Association for Computing Machinery

Advancing Computing as a Science & Profession

NEWS RELEASE

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ACM REPORT AIMS TO SMOOTH PATH FOR STUDENTS TRANSFERRING FROM TWO- TO FOUR-YEAR COMPUTING DEGREES

Goals Include Fostering More Diversity in the Computing Field

NEW YORK, NY, **October 15, 2018** – The Education Policy Committee of the Association for Computing Machinery (ACM) issued its "Lighting the Path: From Community College to Computing Careers" report outlining the opportunities and challenges of providing all computing students in the US with flexible pathways from community colleges through four-year institutions and into the workforce.

Community colleges serve a population of students striving to improve their lives through education. Policymakers and educators throughout the US can make students' dreams a reality by making every effort to smooth and support student pathways through postsecondary institutions. The report analyzes various initiatives being implemented throughout the US that aim to increase the pipeline of students pursuing computing degrees; identify programs that have had the most success; and describe aspects of these programs that could be emulated elsewhere.

In 2015, the American Association of Community Colleges (AACC) reported that community colleges were serving 41% of all undergraduates in the US, with strong representation of students from minority groups. For example, AACC found that 43% of African American, 52% of Hispanic and 56% of Native American undergraduates were enrolled in community colleges. At the same time, various studies have demonstrated that not enough of those earning computing-related degrees at two-year institutions transfer to four-year institutions to earn baccalaureate degrees. Earning four-year degrees would open a wider range of new job opportunities for these students, and significantly increase their earning potential.

"There is a tremendous opportunity here," said Jeffrey Forbes, the Chair of the ACM Education Policy Committee and a professor at Duke University. "Especially for an industry looking to add more diversity to its workforce, community colleges are an excellent source for recruitment. At the same time, in developing this report, we've found that current practices at many four-year colleges and universities impede two-year students from continuing their education. We believe this report on pathways in community colleges, with its emphasis on best practices, will help remove obstacles and serve as a catalyst in increasing enrollments in computing and IT programs throughout the US."

“At Hartnell Community College, we found that by changing our approaches in a few critical areas, we were able to see a significant increase in the number of community college students deciding to pursue their computing education at California State universities and successfully graduate from those institutions,” said Sonia Arteaga of Hartnell Community College (California). “By outlining what has worked in various scenarios, this new ACM report will help many others build and diversify the pipeline of computing students in higher education and industry.”

Key Recommendations:

After reviewing transfer pathways initiatives in California, Hawaii, Kentucky, New Jersey and Oregon, the report highlights the core tenets of programs that have created easier-to-navigate and more inviting computer science pathways for diverse student groups. The report’s inclusion of success stories is designed to offer ideas that could be offered in many community college ecosystems to attract and retain a more diverse student body in computing. Recommendations include:

Articulation and Transfer Agreements and Policies

Articulation and transfer agreements specify to students which credits earned in two-year institutions will transfer to four-year institutions. When institutions can agree on courses and degrees that fulfill requirements at multiple institutions, students are largely protected from having to retake classes or take additional classes to graduate, which shortens time to complete a Bachelor’s degree.

Cross-Institution Faculty/Administration Dialogue and Partnerships

In all of the success stories outlined in the report, dialog between faculty and administrators at community colleges and their counterparts at four-year receiving institutions is critical. Communication could take the form of advisory boards between two- and four-year institutions or agreements to meet on a regular basis to discuss methods of reducing transfer pathway barriers.

Incoming Transfer Student Information, Faculty Contact and Personalized Support

The report urges that four-year institutions take active steps to smooth the transfer process. These steps include providing incoming transfer students with necessary information about their coursework or financial aid, faculty advisors, tutoring, and other formalized interventions to welcome and integrate transfer students.

Student Cohort-Based Model

In contrast to a traditional college program where students change courses every semester and the emphasis is on student/professor interaction, cohort models keep students together as part of a tightly-knit group throughout their learning experience. Cohort programs foster a supportive peer network, teamwork, and interactivity. The case studies outlined in the report suggest that cohort-based models may be an effective way of retaining computing students from traditionally underrepresented groups.

Job Market Focus

The effort to diversify the computing field can be greatly assisted by matching degrees and program content with local workforce needs. Potential students will be more interested in pursuing degrees with

immediate job prospects. Baccalaureate programs oriented toward the local job market are in a better position to offer job preparation training, including interview and resume support as well as internship experiences.

Through a partnership with Siegel Family Endowment, these findings will be converted into actionable recommendations that will be shared and promoted to the broader higher learning community. “We’re excited by this opportunity to shift preconceived notions about success, and to break down barriers to entry that keep so many students from achieving their full potential,” said Jessica Traynor, Executive Director and President of Siegel Family Endowment. “This approach is an exciting way to bring advice from leading experts in the field to bear, and to change the way people think about diversifying talent pipelines.”

The report was developed with input from administrators and faculty at community colleges and four-year colleges, computer science education experts, industry representatives, and other relevant stakeholders.

About ACM

ACM, the Association for Computing Machinery, is the world’s largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field’s challenges. ACM strengthens the computing profession’s collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

About the ACM Education Policy Committee

The ACM Education Policy Committee (EPC) engages policymakers and the public on public policy issues that relate to computer science and computing-related education, including the importance of high-quality education at all levels to the labor market and the economy.

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