



**Association for
Computing Machinery**

Advancing Computing as a Science & Profession

NEWS RELEASE

Contact: Jim Ormond
212-626-0505
ormond@acm.org

New Report Captures Enrollment and Retention in Undergraduate Computing Programs Post-COVID

Representation of Women in Computing Programs is at Its Highest Point in the Last Five Years

New York, NY, December 14, 2023 – ACM, the Association for Computing Machinery, just released the new report “[Computing Enrollment and Retention: Results from the 2021-22 Undergraduate Enrollment Cohort](#).” Developed by the ACM Education Board’s Actionable Enrollment and Retention Task Force, the report is an annual summary of data about enrollment, degree completions, and retention of undergraduate computing degree programs in the United States.

As the report tracks data over a five-year period, it provides the computing community with an understanding of trends from which decisions can be made on questions such as, “Where should we be planning to hire more faculty?” and “Which areas do we need to focus more efforts on retaining traditionally underrepresented students?”

“This kind of information is essential for computer science departments and deans,” explained Stuart Zweben, a lead author of the ACM report, who formerly served as the Computer Science Department Chair at The Ohio State University. “Computing disciplines are steadily growing in enrollments to the point where, at many universities computer science is the largest program. But, as educators and administrators, we need the more granular information that this report provides to understand what is around the corner and how we can make improvements to our programs.”

The “Computing Enrollment and Retention Report” includes both Bachelor’s and Associate Degrees. At the Bachelor’s level, these majors include computer science, computer engineering, information systems, information technology, software engineering, cybersecurity, and data science.

Noteworthy trends outlined in the ACM Computing Enrollment and Retention report include:

- Representation of women in 2021-22 was at its highest level of the past five years in both bachelor’s and associate programs.
- In 2021-22, enrollment increased in all areas of computing except computer engineering.

- Although there was a drop in retention and slower growth in enrollment in computer science bachelor's programs during the COVID-19 pandemic, participation rebounded in the 2021-22 academic year, with the field witnessing the strongest retention and enrollment rates in the last five years.
- The recently added Data Science major at the bachelor's level experienced the greatest increase in enrollment among computing disciplines—an increase of 165% between 2020-21 and 2021-22.
- The representation of women in the Data Science discipline (34%), is significantly higher than other computing disciplines (approximately 22%).

The report includes statistics for all undergraduate institutions, as well as a separate column that lists enrollment and retention statistics from non-doctoral granting institutions.

“Fostering greater participation of women and other traditionally underrepresented groups in computing is an important goal for our field,” added Zweben. “We suspect that the high participation of women in data science majors may be due to its interdisciplinary character. For example, students interested in health or psychology, fields which traditionally have a high participation of women, also need a solid grounding in data science. These numbers may give us a glimpse into the future; as more and more fields rely significantly on computing skills, we will see a larger representation in these types of computing programs from historically underrepresented populations.”

Zweben also noted that educators and administrators were heartened to see retention and enrollment numbers rebound after COVID. “The statistics for 2021-22 demonstrate that computing majors are still popular,” added Zweben. “There may have been many reasons for the dip in enrollment growth and retention during COVID. The quality of the instruction may have suffered, as faculty had to improvise new approaches to teaching. Travel constraints may have impacted international students and others studying outside of their home town in unique ways during the pandemic. In any event, as educators, we’ve learned from that experience. We are looking forward to next year’s report. We expect to see current trends continue, but we always find a few surprises as we compile the report.”

In addition to Stuart Zweben, the report was co-authored by Jodi L. Tims (Northeastern University), Cindy Tucker (Bluegrass Community and Technical College), and Mark A. Weiss, (Florida International University). [The National Student Clearinghouse](#) (NSC) is the principal source of the data for the Computing Enrollment and Retention Report.

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.