

# Women in SCIENCE: A Work in PROGRESS

*Studies show gender bias still exists in the world of science, but today the challenge is less a battle of the sexes and more about tough personal choices.*

It's a fact that gender discrepancy in the field of science exists. It's a fact that changes in legislation, academic policies, and an overall increased awareness of gender bias are improving a woman's chances of succeeding in all the STEM (science, technology, engineering, and math) fields. However, it is also a fact that a woman who wants to have a family and be a scientist will experience more disadvantages than her male counterpart. So what is a girl who wants to pursue bench science to do? Make career and family choices carefully, our female science thought leaders say.

According to an AAUW report (the American Association of University Women), women in scientific fields do still experience bias that negatively influences their career progress and participation in upper-management roles. The report states that instances of explicit bias seem to be decreasing, but implicit bias — social behavior that is an automatic response to learned stereotypes — continues to

have an adverse effect on women. Workplace environment, bias, and family responsibilities all play a role in women's choices to leave STEM fields at a higher rate than their male peers, the report says.

PharmaVOICE spoke with several women who hold or have held scientific research roles to get their input on the issues facing women in science.

## ADDRESSING THE GENDER BIAS

According to Mary Dominiacki, Ph.D., a contractor clinical publications lead at AstraZeneca, gender bias does still exist in the field, but she is fortunate enough to not be experiencing it in her current role.

"People think everything is fine and they are not aware of the issues until they come up against them or someone they know comes up against a bias issue," Dr. Dominiacki says. "I have observed gender bias at play since the beginning of my career. I have watched people get promoted and people not get promoted based on gender. Disparities are the most obvious at the top levels. There are far fewer female full professors at universities or women CEOs on the business side."

Margaret Lee, Ph.D., VP of research, at Zalicus, says within her current work environment there is no gender bias, but she too knows other women who have had to cope with this in their workplace.

"My personal experience has been gender neutral," says Sarah Holloway, Ph.D., senior VP, strategic planning, at Sudler & Hennessey. "My gender has not held me back or given me an advantage. As a former senior market assessment manager at Pfizer, I was once the only

female in a room full of male scientists, but I didn't feel that gender was an issue or relevant to the situation. If there was any bias associated with the situation, it would have been that I was a scientist who had transitioned to the commercial side."

These three thought leaders appear to be in the minority — no pun intended; there are numerous blog accounts, lawsuits, news stories, and studies that support that gender bias exists, not only in terms of opportunities made available to women, but also in the pay scale for women in science.

According to several reports and articles on the subject, a woman has a more or less equal footing in the field until she begins to have children, and then family obli-

*"The best way for women to overcome the generalities and misperceptions is to be specifically brilliant."*

**DR. SARAH HOLLOWAY**  
Sudler & Hennessey



*"There are many people, including women, who do not feel there is gender inequity until it happens to them."*

**DR. MARY DOMINIECKI**  
AstraZeneca



### Women in Science Affinity Group

The Healthcare Businesswomen's Association's Women In Science (WIS) affinity group provides women in scientific roles with professional support for their full and equal career advancement, through interactive, empowering, educational, professional development programs and a platform that facilitates effective networking and collaboration. WIS membership includes women with an M.D., Ph.D., Pharm.D., R.N., R.Ph., or other medical/scientific degree and/or women who are working in a research, medical, or regulatory functions within the healthcare industry.

"The WIS affinity group brings the powerful mission of the HBA to support the unique professional needs of women in scientific roles," says Margaret Lee, Ph.D., VP of research, at Zalicus. "Through tailored programming and leadership opportunities, WIS offers this important segment of industry women the professional support they need for their full career advancement."

gations start cutting into the time she can spend at work.

Despite all of the social efforts to create a more equal opportunity for women in science, the nature of the beast and a woman's desire to have a family may preclude a complete gender-neutral environment, ever.

"I don't think gender bias will ever be completely erased from scientific fields," says Dr. Dominiecki. "There have been certain incre-

mental improvements, but they seem to be very small. One of the driving factors behind the disparity could be women's choices around family and career."

According to a study conducted by the Collaborative on Academic Careers in Higher Education (COACHE) at Harvard University, female STEM faculty express lower job satisfaction than do their male peers. Although trying to balance work and family responsibilities is not specific to women in STEM, the study suggests that the nature of scientific research may make work-family balance particularly challenging for female STEM faculty members.

The lab knows no official stop time — it's an unrelenting 24/7 — so it's difficult to just pack up and go home. The study emphasizes that stopping for any period of time, to take advantage of stop-the-tenure-clock leave for instance, could be deadly to a research program.

In Dr. Lee's case, she may not have experienced gender bias because she is not the primary caregiver of her children. Her husband is a stay-at-home dad, so she is able to perform on the same time commitment level as her male counterparts.

"My decision to have a family and a career in science was influenced by my husband being able to take over the household," she says. "Our situation makes it very easy for me to push myself beyond my comfort zone; other women may not have this luxury."

According to the AAUW, the number of women in science and engineering roles is growing, yet men continue to outnumber women, especially at the upper levels of these professions. In elementary, middle, and high school, girls and boys take math and science courses in roughly equal numbers, and about

*"When companies realize that investing money in support of women could have a positive impact on their bottom line, we will see much more of it."*

**DR. MARGARET LEE**  
Zalicus



as many girls as boys leave high school prepared to pursue science and engineering majors in college. Yet fewer women than men pursue these majors.

Among first-year college students, women are much less likely than men to say they intend to major in science, technology, engineering, or math. By graduation, men outnumber women in almost every science and engineering field, and in some cases, such as physics, engineering, and computer science, the difference is dramatic, with women earning only 20% of bachelor's degrees. Women's representation in science and engineering declines further at the graduate level and yet again in the transition to the workplace.

The decline may be due to women of child-bearing age making difficult choices around balancing family with work, and for better or worse, women will more often choose to make the family a priority at the expense of their career opportunities, Dr. Lee says.

The realities of a career in science involve long hours, the need for flexibility, and being away from home much of the time. Not only women, but men also, have to make sacrifices in their social or family life when trying to perform miracles on the bench.

"Bench work can frequently be very time-demanding and somewhat unpredictable," Dr. Lee says. "For women who are the primary caregivers who need to do the pick up and



## Notable women in science

Women have been making valuable contributions to science for centuries. It is alleged in Ancient Greece that women who practiced medicine had to dress as men, since it was against the law for women to be physicians at that time. And today's female scientists continue to blaze a trail for other women who wish to pursue a career in medical science. Below are just a few notable women from more recent times and their contributions to society.

**GERTRUDE BELLE ELION, PH.D.** (Jan. 23, 1918 – Feb. 21, 1999) Dr. Gertrude Elion was an American biochemist and pharmacologist and a 1988 recipient of the Nobel Prize in Physiology or Medicine, together with George Hitchings and Sir James Black. Attributed with the discovery of many drugs, her most significant was the AIDS drug, AZT. She was the first woman to be inducted to the National Inventors Hall of Fame. According to her autobiography, after graduating from college in the 1930s, she could not get a job because “jobs were scarce and the few positions that existed in laboratories were not available to women.” She was the only female in her graduate chemistry class when she attended graduate school at New York University in the fall of 1939. “No one seemed to mind, and I did not consider it at all strange,” she says in her autobiography. She would eventually be hired by Burroughs-Wellcome, which is now GlaxoSmithKline. She never married.

**BARBARA MCCLINTOCK, PH.D.** (June 16, 1902 – Sept. 2, 1992) Dr. McClintock was the only woman to receive an unshared Nobel Prize in Physiology or Medicine in 1983. She developed the technique for visualizing maize chromosomes and used microscopic analysis to demonstrate many fundamental genetic ideas, including genetic recombination by crossing-over during meiosis, a mechanism by which chromosomes exchange information. Her work is considered groundbreaking, and she is considered one of the most famous cytogeneticists of the world. Two biographer's present different views on gender bias in her career: Evelyn Fox Keller's opinion was that Dr. McClintock was long ignored because she was a woman working in the sci-

ences, whereas Nathaniel C. Comfort asserts that Dr. McClintock was well regarded by her professional peers, even in the early years of her career. She never married.

**ANITA B. ROBERTS, PH.D.** (April 3, 1942 – May 26, 2006) Dr. Roberts was a molecular biologist who made pioneering observations of a protein, TGF- $\beta$ , that is critical in healing wounds and bone fractures and that has a dual role in blocking or stimulating cancers. Dr. Roberts was the 49th most-cited scientist in the world and the second most-cited female scientist in 2005. She was diagnosed with stage IV gastric cancer in March 2004 and started a blog, which is still posted online, detailing her daily struggles with the disease.

**SUSAN ADELE GREENFIELD, CBE.** (Oct. 1, 1950 – ) Baroness Greenfield, CBE (Commander of the Order of the British Empire) is a British scientist, writer, broadcaster, and member of the House of Lords. Dr. Greenfield, whose specialty is the physiology of the brain, has worked to research and bring attention to Parkinson's disease and Alzheimer's disease, but she is best known as an advocate of science. Dr. Greenfield has written several popular science books about the brain and consciousness, and she regularly gives public lectures, and appears on radio and television. Dr. Greenfield has created three research and biotechnology companies: Synaptica, BrainBoost, and Neurodiagnostics, which research neuronal diseases such as Alzheimer's disease. She was the first member of her family to go on to university, at St. Hilda's College, Oxford.

**CAROL W. GREIDER, PH.D.** (April 15, 1961 – ) Dr. Carol Greider was noted by the media in 2009 as the scientist who was folding laundry when she was notified she had won the Nobel Prize for Physiology or Medicine, along with Elizabeth Blackburn and Jack W. Szostak, for their discovery that telomeres are protected from progressive shortening by the enzyme telomerase. Dr. Greider made the discovery that telomeres could be lengthened by the enzyme telomerase while working in her lab on Christmas Day 1984. Dr. Greider is the Daniel Nathans Professor and the Director of Molecular Biology and Genetics at the Johns Hopkins Institute of Basic Biomedical Sciences. She is the mother of two teenagers — a son and a daughter.

drop off at daycare, for example, a scientific career can be very difficult. Science doesn't work 9 to 5; some experiments can run for 12 hours or more. Family constraints make it difficult for women to adhere to a schedule needed to perform the types of experiments that are more outside the box and thought provoking.”

At least in academics, it is extremely diffi-

cult for a woman to achieve tenure while she is raising a family, and there are few role models to follow, Dr. Dominiacki says.

“For example, when I was an assistant biology professor at Slippery Rock University, there were 13 faculty members within the biology department and only three were women,” she says. “None of these women had children at

## Gender differences in science careers by the numbers

- Fewer women than men hold jobs in science and engineering –27% to 73%.
- Women earn more than half of all doctoral degrees in biology but there are far fewer women in postdoctoral, tenure-track, and tenured faculty positions.
- Fewer than 3% of Nobel Laureates have been female.
- One year after graduation, women in science earn fewer dollars (24% less) than their male counterparts.

## DISPARITY IN GRANTS AND VC FUNDING A RESULT OF WOMEN'S OWN BIAS?

A recent study of institutions that are affiliated with Harvard Medical School found that female and male investigators had equal success in winning grants from NIH. However:

- Women requested fewer dollars: \$115,000 on average vs. \$150,000 for men
- Women received fewer dollars on average: \$98,000 vs. \$125,000 for men
- Women generally request smaller loans from banks than men

Successful women entrepreneurs report that their major hurdle was accessing venture capital. According to the Center for Women's Business Research, women-owned businesses receive only 3% to 5% of venture capital. And almost all angel funding — 90% — goes to men, however:

- Women represent fewer than 10% of the requests for angel dollars
- When women do request venture funds, gender bias almost disappears (13% of women are funded vs. 15% of men)

Source: Massachusetts Life Sciences Center. For more information, visit [masslifesciences.com](http://masslifesciences.com).

the time. All of the men who had children also had stay-at-home spouses.”

A study conducted by the National Academy of Sciences supports Dr. Dominiacki's observation. Women comprise a small portion of the science and engineering faculty members at research universities, and they typically receive fewer resources and less support than their male colleagues.

The report states that it's not lack of talent, but unintentional biases and outmoded institutional structures that are hindering the access and advancement of women. Further-

more, rules that appear quite gender neutral may function in a way that lead to differential treatment or produce differential outcomes for men and women. For example, structural constraints and expectations built into academic institutions assume that faculty members have substantial spousal support, the reports states.

Dr. Dominiecki credits her success in part to the fact that her spouse is willing to perform most family and household duties.

“I have a very supportive spouse; his job does not require travel so he watches the kids when I have to be away,” she says. “I do know several women whose careers have suffered because they don’t have this flexibility.”

**THE MILLENNIAL DIFFERENCE**

Men traditionally have more support at home from their spouse, which allows them to

work the long hours necessary; but this too is changing, some studies report.

A new generation of millennials — both men and women — are bringing a different view on family roles and expectations to the work place.

According to a recent Accenture report, millennials have different expectations about life-work balance than their predecessors, and our thought leaders say this attitude could bring about some changes in the scientific field. Millennials, identified as those born after 1977, have fathers who were actively involved in their upbringing. Millennial women, therefore, expect their partners to contribute to the child raising as much as or more so than their own fathers did, the report says. Women who no longer view child rearing as a job only a mother can do are opening up more opportunities for themselves on the career front. However, the study also showed that quality of life

is often more important than career growth for millennials. So much like today’s female scientists, they may not have the desire to put in the long hours of a scientific career, regardless of household obligations.

Dr. Lee believes that the millennial generation may help shape a better pathway for women scientists of the future.

“Millennials very much think outside of the box and what they will put up with is very different from other generations,” she says. “The younger generation is saying, ‘I don’t want to do it this way, so let me come up with another way and pitch that to my organization.’”

As a result, this attitude could force companies and academic centers to provide more support for women, and labs may have to work harder to retain top talent,” she says.

“Employers will need to provide creative work environments or atmospheres that will enable people to have on-site child care and

**MEDIAN ANNUAL SALARY OF SCIENTISTS AND ENGINEERS EMPLOYED FULL TIME, BY HIGHEST DEGREE, BROAD OCCUPATION, AGE, AND SEX**

Occupation and age (yrs)	All Degrees			Bachelor's			Master's			Doctorate		
	Both sexes	F	M	Both sexes	F	M	Both sexes	F	M	Both sexes	F	M
<b>All occupations</b>	\$65,000	\$53,000	\$75,000	\$60,000	\$48,000	\$68,000	\$70,000	\$57,000	\$80,000	\$82,000	\$70,000	\$90,000
<b>29 and younger</b>	42,000	39,000	46,000	40,000	36,000	45,000	48,000	45,000	55,000	50,000	45,000	60,000
<b>30-39</b>	64,000	53,000	72,000	60,000	50,000	67,000	65,000	53,000	78,000	66,000	60,000	71,000
<b>40-49</b>	75,000	60,000	85,000	70,000	55,000	78,000	79,000	64,000	90,000	85,000	71,000	90,000
<b>50-75</b>	72,000	58,000	80,000	63,000	50,000	72,000	72,000	60,000	81,000	91,000	78,000	97,000
<b>Scientist</b>	72,000	64,000	75,000	70,000	61,000	72,000	76,000	66,000	82,000	76,000	64,000	82,000
<b>29 and younger</b>	46,000	41,000	50,000	45,000	38,000	47,000	54,000	50,000	60,000	45,000	42,000	51,000
<b>30-39</b>	70,000	62,000	74,000	70,000	65,000	72,000	74,000	62,000	80,000	60,000	55,000	65,000
<b>40-49</b>	80,000	73,000	85,000	79,000	73,000	82,000	88,000	75,000	93,000	80,000	69,000	84,000
<b>50-75</b>	78,000	70,000	80,000	75,000	68,000	76,000	79,000	70,000	82,000	88,000	75,000	92,000
<b>Biological/life scientist</b>	58,000	52,000	61,000	50,000	45,000	50,000	59,000	55,000	60,000	72,000	60,000	78,000
<b>29 and younger</b>	30,000	29,000	32,000	27,000	27,000	30,000	43,000	43,000	38,000	37,000	36,000	37,000
<b>30-39</b>	52,000	53,000	52,000	53,000	60,000	50,000	52,000	52,000	52,000	52,000	48,000	55,000
<b>40-49</b>	65,000	60,000	66,000	56,000	55,000	60,000	60,000	65,000	59,000	75,000	69,000	80,000
<b>50-75</b>	74,000	70,000	76,000	59,000	56,000	61,000	68,000	68,000	68,000	90,000	76,000	95,000
<b>Physical scientist</b>	61,000	50,000	65,000	55,000	48,000	56,000	67,000	59,000	72,000	82,000	64,000	85,000
<b>29 and younger</b>	36,000	40,000	33,000	34,000	38,000	31,000	42,000	50,000	35,000	45,000	45,000	50,000
<b>30-39</b>	58,000	50,000	59,000	54,000	47,000	58,000	60,000	56,000	60,000	65,000	54,000	69,000
<b>40-49</b>	72,000	63,000	75,000	63,000	63,000	63,000	78,000	63,000	80,000	84,000	73,000	86,000
<b>50-75</b>	74,000	58,000	80,000	62,000	50,000	65,000	74,000	62,000	75,000	95,000	80,000	97,000

Figures Updated December 2008

Source: Committee on Women in Science, Engineering, and Medicine. For more information, visit [nationalacademies.org](http://nationalacademies.org).

more flexibility in the work environment to enable people to balance the responsibilities of family while still having access to scientific opportunities,” Dr. Lee says.

The COACHE research supports this as well. If institutions improve the climate of their STEM departments as well as their work-life balance policies, they can better recruit and

retain female faculty. Furthermore, because the factors that predict satisfaction are the same for female and male faculty in STEM, all faculty and institutions are likely to benefit from these improvements, according to the report.

One of these benefits could include paying for household chores. Stanford’s Clayman Institute for Gender Research calculated how

much time scientists spent conducting household chores. The number is about 19 hours a week, with women performing more than half (54% to 28%) of those hours.

The report, which focuses on ways to improve the work-life balance for scientists at universities, was prompted in part by the fact that Carol Greider, Ph.D., of Johns Hopkins University was folding laundry when she learned that she won the 2009 Nobel Prize in medicine. Dr. Greider is one of the world’s pioneering researchers on the structure of chromosome ends known as telomeres.

According to the paper’s two authors, Director of the Clayman Institute Londa Schiebinger and Clayman Institute Research Consultant Shannon Gilmartin, work done in the home is “very much an academic issue and not peripheral in any way to scientists’ professional lives.”

Dr. Schiebinger writes that young women may think twice before going into the field of science because of the daunting amount of time needed at the job — about 60 hours a week — combined with their disproportionate share of housework and childcare.

In the report, Dr. Schiebinger proposes a concept most likely way before its time — if for no other reason than financial — that institutions and companies include compensation for household labor in their current benefits programs for scientists. Dr. Schiebinger reports that within the next 20 years, paying for house-keeping services or some other compensation should be part of all benefit packages.

While these types of efforts would help swing the gender bias a little more to neutral, in this economy Dr. Lee does not expect that any great strides will occur to support programs for women.

“Programs like these cost money and we are all struggling with a difficult economy,” she says. “It’s going to take a richer society to make the changes; but when companies realize that this is a good investment and could have a positive impact on the bottom line, we will see more of these types of changes.”

When asked if she thought any pharmaceutical company was doing an exemplary job of providing these types of opportunities for women, Dr. Lee pointed to Millennium: The Takeda Oncology Company.

“I know that Millennium has been praised for providing women with more support for childcare and leadership development, and the company has been praised locally for being a great place to work in general,” she says.

Following up with Steve Gansler, senior VP of human resources at Millennium, we asked about its policies.

“Millennium prides itself on employing top talent within the industry and maintaining a corporate culture that fosters innovation and

## Sound Bites From The Field

**PHARMAVOICE POLLED SOME EXPERTS IN THE FIELD OF HIRING WOMEN IN SCIENCE ASKED THEM HOW A WOMAN CAN BEST PREPARE FOR A CAREER OR ADVANCE IN A CAREER IN SCIENCE TODAY. BELOW ARE THEIR INSIGHTFUL RESPONSES.**



**DIANE BARKER** is Director, Americas Product Group, at Scientific Kelly Services, a worldwide scientific and clinical trials staffing company. For more information, visit

[kellyscientific.com](http://kellyscientific.com).

“Women today have many opportunities available to them in the sciences. We are seeing higher-level skill sets transitioning to contingent positions. Along with this, jobs are also converging. A single person may now serve what were once two separate positions, such as a chemist and a biologist. In preparation for this, students may study in an area such as biochemistry. In addition, students should consider working as an intern. Internships provide great real-world experience, allow for networking opportunities, and can introduce students to future mentors.”



**RUTH FRAZER** is President of Pharma-Cruiting, an executive search firm that provides recruitment expertise in pharmaceuticals, biotechnology, medical devices, molecular

diagnostics, clinical laboratory, and clinical research throughout the United States. For more information, visit [pharmacruiting.com](http://pharmacruiting.com).

“The 21st century continues to provide wonderful opportunities for women to achieve high levels of success and reach their career goals, particularly in the life-sciences industry. It is critical to ensure that a woman’s resume clearly represents her elite skill set, background, and experience so that prospective employers and recruiters appreciate her areas of expertise and accomplishments. Networking via conferences, industry-specific networking groups, and the Internet are often quite helpful. Ultimately, it is important for any employment opportunity to result in a successful match and one that is consistent with the professional’s skills and goals.”



**CATHERINE HILL, PH.D.**, is Director of Research, at AAUW (the American Association of University Women), a nationwide network of more than 100,000 members and donors, 1,000 branches, and 500

college/university institution partners. For more information, visit [aauw.org](http://aauw.org).

“Based on the research we reviewed and included in our latest research report, *Why So Few? Women in Science, Technology, Engineering and Mathematics*, we can offer the following recommendations or guidance for a woman preparing for a career in science: Take science and math classes in high school. Young women who take calculus in high school are three times more likely than those who do not to major in a science or engineering field in college. Also, taking higher-level science and math courses in high school keeps major and career options open. In college and graduate school become a member or start a Women in Science (e.g. biology, physics, etc.) group on campus. In male dominated disciplines especially having an informal group of female faculty and students can help female students. Women in science groups often sponsor a variety of social and professional activities and help students develop relationships with other students and with faculty, which facilitates their integration into their departments. Seek out mentors. Identify institutions or companies that have effective policies and support work-life balance. Research from the Collaborative on Academic Careers in Higher Education at Harvard University shows that among science faculty the ability to balance work and family responsibilities is more important to the overall job satisfaction of women compared with men. During the hiring process, inquire about dual career and stop-tenure-clock policies, on-site childcare, and other policies that support work-life balance. Women candidates can also ask to meet with other female or male faculty or employees who have made use of these policies to ensure that employees are not penalized for taking advantage of these policies.”

passion and keeps them here,” Mr. Gansler told PharmaVOICE. “We offer a range of programs through our ‘Simplify Work. Simplify Life.’ initiative to support working mothers and fathers within the organization. These programs and more have been implemented and designed to help all employees, including our working mothers, find balance between work life and responsibilities at home.”

Some examples include sponsoring

employees to participate in Women Unlimited programming, which is designed to accelerate the leadership development of women in the workplace; “Mother’s Rooms” are provided throughout the campus to allow mothers to continue breastfeeding after returning to work; access to a local daycare chain, including emergency back-up child and elder care in the employee’s home when gaps occur with regular care arrangements; and additional services,

such as an on-site ATM and dry-cleaning, to minimize time away from family.

As evidenced by our three women in science thought leaders, women can succeed in science-related careers despite the gender drawbacks. However, the success may come at a price that men do not have to pay. If a woman wants both a family and a science career, she is in for a tough road, our thought leaders say. With the world slowly moving toward a less biased attitude about women in science, and with newer generations bringing higher expectations to the workplace, the path to success could get smoother with time.

In the meantime, women’s groups need to shine more light on the issues, Dr. Dominiecki says.

“Women’s groups need to make some more noise,” she says. “There are many people, including women, who do not believe there is gender inequity, so anything that can put a spotlight on the problem would be helpful.” ♦

PharmaVOICE welcomes comments about this article. E-mail us at [feedback@pharmavoice.com](mailto:feedback@pharmavoice.com).

SEE DIGITAL EDITION FOR BONUS CONTENT  
[WWW.PHARMAVOICE.COM](http://WWW.PHARMAVOICE.COM)

**Experts on this topic**

**MARY E. DOMINIECKI, PH.D.** Clinical Publications Lead Contractor, AstraZeneca, a global, innovation-driven biopharmaceutical business. For more information, visit [astrazeneca-us.com](http://astrazeneca-us.com).

**STEVE GANSLER.** Senior VP, Human Resources, Millennium: The Takeda Oncology Company, a biopharmaceutical company whose research, development, and commercialization activities are focused in oncology. For more information, visit [millennium.com](http://millennium.com).

**MARGARET S. LEE, PH.D.** VP, Research, Zalicus Inc., a biopharmaceutical company that discovers and develops novel treatments for patients suffering from pain and immuno-inflammatory diseases.

For more information, visit [zalicus.com](http://zalicus.com).

**SARAH HOLLOWAY, PH.D.** Senior VP, Strategic Planning, Sudler & Hennessey, a global healthcare marketing and communications organization. For more information, visit [sudler.com](http://sudler.com).

Join us for the **20<sup>th</sup>** Anniversary Celebration.



The #1 Event in Clinical Operations & Outsourcing

Building Strategic Partnerships in an Era of Global Transformational Change

**ALL-STAR SPEAKER LINE-UP**

 <b>Curt Schilling</b> Former Major League Baseball Pitcher and 3 Time World Series Champion; Founder and Chairman, <b>38 Studios</b> and Founder, <b>Curt's Pitch for ALS</b>	 <b>Thomas Goetz</b> CNBC “Fast Money” Contributor & Managing Director, <b>Drakon Capital</b>	 <b>Guy Adami</b> New York Times and Wall Street Journal Best-Selling Author of <b>Made to Stick</b> and <b>Switch</b>	 <b>Dan Heath</b> Executive Editor, Wired Magazine, Author, “ <b>The Decision Tree</b> ”
--	--	--	---

<p>Marquee Sponsor</p> 	<p>Platinum Sponsors</p>    	<p>Gold Sponsors</p>   	<p>Associate Sponsors</p>        
---	--	--	--

Register by October 29 and get the early bird rate! Mention priority code **XP1600PVOCT**

March 30-April 1, 2011 • Phoenix Convention Center • AZ [www.clinicaltrialpartnerships.com](http://www.clinicaltrialpartnerships.com)

BY ROBIN ROBINSON

# Work-Life Balance is Not the Only Challenge Facing *Women* in SCIENCE

## WOMEN IN SCIENCE PROVIDE TIPS FOR SUCCESS

Beyond family and home responsibilities, there are other challenges women in science must overcome. Building adequate networks, learning to take risks, becoming more gender neutral in their own behavior, and increasing their visibility within the workplace are all obstacles for today's female scientist.

## SPEAK UP!

Other than struggling to maintain both career and family responsibilities, another barrier for women in scientific roles is a lack of vis-

ibility, says Mary E. Dominiecki, Ph.D., a contractor clinical publications lead at AstraZeneca.

"In general, women are not good at tooting their own horn," she says. "Many women do not demand recognition for their work and are not as good at playing the game. Women don't spend as much valuable face time with other people building relationships because they tend to get buried in the work instead. Women will often take on more of the work but because they are not getting any recognition for that work, that action doesn't get them where they think it should.

"I have always operated in a 'man's' world," Dr. Dominiecki says. "I was a tomboy growing up. I played high school soccer on the boy's team. I always let my talent, my knowledge, and my skills speak for themselves. But I have found that as I progress in my career, no matter which sector — government, academia, or industry — letting one's talent speak for itself is not enough."

Margaret Lee, PhD., VP, research, at Zalicus, agrees.

"Women need to take career development into their own hands and push themselves outside their comfort zone and do things that are valued by the organization," she says.

who does not contribute nor brings value to the company. So I learned to put the risk of being wrong in context. There's a big differ-

## Good News on Pay Day

AAUW's most recent research report, *Why So Few? Women in Science, Technology, Engineering, and Mathematics*, explores the reasons behind the continuing underrepresentation of women in certain scientific and engineering fields. Pay, however, may not be one of the factors. While men earn more than women in STEM fields, as in other fields, the pay gap tends to be smaller in science and engineering. For example, women computer and information systems managers typically earn 87% of what their male colleagues earn compared with the overall gender pay gap of 77% for all occupations.

New research from the Institute for Women's Policy Research indicates that women earn the same or more than men in only five of more than 500 occupational categories tracked by the Bureau of Labor Statistics.

Source: AAUW/Institute for Women's Policy Research. For more information, visit [aauw.org](http://aauw.org) and [iwpr.org](http://iwpr.org).



*"Taking risks is another important lesson for women to learn."*

**DR. MARGARET LEE**  
Zalicus

*"Women are not good at tooting their own horn."*

**DR. MARY DOMINIECKI**  
AstraZeneca



## BECOME A RISK TAKER

"Taking risks is another important lesson to learn for women," Dr. Lee says.

Women have to learn how to raise issues, for example, when they are in meetings, even if they don't have all the facts or a 100% solution, she says. "I used to not speak up in a meeting if I did not have all the answers. The risk of being wrong felt too great, but what happens is you are then viewed as someone



*"Mentoring can help to reduce feelings of isolation."*

**DR. CATHERINE HILL**  
AAUW



*"It is very important for women to build networks outside of their strict scientific or academic discipline."*

**DR. SARAH HOLLOWAY**  
Sudler & Hennessy

ence between the risks of advancing a therapeutic with potential toxicities into a clinical trial compared with just speaking up in a meeting. And the risk of being seen as not contributing value is far greater than the risk of having an idea that might be wrong."

According to Dr. Lee, all scientists, and women scientists in particular, tend to be risk averse by nature.

"When scientists are asked to work in a business environment where risk taking is an important component of success, the scientist's training is directly at odds with one of the keys of success in business," she says. "One of the things that women scientists don't learn but have to push themselves to practice is the idea of going out on a limb and making some judgments or assertions based on not having a complete data set."

## BEHIND EVERY GOOD WOMAN SCIENTIST IS A MENTOR

Seek out mentors, advises Catherine Hill, Ph.D., director of research, at AAUW. Dr. Hill is co-author of the Why So Few AAUW report.

"Depending on the field or institution or organization, women in science are often in a numerical minority," she says. "Mentoring can help to reduce feelings of isolation and the

marginalization that women who are in a numerical minority experience. Beyond that, mentoring facilitates the integration of women into a faculty or team and can give women access to unwritten rules, information about grants, and other kinds of opportunities that can help professional development."

Dr. Domieniecki reports that interacting with mentors has helped her advance her career.

"The career development programs offered by the Healthcare Businesswomen's Association and the Association For Women In Science have been helpful to me," she says.

"Both organizations offer mentoring programs, career development workshops, and networking opportunities."

Dr. Lee is also a member of the HBA.

"My association with the HBA is one example of finding a safe place to learn and practice new skills around communication and risk taking," Dr.

Lee says. "I would also highly recommend executive coaching and leadership training along with developing some strong mentors.

"And do this early in your career," she advises.

Mentoring can also be found in the workplace, as Sarah Holloway, Ph.D., senior VP, strategic planning, at Sudler & Hennessy, discovered at one of her first jobs. She was taught a very valuable lesson from a male supervisor, which has aided in her success tremendously, she tells us.

"I have had the benefit of having very influential mentors at critical parts in my career who were fundamentally helpful," Dr. Holloway says. "My first year after my Ph.D., I was a sales rep at Rhone-Poulenc Rorer and one of a team of three. In one of my first reviews my manager told me, 'I know you think you can be successful by working hard, but what you have to realize is how much more successful you could be if you worked as a team.'

"I had been working the hardest I could, but all on my own, like I used to work while earning my Ph.D.," she recalls. "I applied that same working principle and practice to the new job because I thought that was what I had to do to be successful. I discovered the important lesson that I could be more successful by harnessing the power of a team. I have carried this lesson

## Millennial Women Expect Work-Life Balance in Careers

Accenture's Millennial Women Workplace Success Index is based on the results of an online survey of 1,000 millennial women ranging in age from 22 to 35 who are employed full-time in the United States. In the United States, women will soon comprise half the workforce, and millennials are now one-third of the working population.

Almost all of the respondents — 94% — believe they can achieve a balance between a satisfying professional life and a gratifying personal life. For these respondents, quality of life is often more important than their career growth. Seven in 10 (70%) reported that they believe they will be successful, and fully one-third of these young female professionals said they believe they will reach the top of their professions. They cited medical benefits and flexible hours (reported by 63% and 50%, respectively) as drivers of professional success, compared with classes and training for professional advancement (37%). Similarly, when asked about what is important to them, 66% cited family life, compared with 29% who cited career success.

While almost half of respondents (46%) reported that they currently have an equal balance of work and personal life, they were divided on whether they would give up personal time for more money or money for more personal time. Respondents also reported that barriers to professional success are changing. When asked to rank barriers to their careers, just 12% cited marriage, and 19% mentioned maternity policies, compared with 30% who cited pay scale for women.

Additionally, role models do not appear to be important to these respondents. In fact, when asked to identify what is most helpful in driving professional success, few cited women in company leadership — i.e., C-suite, boardroom, 16% — and having female role models at my company, 18%, respectively, compared with more than half who cited a good work atmosphere, 59%, and open and honest communications with supervisors, 52%.

However, gender barriers have not disappeared completely. According to respondents, ongoing gender obstacles include a corporate culture that favors men (28%), general stereotypes/preconceptions (26%), and sexism (22%).

Source: Accenture. For more information, visit [accenture.com](http://accenture.com).



# Women in SCIENCE

## Think you are not biased?

**TAKE THE IMPLICIT ASSOCIATION TEST ONLINE. THE RESULTS MAY SURPRISE YOU.**

According to the AAUW, most people associate science and math fields with “male” and humanities and arts fields with “female.” This type of implicit bias is common, even among those who actively reject these stereotypes. This bias not only affects individuals’ attitudes toward others but may also influence girls’ and women’s likelihood of cultivating their own interest in math and science.

Project Implicit is a research and educational virtual laboratory conducted by Harvard where visitors can examine their own hidden biases. Project Implicit is the product of research by three scientists whose work produced a new approach to understanding attitudes, biases, and stereotypes. The Project Implicit site has been functioning as a hands-on science museum exhibit, allowing Web visitors to experience the manner in which human minds display the effects of stereotypic and prejudicial associations acquired from their socio-cultural environment.

Go to: <https://implicit.harvard.edu/implicit/>

through out my career. It wasn’t gender related, but I was lucky enough to have a good mentor who knew how to draw out the best in me.”

## STOP ACTING LIKE A GIRL

According to Dr. Lee, the challenges for men and women in the scientific field are not necessarily different, but the culture and expectations are different, and how the sexes respond to situations is therefore different.

“Girls are raised to be polite and to not be too aggressive and boys are not raised the same way, and this plays out in the business world,” she says. “Women often don’t know how to address conflict at work. One of the most helpful books I have read is ‘Nice Girls Don’t Get the Corner Office: 101 Unconscious Mistakes Women Make That Sabotage Their Careers’ by Lois P. Frankel. I would highly recommend it. Reading it will shed light on these small issues that women do, such as apologizing for things that they have no control over, which I use to do all the time, that might portray them in a negative light.

“I wouldn’t suggest changing everything, that’s not a good way to go, but finding out how to play up your skills and how to function within the environment you are in is very important,” she adds. “It’s good to learn how to gain allies and how to be more savvy.”

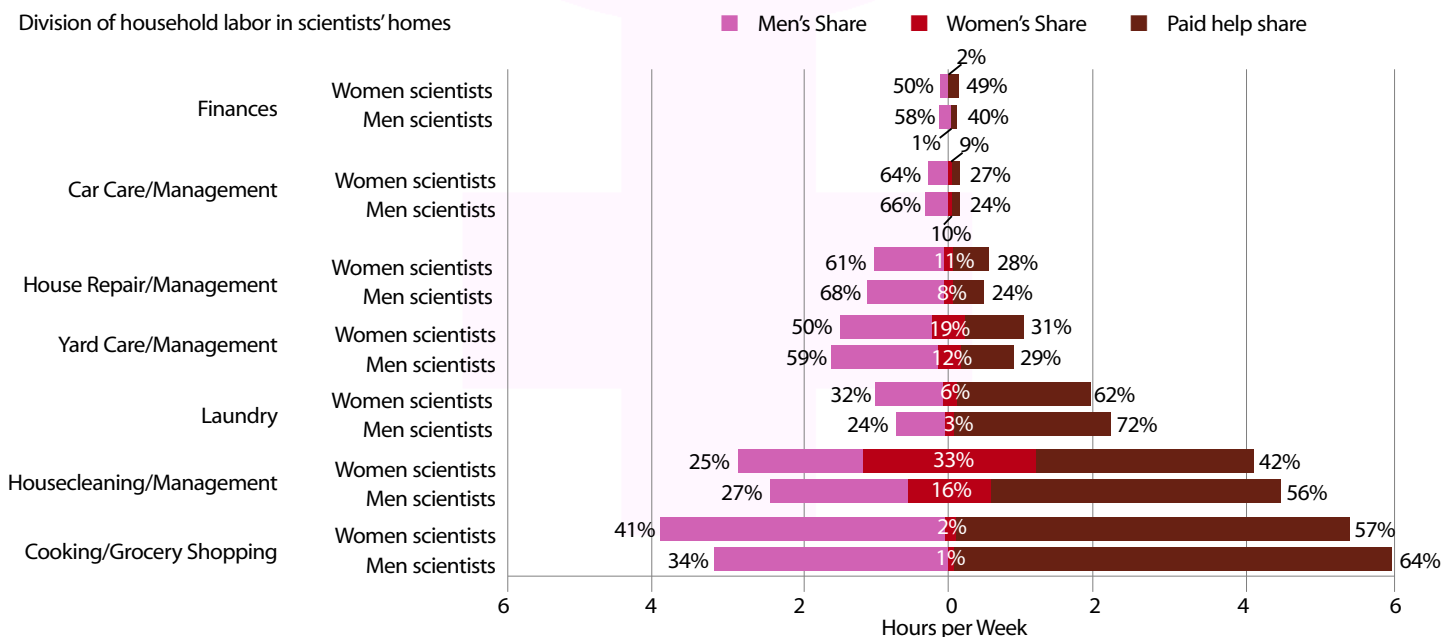
## CAST A WIDE NET

For Dr. Holloway, one of the biggest challenges she faced was building a network.

“When I was transitioning out of bench science into the commercial side, the biggest barrier was access to information,” she says. “At the early stages of your career when your network isn’t well established or not well developed, you don’t know what options are available to you. It is very important that women begin to build networks outside of the strict scientific or academic discipline. If people are interested in getting into the pharma or biotech business, then I suggest they make an effort to learn as much about that business as they can and network with people who work in that industry, especially with women, so they can have women role models and seek out women mentors who have been successful in the industry. Even if you plan to stay firmly in the research or scientific or discovery vertical, a good, well-rounded understanding of what the value drivers of the industry and your company are is really important so that you as a scientist can support and contribute to that value in a way that is meaningful. I think gaining a perspective about the business drivers and about how you might contribute and might have to contribute is very important to success.” ♦

**CHART OF HOUSEHOLD CHORES**

Division of household labor in scientists’ homes



Women scientists do 54% of core household tasks (cooking, cleaning, and laundry) in their homes. Men scientists do 28%. These tasks consume an average of 19.3 hours a week. Men contribute more to yard and car care, house repair, and finance, but these tasks are periodic and estimated to take on average about 4.7 hours a week.

Note: For each task, respondents reported their own share of labor, paid help/other’s share, and their partner’s share. In all figures, percentages may not add to 100 due to rounding. Source: Academe. For more information, visit [aaup.org](http://aaup.org).

*Let's make history together!*

HEALTHCARE BUSINESSWOMEN'S ASSOCIATION  
LEADERSHIP CONFERENCE

# LEADERSHIP IMPACT DELIVERED

INNOVATE · ORCHESTRATE · PERFORM

The most dynamic life sciences and healthcare leadership event for women

- Inspiring speakers
- Interactive learning
- Rich networking opportunities

**October 27–29, 2010 • Philadelphia**

*Seats are limited / Register early / [www.hbanet.org](http://www.hbanet.org)*

Innovative design by



REQUIRED EXPERIENCE FOR HEALTHY CAREERS