A REPORT OF THE NEW JERSEY STATE EMPLOYMENT AND TRAINING COMMISSION
COUNCIL ON GENDER PARITY IN LABOR AND EDUCATION

Taking Initiative: Re-Tooling for an Economy that Can Handle Curves

4th Annual Women in New Jersey's

Science and Technology Workforce Summit

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New Jersey's Council on Gender Parity

Established within the State Employment and Training Commission (SETC), the New Jersey Council on Gender Parity is the only one of its kind in the United States created by legislation to address issues of gender disparity in labor and education. Beginning with its first meeting over a decade ago, the Council has provided the State with leadership on gender equity issues important to economic and workforce development. In the past year alone, the Council has commissioned a report that applies a "gender lens" to the evaluation and assessment of federal, state, and locally funded workforce services; published a best practices piece entitled *Legal Talent at the Crossroads: A Blueprint for Action*; and held four regional forums entitled, *Economic Recovery: What Women Need to Know,* for women who are unemployed, facing career transitions, or returning to the workforce.

The appropriation for the Gender Parity Council also funds gender equity experts to work directly with State Departments to assist them in the implementation of policies and programs in gender-conscious ways. This is a unique role that does not exist in any other form in our state government. Through these and other initiatives, the New Jersey Council on Gender Parity in Labor and Education has made tremendous strides in the advancement of equity in the State.

Bio-1 WIRED

Bio-1's goal is to make Central New Jersey (CNJ) the next "hot spot" for the global bioscience industry, by creating more high-quality, high-paying jobs and an even more highly skilled workforce. The five-county Bio-1 partnership is named for the Route 1 corridor from Rutgers to Princeton, around which most of CNJ's biotech firms are clustered. The CNJ region, comprising Hunterdon, Mercer, Middlesex, Monmouth, and Somerset counties, has received $5 million, available under the Workforce Innovation in Regional Economic Development (WIRED) program from the United States Department of Labor, Education and Training Administration (USDOLETA). The WIRED grant is being used to transform the rich array of existing bioscience education and training and economic development initiatives into a world class bioscience talent development system. There are three WIRED investments in New Jersey, making it "the most WIRED state" in the U.S.

Center for Women and Work

As the research arm of the Gender Parity Council, the doctoral-level staff at the Center for Women and Work (CWW), at the Council's request, collects data, conducts research, produces reports and public forums, and makes presentations within the State and on a national level. The CWW works closely with the New Jersey State Employment and Training Commission (SETC) and the Council to follow occupational trends in New Jersey and to identify and address current or potential inequities.

Additional Event Co-Sponsors

Association for Women In Science (AWIS)
www.awisnj.org

Bosha Design & Communications
www.boshadesign.com

Center for Women and Work
Rutgers University
www.cww.rutgers.edu

Consultants 2 Go, LLC
www.consultants2go.com

DeVry University
www.devry.edu

Division on Women
New Jersey Department of Community Affairs
www.state.nj.us/dca/dow

Douglass Project for Rutgers Women in Math, Science, and Engineering
www.rci.rutgers.edu/~dougproj

The DOW Chemical Company
www.dow.com

Fairleigh Dickinson University
www.fdu.edu

Sarita Felder and Associates, LLC
www.saritafelderandassociates.com

The Hartshorn Group
www.thehartshorngroup.com

Healthcare Businesswomen's Association (HBA)
www.hbanet.org

Hooper Williams Communications, LLC
www.hooperwilliams.com

Mango! Marketing
www.marketmango.com

Middlesex County Workforce Investment Board
www.co.middlesex.nj.us

Monmouth University School of Science
www.monmouth.edu/science

National Center for Science and Civic Engagement
www.ncsce.net

New Jersey Department of Education, Office of Math and Science Education
www.nj.gov/education

New Jersey, Eastern Pennsylvania & Delaware Higher Education Recruitment Consortium
www.njepadeherc.org

The New Jersey Laborers' Employers Cooperation and Education Trust
www.lecet.org

New Jersey State Employment and Training Commission
www.njsetc.net

NJ Social Media
www.NJSocialMedia.com

Nontraditional Career Resource Center
Rutgers University
www.ncrc.rutgers.edu

Office for the Promotion of Women in Science, Engineering and Mathematics
Rutgers University
http://sciencewomen.rutgers.edu

Princeton University
www.princeton.edu

Professional Science Master's Program
Rutgers University
http://psm.rutgers.edu

Public Service Enterprise Group (PSEG)
www.pseg.com

Rutgers School of Engineering
Office of Student Development
www.osd.rutgers.edu

Sherisen International, Inc.
www.sherisentsi.com

Deborah L. Smith Social Media Consulting
www.deborahlsmith.com

Theodolite Human Capital, LLC
www.theodolitehc.com

TIP Research Inc.
www.tipresearch.com

WIRED Bio-1
www.bio-one.org

Overview

Since its 2000 inception, the Council on Gender Parity in Labor and Education has worked to address gender disparities in New Jersey's science and technology workforce. Through numerous outlets, including the three previous Women in New Jersey's Science and Technology Workforce Summits and original, published research, the Council has contributed insight into women's historic and continued underrepresentation in Science, Technology, Engineering, and Mathematics (STEM) fields. Not only do gender disparities persist today, they do so in a more challenging economic context than New Jersey - and indeed the country - has faced in many years. The Council continues its focus on STEM in an effort to raise awareness, broaden public dialogue, and develop effective policies to address gender inequity in recruitment, retention, and advancement in this important sector of New Jersey's economy.

In February of 2010, the American Association of University Women (AAUW) released a troubling report entitled, *Why So Few? Women in Science, Technology, Engineering and Mathematics*. As its title implies, the report concludes that despite contemporary increases in the numbers of women entering science and engineering fields, they continue to be substantially outnumbered by men, particularly at higher levels of prestige and income. Drawing from eight recent studies on gender trends in science, mathematics, and technology, the authors suggest that social and environmental factors are key contributors to persistent disparities in gender representation within STEM professions (Hill, Corbett, & St. Rose, 2010).

Currently, women comprise about 27 percent of the science and technology workforce (National Science Foundation [NSF], 2009), but their representation relative to men decreases at every phase of the educational and professional hierarchy. While enrollment and performance in high school science and mathematics courses is roughly equal for young men and young women, far fewer first-year female college students than first-year male college students report that they intend to major in STEM disciplines. More men than women graduate in all but a few of the STEM majors. Moreover, when biological sciences are excluded, gender differences become even more striking, with women comprising fewer than 25 percent of the graduates in physics, engineering, and computer science (Hill, Corbett, & Rose, 2010).

Those women who do opt to major in a STEM field may have a challenging time finding a gender-matched faculty mentor, as women account for only 18 percent of full-professor rank science faculty at four-year colleges and universities (National Science Foundation [NSF], 2009). As the 2010 AAUW report summarizes, dissatisfaction with academic culture and early exits from faculty positions are more common for women than for men. Just as having a well-qualified mentor tends to beget high-quality mentoring, the failure of a department to integrate and support its women faculty can present obstacles for women students as well.

In addition to evidence of early career exits by women who teach in STEM, recent research suggests that women are more likely than men overall to leave their STEM careers, with attrition rates for women reaching over 50 percent by mid-career (Schick, Lincoln, & Pincus, 2009). Women report hostile work environments, limited rewards and options for advancement, inflexible work schedules, and feelings of isolation (Hewlett, Luce, & Servon, 2008). Moreover, women's perceptions of limited options and rewards are borne out by evidence: using records of awards and distinctions in STEM fields, Schlick, Lincoln, and Pincus (2009) conclude that women receive fewer awards and distinctions than do men, even given their smaller representation in STEM professions.

Even in relatively benign economic times, these are grave concerns. The Fourth Annual Women in New Jersey's Science and Technology Workforce Summit takes place, however, within a context of great economic uncertainty. In the month prior to the Summit, New Jersey's unemployment rate stood at 9.8 percent, and both private and public sector job numbers were mercurial over the first four months of the year. Of particular concern to those in STEM disciplines were continued job losses in construction and merger-related job losses in the pharmaceutical industry.

During the course of the year (2009-2010), the Council on Gender Parity convened four Women's Economic Recovery Forums, to assist women who are unemployed, facing career transitions, or returning to the formal workforce. Numerous women with STEM degrees, many at high levels of expertise within their professions, testified to the challenges that accompany obtaining, retaining, and advancing in STEM jobs in the current economic climate. The agenda for the 2010 Summit addresses these challenges, both by providing resources and networking opportunities for individuals, and by generating recommendations for improvements to programs and policies that extend well beyond the Summit.

The format for the 2010 Summit follows a multi-year history, beginning in 2007. Each year since then, the Council has brought together a diverse group of stakeholders to share perspectives, and develop comprehensive and integrated recommendations for addressing gender issues in STEM education and employment. Representatives from academia, industry, government, community-based organizations, K-12 education, and policymaking groups and institutions have gathered to generate and exchange ideas, collaborate, network, and develop both immediate and long-term recommendations.

Several local, state, and nation-wide recommendations have emerged over the course of the preceding three Summits. Findings and recommendations are detailed in three *Annual Women in New Jersey's Science and Technology Workforce Summit* reports, archived at www.njsetc.net (2008, 2009a, 2009b). To frame this fourth *Annual Report*, a list of recommendations from the third Summit, which focused on green industries and green jobs, follows:

I. Facilitate linkages between academic institutions, communities, and state and federal governments and groups.

- Model a program to bring together government, academic institutions, and companies to support cutting-edge research and development, and to pioneer new alternative-energy technologies.

II. Improve and expand employment and job skills training programs.

- Develop our understanding of successful training programs for both traditional jobs skills (i.e., interviewing, work-readiness skills, and English-language skills) and industry-specific skills*;*
- Monitor the distribution and impact of green jobs training funds by gender*;*
- Increase public awareness and appreciation of vocational schools as avenues for valuable training opportunities; and
- Target specific at-risk populations of women for training and re-training, including:
    - those leaving the prison system,
    - those in inner-cities, and,
    - those in workforce programs related to Temporary Assistance for Needy Families (TANF).

III. Use multi-media to promote STEM careers.

- Create a "one-stop" site that provides a portal to social media networks that can be used for career development, particularly for women in the science and technology fields;
- Develop high-quality social media resources for younger women, including elementary school-aged girls;
- Capitalize on the popularity of games in which users create their own online environments, in the creation of online educational environments and tools;
- Offer support services or tutorials to bridge the generational gap in the use of social media;
- Encourage investment by current employers in technological skills development for their staff, with an emphasis on ways to use social media for their career development, or to help build networks for their clients or students; and
- Ensure that tools are in place to ensure the privacy and safety of participants.

IV. "Market" career pathways in the sciences in higher education.

- Expand efforts by colleges and universities to increase retention among women students in science and technology through:

- Co-curricular intervention strategies, including skills development and active learning through social action projects;
- Coaching and mentoring;
- Classroom management, especially interactive learning and assessment; and,
- Teaching and learning of math and science through the study of civic issues.

V. *"Market" career pathways in the sciences in K-12 (or P-16) education*.

- Continue receiving updates on the development of the Barack Obama Green Charter High School, which will include a mentoring program designed to promote young women's development in sustainability*;*
- Promote academic curricula that are project-based, rather than theory-based, and integrative, especially in elementary school*;*
- Provide information to parents about career options and their influence over their child's career choice; and
- Focus professional development of school counselors more specifically on directing STEM course choice consistent with student strengths and interests.

VI. *Improve mentoring practices*.

- Expand efforts by collegiate science and technology departments to:
  - Develop a policy for a departmental model of cultural identity;
  - Establish a mentoring program for the department or college;
  - Establish a benchmarking and monitoring system for mentorship efforts;
  - Maintain a list of professional network connections;
  - Mandate a course in diversity for graduate students; and,
  - Create a system through which students can articulate concerns.

Taking Initiative

On May 21st, 2010, representatives from government, industry, K-12 schools, academia, and community-based organizations gathered at the Conference Center at Mercer in West Windsor, New Jersey, for the Gender Parity Council's Fourth Annual Summit on Women in New Jersey's Science and Technology Workforce. The event was organized with co-sponsorship from Bio-1, a U.S. Department of Labor Innovation in Regional Economic Development (WIRED) initiative, focused on fostering a high-skill, world-class workforce of bioscience talent in the central New Jersey region. The 2007 summit sponsor, Rutgers University's Office for the Promotion of Women in Science, Engineering, and Mathematics (WiSEM) joined over thirty other co-sponsors (*pages 5-6*), representing a broad range of organizations concerned with assisting women in developing their careers and with increasing women's participation in the STEM workforce.

A Summit record-high number of people - 215 - registered either prior to or at the event. Of these, roughly half identified themselves either as college or university educators (25 percent) or as from community or professional organizations (25 percent). Just over 20 percent identified themselves as industry representatives or industry consultants. Other participants included government representatives and policy analysts, K-12 educators, graduate and undergraduate students, entrepreneurs, and individuals in transition.

The audience for the 2010 Summit reflected its theme: *Taking Initiative*. The program and policy recommendations generated during the course of the day are noteworthy for the extent to which they reflect the combined and collaborative expertise of industry representatives, job seekers, seasoned mentors, students, government representatives and policy makers, educators, and entrepreneurs.

Networking and Opening Remarks

A prominent theme of this year's summit was the importance of networking and of developing skills and tools to support one's networking efforts. The registration, breakfast, and lunch periods were set aside as opportunities for information sharing, networking, and generating ideas and agendas for future work.

The Summit opened with a formal welcome and introduction from Dianne Mills McKay, Chair of the Gender Parity Council, and from Mary Ellen Clark, Executive Director of Bio-1. Council Chair Ms. Mills McKay announced that one of the recommendations from last year's Summit is being implemented in the form of a *LinkedIn* Summit group, providing a forum for year-long exchanges of resources, recommendations, and ideas. All Summit registrants who gave their

permission have been sent invitations to join the group, and at the time of publication it had 87 members. The intent of the Council is to remain actively involved with this online community, and to bring its recommendations to relevant individuals and groups, including local and state government officials.

The theme of the 2010 Summit responds to networking and career development needs for women in STEM careers. What became evident during the welcome is the extent to which green jobs – the focus of the 2009 Summit – constitute one of many emerging opportunities that may call for initiative-taking and innovative thinking. Bio-1 Executive Director Mary Ellen Clark announced that Steven King and Safiyah Sadiq, who presented at last year's Summit on their vision for a green charter school in New Jersey, will be opening The Barack Obama Charter School for Academic Excellence in the fall of 2010. This development ties last year's theme securely to this year's theme: in the emerging area of "green," there is ample room for taking initiative, managing change, and adapting to opportunities.

Gillian Gutierrez of the U.S. Department of Labor's Women's Bureau also tied this year's Summit theme to last year's, as she announced the forthcoming publication of a *Women's Guide to Green Jobs* this fall, and invited the audience to connect with the Women's Bureau for further information about any of its priority areas.

Keynote: "Carpe Diem! Intention, Attention, No Tension"

Sarita Felder, MBA, CEC, founder of Sarita Felder and Associates, LLC, delivered the keynote address, focusing on preparing those in attendance to use the day's events to their best advantage. She discussed three key intentions of the Summit: networking with like-minded others, professional development, and personal reinvention, including entrepreneurialism and branding and marketing. Ms. Felder guided the audience through an exercise during which they envisioned characteristics of their ideal professional situation, points of focus for the day, and personal and professional strengths they wish to highlight for others.

Featured Speakers: "Black and White Strike Gold"

In 2002, Sandi Webster and Peggy McHale together founded *Consultants 2 Go*, a multi-million dollar consulting firm. Their book, *Black and White Strike Gold: Practical Nuggets to Grow Your Business from the Women Who Launched Consultants 2 Go, a Multi-Million Dollar Company*, describes challenges they overcame to build a successful business during an economic downturn, along with practical advice to help others avoid, overcome, or use similar obstacles

to their advantage. As women who faced job loss and turned it into an opportunity to develop their professional lives in an exciting direction, their personal reflections offered valuable insight to those in attendance, a substantial number of whom indicated an intention to develop their own businesses.

Ms. Webster and Ms. McHale presided over an engaging question and answer period, covering topics including cultivating mentors, preparing for advancement within an employment situation or between situations, using available private and public resources for small business development, and developing an honest and committed group of advisors. Each Summit attendee received a copy of their book.

Networking Sessions

A common thread running through previous Summits has been the development of social media for:

(1) promoting STEM careers for women at various stages of their education;

(2) facilitating mentoring and collaboration across distance, affiliation, and discipline; and,

(3) providing a convenient and accessible "one-stop" repository of information for women scientists. This year's Summit responded to the call for expanded knowledge of networking through social media as well as through individual, face-to-face contacts, by inviting social media and networking experts to conduct four simultaneous one-hour sessions on *Facebook*, *LinkedIn, Twitter*, and speed networking.

- **LaNella Hooper-Williams** of Hooper Williams Communications, LLC, conducted a session in which participants learned about, and then practiced, speed networking skills.
- **Eva Abreu** of New Jersey Social Media, conducted a session on finding people and cultivating business relationships through *Facebook*.
- **Dierdre Breakenridge** of Mango! Marketing, conducted a session on *Twitter* entitled, "Tweet for Business."
- **Deborah L. Smith** of Deborah L. Smith Social Media Consulting, conducted a session on developing a professional profile and online presence through *LinkedIn*.

What became clear through each of these sessions is how powerful these tools can be, but only if used well. Presenters highlighted the importance of cultivating a professional network and

online presence on an ongoing basis, rather than only during times of professional crisis or change. Another common theme was with the development of a personal brand, ensuring that one's "profile," both in face-to-face contacts and online, highlights strengths and reflects one's intended professional direction.

Breakout Sessions

The Summit included five breakout sessions, each held once during the morning and once during the afternoon, during which participants engaged topics in detail. Each session was facilitated by women professionals with expertise in the specific topic areas, who served jointly as discussants and resources. Because sessions were designed to encourage an exchange of ideas and information between facilitators and attendees, each session took on a direction and focus of its own.

Cultivating a Circle of Advisors: Who, What, When, Where, How & Why

Discussants: *Catherine Duckett, Monmouth University School of Science; Natalie Batmanian, Office for the Promotion of Women in Science, Engineering, and Mathematics, Rutgers University; Robin Kucharczyk, Monmouth University; Christina Leshko, Office for the Promotion of Women in Science, Engineering, and Mathematics, Rutgers University; Gilda Paul, Princeton University; and Liz Stueck, Metro Chapter Board of the Healthcare Businesswomen's Association*

Liz Stueck from the Healthcare Businesswomen's Association (HBA) summarized the importance of the session topic: "A mentoring relationship is the crucial key to success in the business world and the single advantage women usually do not have."

The mentoring model used by HBA, an organization whose mission is to further the advancement of women in the healthcare industry worldwide, involves pairing two mentors with four to five mentees in groups that meet at least twice per month for about six months. Because each individual in the group is viewed as a learner, the relationships that emerge tend to be non-hierarchical and akin to peer modeling. Mentoring groups are developed with multiple criteria in mind, including the desired focus of the mentoring relationship (i.e., career, change, leadership, networking, and/or skills development); complementary skills sets; geography; and diversity in company or organization.

A second mentoring model profiled during this session was the OASIS Collaboration Networking and Leadership Conference. Discussants described how OASIS mentoring groups were comprised of individuals from various backgrounds (e.g., industry, business, academia),

maximizing diversity in both professional and personal characteristics. Between monthly program sessions for the full group, individual co-mentoring groups were required to have a conference call or meet for one hour.

Natalie Batmanian reflected on the importance of models such as those used by the HBA and by OASIS, as life for women in science can be isolating, even for those women who are well-established in their area of professional expertise. Building structure (e.g., specific questions or issues for discussion) and accountability are essential components for maintaining an engaged group in the midst of competing demands on time.

Catherine Duckett and Christine Leshko offered their reflections on the mentoring relationship, including ways to use *Facebook* and *LinkedIn* to stay in touch with mentor/advisors and to broaden one's circle of advisors. Dr. Duckett noted that one never knows where mentor/advisors will be found or the circumstances in which they may be needed. As the Summit itself demonstrates, connections between individuals who share an interest but not a particular job or affiliation can be invaluable sources of professional development and ideas for program or policy change.

Discussants and attendees generated the following recommendations for mentoring programs and/or individual mentoring relationships:

- Emphasize mentee-driven nature of programs in all materials and presentations,
- Factor geography into the match,
- Whenever possible, prioritize face-to-face meetings,
- Seek diversity in mentors/advisors, including diversity of personal and professional characteristics, perspectives, and career paths,
- Be sure to refresh and replenish networks over time,
- Prepare for challenges related to "down times" in the year (e.g., holidays and summer months),
- Strengthen program oversight, including early identification of problems,
- Establish ground rules and honor them (e.g., confidentiality),
- Provide structure for mentoring/advising groups (e.g., questions or topics).

Discovering and Marketing Who You Are

Discussants: *Judith Formalarie, New Jersey State Employment and Training Commission; Barbara Bosha, Bosha Design + Communications; Forough Ghahramani, DeVry University; LaNella Hooper-Williams, Hooper Williams Communications; and Aleta You, Professional Science Masters Program, Rutgers University*

This session opened with an introduction to the Myers Briggs model of personality development and the Cognitive Style Inventory, with an emphasis on identifying career strengths and types of careers compatible with these strengths (from ross@personalitypathways.com; http://www.personalitypathways.com/type_inventory.html).

LaNella Hooper-Williams, president of Hooper Williams Communications, described how various personality types interact at work [e.g., introverts (think/reflect first, then act) vs. extraverts (act first, think/reflect later)]. Ms. Hooper-Williams also contrasted Thinkers (who tend to evaluate and analyze) vs. Feelers (who tend to be concerned primarily with personal feelings and how people will be impacted); and Judgers (who tend to like priorities/times frames) vs. Perceivers (who tend to like to multitask and plan on-the-go). Developing self-knowledge of one's type can lead to more effective interactions with others, both personally and professionally. Ms. Hooper-Williams stressed that the goal is not to change an individual's personality, but rather to develop skills in adapting communications for effective work with others. For further information, the group recommended the book, *Do What You Are* by Paul Tieger and Barbara Barron-Tieger.

Forough Ghahramani followed with a four-part model for personal branding. Aspects of the model include the following:

1. Discover
   Gather information about yourself. Use this information to commit to a personal image.

2. Design
   Develop a plan. Who is your audience? What are your resources? Think of yourself as 'You, Inc.' (Positioning, Marketing, Sales, Delivery, and Service). What could you be known for?

3. Deploy
   Take your brand and put it into action. Look for opportunities to introduce yourself to others who can then "spread the word." Suggestions for sharing your brand include speaking at a conference, blogging on your topic of expertise, and writing a book.

4. Deal
   Take responsibility for living up to what you say your brand is. If your brand is not authentic, you will lose credibility.

After discussion of this four-part model for branding, discussants and participants moved into a presentation of ways to create and improve one's personal brand or, as Barbara Bosha put it, "how to stand out in the crowd."

Barbara Bosha and Aleta You presented several valuable insights for ensuring the quality and accessibility of one's brand, including the following:

- Dress for the job you want, not the job you have;
- Develop, be aware of, and choose carefully your personal icon (e.g., a pin, hat, or scarf; a smile);
- Make your resume your own; the look is extremely important;
- Create your own personal business card (especially if you are between positions);
- Get a professional photo of yourself;
- Be aware of cultural differences;
- Use a firm, not limp, handshake;
- Be a team player;
- Avoid burning bridges;
- Whenever possible, build group consensus;
- Communicate with words of encouragement;
- Seek a mentor and ask for advice;
- Communicate respect to everyone; and,
- Be humble, yet confident.

The session ended with an important, but too often overlooked aspect of personal branding: what the appearance of an individual's workspace communicates about him or her. Judy Formalarie gave an engaging slide presentation using photos of cubicles and offices, including the "themed" space (e.g., Disney, sports), the "home away from home" space (e.g., framed art, personal photos, lamps, festive lights), the cluttered space, and the clean, sparse, well-kept space. The message is that personal work space communicates a lot about a person and the need to examine your space to be certain that it describes the personal brand that you want communicated.

Entrepreneurship and 'Intra'preneurship: Being Your Own Driver

Discussants**:** *Teresa Boyer, Center for Women and Work, Rutgers University; Michel Bitritto, New Jersey Institute of Technology (NJIT); Dianne Hartshorn, The Hartshorn Group; Irena Petsche, TIP Research; and Suzanne B. Schwartz, Weill Cornell Medical College*

This session highlighted the experiences of four women entrepreneurs, who shared insights, recommendations, and resources based on these experiences.

Irena Petsche is the president of a small, one-year-old company, TIP Research. A chemical engineer by training, she shifted to the business side of implementation and working with clients. She decided to start her own company both because she saw a need for a consulting firm that specializes in competitive intelligence in the pharmaceutical and biotech industry, and because the shift allowed her to work with other high-quality professionals.

Suzanne B. Schwartz is a faculty member at Weill Cornell Medical College, with training as a physician with a specialization in burn wounds. A medical director fellowship gave her a broad understanding of how innovation becomes a marketable product even before she was given the opportunity to enter a young, developing Biotech company. Having to be the face of a company and communicate with the Food and Drug Administration (FDA) and Wall Street firms gave her an understanding of entrepreneurship, as well as the biotech industry. Dr. Schwartz emphasized the importance of developing strong communication skills as it can be a challenge - akin to learning another language - to speak with experts from a variety of fields.

A key point for the session, and indeed for the Summit as a whole, is that universities and biotech companies are transitioning from reliance on solo research into more cross-discipline and cross-industry collaboration. In this context, Dr. Schwartz recommended seeking out collaboration, being proactive, and looking for opportunities to expand upon one's successes.

Michel Bitritto, a chemist by training, left her corporate job when the company moved, and became involved with business incubators. New Jersey hosts twelve business incubators which provide rental space for early-stage companies, along with professional support, access to collaborations and networking opportunities, and assistance in forming an advisory board, which includes potential investors. A map and links to New Jersey's incubators can be found at www.njbin.org.

The final panelist, Dianne Hartshorn, discussed the importance of resilience when pursuing an entrepreneurial path. She shared that she had invested everything when she started a recruiting firm. After building the business up to an eight million dollar enterprise, she saw it collapse to four hundred thousand. Despite being advised to close her company, she started again, but this time with experience, and she has since rebuilt her company. Ms. Hartshorn emphasized several considerations for launching a business, including enjoyment and passion, perseverance, hard work, resiliency, creativity, and access to a good partner.

Dialogue between discussants and attendees yielded the following recommendations for prospective entrepreneurs:

- Be true to yourself, and your internal values will guide your business path.
- Understand what you want to gain and what interests you; find others who share those same views.
- Find something that is fun for you, and not a chore.
- Look to learn and grow outside your comfort zone.
- Develop a stable, committed board to establish necessary trust with potential investors or partners.
- Pay attention to resources and investment:
    - Early-stage entrepreneurs often spend more money and begin to make money later than they had planned.
    - Resources such as family, friends, and investors are often necessary.
    - Programs by the National Institute of Health (NIH), Department of Defense, and the National Science Foundation (NSF), can connect researchers to Small Business Innovative Research (SBIR) and Science Business Technology Transfer (STTR), beneficial groups for entrepreneurs.

Shaping Your Personal Curves (Managing Curves)

Discussants**:** *Bonnie Diehl, Fairleigh Dickinson University; Sondra Sen, Sherisen International, Inc.; and Doreen Valentine, Office for the Promotion of Women in Science, Engineering, and Mathematics, Rutgers University*

The *Shaping Your Professional Curves* session focused on tools and skills for managing change. Given that a typical person holds about nine jobs in a lifetime, such tools and skills take on increasing significance in a time of widespread economic and employment change.

Panelists described the "Five R's" for managing change:

1. Reflect
   Understand your journey, honor yourself and your accomplishments, mourn the losses, and envision new possibilities.

2. Refresh
   Make a commitment; discover resources, energy, and time; enlist support; and make time for a healthy lifestyle.

3. Re-imagine
   Develop an action plan based on your strengths, abilities, skills, interests, personal style, family, values, and goals.

4. Re-invent
   Break your broad vision for change down into manageable tasks; set priorities; and take time to talk about changes with a supportive network.

5. Re-tool
   Create a résumé/C.V., develop your personal brand, and network

As a resource for managing change, panel members recommended: *Your Work, Your Life, Your Way* by Julie Cohen.

Students Leading the Way into the Future of Networking

Discussants**:** *Alyssa Cocchiara, Douglass College, Rutgers University; Brittany Durgin, Douglass College, Rutgers University; Devinn Lambert, Douglass College, Rutgers University; and Carina Sitkus, Douglass Project for Rutgers Women in Math, Science, and Engineering*

This session featured a panel of undergraduate students who presented ways to use social networking sites (e.g. *LinkedIn*, *Facebook*, *Twitter*) to benefit a career, business, or organization. By covering both the positives and negatives of various social media outlets, the session spurred a rich discussion among attendees. For example, panelists recommended *Facebook* for the following business purposes:

- Planning events between office branches;
- Marketing a business and enticing potential clients;
- Highlighting the strengths of a company and keeping clients informed on day-to-day activities, community service, etc.

They cautioned, however, that *Facebook* should not be used as a recruitment method and determinant of employment.

The session next covered the use of *Twitter* for networking and mentoring purposes, advising its use for passing along information quickly and keeping relationships current, but cautioning that using *Twitter* in a mentoring relationship may compromise professionalism.

Panelists then turned to an extensive discussion of the rapidly growing professional networking site, *LinkedIn*. They provided rich examples of the value of *LinkedIn* for job search, giving and receiving professional recommendations, and using existing connections to make develop new contacts.

The session was enriched by sample communications and page views from each of the social media outlets. Panelists concluded by sharing valuable insight into how women in STEM can use social media and networking skills to become mentors and effectively engage future workers.

LinkedIn

As mentioned earlier in this report, registrants for the Women in New Jersey's Science and Technology Workforce Summit were invited to join a *LinkedIn* Summit group, created in response to previous Summit recommendations to:

(1) bring together government, academic institutions, and companies for ongoing collaboration;

(2) create a "one-stop" site that provides a portal to social media networks that can be used for career development; and,

(3) provide an organizing framework for mentoring efforts.

One month after the Summit, the site has 87 members and has served as a reference point for events, publications, and policy information relevant to STEM professions. It is also an online repository for presentations and handouts generated by the Summit. The site has also served as a point of contact for a newly formed New Jersey Women in Science and Technology Mentoring Circle, and as a venue through which other mentoring groups have advertized. The Council on Gender Parity in Labor and Education will serve as a liaison between Summit *LinkedIn* group members and Council members, the New Jersey State Legislature, and appropriate State Agencies.

Recommendations

Numerous recommendations emerged from the 4th Annual Women in New Jersey's Science and Technology Workforce Summit. Because this year's topic addressed professional development, many of these recommendations are directed toward individual STEM professionals. These are presented throughout the report above.

A summary of key program and policy recommendations is provided below:

I. *Strengthen linkages between academic institutions, communities, and state and federal governments and groups, with a particular focus on bridging the gap between academic expectations and industry needs.*

- Following the Summit, industry feedback included a recommendation that next year's Summit focus on discussion and coalition building around:
    - New and innovative research, and potential benefits to industry;
    - Workforce development needs;
    - Policies and regulations in STEM, including healthcare reform; and,
    - Other concerns or areas in need of development for both industry and academia.

II. *Broaden and improve existing uses of social media to promote STEM careers.*

- Provide opportunities for young women considering or entering STEM fields to educate others on effective uses of social media;
- Develop high-quality social media resources for younger women, including elementary school-aged girls;
- Encourage investment by current employers in technological skills development for their staff, with an emphasis on ways to use social media for their career development, or to help build networks for their clients or students; and
- Ensure that tools are in place to ensure the privacy and safety of participants.

III. *Expand mentoring efforts across specialties, disciplines, and organizations (see additional recommendations for mentoring groups on page 16).*

The New Jersey Council on Gender Parity in Labor and Education is sharing the recommendations made in these sessions with its members, with the New Jersey State Legislature, and with appropriate State Agencies.

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