



CHECKING THE PULSE OF WOMEN IN BIOSCIENCE:

What Organizations Need To Know



About Catalyst

Founded in 1962, Catalyst is the leading nonprofit membership organization working globally with businesses and the professions to build inclusive workplaces and expand opportunities for women and business. With offices in the United States, Canada, and Europe, and more than 400 preeminent corporations as members, Catalyst is the trusted resource for research, information, and advice about women at work. Catalyst annually honors exemplary organizational initiatives that promote women's advancement with the Catalyst Award.

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RETAINING WOMEN IN BIOSCIENCE IS VITAL



In the midst of an unpredictable global economy and industry volatility, competition for scarce talent and the lack of women in bioscience leadership has significantly affected the industry.¹ Companies are faced with the reality that career aspirations of women working in bioscience are often dampened by inequities in recognition and too few opportunities to succeed.²

The bioscience industry comprises five major segments, including agriculture; drugs and pharmaceuticals; medical devices and instruments; hospitals and laboratories; and research and testing, as well as 24 subsectors.

The importance of gender equity in bioscience leadership and regulatory changes around the globe cannot be overstated. Regardless of economic conditions or personal views about policies and politics, industry trends suggest that retaining women will be vital to future success.³ Unfortunately, senior women are often hardest hit and at greater risk of losing their jobs when companies downsize or shutdown.⁴ Moreover, data revealed that most women in this study intend to leave their current companies within the next six to 10 years.

Phenomena such as leaky pipes and sticky floors are often used to describe women's underrepresentation in science careers and senior management positions.⁵

Sticky Floor refers to gender-related wage and promotion gaps.

Leaky Pipes occur when individuals enter the science pipeline but do not exit at the appropriate point due to unfair and inhospitable advancement and salary conditions.

Little attention has been given to how industry shifts and market demands impact women's advancement strategies, workplace barriers, and career decisions. Companies should leverage the fact that a critical mass of women in leadership is positively associated with organizational success



ABOUT THIS REPORT

Catalyst provides organizations with a snapshot of emergent industry trends and how they impact women and business.⁷ We spotlight insights from senior leaders in bioscience and academic medicine to provide a richer context to the unique challenges defined by science sectors.⁸ To help organizations more fully understand women's career advancement, we share research on the career pathways and barriers faced by women in healthcare and biopharmaceuticals. We conclude the report with recommendations and examples of real-world practices aimed at retaining and advancing women and establishing more inclusive workplaces.

We also provide additional materials and resources related to *Checking the Pulse of Women in Bioscience: What Organizations Need to Know* on the Catalyst website report project page, including:

- **Meet Our Experts**—Learn more about the career paths and qualifications of the global industry leaders we interviewed for and quote throughout this report.
- **Audio Insights**—Listen to interview excerpts with individuals (in addition to the expert interview excerpts included in this report) on how understanding successful career pathways can help individuals.



Click the **In Their Own Words** icons included in this tool to hear bioscience experts' insights and experiences on what it takes for individuals and organizations to maximize their talent.

and that women are the primary health-care decision-makers in their households.⁶ Companies must recognize that male-dominated hierarchical structures can disadvantage women and business.



SHIFTING TRENDS CREATE OPPORTUNITIES AND CHALLENGES FOR THE BIOSCIENCE INDUSTRY OVERALL



New approaches and alternative strategies for maximizing talent and remaining competitive with fewer resources will help companies capitalize on industry shifts. Research suggests that women will play an increasingly important role in the success of organizations, especially those in the sciences.

Paying closer attention to what’s happening in the bioscience industry is particularly important as trends in bioscience directly influence everyone’s ability to live longer and healthier lives.⁹ Women who completed our online survey¹⁰ reported that bio-medical innovations, governmental overhauls, mergers and acquisitions, and trimmed workforces will present unique opportunities and challenges for the bioscience sector. They believed that their companies are managing and preparing for industry changes and could benefit from greater innovation and diversity of thought.¹¹

Catalyst qualitative data analysis revealed that new medicines and technologies, developing economies, regulatory agencies, emerging global competitors, consumer demands, and generational and gender shifts in graduation rates overlap in ways that create new opportunities and challenges

for organizations globally.¹² When examined in combination, these shifts illustrate that women are vital producers and consumers in all aspects of bioscience.

Our findings demonstrate the interactive nature of the unique complexities and shifts in bioscience and an increased need for industry-wide diversity and inclusion efforts. To further understand these trends in bioscience, we asked industry experts to share their perspectives on what’s happening in bioscience.

1. Medicines and technologies are developing rapidly around the world

The medical solutions, new technologies, and unique challenges that define the bioscience industry affect everyone around the world. Advances in technology have significantly influenced the growth of investments in bioscience research in the public and private sectors, escalating needs for genetically engineered agricultural products, and rising emphasis on bio-fuel development.¹³

DONNA KATEN-BAHENSKY

President and CEO, University of Wisconsin Hospital and Clinics



Companies are reminded to leverage technology and collaborate globally.

At UW Hospital and Clinics, we actively employ technology as a means to further our success. Our organization is just one of a handful of hospital systems nationwide to reach the Stage 7 designation, which is the highest level of achievement in the implementation of electronic health records. For our patients, this means their caregivers have immediate access to critical information—even at clinics not part of our system. For our organization, this immediate access to information allows us to continue to improve on clinical quality.

Technology is also driving our ability to collaborate globally. Advances in online communication have allowed us to gain global experiences without leaving our own country. Recently, at UW Hospital and Clinics, we did a live case for continuing education out of our operating room which allowed about 10,000 people around the world to attend. We can teach people to do procedures without having anybody move anywhere. This was a collaborative effort between the department of surgery, our vascular surgeons, our operating rooms, and the leadership of the hospital. Our work is becoming so much more global. Our hospital just sponsored an emergency department library in a hospital in Ethiopia. We are going to do a lot of global collaboration, and it so much fun.

2. Developing economies are becoming increasingly competitive in global contexts as governments tighten health-care regulations and budgets

The talent landscape in bioscience has changed significantly in recent years with increased capacity for science research, more investments in higher education, new high-tech regions in Europe and Asia, and new regulatory policies around the world.¹⁴ Moreover, U.S. attrition patterns in the sciences have resulted in a large number of international scientists working and training in the U.S.¹⁵ These changes have significantly influenced talent management strategies and budgetary policies in bioscience.

GERALD LEMA

Corporate Vice President and President, Asia Pacific, Baxter International Inc.



Companies should drive toward more convergence and less expensive health care.

One of the greatest industry trends is the rise of developing/emerging economy competitors and global competitors. The enabling of emerging economies to produce comparable products, whether you're talking about Russia, Brazil, India, or China, that's a very significant trend. There are also fundamental differences in types of healthcare reform in the United States and other countries. For example, the Japanese government has a very structured price reduction strategy every two years

In Europe, there is a high degree of focus on pricing and reimbursement. Two key trends or directions are to 1) increase the coverage of patients and the number of people who are covered by healthcare, and 2) rein in expenses in healthcare. It's difficult to think of any government that will not tighten their healthcare budget in some way. One of the critical elements, unless you are bringing in new innovative and breakthrough products, is to try to differentiate yourself in the market and to gain the type of reimbursement that makes you profitable to launch the products.

SUSAN SILBERMANN

Regional President, Latin America, Emerging Markets, Pfizer Inc



Companies must recognize that demographic shifts and changes in regulatory policies require more diverse employees and inclusive workplaces.¹⁶

There are five trends that are really important for our company and our industry: medicines being introduced more rapidly, women making most health care decisions, women earning advanced degrees, the rise of the middle class in some parts of the world, and the changing landscape of politics.

3. Generational shifts are having a compounding effect on consumer demands and industry challenges

As younger generations of scientists seek new advancement opportunities, others are falling off science tracks at very early ages in the United States.¹⁷ Simultaneously, rapidly aging populations, expanding health-care needs, and other factors have significantly influenced industry growth.¹⁸ Effectively managing organizational priorities with the competing demands of cross-generational relationships and career expectations will be a challenge for organizations and individuals.

KAREN KATEN

Senior Advisor, Essex Woodlands Health Ventures and Retired Vice Chairman, Pfizer Inc



Younger generations have too few career opportunities and high expectations for their organizations and supervisors.

I routinely volunteer to mentor people graduating from the University of Chicago Booth School of Business. There are indeed real differences for the current generation. There are fewer job opportunities and they are frequently very different from what the graduate expected. My personal experience is that many of these graduates, men and women, initially have unrealistic expectations of what they think their employers should be doing for them. These expectations tend to get adjusted once they're in a job. Also, they come to realize that the most important relationship is often not with the company per se, but with their direct supervisor.

GERALD LEMA

Corporate Vice President and President, Asia Pacific, Baxter International Inc.



Generational trends in Asia Pacific are critical to the future of talent management.

With Generation Y employees in Asia Pacific, what we see is that they are more impatient about advancement. They desire a lot more freedom to make early career decisions, influence how they operate within their job descriptions, and their overall freedom to drive their career. I think that is something very critical in the future for talent.

4. Women make most health-care goods and services purchasing decisions in their homes but not in the bioscience companies that respond to consumer demands and needs

Women play a central role in household health-care decisions. For example, it is estimated that approximately 80 percent of mothers still hold primary responsibilities for selecting doctors, taking children to doctors, and arranging follow-up care.¹⁹ Women are also more likely than men to report managing their own health needs and those of their parents and are more likely to have concerns about maintaining their own health.²⁰

VALERIE GÜRTLER-DOYLE

Ph.D., Head Diversity and Inclusion for Switzerland, Novartis Pharma AG



Companies must develop products and strategies that consider women's presence in the market.

I think a trend from a female perspective is the higher percentage of females who now qualify with Ph.D.s. That number is increasing. It is known that women make the majority of the health-care decisions at home. So they are going online to gather the relevant information prior to making decisions. By contrast, in most businesses, men dominate decision-making processes and boards. Consequently, there are disconnects between decision-makers and the customer base, which is not reflected in senior leadership from a demographic representation viewpoint. Understanding the needs of women can have a huge impact. With the arrival of social media, if people don't get the answers, then they are going to walk away.

JOHN D. STOBO

M.D., Senior Vice President for Health Sciences and Services, University of California System



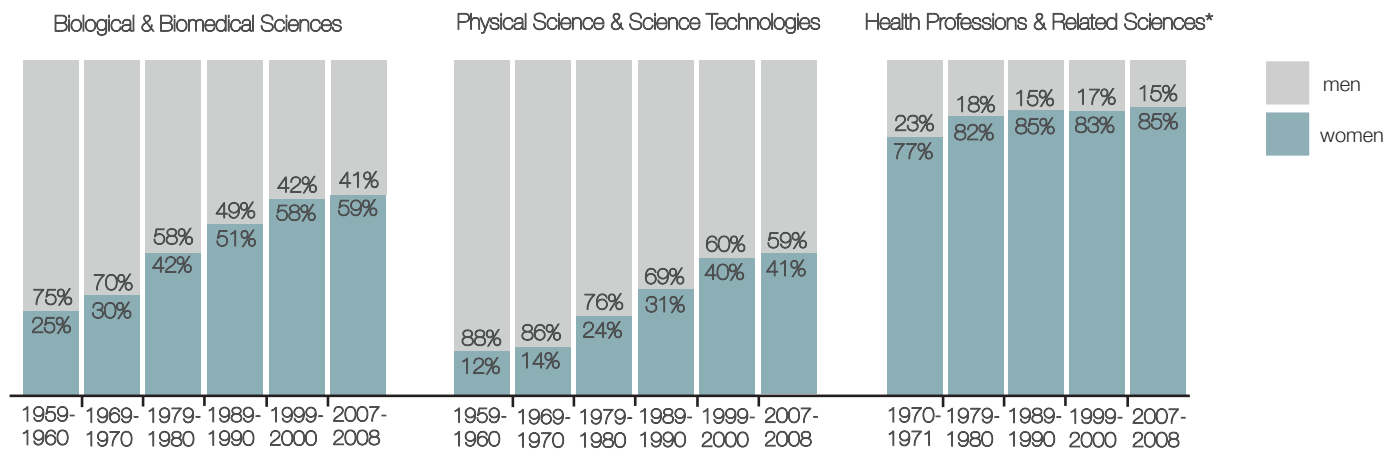
Companies need to create a workplace that reflects the diversity of the populations they serve.

In health, we cannot do education research and clinical service that addresses the needs of a diverse population unless we have a workforce whose diversity reflects that in the population that we are committed to serve. To get that diverse workforce takes work, attention, and multiple interventions, programs, and initiatives at multiple levels.

5. Women are graduating at higher rates with advanced degrees, but gender biases and systemic barriers continue to challenge their career advancement

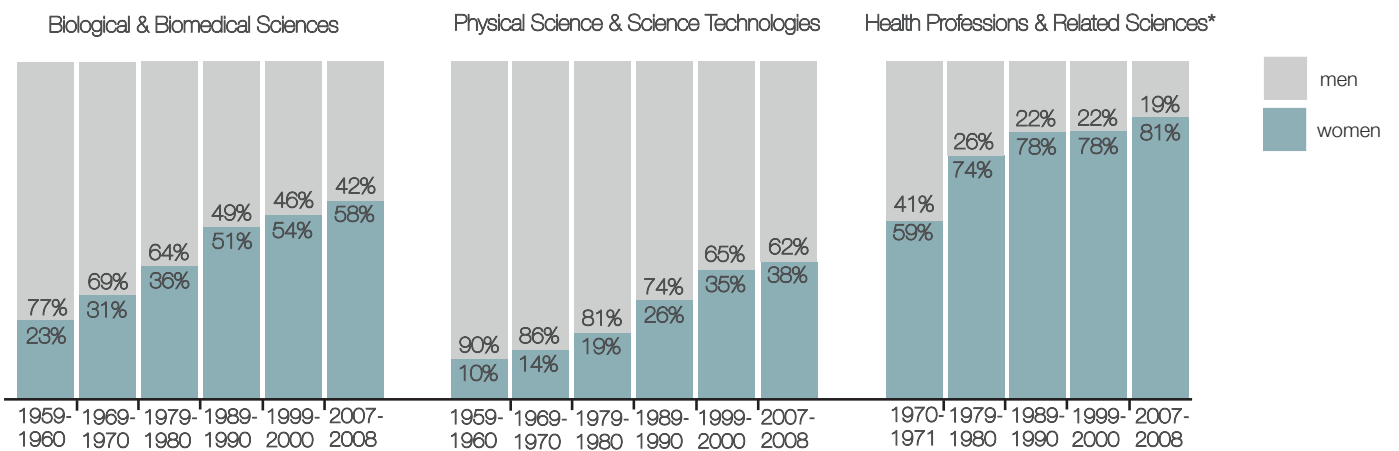
Over the last 50 years, women have increasingly swelled the ranks of undergraduate and graduate schools and captured a substantial share of advanced degrees in science, technology, engineering, medicine, and math in many parts of the world.²¹ As indicated in the following figures on U.S. educational attainments, for example, women's representation in several areas of the sciences has outpaced their male counterparts.²²

Figure 1
Undergraduate Degrees in Some Bioscience Related Fields by Gender 1959-2008



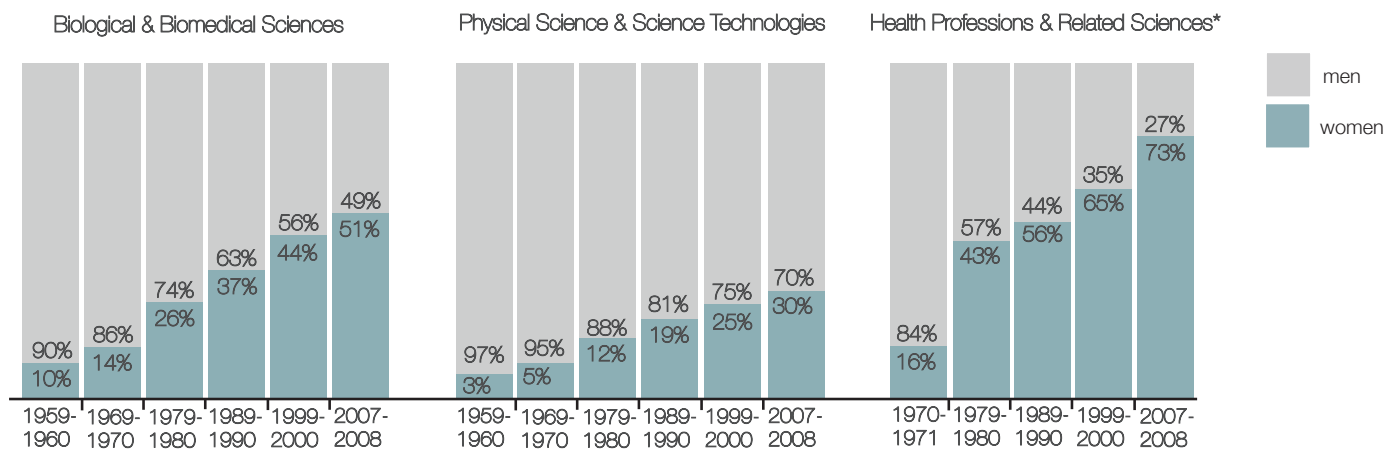
*Health Professions and Related Sciences data were not provided by the National Center for Educational Statistics from 1959-1970.

Figure 2
Master's Degrees in Some Bioscience Related Fields by Gender 1959-2008



*Health Professions and Related Sciences data were not provided by the National Center for Educational Statistics from 1959-1970.

Figure 3
Doctoral Degrees in Some Bioscience Related Fields by Gender 1959-2008



*Health Professions and Related Sciences data were not provided by the National Center for Educational Statistics for 1959-1970.

Once women enter the bioscience sector, female scientists earn substantially less than similarly qualified male scientists, and the wage gap increases at higher levels of management.²³ While women with Master's or Ph.D. degrees are as likely as men to be promoted to middle-level management positions, they are less likely than men to be promoted into top management.

The National Academy of Sciences concluded that observed gender differences in promotion and pay could not be attributed to gender differences in cognitive ability, family responsibilities, or even productivity.²⁴ Rather, many barriers to advancement for women stemmed from stereotypes and institutional biases that disadvantaged women's career pathways. These barriers and biases are different from the frequently cited familial and social issues for why women drop out of the sciences early in their careers.²⁵

ROBERT F. MEENAN

M.D., M.P.H., M.B.A., Dean, School of Public Health, Chair, Sociomedical Sciences, and Professor Health Policy & Management, Boston University School of Public Health



Gender representation in public health influenced Dr. Meenan's decision to develop a more participatory leadership style.

The whole issue of women in leadership is particularly interesting in the School of Public Health. Public health, as a field, tends to be predominately female. So [Boston University School of Public Health] has for many years had a student body that is 80 percent women. My faculty is just under 60 percent women, and the vast majority of staff are women. That, in some ways, makes things easier and, in some ways, makes it harder. What I've learned over time is that a more hierarchical approach, which works very well in medical schools, doesn't work nearly as well in a school of public health. You have to have a much more participatory style...I had to get much more savvy about leadership styles and approaches in a predominately female environment.





COMPANIES MUST BETTER UNDERSTAND WOMEN'S CAREER EXPERIENCES, DECISIONS, AND FIND NEW APPROACHES TO RETAIN TOP FEMALE TALENT

Women in Bioscience are Paid Less and Receive Fewer Advancement Opportunities Than Similarly Qualified Men

While the industry is uniquely positioned as a sector defined by public needs, regulatory policies, new technologies, global shifts, and gender-specific consumer demands, the benefits of gender parity to organizational success have not been realized. To gain a richer understanding of how industry trends impact the careers of women in bioscience, Catalyst examined promotion rates and wages in bioscience, academic medicine, and nursing in its first study on women in the sciences.

Existing research has shown that hierarchical practices and male-dominated leadership teams have a significant impact on women's advancement.²⁶ Healthcare organizations, for example, are often defined as male-dominated, top-down structures with a majority of women employees and mostly men leaders. In the nursing profession, we observed that women were more likely than men to hold leadership positions, mainly due to their higher qualifications, yet male nurses and nurse leaders earned significantly more than their female counterparts.²⁷

Similarly, Catalyst research has consistently found that career decisions and gender biases at institutional levels often result in women receiving fewer advancement opportunities than men.²⁸ They have fewer role models, mentors, and sponsors of their gender in leadership positions and are more likely to leave their current companies for more promising opportunities. Given the significance of women in emergent industry trends, companies cannot afford to have key talent leaving because their careers were stalled by too few career opportunities or organizational resources.

Career advancement experiences for women are relatively consistent across sectors, industries, and geographies despite the fact that their career aspirations are similar to men.²⁹ When we examined the career progression of women in bioscience to

better understand industry-specific pathways and barriers to senior leadership, data revealed that gender inequities were present from the moment women sought degrees in sciences and continued throughout their careers.³⁰

Women in Bioscience are Dedicated and Determined to Succeed but Unclear About How Their Companies Identify Talent

Women working in the bioscience industry are dedicated and determined to succeed. The majority of women we surveyed were pleased that they chose to work for their current employers (85 percent), prepared to put in a great deal of effort to make their companies successful (94 percent), and were overall satisfied with their current career and job position (74 percent) and salaries (70 percent). Despite workplace barriers and emergent industry trends, most women reported that their workplace strategies had a positive impact on their career (91 percent) and would benefit their future advancement (83 percent).

We found that women's high levels of career aspirations were similar across level, functional area, sector, and region of the world. However, only 55 percent knew how their company identified talent. Knowing how their company identifies talent and what it takes to get promoted is critical for women. Not having this essential piece of information may have a direct impact on their intent to stay with their current employers and their employers' ability to benefit from their talent.

When we asked our experts how their organizations identified talent, many responded that employee talent was identified based on past performance and the ability to deliver high-quality work and complete high-visibility assignments. While some of the women who completed our survey may be aware that performance and exposure to high-visibility assignments may be related to how their companies identify talent, career opportunities remain nebulous.

MICHELE G. CYR

M.D., F.A.C.P., Associate Dean for Academic Affairs Division of Biology and Medicine, Professor of Medicine, Brown University



Companies can ensure equity in hiring and promoting diverse talent by using certain controls and strategies when identifying talent.

When I'm looking for potential leaders and talent in the institution, I think about the people who have worked on committees and have really shown initiative, but I get nervous about that approach. I get worried that I am going to miss individuals who may not be the loud mouths in the group, so I always go back to the list of faculty so that I'm sure not to miss someone who might be a prospect for a position of leadership.

As Associate Dean for Academic Affairs in Biology and Medicine...I oversee the appointments and promotion of faculty. I also oversee searches for faculty in biology and medicine and that whole approval process related to how searches are done and how [search] committees are constructed; how pools are identified and how candidates are finally assessed and evaluated for their appropriateness for a position. So that's very very important. I oversee everything that has to do with the lives of faculty with regards to salary. If there are salary equity questions, those come through me. We have a committee that reviews salary equity, so that's important. Our office is also involved in providing information to faculty with regards to salary data, so we collect data from our national organization, which is the the Association of American Medical Colleges (AAMC), so that our faculty can really see the benchmarks out there in terms of salary and can look at their own salaries with those benchmarks. I [am] also...in charge of diversity for faculty.

JEANNINE M. RIVET

R.N., M.P.H., Executive Vice President, UnitedHealth Group



Companies can support women's development by inviting leaders to share strategies for success.

I give a talk on my career and describe how to climb the ladder without getting dizzy or falling off. A pharmaceutical company asked me to come...the reason they were focusing on their up and coming women in sales is because they don't have a team base, and they were trying to create a team and do these types of programs because they were having high turnover and experiencing a lot of frustration.

Organizations must hold senior leaders, managers, and their direct reports accountable for establishing and communicating what career pathways and skills are needed and desired to advance. The following Wellpoint Health Networks Inc. Catalyst Diversity & Inclusion Award-winning initiative provides specific examples of what corporations and institutions can do to ensure that everyone takes responsibility for identifying talent.



Wellpoint Health Networks Inc.

Harnessing High Potential Talent: A Strategic Approach

Catalyst Award-Winning Initiative

WellPoint has created and implemented the Human Resources Planning Program (HRP), a transparent and integrated system that provides tools for employees, supervisors, human resources professionals, and senior leaders to plan, monitor, and evaluate career development opportunities for all employees at and above the director level. In place since 1997, HRP includes metrics and quarterly reviews of employee ratings, promotions, attrition/hires, developmental opportunities, officer appointments, and assignments to help achieve a diverse workforce. Candid “challenge sessions” motivate supervisors to develop career paths for their employees, including those who may have been overlooked or underestimated. The annual “challenge sessions” begin at the division level and culminate with a presentation to the Board of Directors, which evaluates senior leadership as well as gender and ethnic diversity company-wide.

WellPoint’s approach to recruiting, retaining, and developing talent is now the responsibility of everyone at the company, including the leadership, supervisors, and associates. Employees at and above the director level take primary ownership for their development and career advancement at WellPoint. The overall strategy to develop talent within the company has several key areas of focus:

1. Understand and communicate the link between the internal talent pool and the business-related goal of diversifying the senior leadership.
2. Focus on revamping and integrating the core human resources systems.
3. Use technology to provide an efficient system that moves the initiative down through the management layers of the company.

Key Information Isn’t Trickling Down the Leaky Pipeline, and Managers Aren’t Providing Women the Information They Need to Advance

We found that critical information isn’t trickling down the pipeline and, as a result, some women aren’t informed about important issues or opportunities. When data were examined individually and demographically, we found that some managers served as career barriers for women. For example, only 18 percent of pipeline women and 35 percent of senior women believed their manager keeps them informed about different career opportunities within their organizations.³¹ While senior leaders felt informed by their managers, they reported that they were largely left out of the loop.

Fewer Than 50 Percent of the Women We Surveyed Believed That Their Manager Provided the Recognition, Feedback, and Career Opportunities Necessary to Advance

Pipeline women reported receiving higher levels of support than did senior women except when it came to managers offering career advancement. Specifically, when women were asked about support from their managers, the following cross-sectional data emerged:

- Gives appropriate recognition for accomplishing something substantial in their jobs (52 percent of pipeline; 48 percent of senior leaders).
- Helps them understand the unwritten rules of their organization (47 percent of pipeline; 39 percent of senior leaders).

- Provides quality feedback and coaching (36 percent of pipeline; 33 percent of senior leaders).
- Gives timely feedback and coaching (46 percent of pipeline; 37 percent of senior leaders).
- Offers career advancement help (30 percent of pipeline; 39 percent of senior leaders).
- Cares about the effects that work demands have on their personal and family life (49 percent of pipeline; 41 percent of senior leaders).

Communication Can Make or Break Career Aspirations and Goals

Women's perceptions of their managers and senior leaders will have a profound impact on their career aspirations and goals. Supervisors must communicate regularly, openly, and directly with individuals on their team. In addition, managers and direct reports need to develop the habit of sharing information. Doing so will have a positive effect on employee satisfaction, retention, and productivity.

Clogs in Communication Between Managers and Direct Reports Persist Across Industries and Sectors³⁴

I have regular one-on-one meetings, but they don't focus only on performance. I would like them to do so more often.

—Pipeline Woman³⁶

I would like to be involved with more projects than I am currently involved in; I feel that I am being underutilized. I would prefer my supervisor give me an opportunity...to expand my skill sets and my responsibility at work.

—Pipeline Woman

[There is] cross- and back-channel communication, where [the] manager might have gotten feedback about me because people didn't want to approach me as a woman of color, because of the culture. "Oh, I don't want to say anything, I don't want her mad at me," which is crazy. So then the manager would have the feedback, but wouldn't share



CAREER ADVANCEMENT: SUPPORT MATTERS

Most senior women have risen to the top by building diverse professional relationships and work experiences.³² During a convening event, we asked 120 women³³ working in the bioscience industry what strategies benefitted their overall career advancement the most. Most women reported that having people in positions of power to coach and advocate for them (87 percent) and managers that support their career advancement and assign them high-visibility assignments (83 percent) were most important to their advancement. Without support from managers, role models, sponsors, or senior leaders, opportunities to succeed are limited.

it, and then would let it build up. So there was nothing to be acted upon. Then the manager finally says, "Oh yeah, I knew these things, but I just didn't say anything."

—Pipeline Woman

[My supervisor could] offer constructive feedback about my performance. Too often I feel that our meetings are focused in on what I'm not doing right, never focusing in on what I am doing well or what I can do to improve.

—Pipeline Woman

Effective Communication Poses Challenges to and Provides Benefits for Individuals and Organizations³⁵

When they are willing to ask me questions, and I can say, in giving the corporate answer, "I am uncomfortable with this answer," they say, "It is refreshing for me to hear you say that." For me, that sets a tone of I can be honest and tell you what I really think and what we need to

do about it. They say, “Wow, I appreciate your being so open with me.” Then I get the same back from them.

—Male Manager

I asked her, “How did the meeting go?” She said, “I was not prepared. I was in the shadow of [my predecessor]. I [had been] with my son who had the flu [the night before].” That was a milestone. She recognized this as an opportunity for me to coach her. I asked how could she handle it differently...She said she shouldn’t have come in that day, she was almost dozing off. I said that is exactly right. She said she did not know the material, she should have studied. I gave her hints such as, “Did you stand in front of a mirror and

practice presentation skills? Did you practice in front of peers? Every time you step in front of an audience, you are representing [the company].” Very quickly, she recognized that and leap-frogged past her peers.

—Male Manager

It is as-necessary, so that when you’re in the moment and there is a coachable moment or an opportunity, say, “Hey, the way you did that was great,” or “The way you did that could have been more impactful if you had approached the situation this way,” or “That was not acceptable at all, and let’s talk about how we can fix this and what was wrong with that.”

—Pipeline Woman



It is noteworthy that women who have successfully advanced to senior leadership were more likely to report that their manager offered them career advancement help and more likely to have a sponsor.³⁷

Most employees hope to look to their managers and senior executives as role models, sponsors, and champions. However, most managers are not taking the necessary steps to help their employees, departments, or organizations capitalize on internal talent. The lack of communication between senior executives, managers, and direct reports remains a major advancement barrier for women, impacts gender equity, and places hierarchical organizations at risk of losing key talent.

JOHN D. STOBO

M.D., Senior Vice President for Health Sciences and Services,
University of California System



Organizations are encouraged to use multiple strategies and approaches to foster inclusion across all levels.

It takes work [to foster inclusion]. It’s good work, but it takes recognition that there are climate issues and barriers to the advancement of women and minorities. To eradicate those you have to work at it and develop programs at multiple levels and there has to be leadership at the top. It’s not simply top down or bottom up. Some of the most successful gender programs that I’ve seen are ones where women come together and say, “What can I do to gain skills that will help me address some of the internal and external barriers that I’m coming up against in terms of my advancement and development?” Just to sit down with women and say something like, “Here is a situation that happened to me. I went up for a promotion and this is what I came up against. Is there anything that I can do [to] improve my negotiation strategies?” Women can benefit from learning from one another and [companies should] bring in individuals who can help deal with gender issues. There is a lot that can be done for women.

Corning Incorporated *Street Smarts*

Corning Incorporated's *Street Smarts* is a collection of programs aimed at equipping women employees with the skills and awareness necessary to work most effectively at their level of responsibility. With guidance from senior women advisors and in partnership with field directors and the human resources department, Corning's Women's Quality Improvement Team (WQIT) developed this series to help junior women in research, development, and engineering navigate the ins and outs of the company more effectively. The WQIT's goal is to help Corning become a better employer for professional women.

The research and development WQIT surveyed primarily junior women within the organization to identify the current challenges and needs facing Corning's women employees. Corning's senior women advisors discussed the findings with other directors and human resources representatives, identifying which skills are required for success at different levels of a career. From this grassroots effort sprang the *Street Smarts* series.

There is a "buzz factor" measure that has steadily increased each year around this program. Attendance has increased, creating the need for waiting lists. Participant feedback reflects the success of the program:

- This *Street Smarts* series was excellent and right on time for my career development.
- Great to hear from real people who shared their experiences in this company.
- The stakeholder assessment was very valuable for me and let me know what relationships I need to work on.

60 Percent of Women Intend to Leave Their Current Employers in Next Five Years to Do Comparable Work Elsewhere

Our data revealed that women in senior leadership (65 percent) were more satisfied with their overall career than were women in the pipeline (35 percent).³⁸ Given that level of satisfaction is linked

to intent to stay, turnover rates of highly educated professional women can be problematic.³⁹ With long product development cycles, tough sector comparisons, and consumer demands that require companies to find the right answers and ideas for prolonging lives and improving health, losing top talent to competitors can be detrimental to business success and sustainability.⁴⁰



JEANNINE M. RIVET

R.N., M.P.H., Executive Vice President, UnitedHealth Group



Regretted losses are inevitable.

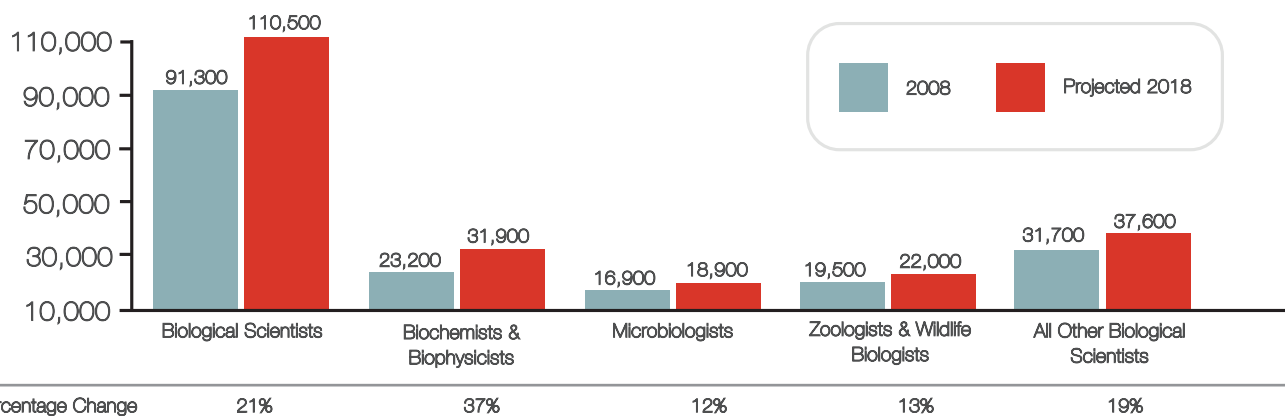
Personal life changes are reasons to leave. That is some of what we find here. We have over 80,000 employees, and we have 70 percent women because of the type of company that we are and not all of them will have senior executive roles because we just don't have that many roles. So there may be some of them who have a career path or trajectory that they are interested in doing something sooner than when a role might come up. I'm sure we lost a few women to that reason and that may be under that personal category.

Sixty percent of the women we surveyed expect to leave their company within the next five years, and 15 percent in the next six to 10 years. All told, a full 75 percent of the women in our sample intend to leave their current employers within the next 10 years but plan to stay in the paid labor force doing comparable work to what they are currently doing. Survey respondents provided a broad range of answers to what they would do next. However, many planned to work at a company similar to their current employer or to start their own business.

Prior research has shown that the gender composition of executive positions and an organization's efforts to increase gender diversity

in senior leadership have a significant effect on women's perceptions of their current company and on their intent to stay.⁴¹ We found that women senior leaders were especially likely to say that they are obligated to stay at their current company (61 percent of senior leaders compared to 45 percent of pipeline women). They were also less likely to consider a new career in a different industry than were pipeline women. Thus, organizations must act quickly to find ways for retaining and advancing top talent, especially highly skilled pipeline women who are seeking advancement opportunities and capable of helping their organizations capitalize on industry shifts.

Figure 4
United States Employment Projects for Scientists^a



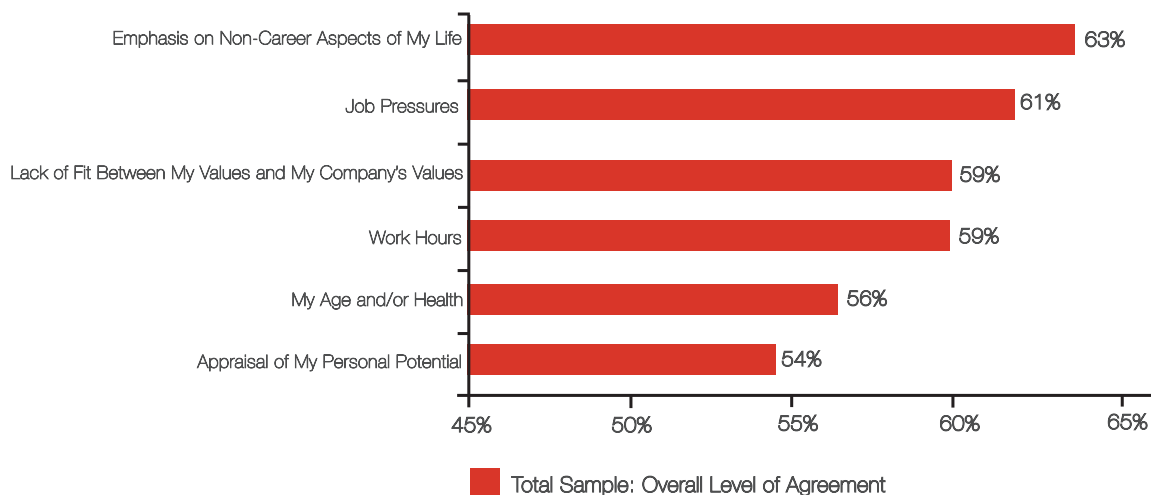
^aOccupational projections and industry trends indicate that emerging opportunities in bioscience will create new demands for talent and unique opportunities for organizations and employees globally.⁴² This figure illustrates employment data comparing 2008 actual to 2018 projected employment.⁴³

Companies Must Better Understand Women’s Career Decision-Making Processes and Find New Approaches for Retaining Female Talent:

To help organizations more fully comprehend how career aspirations influence future career pathways, we explored factors that women consider when thinking about their future careers (See Figure 5).

Figure 5

Important Factors That Women Consider When Thinking About Their Future Career Decisions



To further examine these trends, we looked at career decision-making factors across demographic groups and found the following differences⁴⁴:

- In general, senior executive women (53 percent agreed, and 30 percent disagreed) felt more obligated to stay with their current company to support the organization through emergent industry trends than did pipeline women (41 percent agreed, and 41 disagreed).
- While most women were not considering a new career in another industry, pipeline women (29 percent agreed, and 55 percent disagreed) were more likely than senior women (23 percent agreed, and 67 percent disagreed) to consider a new career and industry.

- Women remain optimistic about their future career opportunities. When asked about whether they had reached a career plateau, 35 percent of pipeline women and 47 percent of senior women strongly believed that they already reached a career plateau.⁴⁵

The finding that senior executive women reported higher levels of obligation to stay with their current company through emergent industry trends than did pipeline women is consistent with their perceptions about career plateaus, strategies, and satisfaction. That is, the more satisfied women are with their careers; the more likely they are to remain in their current companies and industries.

KAREN KATEN

Senior Advisor, Essex Woodlands Health Ventures and Retired Vice Chairman, Pfizer Inc



Organizations are encouraged to improve employee engagement and satisfaction as a retention strategy.

Quite simply, people don't leave companies where they like their work environment and are stimulated. While competent managers frequently get offers from other companies, satisfied competent managers rarely overtly seek to leave fulfilling jobs. Surveys are an effective way for companies to learn the extent of employee's level of engagement and satisfaction. I recommend that companies use their own internal resources to give people cross-functional team experiences and exposure to things they haven't done before so that they stay intellectually stimulated.

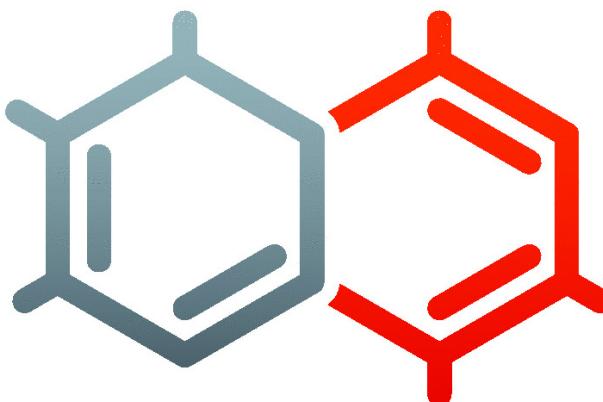
VALERIE GÜRTLER-DOYLE

Ph.D., Head Diversity and Inclusion for Switzerland, Novartis Pharma AG



Creating "A-ha!" moments at convening events and using those learnings can help advance women.

I really do believe that bringing in women is good for the culture. Women look at the value proposition very differently. Women ask, "What's in it for the customer and what's in it for the business. I'm now a user. I'm a customer." Some of the frustration women feel is that there aren't many women in senior positions, so the role models are missing. One of the activities we did at Novartis a few years ago when I led a session at our annual D&I Leadership Forum...



JOHN D. STOBO

M.D., Senior Vice President for Health Sciences and Services,
University of California System



Making change to traditional ways of work fosters innovation and inclusion.

What was important [while in leadership at John Hopkins University] was to assess the climate in the organization or the entity and determine if it's supporting and retaining women and minorities, and I would suspect that most climates aren't. It takes a concerted effort to change that climate. It takes an understanding of the importance of lifestyle issues, the importance of having a family friendly environment.

For example, medical grand rounds were held on Saturday mornings, and that was a tradition in the Department of Medicine. They had been held on Saturday mornings since the inception of the department in the late 1800s. So when I looked at the climate of medicine and whether it was conducive to women and started asking questions to see if people thought it was conducive to supporting to women, I got a lot of responses saying that grand rounds should be changed from Saturday to Friday because in families where there were two careers, the husband found it difficult to come to grand rounds on Saturday because there were family things they had to do, and if women went to grand rounds on Saturday then they felt guilty about being away from their families. To change grand rounds was a major effort because it was a long tradition, but we did change it to Friday based on that, and it made a tremendous difference.

GERALD LEMA

Corporate Vice President and President, Asia Pacific, Baxter
International Inc.



Companies must determine what development opportunities women need to advance and then take action.

In many ways, this reflects women's perspectives and it ties very clearly to trends that we see globally around employee loyalty. In women that's more pronounced because of the significant derailing of careers that we hear about. We think that people leave companies because of salary concerns or are dissatisfied with their boss. Even in a good company, the key criteria for retaining anyone is helping them advance.

MICHELE G. CYR

M.D., F.A.C.P., Associate Dean for Academic Affairs Division of Biology and Medicine, Professor of Medicine, Brown University



Companies should create opportunities to celebrate the successes of women employees.

For several years now, we have had a professional development series for women faculty culminating in a day-long workshop, and I think that has been very good. It's not a panacea, but I think for those women who want to have professional development opportunities it's great to have it....We also took a lesson from Catalyst and established a Dean's Award for the advancement of women. We request nominations from the faculty. They nominate individuals who have done a great job in advancing women's careers. Often, there are chairs of departments who are nominated, but there may be directors, other faculty, men and women. So, on an annual basis we give out a Dean's Award, and it's really gotten people thinking about who does a good job of advancing women in our organization.



Bayer Corporation

Bayer Women: Leaders for the Global Marketplace

Catalyst Award-Winning Initiative

Bayer U.S.'s overarching approach to diversity ensures that women and people of color will get the skills they need to advance to senior positions—particularly in the areas of science and technology. It features multiple mentoring programs, career development programs, employee networks, succession planning, and diversity awareness training. Bayer U.S.'s approach also includes a Delegate Career Development Program that guarantees women access to successful international assignments—a key to advancement in the global company. The Bayer Diversity Advisory Council (BDAC) leads the design and development of *Bayer Women: Leaders for the Global Marketplace* and works through five sub-committees (Communications, Education and Training, Mentorship, Recruitment/Retention, and Work-Life), each with two executive sponsors.

At Bayer U.S., all executive vice presidents must have business targets for cultivating an environment of inclusion and valuing diversity. They are held accountable for meeting their goals annually and must provide action plans and employee statistics for their divisions. Approximately 70 percent of their bonuses are based on meeting objectives, with diversity and employee development as two of four components. The results for all of the programs and activities involved in the diversity effort are monitored by the appropriate BDAC sub-committee and reported to the BDAC as well as the Chief Administrative and Financial Officer.



REACHING A BOILING POINT: RECOMMENDATIONS AND PRACTICES

“ Science is about insight and intuition, and scientific advances are often made because teams connect and collaborate to find the best solution. Women excel at intuition and collaboration—so everything we can do to get more women into the bioscience field is welcome! ”

—SUSAN SILBERMAN

Regional President
Latin America, Emerging Markets, Pfizer Inc

Innovation and historical knowledge are equally important to business success in bioscience. Companies must act quickly to fully capitalize on industry changes and to reap the rewards of having a diverse talent pool. To effectively manage talent, organizations need to be aware of the barriers and risk factors that influence women’s career pathways and decisions.

We found that women value innovation and diversity of thought and talent. They reported that the following approaches would benefit their companies in the future:

1. Transform ideas into products.
2. Attract more innovative people.
3. Perform existing tasks in new ways.
4. View things from different perspectives.

As companies reach a boiling point in trying to tackle multiple industry shifts, they should find innovative strategies to retain and advance top female talent and fuel future growth. To this end, Catalyst has developed the following 10 strategies for retaining, developing, and advancing women in the field.⁴⁶

SUSAN SILBERMANN

Regional President, Latin America, Emerging Markets, Pfizer Inc



Companies should seek support and insight from others as a strategy for improving products and results.

It’s all about getting different perspectives on any business issue, problem, or opportunity. Then, it’s about knowing when it’s time to stop and really make the call. So we need to push people whether they are wearing a skirt or pants to really enhance their ability to connect and collaborate, and to know that even if they’re up against a deadline, they probably have time to check-in with at least one person who might see it differently than they do. It’s well worth that time because they are going to feel more confident in the decision that they make and carry forward.

10 WAYS TO GET THE MOST OUT OF TALENT

10

1. **Be conscious** about the developmental opportunities, promotions, and salaries that you offer women, and take deliberate actions to **ensure promotion and wage equity** for similarly qualified women and men.
2. **Ensure** that your organization has **transparency** in its selection, evaluation, and promotion processes. Make sure that managers and individual contributors are informed about what it takes to advance in your organization, and **offer opportunities** for women to showcase their contributions and develop new competencies (e.g., individual development plans, career portfolios, succession plans).
3. Develop a committee, advisory board, and/or team that **evaluates and monitors gender equity** across departments and functional areas. Make sure that your committee, advisory board, or team receives training on gender biases and stereotypes. Remember, they must have the power or procedures necessary to enforce changes and foster inclusion.
4. **Increase capacity** for managers and leaders so that they pay closer attention to pay equity gaps, promotions rates of women, distribution of high visibility assignments, and access to career development programs. Make sure that managers and senior leaders are trained to **communicate effectively, regularly, and directly** with their direct reports. For example, your organization could develop initiatives or offer training on how to be an effective mentor, coach, or sponsor for women seeking advancement.
5. **Create work-life flexibility programs** that mutually benefit employees, teams, and your organization as a whole. For example, **consider developing re-entry opportunities and policies**, based on inclusive guidelines and procedures, for employees that need to take a leave of absence for educational or personal reasons.
6. Use employee satisfaction surveys, town hall meetings, employee resource groups, networking events, and other opportunities to **actively support relationship building** between pipeline women and senior executive teams.
7. **Hold managers and senior leaders accountable** by making sure their annual performance goals and/or compensation rates include the career development of their direct reports. Be sure to **include diversity and inclusion targets** for managers, senior leaders, and their teams.
8. Allow employees to have access to general salary information for different roles and responsibilities across your industry. Use the lens of equity as a case for providing employees industry trend data on salary and promotion rates of women and men in your sector. **Make sure your organization monitors wage differences of women and men** in the bioscience industry and takes action to mitigate inequities. Remember, everyone can be held more accountable for doing their part to advance diversity and inclusion.
9. **Create sponsorship programs or coaching opportunities** for high-potential women and women invested in developing and advancing through the ranks. Remember to **develop metrics for monitoring and evaluating** the effectiveness of the program and for holding sponsors accountable for creating career pathways for the women or men that they sponsor.
10. Consider following the approaches described by our experts and use the practices included in this report. Make sure you **customize your gender initiatives and policies** based on your organization's unique needs and **challenges**.

ROBERT F. MEENAN

M.D., M.P.H., M.B.A., Dean, School of Public Health, Chair, Sociomedical Sciences, and Professor Health Policy & Management, Boston University School of Public Health



Organizations should consult experts and develop initiatives like task forces to tackle gender equity issues.

One of the things we looked at most closely, which tended to be source of real concern for women, was salary differentials. We put together a task force to look at it at the School of Public Health. One of the members of the task force was a woman named Evelyn Murphy, an economist and former Lieutenant Governor of Massachusetts, who had recently written a book on gender-based salary inequities. ... We brought her on because I figured that if we could pass muster with her then we are probably in pretty good shape. We looked at it and adjusted for rank and time at rank and our average salaries across all of our faculty, women were earning 97% of male salaries which turns out to be really good if you look nationwide. We have since made investments to try and bring it up to equality.

DONNA KATEN-BAHENSKY

President and CEO, University of Wisconsin Hospital and Clinics



Hiring diverse teams and collaborating across cultures and countries to increase innovation and create new opportunities is important.

In terms of diverse thought and talent, it's hard for me to imagine not hiring people who are different on my team. We attract people from all around the world eager to come and do research together and that is very encouraging. It will influence the rest of our environment. There are some wonderful medical schools, researchers, and students in other countries who are collaborating not just within their own institution or their own country but across cultures and other countries. Young people are very innovative, and they are some of our best teachers because they aren't afraid to try new things. The nice thing about working in an academic medical center is that the people who work there by nature are those who question, "Why? Why not?" and ask, "Could we do it differently?"

MICHELE G. CYR

M.D., F.A.C.P., Associate Dean for Academic Affairs Division of Biology and Medicine, Professor of Medicine, Brown University



Organizations should train managers to serve as mentors, sponsors, and coaches.

Probably the most important thing my mentor/sponsor did was to give me opportunities. He pushed me out into our professional organizations and got me involved in the important professional organizations and that's something that I might not have come naturally.

Develop Customized Business Solutions Based on Effective Existing Diversity and Inclusion Practices and Internal Fact-Based Knowledge

In addition to Catalyst's 10 recommended strategies, organizations should create customized solutions based on internal fact-based knowledge as well as on demonstrated Catalyst D&I practices, examples of which have been included throughout the report.



Kaiser Permanente

Achieving Our Mission and Growing the Business Through the National Diversity Agenda

Catalyst Award-Winning Initiative

Kaiser Permanente's initiative *Achieving Our Mission and Growing the Business Through the National Diversity Agenda* makes diversity and inclusion central to the organization's competitive advantage and its ability to deliver culturally competent health care to its members. To maintain and enhance the diversity focus, Kaiser Permanente developed a detailed, CEO-approved and mandated National Diversity Agenda. This organizational framework was designed to demonstrate the values, ideals, and mission of the company; enhance Kaiser Permanente's competitive position in the market; and support accomplishment of the organization's primary objective—the delivery of high-quality, accessible, affordable, personalized, convenient, culturally competent, comprehensive health care to its diverse members. The Agenda began as a multi-dimensional, forward-looking strategy that went beyond traditional workforce diversity to focus on two additional, critically important components of the organization's operations: care delivery and the marketplace.

The Agenda serves as a fundamental strategy for fulfilling the "Kaiser Promise: Quality members can trust, Caring with a personal touch, Convenient and easy access, and Affordability." The business case of the Agenda is rooted in three pillars that enhance the company's ability to capitalize on diversity as a business advantage:

1. **Care Delivery:** Provide culturally competent medical care and culturally appropriate service to improve the health and satisfaction of an increasingly diverse membership. Excellent care delivery is integrated into Kaiser Permanente's culture and business, leveraging the demographic differences of the workforce to deliver customized treatment that acknowledges and understands the needs of diverse members and clients.
2. **Marketplace:** Grow membership through effective market segmentation approaches targeting the fastest-growing segments of the U.S. population. Kaiser Permanente's marketplace-related programs support the company's mission to provide quality care and contribute to the well-being of communities. A high priority is increasing membership by targeting the fastest-growing segments of the U.S. population.
3. **Workforce:** Enhance the diversity, cultural competence, skill, and performance of the Kaiser Permanente workforce. Kaiser Permanente expends extensive resources on building a diverse, high-performing, culturally competent workforce through recruitment, role modeling, training, and leadership development.

The Impact of the Initiative

Achieving Our Mission and Growing the Business Through the National Diversity Agenda demonstrates that an investment in diversity and inclusion can yield continual improvement for women and men. In 2007, women held 47 percent of senior executive positions, and racially/ethnically diverse women held 12 percent of these positions. By 2009, these numbers had increased to 50 percent and 18 percent, respectively. Through targeted recruitment, the organization increased the representation of diverse women executive physicians from 3.7 percent in 2007 to 11.8 percent in 2009, and diverse men executive physicians from 11.3 to 13.6 percent during that same time period. Between 2001 and 2009, the percentage of women board directors increased from 21 percent to 36 percent, and racially/ethnically diverse women on the board increased from 7 percent to 24 percent.



Catalyst Award-Winning Initiative

In 2005, Gerald Lema, the new President of Baxter in Asia Pacific, aligned the 14 countries in the region (Australia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand, and Vietnam), which had previously operated independently, to streamline operations. From the beginning, he demanded a culture of respect for individuals and their contributions by emphasizing high performance standards, knowledge transfer, continual learning, innovation, and the role of gender balance in supporting innovation.

This culture of respect was supported by values shared across the corporation, including:

- Passion to innovate and drive solutions.
- Personal accountability for results and integrity.
- Eagerness to learn and continuously improve.
- Uncompromising dedication to quality.
- Relentless focus on rapid and disciplined action.
- Respect for individuals and their diverse backgrounds.

The Asia Pacific Leadership Team (APLT) was created by appointing leaders of each function for the new region. Other leaders who shared this perspective on the importance of gender balance to business success were recruited. The composition of the APLT reinforces the value of diversity: its 19 members come from 13 nations, and seven of them are women. The APLT developed a comprehensive talent management system that included Talent Acquisition and Talent Development teams. Leaders of these teams worked with the APLT to craft the *Building Talent Edge* initiative, which was implemented in 2005, and which targets women in “leadership” and “critical” positions. Leadership positions are country heads and above, and critical positions report directly to country heads. The initiative focuses on creating a 50/50 gender balance across “critical” positions throughout the 14 countries in its region.

Baxter’s Strategy

1. **Talent Acquisition:** The Talent Acquisition team established a formal recruitment process for all leadership positions in the region, and it makes special efforts to recruit high-potential women.
2. **Talent Development:** The talent development components of *Building Talent Edge* provide women with the leadership skills, technical and functional training, and business knowledge they need to advance. Women are selected for talent development programs in proportions that mirror Baxter’s gender balance goal, and they are sometimes overrepresented.
3. **Advancement:** Across the region, Baxter continually assesses talent and creates opportunities for top talent. All leaders have succession plans that are reviewed regularly. Career paths for women are identified through the initiative’s organizational inventory review.

The Impact of the Initiative

Building Talent Edge has delivered solid increases for women in critical positions across Baxter’s Asia Pacific operations: women in management and executive positions increased from 31 percent in 2004 to 50 percent in 2008, and four out of 16 general managers are women. Representation of women in individual countries is also strong: 30 to 70 percent of management and executive positions in each of the 14 respective countries are held by women. From 2006 to 2008, women’s representation on the APLT increased from 25 to 37 percent.

METHODOLOGY

The data for this study were collected through a variety of methodologies and in three phases.

Phase I Data Set: Survey Data Collection

Survey Respondents

We emailed and requested participation from women and men in bioscience by sending a survey link to: 1) bioscience associations such as Women Business Leaders of the U.S. Health Care Industry Foundation, 2) Catalyst member companies in the bioscience industry, 3) individuals at bioscience related conferences, and 4) individual contacts of industry leaders in Asia, Europe, and the United States. Eighty-one people completed the survey (only two identified as male). Since the majority of the respondents were women, gender comparisons were not made. With regards to level of participants,

31 were pipeline employees, 46 were senior leaders/executives, and four identified as other. The majority of respondents (80 percent) had advanced degrees (38 master’s degrees, 19 doctoral degrees, and eight medical degrees). The remaining held bachelor’s or technical degrees.

Survey Items

The survey items focused on career satisfaction, career development, career advancement, industry trends, and future directions. We asked respondents about their career overall and current career. We also gathered demographic and workplace data, including level, organizational type, and functional role. Survey items that focused on career pathways were validated in prior research studies, and those focused on industry trends were developed based on interviews, meetings, convening events, and media and literature reviews. Table 1 displays the sectors that were represented in the study.



 TABLE 1 Participants by Sector	
SECTOR	Number of Participants
Biopharmaceuticals and Bio-therapeutics	4
Biotechnology Research Services	1
Health-care Plans	2
Health-care Products	3
Health-care Services	18
Medical & Imaging Laboratory	1
Medical Devices	6
Medical Practice Management and Services	1
Pharmaceuticals	26
Pharmaceuticals Distribution and Wholesale	3
Pharmaceuticals Manufacturer	4
Specialized Health-care Services	2
Other (Includes those working in other aspects of healthcare, bioscience consultation, executive search for sciences, and bioscience related private equity)	10
TOTAL	81

Table 2 provides a breakdown of the countries where participants worked at the time of data collection.

 TABLE 2 Participants by Country	
COUNTRY	Number of Participants
Canada	2
Germany	1
Israel	2
Italy	1
The Netherlands	1
Switzerland	11
United States	63
TOTAL	81

Phase II Data Set: Interviews and Data Analyses

Interview Process

To gain a richer understanding of the trends uncovered via Catalyst survey results and industry reviews, we conducted a total of nine interviews with experts in this field. Research questions were developed based on a comprehensive literature review from websites of bioscience associations, corporations, institutions, and media; external literature on bioscience; and survey data collected in Phase 1 of this study. Interview participants (n=6 women, 3 men) were recruited based on their professional reputation, accomplishments, and the reputation of the organizations where they worked (i.e., leaders in bioscience, hospital administration, and academic medicine). We started our convenience sample by asking senior leaders known⁴⁷ for advancing women and used a snowball approach to recruit other interview participants. We included interviewees from academic institutions, hospitals, and administrators to enhance our understanding and assessment of women's experiences in the science pipeline.

Interview Data Analyses

To analyze interview responses, the primary investigator reviewed interview data as it was collected to determine if questions needed to be modified or added before conducting subsequent interviews. After all interviews were complete, the primary investigator analyzed interview transcripts and identified themes and strategies.

Phase III Data Set: Conference Polls and Consulting Engagements

Other Data Collection and Analyses

To augment our Phase I findings, we polled participants in two Catalyst bioscience webcasts and during a speaking engagement at a conference. We asked webcast participants (n=25) and conference attendees (n=120) about their career advancement strategies, perceptions about their career plateau, and impressions of industry trends. We compared their responses (n=135 women and men) to our survey results and found similar trends. We reviewed summary reports from Catalyst Advisory Services consulting engagements with top pharmaceutical companies through a variety of venues, including, webinars and individual meetings.

Final Data Analyses

We integrated data from survey results, expert interviews, external literature, consulting engagements, strategy meetings, and convening events to understand relationships among career pathways of women, emergent industry shifts, and diversity and inclusion efforts at corporations and institutions. Throughout data collection and analyses, the Catalyst Senior Vice President of Research and Catalyst Senior Director leading this project tested hypotheses and assumptions and established consensus on findings for each phase of the research.

ENDNOTES

1. See The Center for Workforce Development A Member of the Division of Academic and Student Affairs, "Industry Cluster Summary: Bioscience."
2. In this report, we will discuss the entire industry with specific focus on health care and biopharmaceuticals. We will also discuss academic medicine in response to prior research on this topic and the fact that many people who pursue careers in bioscience receive some training through programs in science, medicine, and health care. Lois Joy, *Women in Health Care & Bioscience Leadership State of the Knowledge Report: Bioscience, Academic Medicine, and Nursing "Glass Ceiling or Sticky Floors"* (Catalyst, 2008).
3. National Academy of Sciences, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering* (Washington, DC: National Academy of Sciences, National Academy of Engineering, Institute of Medicine, 2007).
4. Nancy M. Carter, Ph.D. and Christine Silva, *Opportunity or Setback? High Potential Women and Men During Economic Crisis* (Catalyst, 2009).
5. See Heather Metcalf, "Stuck in the Pipeline: A Critical Review of STEM Workforce Literature," *InterActions: UCLA Journal of Education and Information Studies*, vol.6(2), no. 4 (2010): p. 1-20. See also Booth, M. Francesconi, and J. Frank, "A Sticky Floors Model of Promotion, Pay, and Gender," *European Economic Review*, vol. 47, no. 2, (April 2003): p. 295-322. See also Lois Joy, *Women in Health Care & Bioscience Leadership State of the Knowledge Report: Bioscience, Academic Medicine, and Nursing "Glass Ceiling or Sticky Floors"* (Catalyst, 2008).
6. Catalyst, *The Bottom Line: Connecting Corporate Performance and Gender Diversity* (2004). Women and Health Care: A national Profile, Chapter 7: Women and Family Health.
7. For more detail about how we collected data and information see the Methodology.
8. In Lois Joy, *Women in Health Care & Bioscience Leadership State of the Knowledge Report: Bioscience, Academic Medicine, and Nursing "Glass Ceiling or Sticky Floors"* (Catalyst, 2008), Catalyst explores gender differences in the scientific pipeline by examining the science, medical, and nursing degrees earned by women and men over the last 30 years. Since the bioscience and healthcare workforce is fueled by scientific and medical expertise, a first step in understanding women's status in this workforce is to document their representation in the education pipeline. Next, we moved to the bioscience workforce to examine gender gaps in representation, rank, promotion, and pay. We examine gender differences in the career paths of research physicians employed primarily in academic medical centers. Along with the scientists employed in the bioscience industry, physicians in academic medicine are responsible for the bulk of the research done to understand and cure human disease around the world. In the current report we interviewed experts in biopharmaceutical, healthcare, and academic medicine to further understand our quantitative findings from our prior report and this report.
9. The Wharton School, William and Phyllis Mack Center for Technological Innovation, "The Future of BioSciences: Four Scenarios for 2020 and Beyond..."; The Center for Workforce Development A Member of the Division of Academic and Student Affairs, "Industry Cluster Summary: Bioscience."
10. See Methodology.
11. When asked to rank their perceptions of how their companies would benefit most, women who completed the present study's survey ranked items related to innovation the most (e.g., attracting innovative people, seeing something from a different perspective, and performing existing tasks in new ways). Innovation items were developed from prior research studies on innovation. See Karina Skovvang Christensen, "Losing Innovativeness: The Challenge of Being Acquired," *Management Decision*, vol. 44, no. 9, (2006): p. 1161-1182.
12. We used a thematic analysis of interview data, a review of external literature on bioscience from media, company websites, and bioscience associations to understand and synthesize industry trends. The global leaders we interviewed for this study represent and are responsible for leading organizations in Asia Pacific, Europe, Latina America, and the United States. See also The Wharton School, William and Phyllis Mack Center for Technological Innovation, "The Future of BioSciences: Four Scenarios for 2020 and Beyond..." and Mary Ann Mason, Marc Goulden, and Karie Frasch, "Keeping Women in the Science Pipeline," Alfred P. Sloan Foundation, *Workplace Flexibility*, (November 2010).
13. *Nature Biotechnology*, "BioPharma Dealmakers." (January 2010).
14. See data in this report and see also Mason et al., p.2.
15. Mason et al.
16. To learn more about workplace strategies, see Catalyst, *Strategy Matters: Evaluating Company Approaches for Creating Inclusive Workplaces* and Catalyst, *Building Cultural Awareness: Questions to Ask Before Adapting a Women's Initiative to a New Region*.
17. Mason et al., p.2.; Birgit Enberg, Hans Stenlund, Gunnevi Sundelin, and Ann Öhman, "Work Satisfaction, Career Preferences and Unpaid Household Work Among Recently Graduated Health-Care Professionals – A Gender Perspective," *Journal Compilation, Nordic College of Caring Science*, (2007): p. 169-177. See Emily V. Troiano, *Workplace Trends: Today's Decisions, Tomorrow's Successes* (Catalyst, 2008) and Laura Sabbatini, Anika Warren, Sarah Dinolfo, Emily Falk and Mekayla Castro, *Beyond Generational Differences: Bridging Gender and Generational Diversity at Work* (Catalyst 2010) to learn more about generational diversity.
18. The Wharton School, William and Phyllis Mack Center for Technological Innovation, "The Future of BioSciences: Four Scenarios for 2020 and Beyond..."; The Center for Workforce Development A Member of the Division of Academic and Student Affairs, "Industry Cluster Summary: Bioscience."
19. Women and Health Care: A national Profile, "Chapter 7: Women and Family Health."
20. Women and Health Care: A national Profile, "Chapter 7: Women and Family Health."
21. Joy; Mason et al., p.2. While women's educational attainment in other areas of the science (e.g., engineering, math) have also increased over the last 50 years, their graduation rates do not exceed their male counterparts (See Joy; Mason et al., and The National Center for Educational Statistics); Peter Conrad, Phyllis Carr, Sharon Knight, Megan R. Renfrew, Mary B. Dunn and Linda Pololi, "Hierarchy as a Barrier to Advancement for Women in Academic Medicine," *Journal of Women's Health*, vol. 19, no. 4 (2010): p.799-805.
22. The National Center for Educational Statistics, U.S. Department of Education Institute of Educational Sciences, *Digest of Educational Statistics. Tables 299, 311, and 313*.
23. Joy.

24. National Academy of Sciences, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering* (Washington, DC: National Academy of Sciences, National Academy of Engineering, Institute of Medicine, 2007).
25. Anitha Kurup and R. Maithreyi, "Beyond Family and Societal Attitudes to Retain Women in Science," *Current Science*, vol. 100, no. 1 (January 2011): p. 43-48. National Academy of Sciences, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering* (Washington, DC: National Academy of Sciences, National Academy of Engineering, Institute of Medicine, 2007).
26. Conrad et al.; Enberg et al.
27. Joy.
28. Anika K. Warren, *Cascading Gender Biases, Compounding Effects: An Assessment of Talent Management Systems*, (Catalyst, 2009).
29. See Ellen Galinsky, Nancy Carter, and James T. Bond, *Leaders in a Global Economy: Finding the Fit for Top Talent* (Families and Work Institute and Catalyst, 2008).
30. Joy; Conrad et al.
31. See Methodology.
32. Katherine Giscombe, *Building Trust Between Managers and Diverse Women Direct Reports* (Catalyst 2011). Andrea Gabor, "Cracking the glass ceiling in R&D," *Research Technology Management*, vol. 37, no. 5 (September/October 1994).
33. See Methodology.
34. Heather Foust-Cummings, Laura Sabattini and Nancy Carter, *Women in Technology: Maximizing Talent, Minimizing Barriers* (Catalyst, 2008).
35. Katherine Giscombe, *Building Trust Between Managers and Diverse Women Direct Reports* (Catalyst 2011); Katherine Giscombe, *Building Trust Between Managers and Diverse Women Direct Reports: Recommendations for Human Resources Departments, Managers, and Individuals* (Catalyst, 2011).
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37. Nancy M. Carter and Christine Silva, *Mentoring: Necessary But Insufficient for Advancement* (Catalyst 2010).
38. The strength of this relationship was assessed using Chi-Square with a two-tailed test for statistical significance. Differences were significant ($p=.004$).
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41. Ellen Galinsky, Nancy M. Carter, and James T. Bond, *Leaders in a Global Economy: Finding the Fit for Top Talent* (Families and Work Institute and Catalyst, 2008); Nancy M. Carter and Ellen Galinsky, *Leaders in a Global Economy: Talent Management in European Cultures* (Catalyst, 2008).
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43. U.S. Department of Education, National Center for Education Statistics. (2010). Condition of Education 2010, Indicator 23 (NCES 2010-028); Bureau of Labor Statistics, "Occupational Outlook Handbook, 2010-11 Edition."
44. Results are from exploratory survey data collected for the present study. Neutral responses were not included and account for the variance between those who agree and disagree. See Methodology for more detail.
45. This trend was further evidenced at a convening event where 70 percent of women reported that they had not reached a career plateau and 52 percent reported aspiring to higher levels in their careers.
46. Thematic analysis of interview data, survey data, findings from convening events, Catalyst Advisory Services engagements, and literature on women in bioscience were used in the development of these recommendations.
47. See Meet Our Experts for more information on the titles, biographies, and educational and professional backgrounds of our experts. Organizations involved in diversity and inclusion in bioscience, and/or recognized as industry leaders focused on advancing gender diversity and workplace inclusion in bioscience, were invited to participate as expert.



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