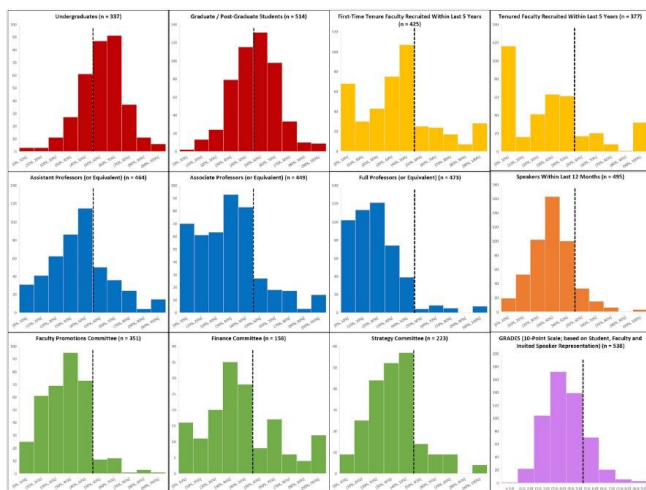


Gender equality report card reveals systematic underrepresentation of women in STEM

5 September 2019



This figure shows the proportion of women among student, faculty, and committee populations across 541 surveyed institutions. Credit: Beeler et al./Cell Stem Cell

Teams from the New York Stem Cell Foundation Research Institute (NYSCF) and the University of Michigan have used the NYSCF Institutional Report Card for Gender Equality (Report Card) to evaluate the representation of women in STEM across more than 500 institutions over the past four years. NYSCF designed and collected the Report Cards and the University of Michigan analyzed the over 1,200 Report Cards received. The findings indicate that promotion, recruitment, and retention of women to senior roles are lacking, as are policies to support women in science.

"To reach treatments and cures, we need full participation in science and medicine," said NYSCF CEO Susan L. Solomon, JD, who co-led the study. "When women are prevented from reaching their full potential, the entire field suffers. We need 100% of the available brainpower to

make the biggest impact and move research forward as quickly as possible."

The study resulted from NYSCF's Initiative on Women in Science and Engineering (IWISE), started by NYSCF in 2014 with support from the Doris Duke Charitable Foundation, whose mission is to devise actionable strategies for advancing women in STEM. These strategies included an Institutional Report Card for Gender Equality, which NYSCF used through its extramural award program to collect [quantitative data](#) about gender representation throughout the educational and academic pipeline (e.g. among students, professors, invited speakers) as well as qualitative data on institutional policies to support women in science. Over the past 4 years, 541 institutions in 38 countries have completed the Report Card.

Gender Imbalance at the Top: The Leaky Pipeline Persists

The Report Card results show that we are still a long way from [gender equity](#) in STEM. Women are well represented amongst undergraduate, graduate, and post-graduate students (constituting over 50% of each population), but among faculty, as seniority increased, representation of women decreased (averaging 42% of assistant professors, 34.2% of associate professors, and 23.4% of full professors). Women made up less than 10% of tenured faculty recruits in nearly one-third of institutions. This data suggests that rather than recruiting women into STEM, the bigger issue appears to be retention and promotion of women into positions that allow them more influence, resources, and in turn, high-impact research.

Unfortunately, institutional gender equity did not improve over time. Among 71 institutions tracked over a period of more than 2 years, just over half

improved their grades, but only by an average of 8%. Institutions whose grades worsened did so by the same amount, suggesting that overall, there were no significant or systematic changes in institutional practices over time.

Policies and Programs to Support Gender Equity are Emerging, but Limited

The actionable strategies put forth by IWISE include institutional policies that would be supportive of women in STEM. Among institutions surveyed, 38% offered additional support mechanisms for paid family leave, while some offered additional policies that addressed childcare, flexibility, funding, and career development initiatives.

"Many of these policies and programs—such as flexible family care spending, 'extra hands' funding, and gender-balanced peer review and speaker selection policies—align with the seven actionable strategies proposed by IWISE in 2015," explained NYSCF's Kristin Smith-Doody, co-author of the study. "We are excited to see some organizations implement these recommendations and hope to see widespread adoption in the future."

To support gender equity on decision-making committees, however, only 8% of institutions had an explicit minimum requirement, 16% had general policies to promote diversity, and 77% held no policies on the issue.

"Representation on strategic, decision-making committees is critical, both because it is important to have a diversity of viewpoints within these groups, and because participation in committees builds leadership skills and visibility that helps members advance their careers," noted University of Michigan's Reshma Jagsi, M.D., D.Phil., who co-lead the study. Jagsi is director of the university's Center for Bioethics and Social Sciences in Medicine.

While many of these results are sobering, the researchers believe that the process of collecting high-quality, comprehensive data through the Report Cards is helping assess the current landscape of gender equality in STEM, and

encouraging institutions to establish a baseline. The Report Card is also shining a light on the issue and prompting institutions to think more about gender equity in STEM.

"Simply asking institutions to fill out this Report Card draws their attention to the gender equity issue, encouraging them to identify areas for improvement and make necessary changes," said Ms. Solomon. "In the beginning, many institutions told us that there was nowhere for them to go to find the information that we were requesting in the Report Card. In subsequent years, we heard that information on gender equity is now being tracked and is more easily accessible at the institutions."

What's Next?

The researchers will continue to use the report card to collect data, highlight best practices, and monitor changes in gender representation over time. They look forward to improving this tool and working with other organizations to identify strategies for fostering the success of women in STEM.

To encourage change at the institutional level, NYSCF aims to work with other funders to implement a 'recognition phase' for the Report Card modeled in part on the UK's Athena Swan charter, which confers awards of bronze, silver, or gold status to member institutions that have demonstrated good practices and meaningful interventions to advance gender equity. Case studies and independent surveys have shown that this initiative has positively impacted [women's](#) career progression in STEM, and the team hopes that establishing such a system in the United States will confer similar benefits.

"We remain committed to reaching [gender](#) equality in STEM, and to partnering with institutions to achieve this goal," remarked Ms. Solomon. "This is a large-scale, collaborative effort, and we must all work together to make it a reality."

More information: *Cell Stem Cell*, Beeler et al. "Institutional Report Cards for Gender Equality Results of a 4-Year Pilot to Encourage Benchmarking for Women in STEM." [www.cell.com/cell-stem-cell/fulltext/S0092-8614\(18\)30111-1](http://www.cell.com/cell-stem-cell/fulltext/S0092-8614(18)30111-1)

[1934-5909\(19\)30345-5](#) , DOI:
[10.1016/j.stem.2019.08.010](#)

Provided by New York Stem Cell Foundation

APA citation: Gender equality report card reveals systematic underrepresentation of women in STEM (2019, September 5) retrieved 19 June 2021 from <https://phys.org/news/2019-09-gender-equality-card-reveals-systematic.html>

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