

A Title IX Timeline

The Enforcement of Title IX in Science and Engineering Education

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Below is a chronology of a policy movement to use Title IX compliance reviews to put pressure on universities to improve on the low numbers of women in science and engineering, and to address biases in institutional policies and practices that contribute to the discouragement or exclusion of women. Links are provided to most citations. Items recommended for quick study have a box around the citation.

2000 Time to Apply Title IX to Science and Engineering

“Uppity” Talks Begin. Debra Rolison, a research chemist at the Naval Research Laboratory and an independent advocate, gives a talk at a workshop on the chemical workforce at the National Academy of Science raising the idea that Title IX applies to any educational program in which there is discrimination against women. She is frustrated by the lack of progress in chemistry. She notes that lawsuits by individuals have not worked, and they damage individual careers. The numbers of female graduates in chemistry has increased, yet women are not showing parallel progress in faculty hiring.

Rolison, Debra (2000). Title IX for Women in Academic Chemistry: Isn't a Millennium of Affirmative Action for White Men Sufficient? In Chemical Sciences Roundtable, Board on Chemical Sciences and Technology, National Research Council (2000). *Women in the Chemical Workforce: A Workshop Report to the Chemical Sciences Roundtable*. Pp. 74-88. Download or purchase from http://books.nap.edu/catalog.php?record_id=10047

Uppity Echo in Newsletter. Rolison publishes an editorial in Chemical and Engineering News about the status of women in chemistry faculty: the fraction of women in top research departments in chemistry is 10% in 2000, whereas the number of PhDs in chemistry was at 20% in 1985 and is at 33% in 1999, showing a tremendous lag in hiring proportional to the pool of candidates available.

Rolison, Debra (2000). A Title IX Challenge. *C&EN*, 13 March 2000, p. 5. Available at <https://pubs.acs.org> with a subscription.

2002 Special National Studies Are Mandated

A Comprehensive Study Requested. Senator Ron Wyden (D-OR), Chair of the Senate Subcommittee on Science, Technology and Space, convenes a hearing on stronger enforcement of Title IX with respect to math, science and engineering education. He says “Last week the Commerce Committee approved an amendment I offered with Senator Cleland. The amendment calls for a 10-year retrospective report on NSF programs to promote participation of women, minorities, and persons with disabilities in science and engineering. This week, I will offer another amendment to the NSF authorization bill. I want the National Academy of Sciences to report on how universities support their math, science and engineering faculty with respect to Title IX. This can cover hiring,

promotion, tenure, even allocation of lab space.” With co-sponsor Senator Barbara Boxer (D-CA), he requests a GAO audit of Title IX enforcement among agencies funding science and engineering.

Wyden, Ron (2002). *Speech before the Senate Subcommittee on Science, Technology and Space, October 3, 2002, Hearing on Title IX and Science*. Downloaded from <http://wyden.senate.gov/newsroom/record.cfm?id=271926&&>

Media Attention. Science magazine recounts how “a 30-year-old federal education law caused participation in sports by women to skyrocket” and “a panel of scientists and women activists told the U.S. Senate that Title IX could also help the next generation of women scientists and engineers in academia.”

Mervis, Jeffrey (2002). *Women in Science: Can Equality in Sports Be Repeated in the Lab?* Science, 11 October 2002, p. 356. Downloaded from <http://www.sciencemag.org/cgi/content/full/298/5592/356>

30 Year Report. The National Coalition for Women and Girls in Education issues their report. It recalls that Title IX was to cover all forms of discrimination in education, that the Office for Civil Rights in the Department of Education was the primary enforcer, that the Department of Justice had just issued regulations and a manual for 20 other Federal agencies, and Executive Order 13,160 issued in June 2000 prohibits discrimination in any educational program conducted or sponsored by the Federal government. The Executive Order explicitly put Federally-funded programs such as NSF’s education scholarships and fellowships under Title IX compliance. In 1996 Congress cut or eliminated funding for state Title IX coordinators, and in 2003 Congress cut the funding for the Women’s Educational Equity Act. Thus Congress undercut the infrastructure for Title IX compliance activities focused on K-12. Among the score-cards in the NCWGE report is a chapter on Math and Science, focused on K-12 and on gaps in test scores. The report’s proposed Action Agenda does not raise the flag for science and engineering higher education. The NCWGE officers are led by representatives of AAUW, National Women’s Law Center, and American Federation of Teachers.

National Coalition for Women and Girls in Education (2002). *Title IX at 30: Report Card on Gender Equity*. Downloaded from <http://www.ncwge.org/PDF/title9at30-6-11.pdf>

2003 Idea Takes Hold

Get The Idea. Debra Rolison makes another strong statement for the use of Title IX compliance by Federal agencies to reform higher education in S&E. She echoes Senator Ron Wyden (D-OR) at the October 2002 U.S. Senate Hearing. Her excellent and concise article cites the evidence of discrimination against women in the 1999 MIT study of faculty in science. “How does one reform institutions that institutionalize injustice?... complete demolition... redirect the reward structure... [or] coercion”. “The breathtaking inability of too many of our research universities to diversify their faculty is a national disgrace.” She says since “sweet reason, historical perspective, and moral suasion” have not worked, “then it is reasonable to withhold Federal funding from the departments seemingly satisfied with a gender status quo that would not be out of place in the 1950s.” “Let’s ‘out’ the toxic departments.”

Rolison, Debra R. (2003). *Can Title IX Do for Women in Science and Engineering What It Has Done for Women In Sports?* APS News Online, The Back Page, May 2003. Downloaded from <http://www.aas.org/cswa/MEETING/rolison.pdf>

Wyden Article. Senator Ron Wyden (D-OR) publishes an article in the Computing Research News, selling the idea. He says he and Senator Barbara Boxer have asked the General Accounting Office to investigate Title IX enforcement in math, science and engineering.

Wyden, Ron (2003). Title IX and Women in Academics. *Computing Research News*, September 2003, 15(4), pp. 1, 8. Downloaded from <http://www.cra.org/CRN/articles/sept03/wyden.html>

2004 GAO Report Is Issued

GAO Audit Report. In response to congressional request, the U.S. Government Accountability Office issues an audit report on how Federal agencies that provide funding to educational institutions are ensuring that the grant recipients are complying with Title IX in math, engineering, and science. The report reviews women's participation in S&E and promising practices. It recommends that NASA, Energy, and NSF take more action in conducting compliance reviews. The Department of Education was found to be conducting reviews. One appendix summarizes the total amounts of funding by broad field or program, from NSF, NASA, Energy, and Education in 2003.

U.S. Government Accounting Office (2004). *Gender Issues: Women's Participation in the Sciences Has Increased, but Agencies Need to Do More to Ensure Compliance with Title IX*. GAO-04-639. Downloaded from <http://www.gao.gov/new.items/d04639.pdf>

Information Campaign. The National Women's Law Center and the Women's Prerogative launch a nation-wide public education and letter-writing campaign called "Left Out, Left Behind" in response to Donna Nelson's study of diversity in science and engineering faculties (see below). The website supports look-ups of the diversity statistics for individual universities and letter writing to specific university departments and to Federal officials.

National Women's Law Center & Women's Prerogative (2004). *Press release: Women's Groups Launch National Letter-Writing Campaign Demanding That Universities Break Down Barriers to Women in the Sciences*. November 18, 2004. Downloaded from www.nwlc.org/details.cfm?id=2056§ion=newsroom See also www.womensprerogative.org/womenin sciences

2005 The Year of Larry Summers

Larry Summers Speaks. The National Bureau of Economics holds a Conference on Diversifying the Science & Engineering Workforce, at Harvard on January 14, 2005. The President of Harvard, Lawrence Summers, addresses the conference and makes the statement that there are fewer women in science and engineering because they are not interested and because of innate differences that limit their success in science. Senator Ron Wyden, during confirmation hearings for the Secretary of Education by the Senate, disputes Summers' comments and raises the issue of using Title IX to change the status of women, since the Department of Education is one of the agencies responsible for enforcing Title IX.

Wyden, Ron (2005). *Using Title IX to Ensure Equal Opportunity for Women in Math Science*. Downloaded from <http://wiseli.engr.wisc.edu/news/Wyden.pdf>

Summary Article. Sarah Glazer writes a good summary of the issues following Summers comments – why do so few women hold tenured faculty positions in science and engineering? She reports on the GAO findings and response by federal agencies.

Glazer, Sarah (2005). Gender and Learning: Are there innate differences between the sexes? *The CQ Researcher*, 15(19), pp. 445-448. Available for purchase from <http://www.cqpress.com/product/Researcher-Gender-and-Learning-v15.html>

History of Title IX. Publication of *Let Me Play* by Karen Blumenthal. Although written for young readers, this history of Title IX is a superb summary – and playbook -- for anyone. In a journalistic style, Blumenthal tells the story of how Title IX became a law and a social revolution, with stories of Congressional battles, the personal struggle of leaders, examples of girls' experience, and the colorful details of the political and social climate every step of the way. Illustrations draw on cartoons, commercials, magazine covers, and photos. "Player profiles" of early and late leaders include Martha Wright Griffiths, Edith Green, Patsy Mink, Ruth Bader Ginsburg, and Sally Ride. You will learn how Ron Wyden of Oregon, who held Edith Green's old congressional seat and was the Chair of the U.S. Senate Science and Technology Subcommittee, became an advocate and launched the General Accounting Office audit of the status of women in science and engineering and Title IX compliance. The title and contents accurately convey how Title IX was primarily and narrowly applied to equal access to sports for thirty years. Includes a timeline, statistics comparing before and after, and extensive references.

Blumenthal, Karen (2005). *Let Me Play: The Story of Title IX, the law that changed the future of girls in America*. New York, NY: Atheneum Books for Young Readers.

Promotion for Let Me Play. Karen Blumenthal, an editor at The Wall Street Journal, publishes an article with summary statistics and a timeline, highlighting the Bush administration's change in the rules for compliance regarding sports programs, which soften requirements, using excerpts from her book.

Blumenthal, Karen (2005, July 6). *Title IX's Next Hurdle. Three Decades After Its Passage, Rule That Leveled Field for Girls Faces Test from Administration*. The Wall Street Journal, p. B1. Downloaded from <http://online.wsj.com/public/article/SB112169881335788328.html>

Harvard Report. Larry Summers, the President of Harvard, formed two Task Forces, one on Women Faculty and one on Women in Science and Engineering. They were asked to identify issues for immediate action and to recommend structures and initiatives that will ensure continuing commitment to enhancing faculty diversity. They surveyed Harvard policies and practices, practices at comparable institutions, and research. The resulting reports are good resources in identifying potential policies and practices that have been tried or could be tried to promote the recruitment, retention, and advancement of female faculty in math, science and engineering. The recommendations provide a good picture of what institutional change can look like. The reports were completed in three months.

Harvard University (2005). *Report of the Task Force on Women in Science and Engineering*. Downloaded from <http://www.womenstaskforces.harvard.edu/reports.php>

Harvard Report Comment. The National Women's Law Center offers comments on the Report on Women in Science and Engineering. They make suggestions on climate surveys, analysis of data and publication, mentoring, and sexual harassment policies.

National Women's Law Center (2005). Comments on Harvard Task Forces Reports. June 27, 2005. Downloaded from <http://www.nwlc.org/pdf/CommentsonHarvardTaskForcesReports.pdf>

Put the Numbers Up & The List of Zeros. Donna Nelson, a chemist at Oklahoma University, conducts and publishes a survey of faculty diversity in the nation's top fifty science and engineering departments. Her detailed charts show the numbers of students graduating through PhD in the universities by gender and race/ethnicity, and the demographics of faculty, by rank, gender, and race/ethnicity. Another survey follows in 2005, including the top hundred departments (based on National Science Foundation rankings). There was little interpretation in the initial report – e.g., how do you explain gaps by gender and race/ethnicity, and the disparities between the numbers of diverse students graduating and the numbers of faculty hired? A more analytical article appeared in the JWMSE three years later.

The idea of getting fresh, direct data on the composition of faculties came from the awareness that routine reporting by universities was not accurate (e.g., per Rolison talk in 2000). In relation to a lawsuit in the 1970s, Shyamal Rajendar, a chemist, compiled what was called “a list of zeros” – a list of chemistry departments and the number of women on the faculty. Per Margaret Rossiter, a historian of science, “The list turned out to be a useful and long-lasting consciousness-raising device.” *Thus started a trend in just putting the numbers out.* An early “list of zeros” is among the references below and is reprinted in Rossiter's paper on p. 15.

Nelson, D.J. (2008). *Nelson Diversity Surveys*. Diversity in Science Association: Norman, OK: Diversity in Science Association.
<http://cheminfo.chem.ou.edu/~djn/diversity/top50.html>

Nelson, D.J. & Rogers, D.C. (2005). *A National Analysis of Diversity in Science and Engineering Faculties at Research Universities*. Downloaded from <http://cheminfo.ou.edu/~djn/diversity/briefings/Diversity%20Report%20Final.pdf> with updates primarily on minorities in 2007 at http://cheminfo.chem.ou.edu/faculty/djn/diversity/Faculty_Tables_FY07/07Report.pdf

Beutel, A.M. & Nelson, D.J. (2005). The Gender and Race-Ethnicity of Faculty in Top Science and Engineering Research Departments. *Journal of Women and Minorities in Science and Engineering*, 11(4).

Rossiter, Margaret W. (2000). 1970-2000: A Less Than Golden Age for Women in Chemistry? In Chemical Sciences Roundtable, Board on Chemical Sciences and Technology, National Research Council (2000). *Women in the Chemical Workforce: A Workshop Report to the Chemical Sciences Roundtable*. Pp. 6-16. Download or purchase from http://books.nap.edu/catalog.php?record_id=10047

Few Women in Academia. *C&EN* 49 (May 10, 1971). Table on p. 21. Not available online.

Letter Campaign. The National Women's Law Center and AAUW develop a website called Women's Prerogative (e.g., the prerogative to change her mind and change the world). On that website is a page that makes it very easy to look up a university by name and check the numbers of women and minorities in S&E departments, using the survey data collected by Donna Nelson. In addition, the site helps the reader send a letter to university officials or send a letter to Federal officials. It suggests other advocacy actions like preparing fliers to post on campus and letters to campus newspapers. (Check out your alma mater.)

Women's Prerogative (2008).
<http://www.womensprerogative.org/womeninsciences/index.cfm>

A Lawyer Helps. Catherine Pieronek, a lawyer and an education administrator at the University of Notre Dame, publishes an analysis of the potential differences between the application of Title IX to sports and the application to academic programs. With athletics, where the genders are segregated, it is easier to assess unequal allocations of resources such as scholarships, teams, and facilities. In the academic context, discrimination can result from policies, procedures, and practices that covertly and possibly unintentionally favor one sex over another. Remediation is not a simple shift of assets; it is much more complex. Pieronek thinks it is consistent with Title IX for a university to engage in targeted efforts to encourage women. The statute neither requires nor prohibits quotas to achieve equitable opportunity. Under the current law, there may not be different admissions standards for a particular gender, male or female. The institution may offer different services separately or differently for female students (and for males) as long as they are comparable services. Her discussion of what educational practices are consistent with Title IX and which are not allowed is useful to those engaged in special outreach and retention efforts. Likewise, her discussion of Title IX implications regarding employment practices is a good introduction.

Pieronek, Catherine (2005). Title IX and Gender Equity in Science, Technology, Engineering and Mathematics Education: No Longer an Overlooked Application of the Law. *Journal of College and University Law*, 31:2, 291-350.

2006 Federal Agency Plans In the Air

AAAS Panel. In February, Debra Rolison moderates a panel at the American Association for the Advancement of Science (AAAS) annual meeting, on Title IX Assessments of Science and Engineering. Her talk is titled "It's Not Just For Sports." Other speakers are Jocelyn Samuels of the National Women's Law Center ("An Effective Change Strategy"), Willie Pearson, Jr., of Georgia Tech ("Slow State of Change in STEM Departments"), Judith Sunley of the National Science Foundation ("Funding Agencies..."), George Whitesides of Harvard University ("Recruiting and Retaining Women Faculty"), and Richard Zare of Stanford University ("My Thoughts on Applying Title IX").

Synopsis at http://php.aaas.org/meetings/MPE_01.php?detail=1048 and summary at http://cenonline.blogs.com/aaas2006/2006/02/day_3_thinking_.html

Echos at AAAS. A reporter writes up the panel.

Halford, Bethany (2006). Day 3: Thinking About Title IX. *Chemical and Engineering News Meeting Weblog*, February 19. Downloaded from http://cenonline.blogs.com/aaas2006/2006/02/day_3_thinking_.html

NSF and Education Plans. An article summarizes plans for compliance reviews. Stephanie Monroe of the Department of Education is quoted, as are Alice Hogan, NSF, Debra Rolison, Naval Research Laboratory, and Lawrence Joseph representing National Wrestling Coaches Association. It recalls the origins of the plans in the GAO Report (see 2004, below) and broader issues of women's roles in society – the roots of the problem.

Early in 2006, NSF posts on its web site a presentation and frequently asked questions on its plans for compliance reviews. These materials are no longer visible. A general brochure on Title IX and the rights and options to individuals is posted. The web site no longer makes any mention compliance reviews or enforcement. See <http://www.nsf.gov/od/oeo/>

Munro, Neil (2006). Issues & Ideas – Title IX: Not Just for Athletes. *National Journal*, March 25, 2006. Download from <http://nationaljournal.com> with account.

Dept. of Education's Plans. A news article describes plans by the U.S. Department of Education Office for Civil Rights to conduct in-depth compliance reviews. Stephanie Monroe, assistant education secretary of the office, explains rough plans. Some of the issues are described, with quotes from Jocelyn Samuels of the National Women's Law Center. The public affairs officer from the Association of American Universities is quoted, responding to the plans. The website includes some comments from readers.

Federal Inquiry on Women in Science. *Inside Higher Ed*, March 28, 2006. Downloaded from <http://www.insidehighered.com/news/2006/03/28/women>

NASA Compliance Review. The aerospace-engineering and physics departments at the University of Michigan at Ann Arbor were visited by NASA. NASA representatives requested information on undergraduate recruitment and retention and the makeup of their faculties.

Federal Inquiry on Women in Science. (2006, March 28) *Inside Higher Ed*. Retrieved March 2008 from <http://www.insidehighered.com/news/2006/03/28/women>

Wilson, Robin & Karen Birchard (2006, January 20). Looking for Gender Equity in the Lab. *The Chronicle of Higher Education*, This Academic Life, 52. Retrieved October 2008 from <http://chronicle.com/free/v52/20a01901.htm>

Zare Article. In May, Richard Zare of Stanford University publishes "Sex, Lies, and Title IX: Federal law banning sex discrimination in schools may do as much for academics as it has for athletics." It is a reasoned, calm and short statement of the case for pressure on universities to comply with Title IX.

Zare, Richard N. (2006, May 15). Sex, Lies, and Title IX. *Chemical and Engineering News*, 84(20), pp. 46-49. Downloaded from <http://pubs.acs.org/cen/education/84/8420education.html>

Rolison Speech. In June, Debra Rolison speaks on Title IX and science and engineering at the annual WEPAN (Women in Engineering Proactive Advocated Network) in June. Her presentation covers all the major points of the argument: scientists are overwhelmingly white males which does not reflect the composition of graduates in S&E; Title IX has worked to improve S&E participation of women; national competitiveness is at risk; much recruitment of faculty is biased according to research; Federal agencies need to use Title IX compliance to put pressure on grantees (most of research institutions in the U.S.); external pressure has worked (citing the case of MIT).

Rolison, Debra R. (2006). *Title IX as a Change Strategy for Science and Engineering – the Path Forward*. Downloaded from http://dpubs.libraries.psu.edu/DPubS?service=Repository&version=1.0&verb=Disseminate&handle=psu.wepan/1181066429&view=body&content-type=pdf_1#

Society of Women Engineers Position Statement. Also in June, SWE posted a position paper that is a very readable summary of the new policy cause.

Society of Women Engineers (2006). *SWE General Position Statement on the Application of Title IX to the Science, Technology, Engineering, and Mathematics (STEM) Fields*. Retrieved October 2008 from http://societyofwomenengineers.swe.org/images/stories/SWE_STEM_Education_Statement.pdf

Another Statistics Milestone. The American Association of University Professors issues a major statistical report. It provides data on four measures of gender equity for faculty at over 1,400 colleges and universities across the country – across all fields, not just science and engineering. There are individual campus listings with the belief that discussion at the local level is more productive than a focus on the more abstract national picture. Four indicators compared in the report for men and women faculty are employment status (full- and part-time); tenure status for full-time faculty; promotion to full professor rank; and average salary for full-time faculty. The report consists of three sections: an article on “Organizing around Gender Equity,” authored jointly by Professor Martha West of the University of California, Davis, and John W. Curtis, AAUP Director of Research and Public Policy; aggregate national tables for each of the four equity indicators by type of institution; and an appendix listing the four indicators for each individual college and university. Data for the report are drawn primarily from the AAUP Faculty Compensation Survey, with additional data on part-time faculty from the U.S. Department of Education.

American Association of University Professors (2006). *AAUP Faculty Gender Equity Indicators 2006*. By Martha S. West and John W. Curtis. Downloaded from <http://www.aaup.org/AAUP/pubsres/research/geneq2006>

2007 Beyond Bias Is Issued; Legislation Follows

Rolison Profile. Science magazine features Debra Rolison as a scientist/advocate.

Coontz, Robert (2007). Debra Rolison Profile: Small Thinking, Electrified Froth, and the Beauty of a Fine Mess. *Science*, 9 February 2007, 315 (5813), p. 787. Download by purchase from <http://www.sciencemag.org/cgi/content/summary/315/5813/787>

US Agencies Act. Science reports that NSF, DOE and NASA have visited four academic departments at three universities to monitor compliance with Title IX. They examined grievance procedures, interviewed dozens of female students and faculty, and gathered data, for example, whether male and female graduate students were equally likely to get research assistantships. Agency officials did not explain the basis for determining compliance, nor did they say what would happen if they found evidence of discrimination. NSF reported that its responsibility would subsequently be covered by the White House Office of Science and Technology Policy (OSTP) for monitoring compliance.

Bhattacharjee, Yudhijit (2007). U.S. Agencies Quiz Universities on the Status of Women in Science. *Science*, 30 March 2007, 315, p. 1776. Available for purchase from <http://www.sciencemag.org/cgi/content/summary/315/5820/1776>

Report: Beyond Bias. The Committee on Science, Engineering and Public Policy within the National Academies charged a Committee on Maximizing the Potential of Women in Academic Science and Engineering to recommend methods for achieving the goal of fully utilizing talent represented in women scientists and engineers. They looked at research, academic culture, and effective practices in education and faculty recruitment in order to make recommendations. The Chair of the group of 15 was Donna Shalala, President of the University of Miami, and they were supported by multiple grants and a project staff headed by Laurel Haak. They had access to any expert or leader in the country. The book is an outstanding and readable summary of research, profiles of particular key projects, and recommendations for action. It supersedes dozens of prior task force and commission reports in repeating and incorporating now-familiar action items. One of its recommendations is that

an inter-institutional monitoring organization be created to monitor compliance with Title IX. (See pp. 232-239)

Committee on Maximizing the Potential of Women in Academic Science and Engineering (2007). *Beyond Bias and Barriers: Fulfilling the potential of women in academic science and engineering*. Committee of Science, Engineering, and Public Policy. Downloadable for a fee or purchase from http://www.nap.edu/catalog.php?record_id=11741

Congressional Hearing re Beyond Bias. The Science & Technology Committee's Subcommittee on Research and Science Education held a hearing on October 17th, to discuss the barriers to women's participation in S&E. Witnesses included Donna Shalala, President of the University of Miami (and a chair of the committee that produced *Beyond Bias*), Kathie Olsen, Deputy Director of NSF, Freeman Hrabowski of University of Maryland Baltimore County, Myron Campbell of University of Michigan, and Gretchen Ritter, University of Texas at Austin. It was a review of the message of *Beyond Bias* and an review of responses to the problem.

U.S. House of Representatives, Committee on Science and Technology (2007). *Press Release: Subcommittee Investigates Barriers to Women Seeking Science and Engineering Faculty Positions*. Downloaded from <http://science.house.gov/press/PRArticle.aspx?NewsID=2000>

Ritter, Gretchen (2007). *Women in Academic Science and Engineering: Statement prepared for hearing*. Subcommittee on Research and Science Education, House Committee on Science and Technology, October 17, 2007. Downloaded from <http://gop.science.house.gov/hearings/research07/Oct17/Ritter.pdf>

Day-After-Hearing News. A news piece reports that the witnesses said a new quasi-governmental agency is needed to enforce Title IX in science and engineering. The National Collegiate Athletic Association, for example, acts as a watch dog in athletics. Witnesses described a number of strategies that improve recruitment and retention of female faculty: childcare grants for professional conferences, flexible tenure timelines, salary equity review, more attention to biased letters of recommendation, postdoctoral support, and broader faculty searches. Witnesses noted that universities did not like directives from government, but that the government (esp. NSF and NIH) had leverage through the funding process. Extensive comments attached to this article illustrate the depth of feeling, hostility, and level of thinking about the issue from the public.

Female Faculty and the Sciences. *Inside Higher Ed*, October 18, 2007. Downloaded from <http://www.insidehighered.com/news/2007/10/18/womensci>

Bill Introduced. The same day as the Insider Higher Ed article (above), and the day after the Science & Technology subcommittee hearing, Representatives Eddie Bernice Johnson (D-TX) and Silvestre Reyes (D-TX), Co-Chairs of the House Diversity and Innovation Caucus, sponsor a briefing on "The Leaky Science and Engineering Pipeline: How Can We Retain More Women in Academic and Industry?" Co-sponsors include the Society of Women Engineers, the American Association of University Women, American Chemical Society, the Association of Women in Science, Girls Incorporated, National Center for Women and Information Technology, National Science Teachers Association and the National Women's Law Center. Donna Shalala summarizes the recommendations of *Beyond Bias*, and Lisa Frehill of the Commission of Professionals in Science and Technology summarizes a national survey of women in engineering. The legislation is introduced by Johnson (D-TX) and adopts recommendations from *Beyond Bias*.

H.R. 3514 Gender Bias Elimination Act of 2007. Downloaded from <http://www.govtrack.us/congress/bill.xpd?bill=h110-3514>

35th-Year Resource Kit. AAUW publishes a comprehensive resource kit for advocacy of continued enforcement of Title IX. It states that "Title IX is more than athletics" but does not provide much content related to women in S&E and higher education. The section on girls in science, technology, engineering and math education focuses on K-12: more teachers in STEM are needed; we need STEM after-school programs; more emphasis on STEM in early education; and measurement of student achievement in science.

American Association of University Women (2007). *AAUW Title IX 35th Anniversary Resource Kit*. Downloaded from http://www.aauw.org/advocacy/issue_advocacy/actionpages/upload/titleixResourceKit.pdf

Magazine Feature. MS Magazine's fall issue (35th anniversary issue) features "Title IX at 35" as a topic on its cover. It recalls Bernice Sandler filing discrimination complaints that got the attention of Edith Green (D-OR) and Patsy Mink (D-HI) who held hearings and sponsored the legislation. Caryn McTighe Musil summarizes gains in 35 years, including a nice graph, and recalls differences between her own and her daughter's experience as new faculty. Jennifer Hahn summarizes six areas in which advances have been made, including "Girls participation and achievement in math and science have increased substantially."

Musil, Caryn McTighe (2007). Scaling the Ivory Towers. *MS Magazine*, Fall 2007. Pp. 43-45.

Hahn, Jennifer (2007). Schoolgirl Dreams. *MS Magazine*, Fall 2007. Pp. 46-47.

Book Promotion. NOW posts an article promoting the issuance of Title IX at 35 – Beyond the Headlines, which is pending release.

National Organization for Women Foundation (2007). *Women Make Progress Under Title IX, But Barriers Persist*. By Jan Erickson, Director of Foundation Programs. Downloaded from <http://www.nowfoundation.org/news/fall-2007/titleix.html>

2008 More Findings on the Problem

35th Year Report & Action Agenda. The National Coalition for Women and Girls in Education (chaired by AAUW) uses a Congressional briefing on January 23rd to release the report Title IX at 35. Co-sponsors include the Association for Women in Science and the Society of Women Engineers. There are speeches on Title IX and sports, women in nontraditional fields, and sexual harassment. The report includes a section on education in science, technology, engineering and mathematics. The action agenda includes recommendations that Congress oversee Title IX compliance reviews by the Department of Education Office of Civil Rights, and recommends increased funding for programs that focus on women and girls in S&E.

National Coalition for Women and Girls (2008). *Title IX at 35: Beyond the Headlines*. Download from www.ncwge.org (Full PDF at <http://www.ncwge.org/PDF/TitleIXat35.pdf> ; Executive summary at <http://www.ncwge.org/PDF/TitleIXat35-summary.pdf>)

A Listening Meeting. The Congressional Diversity and Innovation (D&I) Caucus holds a meeting of stakeholders on February 28th to ask: what are the three biggest barriers to minorities and women entering the STEM workforce, what institutional policies and practices help, and what can Congress and federal agencies do to promote a better environment? The D&I Caucus – now 55 Members of

Congress -- was launched in June, 2007, "to increase the competitiveness and security of the U.S. by growing the STEM workforce through expansion of its diversity." Over 60 organizations register as stakeholders.

Ad Hoc Position Paper. In February, R. Sevo posts this timeline and a 5-page position paper summarizing arguments and data, as resources to explain the issue. Recommendations derive from [Beyond Bias](#).

Sevo, Ruta (2008). A Title IX Timeline: The Enforcement of Title IX in Science and Engineering Education. Download from <http://momox.org/TitleIXSETimeline.html> or <http://momox.org/TitleIXSETimeline.pdf>

Sevo, Ruta (2008). The Case for Title IX Compliance in Science and Engineering. Download from <http://momox.org/TitleIXCase.pdf>

Findings Delivered. The National Academies Presses announces a report on faculty in science, engineering, and mathematics. Two surveys were conducted per congressional request (see above: 2002, Ron Wyden). One surveyed departments and their policies, looking at hiring, tenure, and promotion practices. The second surveyed faculty at top research universities, looking at demographics, employment experience, and allocation of resources.

Committee on Gender Differences in Careers of Science, Engineering, and Mathematics (2008). *Assessing Gender Differences in the Careers of Science, Engineering, and Mathematics Faculty*. Washington, DC: National Research Council. Pending availability in June from http://www.nap.edu/catalog.php?record_id=12062

Does Compliance Review Work? Sociologists Kalev and Dobbin consider whether, with affirmative action, compliance reviews or law suits worked to increase the employment of women or African Americans. "Compared to lawsuits, compliance reviews appear to have a greater capacity to elicit lasting organizational change, evidently because they target recruitment, hiring, and promotion routines, but their effects are mediated by the regulatory environment." Reviews initiated in the 1980s were much less effective than those initiated in the 1970s.

Kalev, Alexandra and Dobbin, Frank (forthcoming). Enforcements of Civil Rights Law in Private Workplaces: The Effects of compliance reviews and lawsuits over time. *Law & Social Inquiry*, pending.

Word about Compliance Reviews. A few participants in campus visits that were conducted shared their experience. Review teams were asking for both qualitative and quantitative information, covering recruitment, outreach, admissions, enrollments, academic advising, classroom environment, policies regarding family leave, safety, and sexual harassment. They asked for information about practices and programs in place that are aimed at improving the status of women. Paige Smith reported that NASA visited the aerospace and engineering departments at the University of Maryland, College Park. As the Director of a Women in Engineering Program, Dr. Smith found herself a key resource in preparations for the review, and advised others in similar positions to anticipate the role.

Smith, Paige & Catherine Pieronek (2008). *Discussion – Finding Meaning in Title IX*. Working session at 2008 WEPAN National Conference. No paper available.

Looking for Metrics. NSF funded a workshop to discuss possible metrics for measuring whether an institution is actually increasing diversity. The initial focus was on NSF's requirement that every

request for funding explain how any research or education activity will have “broader impacts” on society, which can include increasing the participation of under-represented groups. The workshop discussed whether the metrics might also substantiate compliance with Title IX. Apparently colleges and universities are already required to file a report called “The Equal Employment Opportunity Higher Education Staff Information Report (EEO-6)” biennially that covers the composition of faculty and staff. In addition, Federal contractors (including most colleges and universities) must supply Affirmative Action plans. Those two could be a first step in public reporting of status at institutions. The workshop suggested that these two reports be expanded, optionally, to include additional metrics, which they outline.

Cady, Elizabeth & Fortenberry, Norman (2008). *Metrics for Assessing Broadening Participation in a Title IX Context*. 2008 WEPAN Conference Proceedings. Retrieved October 17, 2008 from the WEPAN Conference archives, via <http://www.wepan.org>

SWE Makes It Central. The Society of Women Engineers is making the issue a priority for its public policy advocacy in 2008.

Pieronek, Catherine & Shanahan, Betty (2008). *SWE Public Policy Initiatives for Women in Engineering*. 2008 WEPAN National Conference, June 10, 2008. Retrieved October 2008 via www.wepan.org – National Conferences – 2008 Conference – Conference Presentations

Unpublished Op Ed. The Directors of AWIS (Association for Women in Science) and SWE (the Society of Women Engineers) distribute an unpublished op-ed on Title IX, pointing out that compliance reviews are “not new” – the law has been applicable to all educational programs receiving federal funds for 36 years.

Koster, Janet Bandows and Shanahan, Betty (2008). Title IX: Ensures Equality in Education. Cover letter July 29. Downloaded October 2008 from http://www.awis.org/documents/TitleIXOp-EdFINAL_000.pdf

Does It Mean Quotas? Allison Kasic points out that the use of quotas to bring equity to sports had negative consequences, and they are not a requirement of the law.

Kasic, Allison. (2008, June 26). Let’s not gloss over Title IX’s faults. *The Christian Science Monitor*. Downloaded November 2008 from <http://www.csmonitor.com/2008/0626/p09s01-coop.html>

Bill Re-Introduced? Representative Eddie Bernice Johnson (D-TX) introduces Fulfilling the Potential of Women in Academic Science and Engineering Act of 2008, through the House Science and Technology’s Subcommittee on Research and Science Education. It sounds much like H.R. 3514 Gender Bias Elimination Act of 2007, above.

U.S. House of Representatives (2008, May 8). Subcommittee Reviews Legislation to Remove Barriers for Women in Academic Science and Engineering Fields. *Press Release*. Downloaded November 2008 from <http://science.house.gov/press/PRArticle.aspx?NewsID=2186>

“Congressional Panel Considers Call for More Female Science Professors.” *The Chronicle of Higher Education*, May 8, 2008. Downloaded November 2008 from <http://chronicle.com/news/article/4457/congressional-panel-considers-call-for-more-female-science-professors>

Anniversary DVD for Students. A 48-minute documentary film is shown on ESPN in March-June 2008. It will be distributed as a DVD with a facilitator's guide, aimed at grades 3-12, starting December 2008.

"License to Thrive: Title IX at 35." Produced by T-Time Productions, distributed by Scholastic and Women Make Movies. See <http://licensetothrive.org/story/detail/id/124>

Rich Web Sites for Title IX Resources

American Association of University Women (AAUW).

http://www.aauw.org/advocacy/issue_advocacy/actionpages/titleix.cfm (Position papers, comprehensive resource kit, research reports, action guide, announcements of briefings, hearings, and press conferences, testimony to Congress)

National Coalition for Women and Girls in Education (NCWGE). <http://www.ncwge.org/> (Position papers, reports, press releases, testimony to Congress)

National Women's Law Center (NWLC). Esp. Gender Equity in Education.

<http://www.nwlc.org/display.cfm?section=education> (Press Conferences, press releases, testimony)

Title IX. <http://www.titleix.info/> (Funded by NWLC; information, fact sheets, action guides, products, some content on higher education and S&E)

Society of Women Engineers <http://societyofwomenengineers.swe.org/> (Position papers, statistics on women in engineering)

Women's Prerogative: Women in the Sciences. <http://www.womensprerogative.org/> (campaign on women in science; information on Bureau of Labor Statistics data on women, lookup faculty profiles by university name & write letters to campus or federal officials; site developed by National Women's Law Center and AAUW)

WEAA Equity Resource Center. <http://www2.edc.org/WomensEquity/resource/title9/index.htm> (now frozen in time, but still contains comprehensive resources for state coordinators for Title IX)

U.S. Department of Justice, Civil Rights Division, Title IX page.

<http://www.usdoj.gov/crt/cor/coord/titleix.htm> (legal resources and complaint form)

Commission on Professionals in Science and Technology. <http://www.cpst.org/> (authoritative statistics on human resources)

American Civil Liberties Union, Education. <http://www.aclu.org/womensrights/edu/index.html>
(Articles, press releases, fact sheets)

Feminist Majority Foundation. <http://feminist.org/education/> (Position papers, research reports, action network)

Title IX Blog. <http://title-ix.blogspot.com/> (heavy sports focus, detailed reports of particular cases & complaints, lots of links to other sites)