INTERNET® 2015 TECHNOLOGY exchange



INTERNET2 GENDER DIVERSITY INITIATIVE AND SWE@INTERNET2 COMMUNITY

FLORENCE HUDSON

Senior Vice President & Chief Innovation Office

ANA HUNSINGER Vice President, Community Engagement

INTERNET2

INTERNET2 GENDER DIVERSITY INITIATIVE AND SWE@INTERNET2 COMMUNITY

AGENDA

- Welcome and GDI / SWE@Internet2 Community Overview
- Unconscious Bias Presentation
- Panel Discussion
- Closing and Networking



INTERNET® 2015 TECHNOLOGY exchange

OCTOBER 4-7 Cleveland oh

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Community outreach and dialogue

GDI Scholarships

Collaboration: National Center for Women in IT (NCWIT) & Internet2

SWE@internet2.edu community



Community outreach and dialogue

- Community gatherings at every anchor event since Annual Meeting in 2013
- Steering Committee active participation

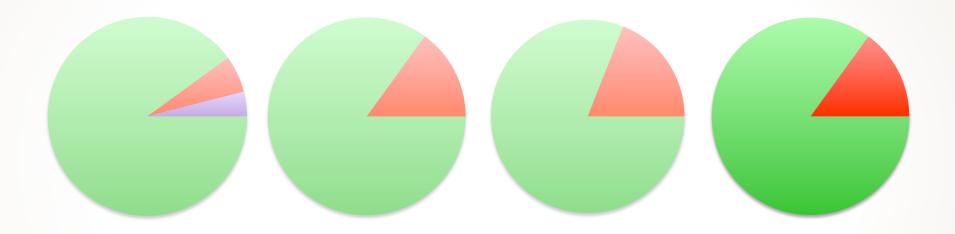


GDI Steering Committee

 Laurie Burns McRobbie, Indiana University, Co-chair
Marla Meehl, FRGP/UCAR, Co-chair
Lucy Sanders, NCWIT
Jen Leasure, The Quilt
Scott Midkiff, Ph.D., Virginia Tech
Pattie Orr, Baylor University
John Kolb, Rensselaer Polytechnic Institute
Gregory Bell, ESnet



Women at Internet2 Meetings



2012–2013 **6–10%** 2014 Tech Ex 19%

2015 Global Summit 21%

2015 Tech Ex 15%



Women at #TechEX15

- Registrants 15%
 - **Speakers** 12%
- 30% **Exchange Speakers**
- **Program Committee** 30%
 - **Track Chairs** 20%







Gender Diversity Initiative scholarships



2015 Carrie Regenstein Awardee

Chris M. Collins, University of Cincinnati



2015 Tech Ex Awardees Sarah Bailey, Case Western Reserve University 2014 Carrie Regenstein Awardee Jamie McCue

2014 Tech Ex Awardees Jill Casey

2015 Global Summit Awardees

Heather (Heath) Davis Angel Male Deidre Mitchell Jackie Stampalia



Gourija S. Menon, Vanderbilt University



EVELAND OH

Collaboration: National Center for Women in IT (NCWIT) & Internet2

- Research collaboration and data on Internet2 community
- NCWIT resources available to Internet2 members
- Visit ncwit.org

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SWE@Internet2 community

- Provides Society of Women Engineers (SWE) member benefits for up to 200 professionals at participating Internet2 higher education member institutions
- For more information, email swe-i2@internet2.edu



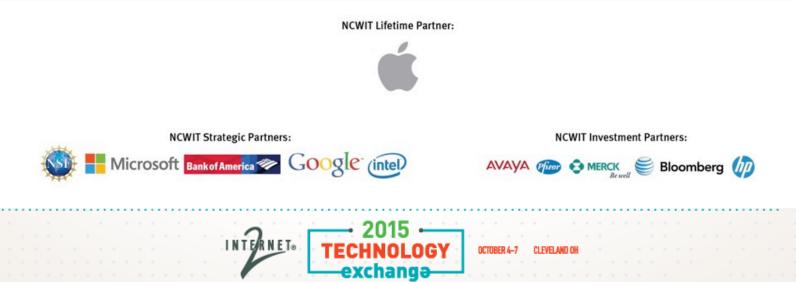
Society of Women Engineers





Unconscious Bias Keeps Girls and Women From Computing

Avis Yates Rivers, CEO Technology Concepts Group Int'l. Board Member, National Center for Women & IT





We Have a U.S. Pipeline Problem



GIRLS COMPRISE

19% of AP CS exam-takers





That Continues into the Corporate Space



WOMEN COMPRISE 57% of U.S. Professional Occupations



WOMEN HOLD 26% of U.S. Technology Jobs



WOMEN MAKE UP 19% of U.S. Software Developers

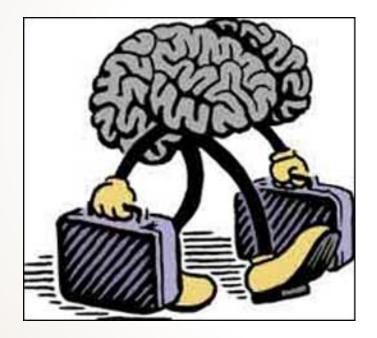


Only 5% of TECHNOLOGY LEADERSHIP Jobs Are Held by Women

SOURCE: U.S. Dept. of Labor Current Population Survey, 2014



We're Losing The Diversity Already There: An Unnecessary Corporate Brain Drain

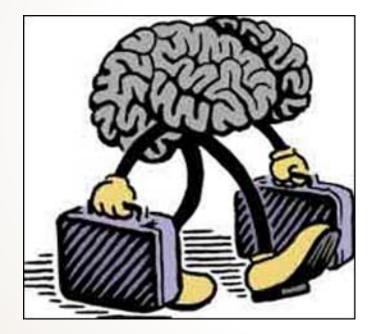


2 million people a year leave U.S. companies due solely to perceived unconscious biases.

Sources: Corporate Leavers Survey, Level Playing Field Institute



We're Losing The Diversity Already There: An Unnecessary Corporate Brain Drain



74% love work

56% leave

75% stay in workforce

Sources: Capturing Turnover Costs, Joins, 2000; TalentKeepers, 2010; Athena Factor, 2008





Diversity Enhances Teams

Groups with greater diversity solve complex problems better and faster than homogenous groups.

Scott Page, The difference: How the power of diversity creates better groups, firms, schools, and societies, Princeton



Diversity Benefits Creativity

Groups with greater diversity solve complex problems better and faster than homogenous groups.





BETTER AND FASTER PROBLEM SOLVING

Scott Page, The difference: How the power of diversity creates better groups, firms, schools, and societies, Princeton University Press, 2009.



Impact on Innovation - Patenting

Male and Female Collaboration Statistics by Category

SUBCATEGORY # MATCHABLE FEMALE-ONLY MIXED-SEX TEAM MALE-ONLY % COUNT % COUNT COUNT % PATENTS Communications 163,408 2.1% 13,813 8.5% 146,129 89.4% 3,466 Computer 132,486 2,291 1.7% 12,802 9.7% 117,393 88.6% Hardware Computer 45,732 871 1.9% 4.424 9.7% 40,437 88.4% Peripherals Computer Software 15,915 105,256 3.062 2.9% 15.1% 86,279 82.0% Semiconductors/ 156,310 3,184 2.0% 16,420 10.5% 136,706 87.5% Solid-state Devices All Information 603,192 63,374 12,874 2.1% 10.5% 526,944 87.4% Technology

U.S.-invented U.S. Information Technology Patents

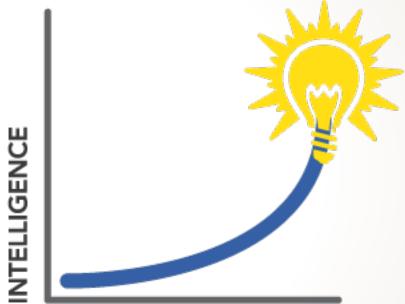
NCWIT – Who Invents IT? – 1980 - 2012



A group's collective intelligence is not predicted by the IQs of its individual members. But if a group includes more women, its collective intelligence rises.

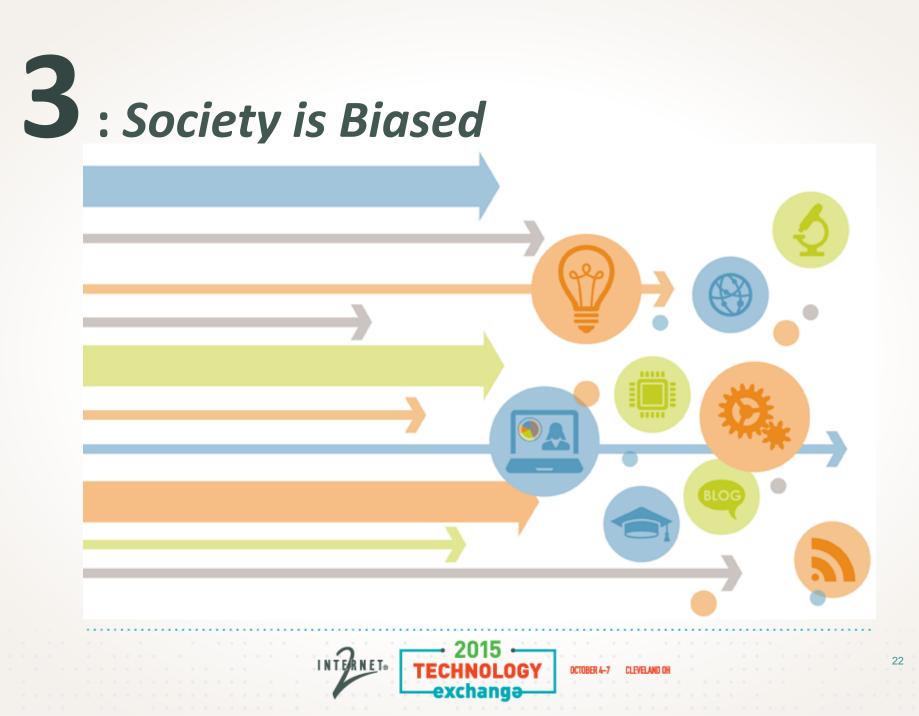
"Evidence for a Collective Intelligence Factor in the Performance of Human Groups," Science October 2010, Woolley, Chabris, Pentland, Hashmi and Malone.

⋸ GROU ш



NUMBER OF WOMEN IN A GROUP





Pick the Technologist





What Causes Societal Bias?



We all have shortcuts, "schemas" that help us make sense of the world. But our shortcuts sometimes make us misinterpret or miss things. That's **unconscious bias**.



Societal Bias Starts Young



"I'm only creating the design ideas," Barbie says, laughing. "I'll need Steven's and Brian's help to turn it into a real game!"





"This command-line tool I wrote should help you trace any bugs you encounter while interfacing with the architecture I designed. It's easy enough that even a software engineer should be able to figure it out."



you think of my code?" Skipper asked Barbie, her ister and well-respected C hacker. "Skipper... this is full of Barbie sighed.



"I'm sorry, Skipper," says Barbie. "You have to be over 18 to pitch to the venture capitalists tonight." "I can't wait until I can pitch my own start-up idea!" says Skipper, "I'm tired of just writing code!"

i îm a girî, "saya Barbi



library. "Hi, guys," says Barbie. "While you were drinking protein shakes at the frat house, I took down ? KKK websites and got the Grand Wizard's SSN &



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TECHNOLOGY

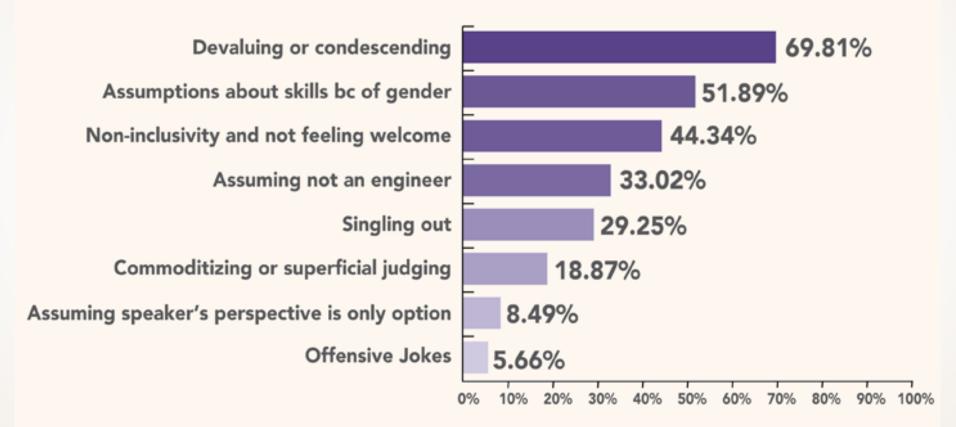
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OCTOBE

"Unconscious" Still Harmful

Percentage of Phrases by Category



NCWIT Aspirations in Computing Informal Survey



How Stereotype Threat Shows Up in Technical Environments

Not speak up in meetings

Be reluctant to take leadership positions

Be overly harsh about their own work

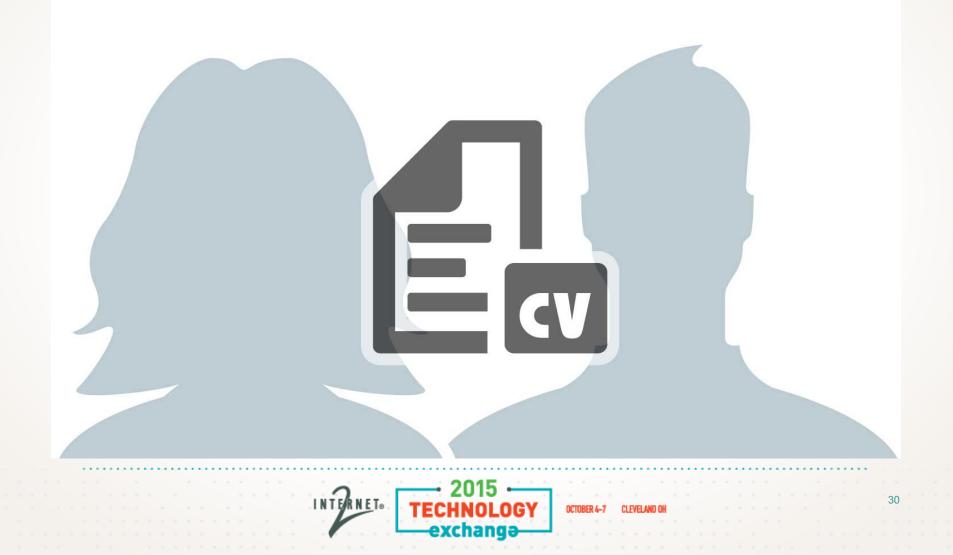
Discount their performance





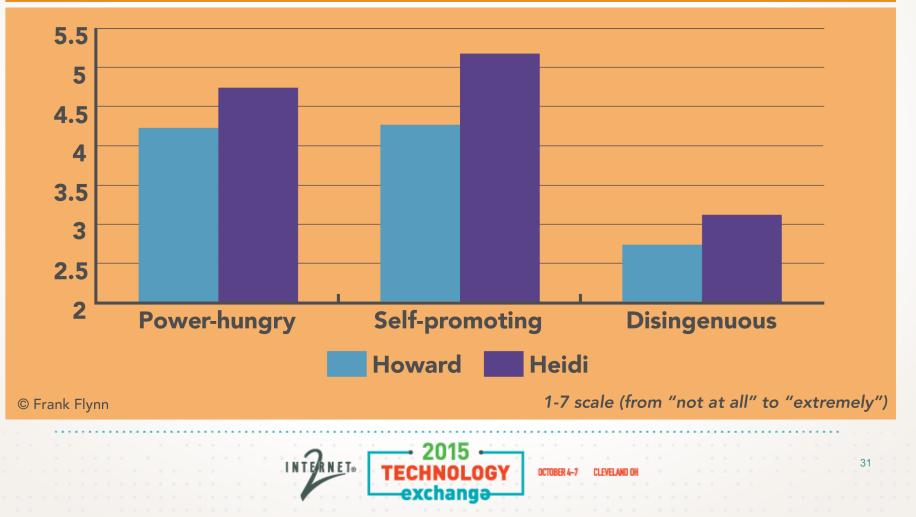


Resume Studies



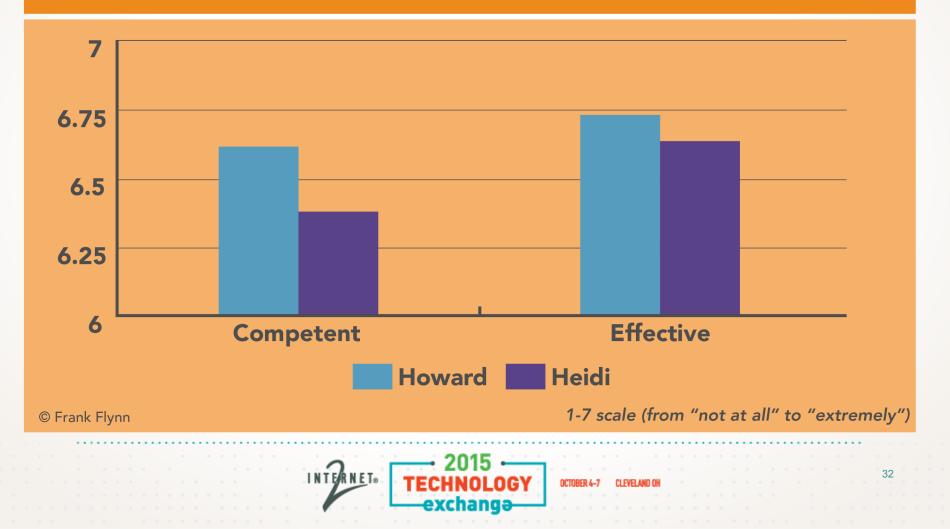
Howard vs. Heidi

How power-hungry, self-promoting, and disingenuous was Roizen?



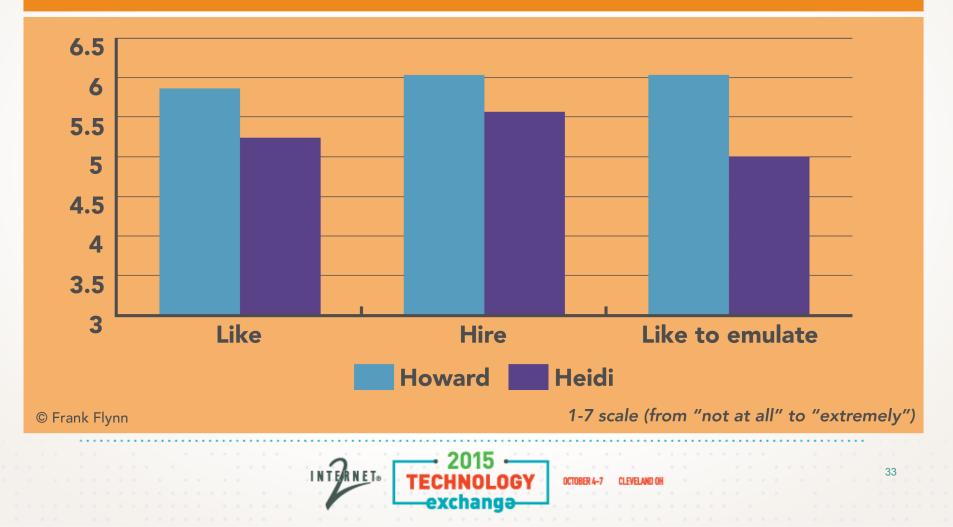
Howard vs. Heidi

How competent and effective was Roizen?



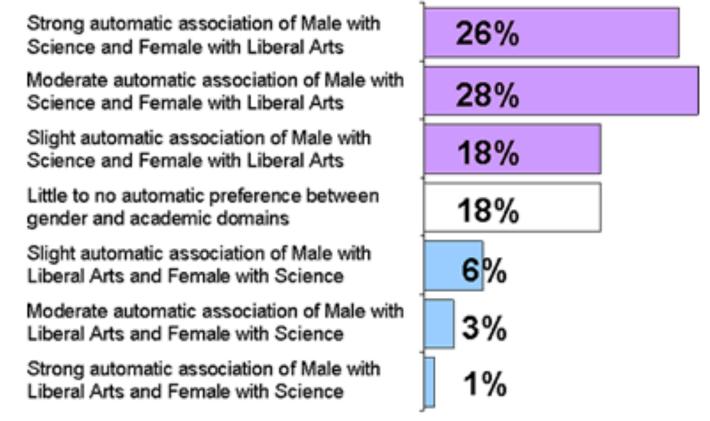
Howard vs. Heidi

Would you like, hire, like to emulate Roizen?



Project Implicit Bias Results

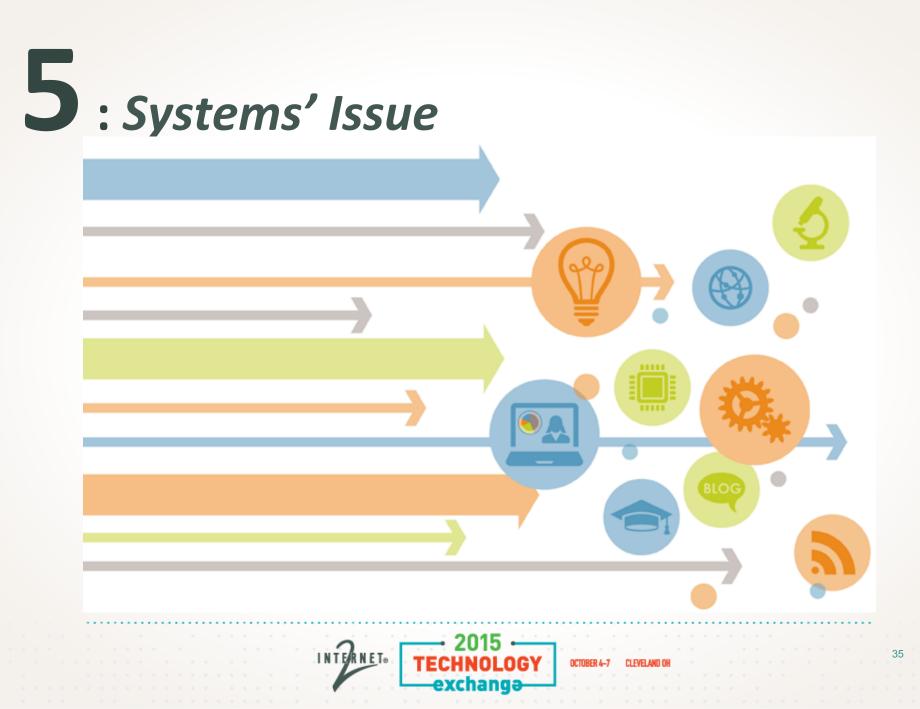
Percent of web respondents with each score



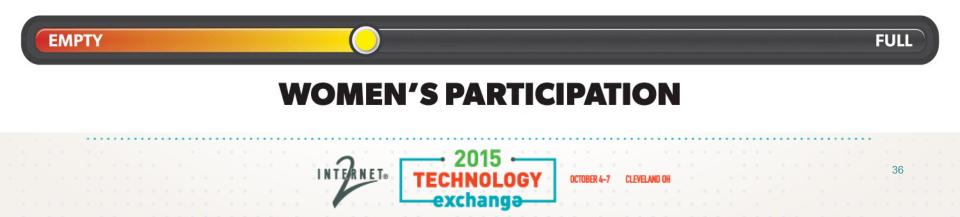
Click for detailed summary



Project Implicit Science and Gender Test



Today Ö **TALENT OUT TALENT IN STAKEHOLDERS**



And Tomorrow ...





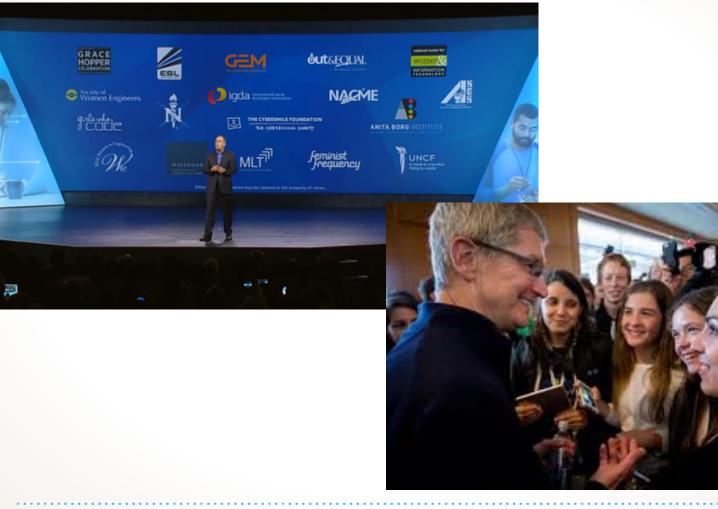
Fix the System (and not the people)

- Girls & women aren't broken.
- Boys & men aren't evil.
- The culprit is societal bias (shared by both women and men) that manifests itself in technical cultures and classrooms.
- The answer is stronger leadership, analysis and practice across the pipeline.





CEO Attention





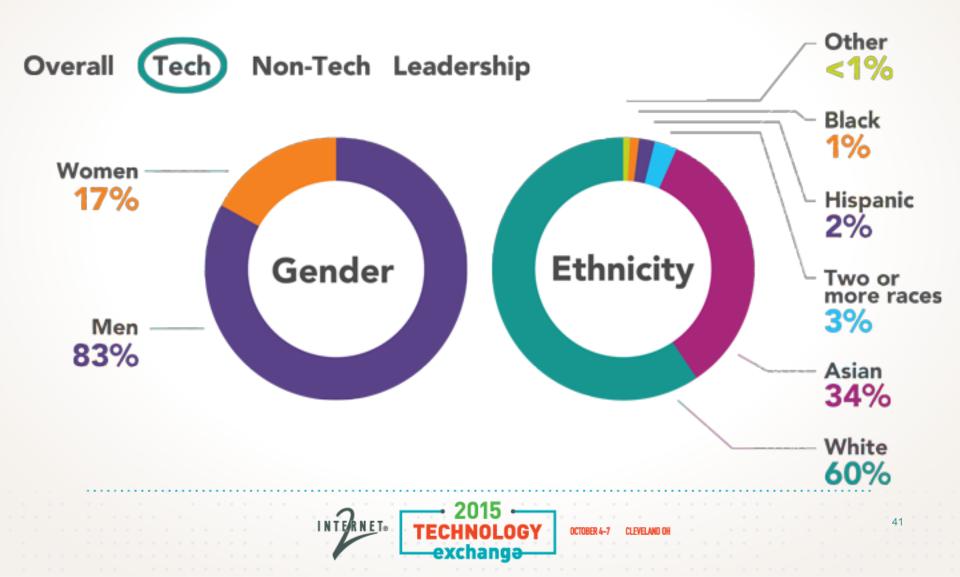
Corporate Technical Leadership

Good Leader

- Communication
- Encourage others
- Share
- Have a broad perspective
- set a good example
- Support employee ideas
- Identify need for change
- Inspire and motivate
- Encourage cooperation

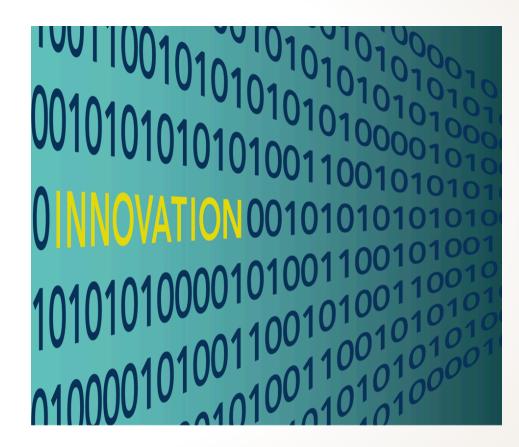


A Year of Transparency: Google Releases June 2014



Why Data Transparency?

- To enable strategic, data-informed change efforts
- To better understand HOW women are participating in innovation & leadership roles
- ✓ To measure change and create accountability





Invite Diversity & Actively Recruit



Remove Biased Language from Job Descriptions



Audit Your Physical Space for Implicit Biases





Assure inclusive team meetings and social events





Audit Performance Review & Advancement Processes

Examine performance reviews for unconscious biases

Build accountability metrics into managers' performance reviews

Clarify paths to promotion





Be a Male Advocate Inspire More Male Advocates



Don't give up: this is a long distance race and not a sprint





4-H National Headquarters, USDA + 6kites + Advance IT Minnesota + Aetna, Inc + Afterschool Allance + Allegheny College + Allstate Insurance Company + Amazon + American School Counselor Association + Andreessen Horowitz + Anita Borg Institute - Systems - Anits Borg Institute for Women and Technology - APPCityLife - Apple Inc. - Application Experts (App-X) - Arizona State University - Mese - Arizona State University - Phoenix - Arizona State University - Tempe -Asheville-Buncombe Technical Community College - Association for Career and Technical Education - Association for Computing Machinery - Association for Information Systems - AT&T Corporation - Aten Design Group - Auburn University Avays, Inc. - Baldwin Wallace College - Ball State University - Bank of America - Bank of America Women in Technology and Operations (WIT&O) - Barry University - Beneath The Ink - Bennett College - Bentey University - Bindbox -Bismarck State College • BitNami • The BizWorld Foundation • Black Data Processors Associates (BDPA) • Black Girls Code • Blacks in Technology • Bicomberg LP • Blue Stamp Engineering • Bluegrass Community and Technical College Boise State University - Bootstrap - Boston University - Boston University's Learning Network - Bowle State University - Bowling Green State University - Boys and Cirls Clubs of America (BCCA) - Brigham Young University - Provo -Broadridge Financial Solutions, Inc. + Brocade Communications + Brocade Women in Networking + Brown University + Bryn Mawr College + Bulk in Chicago + Business and Professional Women's Foundation + BusyNte + California Lutheran University - California Polytechnic State University - San Luis Obispo - California State Polytechnic University - Pomone - California State University - Chico - California State University - Long Beach • California State University - Monterey Bay • Canisius College • Carteton College • Cartely Consulting Group • Carnegie Mellon University • Carnol College • Catelyst • Central Michigan University • Central Pledmont Community College - Central Washington University - Chapman University - Chapman University of Pennsylvania - Chicago Women Developers - Cisco Systems, Inc. - Cisco WISE - Citrus Systems, Inc. - Citrus College - City University of New York Hunter College + Claremont Graduate University + Clemson University + Coastline Community College + code.org + CodeMontage + Colgate University + College Board + College of Charleston + College of St. Scholastica + Colorado Community College System - Colorado Department of Labor and Employment - Colorado School of Mines - Colorado State University - Colorado Technology Association - Colorado Women's Chamber of Commerce - Columbia College of South Carolina - Columbia University - Columbia State University - CompTIA - Computer Science Equity Allance (CSEA) - Computer Science Teachers Association (CSTA) - Computing Research Association (CRA) - Conject Women We Know - Coppin State University - Comell University - Cureec - CyberWatch West Consortium - DailyCollar - Dekota State University - Dertmouth College - DC Web Women - Deakin University - Depaul University - DePauw University - Des Molnes Area Community College • Dilard University • Dick State University • Diczion • Dojo4 • Dordt College • DreamitAlive.com • Drexel University • Drexel University • Dicke University • Eastern Kentucky University • Eastern Michigan University - Edison Community College - EDUCAUSE Women in IT Constituent Group - Elizabeth City State University - Embry-Riddle Aeronautical University - Deytons Beach - EMC Corporation - ETR Associates - Etay, Inc. - Evergreen State College + Facebook, Inc, + Fairleigh Dickinson University + Fanshawe College - Ontario + Fisk University + Florida A&M University + Florida International University + Florida State University + Florida State University + Florida State University - Fort Valley State University - Foundry Group - FullContect - Gelleudet University - Gelleudet University - Genes for Learning Institute - Geek Squad Academy - GEMS Club - Generation YES - George Mason University -Georgetown University - Georgia Gwinnett College - Georgia Institute of Technology - Get Satisfaction - Girl Geek Dinners - Girl Scouts of the USA - Girls Who Code - Girls, Incorporated - Celor - Gold Systems - Golde Blox - Google, Inc. -Governors State University - Hackbright Academy - Harvard University - Harvard University - Harvey Mudd College - Haverford College - Hewlett Packard - Highline Community College - Haver University - Horizon Healthcare Innovations - Hukkster, Inc. - ICamegie, Inc. - IEEE Women In Engineering (VIE) - lexpress. Me - IGNITE-Melrose, MA - IGNITE-Washington - Illinois Institute of Technology - Illinois State University - Illinois Technology Foundation - Imulus - Indiana University - Indiana University - Bloomington - Indiana University - Northwest - Indiana University - Southeast - InspiringApps - Integrata - Intel Corporation - International Society for Technology In Education (ISTE) - Internet2 - Intuit IOUG (Independent Oracle Users Group) + Iowa State University + Iowa Tech Chicks + Iridescent + IT-clogy + ITWomen + Ivycorp + Jackson State Community College + Jackson State University + Jackson Ville State University + Jackson Vi University - James Madison University (JMU) Women In Technology - Johnson & Johnson - Joy Cock Public Relations - JPMorgan Chase - Keen University - Keen - Kennesaw State University - Kent State Uni KeyBank + Khan Academy + KISS Institute for Practical Robotics + Kellective Mohite + Kellective South + Lake Superior State University + Lake-Sumter Community Collece + Lakes Region Community Collece + Latino Startup Allance + Leeward Community College - Lewis & Clark College - Lewis University - Lightbank - Lift Networks, Inc. - Lincoln University - Linfletd College - Long Island University - Los Medanos College - Louisiana State University - Louisiana Tech University + Loyola University Chicago + Loyola University Maryland - Magnet Media Films, Inc. + Marquete University + Massachusetts Academy of Sciences + Massachusetts Institute of Technology (MIT) + Medium + Memeo + MentorNet Merck & Co., Inc. • Mercy College • Metropolitan Community College - Longview • Metropolitan State University • Mismi Decle College • Mismi University • Michigan State University • Michigan Technological University • Microsoft Corporation - Microsoft Research - Microsoft Women Employee Resource Group - Middlebury College - Minwaukee Area Technical College - Minwaupolis Community and Technical College - Mississippi State University - Missioni University of Science and Technology - MobileDay, Inc. - Mount Holyoke College - MOUSE - Murray State University - Murray Itale University - Murray College Options - NanoSatisti - Nashville State Community Cellege - National Academy Foundation - National Allance for Partnerships in Equity (NAPE) - National Coelition of Gife, Schools (NCGS) - National Girls Calaborative Project (NGCP) - National University - Networks in - New Mexico State University - Nexed - Next Bio Sound, Inc. - Norfolk State University - North Caroline State University - North Car University - Northeastern Illinois University - Northeen Kentucky University - Northwest Missouri State University - Northwestern Illinois University - Ockton Community Cyllege - Oblong - Occidial Inc. - Ohio State University - Okishome State University - On State University - One Mighty Roar - Online School for Girls - Overge Coest College - Okishom State University - One State University - Park University - Park University Pearson Frentice Hall
Pellosippi State Community College
Pennsylvaria State University
Pfazer Inc.
Pladment Virginia Community College
Pence Cellege
Los Angeles
Plagyback:
Pinnovio
Pixebility, Inc.
Plum Perfect - Portland Community College - Portland State University - Prairie View A&M University - Pretro University - Project Lead the Way (PLTW) - Purdue University - Pyledies - Q-Local - Quelcomm - Quelcomm Women In Science & Engineering (QWISE) • Quick Let, Inc. • Racksonce Hosting, Inc. • RAISE Project • Ramace College • Rept Media • RBC • Red Rocks Community College • Rensselae: Polytochnik Institute • Return Path, Inc. • Revolv Inc. • In Science & Englisheng (Christe) - Culor Lett, Inc. - Kackspice Hosping, Inc. - Kackspice Hospi Southwest im University • Spanning Cloud Apps., Inc. • SpankFun • Spelman College • Splunk • SpotXchange • Spring HI College • St. Francis College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Mary's College • St. Louis University • St. Mary-of-the-Woods College • St. Louis University • St. Mary-of-the-Woods College • St. Mary-of-the-Woods College • St. Louis University • St. Mary-of-the-Woods College • St. Mary-of-the-Woods College • St. Louis University • St. Mary-of-the-Woods College • St. Mary-of-the-Woods College • St. Louis University • St. Mary-of-the-Woods College • St. Mary-of-+ St. Peter's College + St. Xavier University + Standing Cloud + Stanford University - Case of Colorado OIT + Stevens Institute of Technology + Stripe + Suffolk County Community College + SwiftPage Symantec Corporation - Synacuse Student, Sandbox - Synacuse University - Tapinfluence - TaskRabbit - TD Bank - Teach for America - TEALS - TECH CORPS - Tech Savvy Women - Techbridge - Techbic/hic Meetup - TechStars - Temple University - Tennessee Tech University - Tennessee Technology Center - Shelbyville - Texas A&M University - College Station - Texas A&M University - San Antonio - Texas State University - San Antonio - Texas State University - San Antonio - Texas State University - San Antonio - Texas A&M University - San Antonio - Texas State University - San Antonio - Texas A&M University - San Antonio - Texas State University - San Antonio - Texas A&M University - San Antonio - San A&M University - San A&M of New Jersey • The Cotery Inc. • TIAA-CREF • Towson University • Trition University • Trition College • Tufts University • Tuliane University • Tuner Broedcesting System, Inc. • Twilio • Ubcoly • UC Davis K-14 Outreach Center for Computing and STEM Education (C-STEM) + UNAVCO + Union College + University at Albany - SUNY + University of Arizona + University of Arizon of California - Invine - University of California - Los Angeles - University of California - Santa Barbara - University of California University of Central Lanceshire - Cyprus - University of Chicago - University of Colorado - Boulder - University of Connectout - University of Delaware - University of Delaware - University of Delaware - University of Chicago - Boulder - University of Colorado - Boulder - Boulder - University of Colorado - Boulder - University o of Haweil - Manoa - University of Houston - Downtown - University of Illinois - Chicago - University of La Verne - University of La Verne - University of La Verne - University of Iso Andes - Colombia - University of Maryland - Baltimore County -University of Maryland - College Park + University of Massachusetts - Amherst + University of Massachusetts - Lowell + University of Minnesota - Twin Cities - University of Missouri -Kansas City - University of Nebraska - Lincoln - University of Nebraska - 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University of Richmond - University of South Alabama - University of South Carolina - Columbia - University of Rode Island - University of Richmond - University of South Alabama - University of South Carolina - Columbia - University of Rode Island - University of Richmond - University of South Alabama - University of South Carolina - Columbia - University of Rode Island - University of South Carolina - Upstate - University of Texas - Austin - University of Texas - Austin - University of Texas - Dalas - University of Texas - El Paso - University of Texas - Pan American - University of Texas - San Antonio • University of the District of Columbia • University of Visconsin • University of Washington - Bothell • University of Washington - Seattle • University of Wasconsin • Multiewater • University of Washington - Seattle • University of Wasconsin • Uni of Wyoming + University Parent + Upper Iowa University + USAA + Utah State University + Valley City State University + Valley City State University + Valley City State University + Vegas 2.0 + Vacorn, Inc. + VaWest + VictorOps + Vilanova University + Virginia Commonwealth University • Virginia Polytechnic Institute and State University • Weighie of Technology - Wesleyan University - Wesleyan University - Wesleyan University - Wesleyan Vesleyan Vesleyan University - Wesleyan University - Wesleyan Vesleyan Vesley Wimington University - Winone State University - Winston-Salem State University - Winthrop University - Women @ Intel Network - Women & HI Tech - Women in Engineering ProActive Network (WEPAN) - Women in Technology Education Foundation (WIT) + Women of AT&T + Women Who Code (Derwer/Boulder) + World Wide Workshop + Xavier University of Louisiana + Yesware + Youngstown State University - Zyle & Friends + Zynga Game Network, Inc.





Revolutionizing the Fac of Technology

Let Me Know If We Can Help

exchanga

Avis Yates Rivers, CEO Technology Concepts Group Int'l.

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Twitter: @sitwithavis

LinkedIn: <u>www.linkedin.com/in/avisyatesrivers</u>





Thank You



UNCONSCIOUS BIAS PANEL PARTICIPANTS

- Peter Finn, Deputy Executive Director & Chief Learning Officer Society of Women Engineers
- **Dave Lambert**, President & CEO Internet2
- Inder Monga, Division Deputy of Technology for Scientific Networking Division, Lawrence Berkeley National Lab and Chief Technology Officer ESnet
- Avis Yates Rivers, President & CEO, Technology Concepts Group, and Board Member National Center for Women & Information Technology



Are you a university member that would like to join the Society of Engineers (SWE)?

We can offer you a discounted membership!



Please click here <u>http://bit.ly/1LMzKIT</u> for more information or send an email to <u>swe-i2-request@Internet2.edu</u> to learn more



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