising 199 educators employed in rural and low-income K-12 schools across four states - including California - resulted in 93% of candidates mastering computer science fundamentals aligned to state standards, an enhanced perception of the value of computer science, and overall improved confidence in teaching CS curriculum.

Reach's undergraduate school of education, based in Oakland, is the only educator preparation program (EPP) operating across multiple U.S. states to make computer science an undergraduate requirement for all preservice educators. Undergrads also complete a compulsory 15-credit hour math and computational thinking semester in part of their teacher training. In its nearly 20 year history in California, Reach has trained 1,000+ teachers and school leaders across 60 K-12 districts. 52% of Reach's California grads are educators of color currently working in local schools years after they completed their Reach training.

"To achieve long-standing equity in the field of computer science, teachers must be both prepared and confident to deliver on foundational computer science principles at every grade level," said Katherine Goyette, Computer Science Coordinator, California Department of Education. "Reach's preservice educator CS requirement accelerates California's ability to inclusively equip educators with the content knowledge and pedagogical practices necessary to make CS an essential core subject in schools across the state. We're thrilled to see both the core principles of California's Computer Science Strategic Implementation Plan and a high focus on boosting representation reflected within Reach's program."

In 2018, California adopted the "Computer Science Standards for California Public Schools," which has resulted in 45% of state public high schools offering foundational computer science in the '22 - '23 academic year and teacher certification pathways at the elementary and secondary levels. Under the state's CS standards, learners build conceptual knowledge in key content areas beginning in kindergarten. Seven core practices guide behaviors and developmental thinking to create computationally literate learners ready to engage in "today's data-rich and interconnected world."

"California has taken strong steps towards bringing CS to every classroom," said Joe E. Ross, President of Reach University. "In contrast, CS is only offered in a little over half of our nation's high schools, with less than 6% of students enrolled in these courses. Rural and low-income schools are less likely to offer CS courses, exacerbating systemic equity and racial disparities in

the field of STEM."

"To break this cycle of underrepresentation, particularly in rural America, Reach University has implemented a required 3-credit hour course on computer science to ensure all Reach-trained educators can lead the classroom with CS know-how and confidence," Ross continued. "The results of this inaugural cohort demonstrate that access and mastery can be achieved, regardless of a degree seeker's previous educational experience."

Nationally, rural K-12 schools trail behind counterparts in offering access to CS education. 42% of public schools are designated as "rural or small-town," yet previous data shows only 10% offer AP computer science courses. In California, 27% rural and 21% small public high schools offered foundational CS in the '22 - '23 academic year. Beyond limitations in curriculum offerings, continued specialized teacher shortages, specifically in rural and low-income communities, contribute to this systemic access inequity.

"Recruiting and retaining teachers, specifically STEM-qualified teachers, is a challenge in the remote, rural, and frontier areas of California," said Allan Carver, Superintendent of Schools, Siskiyou County Office of Education. "Reach's on-the-job teacher training program helps our community overcome these challenges, while also meeting California's K-12 CS standards. From the math and computational thinking immersive semester, to now CS, we are expanding a debt-free opportunity for our rural community members to achieve a bachelor's degree. This creates opportunity for people to pursue a career path that now includes a strong STEM foundation which can be applied to teaching or any other industry."

Reach University's undergraduate CS course introduces candidates to the core concepts and practices common to the state and national standards for computer science. The curriculum builds teacher self-efficacy and pedagogical content knowledge through hands-on investigations of computing systems; data and analysis; networks and the internet; algorithms and programming; and impacts of computing.

The inaugural Summer '23 cohort was comprised of paraprofessionals working in K-12 schools across Reach's partner districts in California, Louisiana, Arkansas, and Alabama. 97% of participants identified as female and 45% identified as educators of color. Comparatively, 42% of U.S. K-12 CS teachers are female and only 17% are Hispanic/Latino or Black/African American.

"My time serving as the first CS Coordinator for the California Department of Education has informed Reach's approach to foundational CS to ensure educators of all digital-literacy levels can master the content knowledge, coding skills, and pedagogical best practices," said Dr. Emily Thomforde, Founding Chair & Faculty Lead for Computer Sciences at Reach University. "With CS-capable teachers, equipped to deliver on the promise of making CS equitable, inclusive, and integrated throughout a K-12 learning experience, the state can achieve its vision of CS for all."

Although Reach's course is geared towards building CS confidence and know-how for all grade levels, it is most focused on training elementary and middle school educators. Nationally, 30

states require schools to teach computer science, but only 17 require all K-12 schools to offer CS coursework.

“My perception of what computer science is, and how to approach it in an instructional setting, has completely changed after taking this course,” said Jendri Quezada Ayala, Reach University teacher candidate at the Boys & Girls Club of the Peninsula. I now realize that at its root, we’re focusing on problem solving, creation, communication, and collaboration in part of creating computer literate and digital citizens. I thoroughly enjoyed this course, and it made me view video games in a completely new light! I encourage every preservice educator, especially at the elementary level, to take foundational CS and bring these key skills to our youth in every California classroom.”

To learn more about Reach University’s computer science courses and view the outcomes of its Summer ‘23 cohort, please visit www.reach.edu/computer-science. Reach’s Spring ‘24 cohort is open to any faculty member of a fellow EPP interested in enrolling.

ABOUT REACH UNIVERSITY

Oakland-based Reach University is the regionally accredited, non-profit university dedicated to advancing job-embedded degrees and credentials. Reach is actively solving America's teacher shortage by creating fully-embedded pathways for high-potential individuals to earn degrees, credentials and jobs as teachers within their own communities. By focusing on low-income, urban and rural regions, offering online tutorials and classes, and rendering academic credit for on-the-job experience, Reach University is eliminating barriers to entry in high-need professions, and building untapped pipelines of locally representative talent. Reach University currently operates in Alabama, Arkansas, California, Colorado, Louisiana, Mississippi, and Texas.

Media Inquiries:
Lauren Bauml, Reach University
(512) 923-6136
LBAUML@REACH.EDU