Counselors have an important role to play

Technology is driving innovation in every sector of the economy, resulting in an abundance of creative and lucrative jobs — many of which people don’t even know about! C4C helps counselors shape students’ interest and preparedness for these jobs.

Advances in US computer science education have implications for counseling

Currently, only one in ten high schools offers computer science but change is afoot!

- CS education is proliferating with 10,000 new computer science classes being offered in US schools in the next few years.
- Inclusive new courses Exploring Computer Science and AP Computer Science Principles are making computer science accessible to a broader array of students.
- More than half of US states now count computer science toward math or science requirements in high school.
- Computer Science Education Week and the Hour of Code have increased public awareness, resulting in more students and parents expecting computer science to be offered in their schools.

Through C4C

- Discover what computing really is (beyond what many think it is).
- Understand why having more — and more kinds — of people involved matters.
- Get up-to-date information about different kinds of computing jobs and the benefits of these jobs for students.
- Learn about new CS courses, how they fit in the school curriculum, and how they count toward graduation and college requirements in your state.
- Learn how students’ interests and career aspirations align with computing.
- Examine key factors that influence students’ education and career choices.
- Get research-validated tips for advising and plan meaningful interactions so diverse groups of students get involved.
Technology Is Changing the World
Technology affects almost every aspect of modern life, and our students use technologies skillfully. Let’s be sure they also participate in the invention of the next world-changing technologies.

Technical Jobs Not Limited to Tech Companies
Technical innovation is critical to things students care about. Imagine your students in:

- **Healthcare** – developing software for a cochlear implant that helps people who are deaf to hear
- **Art** – designing 3-D digital scanners that aid preservation of ancient artworks
- **Gaming** – developing video games that rely more on brainpower than finger dexterity
- **Environmental Protection** – creating global climate models that help to predict how Earth’s climate is changing
- **Humanitarian Relief** – inventing low-cost location devices to keep aid workers and separated families connected during disasters

Lots of Jobs, High Pay
Given commensurate levels of education and time to graduation, computing occupations are more stable and pay better than other jobs.

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Sample Occupation</th>
<th>Projected growth by 2020</th>
<th>Average Annual Salary/Hourly Wage (2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-year Degree or Equivalent Military Training</td>
<td>Network Technician</td>
<td>18%</td>
<td>$46,260/$22.24</td>
</tr>
<tr>
<td></td>
<td>Computer Support Specialist/Help Desk</td>
<td>18%</td>
<td>$46,260/$22.24</td>
</tr>
<tr>
<td></td>
<td>Environmental Engineering Technician</td>
<td>24%</td>
<td>$43,390/$20.86</td>
</tr>
<tr>
<td></td>
<td>Medical Record, Health Information Technician</td>
<td>21%</td>
<td>$32,350/$15.55</td>
</tr>
<tr>
<td>4-year or Advanced Degree</td>
<td>Web Developer or Website Manager</td>
<td>22%</td>
<td>$75,660/$36.37</td>
</tr>
<tr>
<td></td>
<td>Database Administrator</td>
<td>31%</td>
<td>$73,490/$35.33</td>
</tr>
<tr>
<td></td>
<td>Software Developer</td>
<td>30%</td>
<td>$90,530/$43.52</td>
</tr>
<tr>
<td></td>
<td>Computer Scientist</td>
<td>19%</td>
<td>$100,660/$48.39</td>
</tr>
<tr>
<td></td>
<td>Software Engineer (Applications)</td>
<td>9%</td>
<td>$98,810/$47.50</td>
</tr>
</tbody>
</table>

Qualified People Are Needed
Increasing girls’ participation in computing could significantly reduce the gap between qualified workers and available jobs. Diversification of the workforce also leads to greater innovation.

<table>
<thead>
<tr>
<th>Percent</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>57% of professional occupations in the 2014 U.S. workforce held by women</td>
</tr>
<tr>
<td>26</td>
<td>26% of technical employees who are women</td>
</tr>
<tr>
<td>7</td>
<td>7% of Fortune 500 CIOs (chief information officers) who are women</td>
</tr>
<tr>
<td>56</td>
<td>56% of Advanced Placement (AP) test-takers in 2014 who were female</td>
</tr>
<tr>
<td>48</td>
<td>48% of AP Calculus test-takers in 2014 who were female</td>
</tr>
<tr>
<td>20</td>
<td>20% of AP Computer Science test-takers in 2014 who were female</td>
</tr>
<tr>
<td>57</td>
<td>57% of 2013 undergraduate degree recipients who were women</td>
</tr>
<tr>
<td>18</td>
<td>18% of 2013 Computer and Information Sciences undergraduate degree recipients who were women</td>
</tr>
</tbody>
</table>

Sources:
6,7. National Center for Education Statistics (NCES), 2013 (CIP 11); 2012-2013 CRA Taulbee survey (Computer Science).
Significant factors influence students' involvement in computing. Take action and help them get involved.

- **Exposure to quality experiences** — Enroll young women in pairs into CS; suggest students get involved in camps, courses, competitions, and clubs; advocate for computer science courses in your district (talking points for doing so at www.ncwit.org/schools).
- **Access to role models** — Invite technical professionals and college students to school; arrange for field trips, career fairs, job shadows, and internships.
- **Encouragement** — Help students distinguish between computer applications and computer science courses, and encourage them to take computer science!
- **Recognition** — Nominate a high school woman for the NCWIT Award for Aspirations in Computing.

Two thousand and eight high school women received the NCWIT Award for Aspirations in Computing in 2015.

Fifty-two teachers and counselors received the NCWIT Aspirations in Computing Educator Award for encouraging high school women and received over $50,000 in professional development funds.

Help grow the award by encouraging young women to apply this September. See: www.aspirations.org.

Get Involved!

- **Bring Counselors for Computing to your area.** Contact c4c@ncwit.org.
- **Get Counselors for Computing resources.** Visit www.ncwit.org/c4c.

**SPREAD THE WORD: JOIN COUNSELORS FOR COMPUTING**

www.ncwit.org/c4c

*Counselors for Computing* is a project of the K-12 Alliance of the National Center for Women & Information Technology (NCWIT), with initial funding from the Merck Company Foundation and Google.

**NCWIT Lifetime Partner — Apple**

**NCWIT Strategic Partners** — the National Science Foundation, Microsoft, Bank of America, Google, and Intel

**NCWIT Investment Partners** — Avaya, Pfizer, Merck, AT&T, Bloomberg, and Hewlett-Packard