

WOMEN IN SCIENCE

at the National Institutes of Health
2007–2008

Office of Research on Women's Health

WOMEN IN SCIENCE

at the National Institutes of Health

2007–2008



OFFICE OF
RESEARCH ON
WOMEN'S HEALTH

National Institutes of Health

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Acknowledgements

The National Institutes of Health (NIH) Coordinating Committee on Research on Women's Health (CCRWH), which advises the Director of the Office of Research on Women's Health on matters related to the mission of the ORWH, is composed of Institute and Center Directors, or their designees, and facilitated the submission of profiles from their Institutes, Centers, or Offices. Members of the CCRWH are listed on the following page.

The ORWH would like to acknowledge the specific efforts of a few individuals whose assistance was invaluable with initiation and completion of this effort. They are Eileen Crehan (Wellesley College student /Summer 2007 Intern, ORWH), Joslyn Yudenfreund Kravitz, Ph.D. (AAAS Science & Technology Policy Fellow/Office of Intramural Research), Jennifer Reineke Pohlhaus, Ph.D. (AAAS Science & Technology Policy Fellow/ORWH), and Janine Austin Clayton, M.D. (National Eye Institute/Deputy Director, ORWH).

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Alternate, National Heart, Lung, and Blood Institute (NHLBI)
- Lana Shekim, Ph.D.**
National Institute of Deafness and Other Communication Disorders (NIDCD)
- Lana Skirboll, Ph.D.**
Office of Science Policy
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Intramural Program on Research on Women's Health
- Kate Stony, Ph.D.**
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- Kester Williams**
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Foreword

As recent demographic and academic data demonstrate, the population earning advanced degrees in science and medicine continues to become more diverse. The change includes an increase in the number and proportion of women in that population. To help

promote the advancement of women in research careers both within the National Institutes of Health (NIH) intramural community and throughout the extramural research community, in 2007, we established the NIH Working Group on Women in Biomedical Careers.¹ Through the Working Group's efforts, the NIH is striving to determine solutions that will shrink and eventually close the gender gap in sciences and engineering. I strongly believe that the future of the biomedical research enterprise depends on attracting the most gifted individuals. That is why this publication, *Women in Science at the National Institutes of Health, 2007–2008*, which highlights successful women at the NIH, can serve as an inspiration to both women and men.

This publication celebrates the careers and life accomplishments of talented female scientists and engineers who are part of the NIH community. Any discussion of "Women in Science" at the NIH must highlight the contributions of certain pioneering women. First among these is Ruth Kirschstein, M.D., Senior Advisor to the Director, NIH, and first female Director of an NIH Institute (National Institute of General Medical Sciences [NIGMS], 1974–1993). At a time when there were few women in science and medicine, she broke through barriers and helped change the NIH culture. Dr. Kirschstein also played a key role in establishing the Office of Research on Women's Health (ORWH) in the Office of the Director (1990). The ORWH works to develop opportunities for and to support the recruitment, reentry, retention, and advancement of women in biomedical careers.

Bernadine Healy, M.D., was the first female Director of the NIH, serving from 1991 to 1993. Dr. Healy was instrumental in elevating career opportunities for and advancing the status of women across the NIH landscape. She provided impetus for the ORWH to address women's health research and to improve opportunities for women in biomedical research careers. Dr. Healy appointed Vivian W. Pinn, M.D., as the first full-time Director of the ORWH, a position she has held since 1991. Under Dr. Pinn's direction, the ORWH and the NIH have worked to determine the barriers to success for women in biomedical careers and have devised strategies to eliminate those barriers.² Dr. Pinn, also the NIH Associate Director for Research on Women's Health, co-chairs the NIH Working Group on Women in Biomedical Careers with me.

I am particularly delighted to commend the invaluable contributions of two other women within the Office of the Director: Norka Ruiz Bravo, Ph.D., and Lana Skirboll, Ph.D. In 2003, Dr. Ruiz Bravo accepted the position of NIH Deputy Director for Extramural Research (she is the third woman to hold this position since its creation in 1983), and Director of the Office of Extramural Research. Dr. Skirboll has served as Director of the Office of Science Policy and the NIH Associate Director for Science Policy since 1995.

Turning to the NIH's 27 Institutes and Centers, we find women currently directing 6 (or 22 percent) of them—the highest proportion in the history of the NIH. I am sure the profiles of each of these women—Barbara M. Alving, M.D.; Josephine P. Briggs, M.D.; Patricia Grady, Ph.D., R.N.; Story Landis, Ph.D.; Elizabeth G. Nabel, M.D.; and Nora Volkow, M.D.—will inspire you.

I invite you to share in the stories of these dedicated and remarkable women in science. We are all fortunate to benefit from their leadership in the NIH community.

Elias A. Zerhouni, M.D.
Director, NIH

1 NIH Working Group on Women in Biomedical Careers, <http://womeninscience.nih.gov/workinggroup>.

2 ORWH Workshop Report, *Women in Biomedical Careers: Dynamics of Change, Strategies for the 21st Century*.



Introduction

I am delighted to present this publication, *Women in Science at the National Institutes of Health, 2007–2008*, which was sponsored and prepared by the Office

of Research on Women's Health (ORWH), Office of the Director, National Institutes of Health (NIH), in collaboration with the NIH Coordinating Committee on Research on Women's Health (CCRWH). This publication was inspired by the brochure, *National Institutes of Health: Women in Science*, coordinated by Dr. Antonia Novello, then Deputy Director of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, in collaboration with the NIH Advisory Committee on Women's Health Issues (predecessor of the CCRWH). Because of the current ongoing efforts of the NIH Working Group on Women in Biomedical Careers, appointed by the NIH Director, and also the impressive rise in the number of women scientists in recent years, it seemed an ideal time to prepare a similar publication and demonstrate the accomplishments and leadership of women scientists at the NIH.

Through the achievements and reflections of the accomplished members of the NIH community, this publication is intended to inspire young women and men to enter science careers, recognize role models of successful researchers, and consider careers within the NIH community. Rather than a directory of the totality of women scientists at the NIH, this effort is meant to highlight examples of the variety of roles, positions, and contributions of doctoral-level women in science across the NIH. In order to identify women scientists and leaders in the NIH community, members of the CCRWH assisted their Institutes, Centers, or Offices in selecting representative scientists and coordinating submissions from the outstanding women who are featured in this publication. I regret that we were unable to include all women scientists at the NIH, but the production of such a large document would have been prohibitive.

Profiles of the women are organized into NIH components, including the Office of the Director, and the 27 Institutes and Centers at the NIH. In addition to providing information about their position and education, featured women were asked to lend insight into their career paths by describing pivotal events that shaped their careers as scientists, commenting on mentoring experiences, and discussing their perspective on how

to balance personal and professional responsibilities. Some women also provided details on their career milestones, scientific accomplishments, or other inspirational observations about being a woman in science.

The women represent diverse fields of accomplishments, backgrounds, positions, and career pathways. Many have provided comments on how they have successfully addressed dual professional and family responsibilities, a challenge often cited by young women considering careers in biomedical research. The brief biographical information about the women in this publication provides a perspective on where an interest in science can lead when combined with determination, guidance, experience, mentoring, and organizational support. In addition, the women in this publication have graciously provided details about life experiences that shaped their careers as women in science. Many of these women have served as mentors to other women and men, in addition to having benefited from mentoring themselves, which, in many cases, led to their pursuit of a career in science or to their chosen career pathway.

The achievements and accomplishments of these and other women who are currently or were previously at the NIH have demonstrated the magnitude and breadth of abilities and accomplishments of women in science, policy, programmatic, and research careers. I have been personally inspired by the historical legends who preceded the women included in this publication, and I hold in awe the current women leaders and leaders-to-be in the NIH community. These women scientists have earned the great respect with which they are regarded, both by those in the NIH community, and those in the greater scientific research community. I am very proud that the ORWH, in collaboration with the CCRWH and all of the Institutes, Centers, and Programmatic and Policy Offices in the Office of the Director, is able to present a snapshot in time of the women scientists in the NIH community.

A handwritten signature in black ink, appearing to read "Vivian W. Pinn".

Vivian W. Pinn, M.D.
Associate Director for Research on Women's Health
Director, Office of Research on Women's Health



The Office of Research on Women's Health honors the exemplary leadership of Dr. Ruth L. Kirschstein, who, among her many accomplishments, established the Office in 1990. Her rise to senior leadership began many years prior, when she was selected as the Director of the National Institute of General Medical Science, the first woman (and for many years, only woman) to serve as the Director of an NIH Institute or Center. Following these achievements, she has more recently been in the high-ranking positions of Deputy Director, NIH and Acting Director, NIH. In her current position as the Senior Advisor to the Director, NIH, Dr. Kirschstein continues to serve as a role model for women and men in research and scientific leadership positions. With all that she has attained, Dr. Kirschstein inspires others to reach for their career goals, which may, for many of us, include just one of the exceptional successes that she has realized over her life-long career. —Vivian W. Pinn, M.D.

Special Tribute

Ruth L. Kirschstein, M.D.

Senior Advisor to the Director, NIH

Former NIH positions:

- » Acting Director, National Center for Complementary and Alternative Medicine, 2006–2007
- » Acting Director, National Institutes of Health, 2001–2002
- » Deputy Director, National Institutes of Health, 1993–1999
- » Acting Director, National Institutes of Health, 1993
- » Acting Associate Director for Research on Women's Health, 1990–1991
- » Director, National Institute of General Medical Sciences, 1974–1993
- » Assistant Director, Division of Biologics and Standards, 1971–1972
- » Chief, Laboratory of Pathology, Division of Biologics and Standards, 1965–1972
- » Acting Chief, Laboratory of Pathology, Division of Biologics and Standards, 1964–1965
- » Assistant Chief, Laboratory of Viral Immunology and Chief, Section of Pathology, Division of Biologics and Standards, 1962–1964
- » Chief, Section of Pathology, Laboratory of Viral Immunology, Division of Biologics and Standards, 1960–1962
- » Medical Officer and Pathologist, Laboratory of Viral Products, Division of Biologics and Standards, 1957–1960
- » Medical Officer and Resident in Pathology, Clinical Pathology, Clinical Center, 1956–1957

Full profile on page 2

Senior Leadership

OFFICE OF THE DIRECTOR

Norka Ruiz Bravo, Ph.D.

*Deputy Director for Extramural Research;
Director, Office of Extramural Research*

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Vivian W. Pinn, M.D.

*Associate Director for Research on Women's Health;
Director, Office of Research on Women's Health*

Full profile on page 21

Lana Skirboll, Ph.D.

*Associate Director for Science Policy;
Director, Office of Science Policy*

INSTITUTE AND CENTER DIRECTORS

Barbara M. Alving, M.D.

National Center for Research Resources

Full profile on page 210

Josephine P. Briggs, M.D.

National Center for Complementary and Alternative Medicine

Full profile on page 198

Patricia A. Grady, Ph.D., R.N.

National Institute of Nursing Research

Full profile on page 179

Story Landis, Ph.D.

National Institute of Neurological Disorders and Stroke

Full profile on page 168

Elizabeth G. Nabel, M.D.

National Heart, Lung, and Blood Institute

Full profile on page 49

Nora Volkow, M.D.

National Institute on Drug Abuse

Full profile on page 132



Barbara M. Alving, M.D.



Josephine P. Briggs, M.D.



Patricia A. Grady, Ph.D., R.N.



Story Landis, Ph.D.



Elizabeth G. Nabel, M.D.



Nora Volkow, M.D.

Senior Leadership

INSTITUTE AND CENTER DEPUTY DIRECTORS

Judith A. Cooper, Ph.D.

National Institute on Deafness and Other Communication Disorders

Full profile on page 110

A. Isabel Garcia, D.D.S.

National Institute on Dental and Craniofacial Research

Full profile on page 112

Betsy L. Humphreys

National Library of Medicine

Joyce A. Hunter, Ph.D.

National Center on Minority Health and Health Disparities

Full profile on page 207

Mary E. Kerr, Ph.D., R.N.

National Institute of Nursing Research

Full profile on page 180

Cheryl Kitt, Ph.D.

Center for Scientific Review

Full profile on page 187

Yvonne Thompson Maddox, Ph.D.

Eunice Kennedy Shriver National Institute of Child Health and Human Development

Full profile on page 98

Louise E. Ramm, Ph.D.

National Center for Research Resources

Full profile on page 211

Belinda Seto, Ph.D.

National Institute of Biomedical Imaging and Bioengineering

Full profile on page 96

Susan Blakely Shurin, M.D.

National Heart, Lung, and Blood Institute

Full profile on page 50

*Women in Science at the
National Institutes of Health
by Institute and Center*

Office of the Director

IMMEDIATE OFFICE OF THE DIRECTOR

Ruth L. Kirschstein, M.D.

Senior Advisor to the Director, NIH

EDUCATION

M.D.: Tulane University
School of Medicine, 1951

B.A.: (Biology) Long Island
University, 1947

RESEARCH INTERESTS

Pathology and pathogenesis of infectious diseases, live viral vaccines, tumor viruses, basic biomedical research, and predoctoral training



PIVOTAL EVENTS

The most pivotal event, which set the rest of my career in motion, was coming to NIH to work and getting a job in research. This led to studies of polioviruses and to the development of the critical tests for the safety of the oral poliovirus vaccine and the choice of the Sabin strains for vaccination of the people of the United States and eventually of people around the world. Indeed the disease, poliomyelitis, was eradicated in this country and in the Western Hemisphere more than 20 years ago.

Another pivotal event was my appointment in 1974 as Director of the National Institute of General Medical Sciences, the first woman to be appointed to such a high level at NIH.

Establishment and implementation of the Office of Research on Women's Health and service as the first Director was another important milestone.

In 1993, I was chosen to be the Deputy Director of NIH and, most importantly, to be Acting Director of NIH for 6 months before the appointment of Dr. Varmus. I was also appointed as Acting Director of NIH for 2 1/2 years in 2000.

MENTORING & WORK/LIFE BALANCE

I have been married for over 56 years and have worked in my chosen profession all my life. I have achieved an appropriate balance because of the full and wonderful partnership with my husband and my son and our ability to enjoy life fully. I have compartmentalized my days and done each task as thoroughly as possible and as perfectly as I was able. I have met the challenges, of which there were many, as they came, and solved each problem as needed. Continuity of efforts and enjoyment of each moment have been the hallmarks of my life.

I have never had a mentor but I have mentored many, many young (and not so young) people, both women and men.

OFFICE OF THE DIRECTOR

INSIGHTS

The most important thing is to enjoy what one is doing and to gain total satisfaction doing it; to accomplish what is needed; be sure one has given one's best effort, even beyond one's ability; to be able to recognize mistakes, correct them, and admit when one is wrong; and to learn from them and move ahead.

Also, if your work does not make you happy, consider changing what you do. The happier one is, the greater will be the satisfaction with the job and the greater the satisfaction in the job, the happier one will be.

Have an open door policy to all. One should never be too busy to stop and help someone in need, regardless of rank or status. Treat all people equally.

Amy Bany Adams, Ph.D.

Special Assistant to the Director, NIH

EDUCATION

Ph.D.: (Cell Biology)
Yale University School of
Medicine, 2003

S.B.: (Biology) Massachusetts
Institute of Technology, 1994

RESEARCH INTERESTS

My thesis work concerned the genetic and anatomic basis of the neurotransmitter signaling that regulates behavior in the *C. elegans* model system.

PIVOTAL EVENTS

I confess to being a true geek growing up – I loved all my classes in school and looking ahead to college, I couldn't decide whether to focus on the humanities or the sciences. Then I attended a 6-week summer science program in high school that included the opportunity to conduct your own research, and it changed my life. I was surrounded by incredibly impressive peers (including a 2006 Fields Medal winner), immersed in the thrills of scientific discovery and possibility, and spent the summer dazzled by the possibility of making the world a better place through research. The camaraderie and excitement of the scientific community I glimpsed that summer set me on the career path to becoming a scientist.

MENTORING & WORK/LIFE BALANCE

Balancing my professional and personal life took on a new dimension in August 2007, with the birth of my beautiful son, Jack.

Committing to starting a family was a bit daunting – there are



tomes written about how hard it is to be a working mother. Furthermore, I moved away from the lab bench only a few years ago, and I am just establishing myself in the world of science policy – but the clock was ticking. Luckily, when I shared my concerns with an Institute Director, she counseled me to “just do it” – that there is never a perfect time to have a child, but there was no reason that I could not have a family and still succeed professionally. It was indescribably liberating to hear this advice from an incredible (and incredibly successful) woman scientist that I so admired.

Life as a working mother is challenging – I have never worked so hard in my life as I do now, balancing demands of family and work. However, it is all so much more fun than I ever hoped – watching my child grow into this fearless little person, every day has its miracle. Though my position includes a lot of unexpected, high-profile projects with quick deadlines, I have been able to thrive because my office provides a wonderfully supportive environment, and my colleagues and boss work hard to ensure I have the tools, resources, and flexibility I need to succeed.

Penny Wung Burgoon, Ph.D.

Senior Assistant to the Deputy Director, NIH

EDUCATION

Visiting Scholar: (Physiology)
The Ohio State University, 2004

Postdoctoral Research Fellowship:
(Neurophysiology) University of
Illinois at Urbana-Champaign,
2001–2004

Postdoctoral Research Associate:
(Neurophysiology) University of
Illinois at Urbana-Champaign,
1997–2000

Ph.D.: (Physiology) The Ohio State University, 1997

M.S.: (Physiology) The Ohio State University, 1994

M.A.: (Exercise Physiology) California State University
Northridge, California, 1989

B.A.: (Biology and Physical Education) Oberlin College, 1985

RESEARCH INTERESTS

My research was focused on central control of biological timing. I studied the circadian clock and circadian rhythms in humans and mammalian models. I began examining aspects of human performance and physiology at different times of day and under different conditions. Then, I examined the brain control of the biological clock and its mechanisms of operation.



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PIVOTAL EVENTS

With a master's degree in human physiology, I ran a clinical chemistry lab for an Army medical research center. I provided overall research support in tissue collection, data collection, and analysis to a number of investigators conducting human research studies. This period coincided with Operation Desert Storm, and our research quickly stopped and was redirected toward mission-specific needs.

In retrospect, this period was really instrumental in my subsequent years because:

- » It gave me great confidence in my skills and ability to apply new knowledge and techniques;
- » I learned that I could perform well and manage the efforts of others under highly stressful conditions;
- » I could appreciate the immediate impact of my efforts on the knowledge of human physiology, performance, and the mission of the army;
- » I learned how research could be very team-oriented, as well as individually focused;
- » This experience gave me a clear understanding of why and how I wanted to pursue further training in biology and physiology. It was a great jump-off point toward my doctoral degree.

MENTORING & WORK/LIFE BALANCE

Some of my most difficult times during my career have led to the most profound changes in my work/life balance. These periods of self-assessment have often been followed by times of great satisfaction and reward. As with many women, I struggled with balancing family and career. This ultimately led me to identify what was really important to me regarding science and my career, and everything else could be changed. That was a very "freeing" moment for me, allowing me to subsequently redirect my career down a different but very rewarding path in working for the NIH.

I was happily surprised to discover that moving into science policy required many of the same skill sets that I used for research. Problem solving, team work, research, and eureka moments – it still works for me.

One of my better lessons learned along the way was to stop looking for the "cool" projects and start looking for the good mentors. If you look carefully, you can find both; but I needed a person who would help me look out for my best interests.

Vesna Kutlesic, Ph.D.

Special Assistant to the Director, NIH

EDUCATION

Fellowship: American Association for the Advancement of Science, Science and Technology Policy Fellowship, NIH, 2006–2008

Internship/Postdoctoral Fellowship: (Child Clinical Psychology) University of New Mexico Health Sciences Center, 1997

Ph.D.: (Clinical Psychology) Louisiana State University, 1995

M.A.: (Clinical Psychology) Louisiana State University, 1992

B.A.: (Psychology) Kent State University, 1988



RESEARCH INTERESTS

Post-traumatic stress disorder, eating disorders, child and family mental health, cognitive-behavioral therapy, multicultural considerations in assessment and treatment

PIVOTAL EVENTS

The interplay of mental health research, clinical practice, and training within culturally diverse communities had the most significant impact on my work as a scientist. Each of these dimensions informed priority areas in at least one of the others. My research helped structure and evaluate my work with clients, and provided a framework for testing proposed assessment and treatment models when working with trainees. Clients and trainees would regularly critique research and treatment models being implemented, and provide valuable input toward refining these approaches. Publication of these research findings and further consideration of their policy implications fostered an interest in health policy development, both on a national and international basis.

MENTORING & WORK/LIFE BALANCE

My mentoring experiences (i.e., both as a mentor and mentee) within academic, research, and clinical settings have been one of the highlights of my career. I have been fortunate to have worked with mentors who were dedicated to my professional growth in ways I was able to model and pass onto individuals I have mentored or supervised. The essence of the mentoring approach I found most rewarding was placing mentees' professional growth goals over and above an organization's needs, particularly when the two sets of needs are in conflict. Though organizational needs would be considered when developing a mentoring plan, they would not supersede mentees' professional development goals. Also worked through with the mentee would be the types of professional experiences that

OFFICE OF THE DIRECTOR

would be the best fit to accommodate significant life events in the mentee's life, and to foster a sense of balance.

Camelia L. Owens, Ph.D.

American Association for the Advancement of Science (AAAS) – Science & Technology Policy Fellow, Immediate Office of the Director

EDUCATION

Ph.D.: (Chemical Engineering)
University of Delaware, 2004

Visiting Scholar: (Chemical Engineering) University of California–Santa Barbara, 2002–2004

B.S.: (Chemical Engineering)
University of Maryland Baltimore County, 1999

**RESEARCH INTERESTS**

Biomedical, biotechnology, engineering education, control systems, health policy

PIVOTAL EVENTS

During one of the holiday breaks in graduate school, I was traveling back home and I ran into Dr. Freeman Hrabowski, president of the University of Maryland Baltimore County, in the airport. I remember talking to him about my career interests and experiences and stating how unsure I was of my next steps; he immediately reminded me of the Langston Hughes' poem, *Hold Fast to Dreams*. From that conversation in the airport, I decided to always dream big and to really take strides to realize those dreams. It is with that mentality that I have been able to contribute to the biomedical research enterprise in different capacities, mentor the younger generation of scientists and engineers to come and keep a positive outlook about the fields of science and engineering and what I will accomplish in the next phases of my career.

MENTORING & WORK/LIFE BALANCE

Throughout my life, I have had several mentors, many of which were not obvious to me. To me, it is important to have individuals in your life who can provide a balanced array of perspectives from within your peer group and outside of it. From the other viewpoint, I am always surprised to hear myself called a mentor, but I welcome the experience and opportunity to help other individuals craft their vision.

Balancing my professional responsibilities with my personal life is very difficult, but I am physically and mentally healthier when I do so it is a priority for me. Over the years, I have become very structured with my schedule so that I can maintain that balance. I try to remain flexible, as sometimes I do have

to accommodate for tight deadlines or a personal emergency. Ultimately, I try to plan as best I can to enjoy the personal and professional segments of my life.

OFFICE OF AIDS RESEARCH (OAR)**Victoria A. Cargill, M.D.**

Director of Minority Research and Clinical Studies, OAR

EDUCATION

M.S.C.E.: (Clinical Epidemiology) University of Pennsylvania, 1993

Certificate in Epidemiology:
University of Pennsylvania, 1986

Andrew W. Mellon Fellow:
(Clinical Epidemiology)
Hospital of the University of Pennsylvania, 1982–1984

Residency: Peter Bent
Brigham Hospital, 1978–1980

Internship: Peter Bent Brigham Hospital, 1977–1978

M.D.: Boston University School of Medicine, 1977

B.A.: (Biological Sciences) Mount Holyoke College, 1973

**RESEARCH INTERESTS**

HIV infection in African American women and heterosexual men and HIV risk reduction through community-based research

PIVOTAL EVENTS

I became seriously ill as a result of a needle-stick sustained while resuscitating a patient. The patient lived, but I almost died from hepatitis. The discrimination and cold isolation I experienced from my own peers while hospitalized uniquely sensitized me to the effects of disease-associated stigma.

MENTORING & WORK/LIFE BALANCE

Mentoring is essential and cannot be done "on the cheap." It requires commitment and time. Time is a precious and limited commodity, so to balance family and work I have a clear set of priorities. I keep this written down and visible as a reminder when stressed over too many demands.

INSIGHTS

I can think of three major events that shaped my career, although at the time these events were anything but challenges to manage. The first event came as a young intern as I wrote earlier. To be in the prime of one's health and to be suddenly and without warning desperately ill, with little voice in one's

care (even as a physician) and be treated as a pariah profoundly affected me. I had a unique insight into how it felt to be a desperately ill patient and with an illness that everyone feared. I could not have known that a mere 4 years later, I would be seeing some of the early cases of what was then called gay-related immunodeficiency disease (GRID) and what we now know to be HIV infection. I understood then, as now, in a very visceral way, the fear, the stigma, and the isolation of having an infectious disease that leads rational people to treat you in irrationally cruel ways. It is what underscores my passion and commitment to people living with HIV infection, as well as preventing the transmission of HIV infection in vulnerable populations.

The second big milestone in my career came when I was working as a physician in a neighborhood health center in the heart of Boston's Jamaica Plain. I had decided to live within the community I served, and as a result had an opportunity to witness first hand the racism, xenophobia, and classicism that affected many of our patients who were usually from Puerto Rico or Hispaniola and spoke little English. Another pediatrician and I were working late and in the process of discussing our patients, when we discovered that we were both seeing unusual episodes of otitis media. Instead of the usual pathogens, this was an unusual organism, and we ended up staying late, mapping the cases out on a large map of Jamaica Plain that was in the pediatrician's office. We quickly realized that our cases seemed to cluster around one particular city wading pool. We were able to pull the charts, demonstrate that the organism was indeed found in 90+ percent of our patients, and ultimately sampled the water and clinched the finding. I hadn't heard of John Snow then or didn't know much about epidemiology, but that was about to change! This "happenstance" led me to the University of Pennsylvania and the Andrew Mellon Clinical Epidemiology program.

The third milestone was the invitation to work with one of the best HIV prevention scientists around, Dr. Jeff Kelly. As a seminal researcher in HIV prevention, especially among men who have sex with men (MSM), I could not imagine having someone of his caliber take an interest in my HIV prevention work with inner city teens. But he did and under his tutelage, I was able to successfully compete for an RO1 grant, and became a co-investigator with him on several projects. At his suggestion, I also became a member of an NIH study section, and learned a great deal about the funding and review process. He really walked with me every step of the way as I went from a junior investigator, to an RO1-funded investigator, and ultimately a full professor of medicine, the second African American woman to do so in the history of the medical school where I was appointed.

I learned through these experiences and many since, that sometimes adversity really is the mother of creativity, and that no one path is 'the right way.' My advice is to make your own way, follow your passion, and find those who will advise and support you.

OFFICE OF BEHAVIORAL AND SOCIAL SCIENCES
RESEARCH (OBSSR)

Margaret A. Chesney, Ph.D.

*Senior Advisor to the Director, OBSSR (Former);
Deputy Director, National Center for Complementary
and Alternative Medicine (Former)*

EDUCATION

Postdoctoral Fellowship:
(Psychiatry)

Temple University School
of Medicine, 1976

Ph.D.: (Counseling-Clinical
Psychology) Colorado State
University, 1975

M.S.: (Counseling-Clinical
Psychology) Colorado State
University, 1973

B.A.: (Psychology and Soci-
ology) Whitman College, Walla Walla, Washington, 1971



RESEARCH INTERESTS

I am involved in clinical investigations in the area of integrative or behavioral medicine including the role of the individual in the promotion of personal health; prevention of disease, and the potential for optimal management of health across the lifespan; and the role that lifestyle and behavior can play in health, development, and evaluation of behavioral strategies to enhance health and well-being, even in the face of serious health challenges. Much of my research has concentrated in three areas: women's health concerns, cardiovascular disease, and HIV/AIDS.

PIVOTAL EVENTS

A sense of purpose has been very important to my scientific success. When the HIV/AIDS epidemic raged throughout San Francisco, I was asked to evaluate an HIV/AIDS program. I approached my colleague, Thomas Coates, a highly esteemed scientist from the University of California, San Francisco (UCSF) to consult on the effort. He turned the request around, asking if I would consider joining him at UCSF and working together on the epidemic. About this event, I have often said, "It is rare that a colleague directly asks for help with their work." I was touched by his sincerity and the severity of the problem he confronted. I said, "Yes," leaving the Department I directed at SRI (formerly Stanford Research Institute) and began a career as a Professor of Medicine at UCSF, where I believe I made important contributions to research on HIV/AIDS, as well as coping with chronic illness, personal growth, and women's health.

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MENTORING & WORK/LIFE BALANCE

It was balancing family responsibilities that opened doors for me with regard to exceptional mentoring. To care for my step-mother in the East, I sought training experiences that would allow me to work part-time in the Washington area and continue my work at UCSF. Fortunately, I was given an opportunity to work half-time with ORWH at NIH. The 2 years I worked at ORWH coincided with the Office's 10-year anniversary. In addition to working with the office on a 10-year evaluation, I found that working on the anniversary activities gave me unparalleled opportunities to meet and be mentored by some of the most outstanding women in science, health policy, and public service in the United States. As a mentor, I dedicate myself to helping other women convert the personal choices they make in balancing family and professional responsibilities into their own unparalleled opportunities.

INSIGHTS

I believe that strong leaders know their "true north." Personally, this seems particularly true of women leaders. For me, it has been very important to think about what I want to contribute; to think about my values, and use these as an "internal compass" as I have gone through my life. For me, my "true north" is promoting health and preventing disease. When I have been faced with career choices, I have consulted my "internal compass" and it has helped me to stay on the course that is most meaningful to me, personally. It is easy to become intrigued by a number of scientific domains, or to be persuaded by topics that are highly popular at the moment, and this can create forces that can pull a person off course. If we, as women, consult our own internal compass, which often balances a number of forces, and stay true to our personal values, we are more likely to make decisions that will advance our interests as well as help us continue on a journey that will be personally and professionally meaningful.

I was privileged to serve as the President of the Academy of Behavioral Medicine Research, the American Psychosomatic Society, and the Division of Health Psychology of the American Psychological Association (APA). I was honored to receive the Annual Award for Outstanding Contributions to the APA Division of Health Psychology in 1982 and 1986, the President's Award from the Academy of Behavioral Medicine Research in 1987, and the Charles C. Sheppard Science Award, from the Centers for Disease Control and Prevention (CDC) in 1999. Two recent events that have meant a great deal to me were being elected to the Institute of Medicine in 2001 and receiving an honorary doctorate in humanities in 2008 from my *alma mater*, Whitman College.

OFFICE OF COMMUNICATIONS AND PUBLIC LIAISON
(OCPL)**Marin P. Allen, Ph.D.**

*Deputy Associate Director, OCPL;
Director of Public Information, NIH*

EDUCATION

Ph.D.: (Public Communication) University of Maryland-College Park

M.A.: (Radio-Television-Film) University of Maryland-College Park

B.A.: (Theater/English) University of Maryland-College Park
(with portfolio credits from The Corcoran School of Art)

**RESEARCH INTERESTS**

Communication theory and practice; science and health communication; public communication; leadership communication; film; political communication; health literacy; cultural competency; rhetorical communication; visual competency; and language. Dissertation: "The Guest-Host Archetypes. Rhetorical Constraint on the Modern American Presidency."

PIVOTAL EVENTS

My final science fair project in high school was a short, animated-the-old-fashioned-way — breath by breath — film called "Concepts of Infinity." I was allowed into the judging session because I was the only one who could run the equipment. The project won a special award as it didn't fit in any category. Later, in a Kodak student film competition, my film won an award that included cash and a new movie camera. The story was in the Washington Post, I was interviewed with my film on WETA-TV, and, importantly, I was invited to speak at the University of Oklahoma for the University Film Producers Association. I guess it was my earliest attempt, at age 18, to explain science.

I began my career on the faculty at the University of Maryland - College Park and later was a tenured, full professor and chair at Gallaudet, where for the last 2 years, I was on dual appointment directing university public relations. In between, I was a media specialist with the White House Conference on Aging. In 1990, I joined the NIH as the Communication Director for NIDCD. In the early years, I also headed planning, evaluation, and legislation. I have been at OCPL since 2004, and I still teach one course each year.

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Over the years, I was fortunate to receive honors and awards including Phi Kappa Phi; Pi Delta Epsilon; Phi Alpha Pi; Teacher of the Year (1984–1985); Emmy Award (1988–1989); Emmy Award (1986–1987); CINE Golden Eagle Awards (1988, 1989); NIH Director's Awards (group) Biennial Report (2008) and (group) GWAS (2008); Achievement Award for Mentorship in the Partnership Program NIDCD; and NIH Merit Award NIH Discovery Young Scientist Challenge (2007).

MENTORING & WORK/LIFE BALANCE

My son, a reporter covering national politics, was born during my early teaching years and my daughter, a licensed attorney, was born as I finished my Ph.D. She has memories (and photos) of sitting in my lap while I wrote. My husband of 34 years is a consistently formidable intellect and a challenger of ideas. Laughter is our major family survival tool—and no one put too much emphasis on cooking! My lovely daughter-in-law has fallen in with us very comfortably.

INSIGHTS

I was the first woman hired as full-time faculty in my division at University of Maryland - College Park and am believed to be the first woman to teach television and film production full-time nationwide. It was pivotal that I was offered a teaching assistantship, allowing me to make the transition into the academy. I have had many mentors, most who demonstrated their leadership, some who shared knowledge, but all who insisted on excellence. I have been an official advisor to a great many mentees, and an unofficial sounding board to many more. I especially valued working on the NIDCD Partnership Program, benefitting young scientists from diverse backgrounds.

I had an outstanding division chair in my first job and an outstanding dean when I was a department chair. I was fortunate to have had extraordinary colleagues who became friends as we discussed—and still discuss—the meaning of what we do and how we might do it better. I had the challenging experience of learning sign language mid-career. Signing altered my understanding of words, images, and communication.

I serve as NIH representative to the U.S. Department of Health and Human Services (HHS) working group on health literacy and on literacy and communications working groups for Healthy People. Additionally, I serve on the NIH Nanotechnology Task Force Executive Committee. I speak and write about communication topics regularly. Translating science and health for a variety of audiences and in a variety of ways is an enlightening experience.

Kim Pelis, Ph.D.

Speechwriter, OCPL

EDUCATION

Postdoctoral Fellowship: (History of Blood Transfusion and Shock) Wellcome Institute for the History of Medicine and The Science Museum, London, 1995–1998

Ph.D.: (History of Medicine) The Johns Hopkins University School of Medicine, 1994

B.A.: (Great Books and pre-medical studies) University of Notre Dame, 1985



RESEARCH INTERESTS

At NIH, my research follows the Director's speaking schedule. Solid research is the foundation of any good speech. Additionally, I continue to do medical historical research in my spare time. In particular, I will be writing a "biography" of typhus for Oxford University Press.

PIVOTAL EVENTS

My undergraduate mentor died shortly before my college graduation. It suddenly seemed far more important to devote my life to doing what I loved than to following a conventional career path. I decided to study the meeting-place of two loves—history and medicine—in graduate school. This had the desired effect, but ultimately set me on another type of conventional career path. The path did little to foster the kind of passion that initially brought me to study medicine from "alternative" (i.e., historical, social, and cultural) perspectives.

This is where mentoring again enters the story. It also provides a pivotal moment in my career. Initially, I had no appreciation for how historical research skills might be used outside academic history departments. Unconventionally placed mentors helped me understand these skills differently, appreciate them more fully—and wield them more effectively. In so doing, I've found myself on a career path that is not only intellectually fulfilling, but also plays a small part in helping NIH fulfill its mission: which is of profound cultural, social, and even historical, significance!

MENTORING & WORK/LIFE BALANCE

If only experience necessarily led to wisdom, I would be able to offer insightful tips and illuminating examples. In the real world, however, I can only confess that the challenges of balancing personal and professional responsibilities are both legion and constant. My personal approach is a work in progress; my estimation of its success varies wildly by the day (and

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sometimes by the hour). Humor helps. As do supportive colleagues, friends, and family members. And, when it comes to cleaning the kitchen, I try to remind myself that my mother's standards are about as applicable to today's world as her old poodle skirts would be considered fashionable.

Sometimes, that even works for a few minutes.

OFFICE OF DISEASE PREVENTION (ODP)

Rashmi Gopal-Srivastava, Ph.D.

Director, Extramural Research Program,
Office of Rare Diseases, ODP

EDUCATION

Staff Fellow:
(Molecular and
Developmental Biology)
National Eye Institute,
NIH, 1992–1994

National Research
Council Research
Associate: (Molecular
and Developmental
Biology) National Eye
Institute, NIH, 1989–1992

Ph.D.: (Microbiology and
Immunology) Medical College
of Virginia, Virginia Commonwealth University, 1989

M.S.: (Biochemistry) Banaras Hindu University, India, 1982

B.S.: (Chemistry & Biology) Banaras Hindu University,
India, 1979

RESEARCH INTERESTS

Genetic diseases, including cancer

PIVOTAL EVENTS

In India in the late 1960s, where equal education for women was available (it was not universally available), there was little effort in preparing women for scientific careers. Instead, women's careers primarily remained domestic. Studying home economics, arts, or social sciences and becoming a homemaker after getting married was the routine that I had seen many women around me go through. A pivotal event in my life was when my 6th grade science teacher understood my passion, dedication, and zeal for solving complex biological problems. Despite the challenges we both knew I would face, he encouraged me to take up science as a career and offered his help in persuading my parents. However, it was not needed, as my parents extended their full support.



MENTORING & WORK/LIFE BALANCE

Having the opportunity to mentor others is extremely important to me. I feel that my role as an individual, who has worked hard to achieve the dream, is to encourage others to do the same. As a graduate student and at the NIH, I mentored undergraduates on laboratory projects. Despite being busy with experiments and other professional responsibilities, I volunteered my time in teaching special science classes to elementary and middle school students. I have been invited to give lectures for Science and Math: Girls at the Cross Road of Success program, organized by the American Association of University Women, and am a member of the NIH Speakers Bureau, Office of Science Education.

Balancing personal life with professional responsibilities can be challenging, but is not impossible. After getting married in 1983, I followed my husband to the United States. I was lucky that my husband also encouraged me to pursue higher studies. During the last couple of years in my graduate school, I was pregnant with my first child and my husband had moved to another state. It was suggested that I get another Masters degree so that I could finish early and join my husband, but I was determined and joined NIH immediately after finishing my doctorate. I had to be very organized and I did two to three experiments at the same time so that I could spend time with my family during the weekends. My second child was born while I continued research, published several manuscripts, and became one of the more productive scientists in the lab. Later, I moved to the NCI as an extramural scientist where the opportunities for desk science existed and continued to balance my life, despite being very busy.

Our experiences shape our lifestyles. I firmly believe that life is to be lived to its utmost potential. I integrate the lessons I take from my personal life—playing the roles of wife, mother, friend, sister—with the roles that I play in my professional life such as a mentor, a colleague, and a leader. I am extremely passionate about both my worlds, and I use my experiences from each to benefit one other. I am a deeply involved parent, and I know that it is never good to mix in too much of one's professional life with personal life, but I allow my professional side to act as a vehicle for motivation for my two daughters. Being a working woman, we are given several tasks as we play the traditional and the dynamic roles in society. Though it is impossible to not let your work and life coincide with one another, setting limits as to how much they relate has been most efficient for me.

INSIGHTS

Though our society has progressed in a direction where women are respected in their professional lives substantially, I would still like to see more girls in the science and technology field. With growing need and career opportunities, I believe that contributions by women in the sciences are necessary and important. I know that there are still several setbacks in our

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journey to achieving personal and professional fulfillment in these fields, but with a combination of motivation, determination, and passion, I believe that every girl who dreams of being a physician, scientist, engineer, or working with the health care system can do so.

Elizabeth A. Yetley, Ph.D.

*Senior Nutrition Research Scientist,
Office of Dietary Supplements, ODP (Former)*

EDUCATION

Ph.D.: (Human nutrition) Iowa State University, 1976

M.S.: (Human nutrition) Iowa State University, 1970

B.S.: (Community nutrition) Iowa State University, 1963

RESEARCH INTERESTS

Nutrition, nutritional assessment, nutrition science, and public health policy

PIVOTAL EVENTS

Pivotal events in my career included strong family encouragement to pursue a scientific curriculum in college despite considerable discrimination against female scientists; a tough major professor who grilled me unmercifully on a weekly basis about my research decisions and activities; several managers within the Food and Drug Administration (FDA) who encouraged me to advocate and use sound science in regulatory decisions despite political pressures to do otherwise; and the freedom and encouragement from my supervisor and colleagues in the Office of Dietary Supplements to focus on areas of nutrition science and public policy interfaces in ways that were relatively novel to this office. Perhaps the greatest pivotal factor was the unfailing support that I received from my husband throughout my entire professional career and particularly at times when discriminatory actions and intimidations against me as a female professional became overwhelming.

MENTORING & WORK/LIFE BALANCE

In mentoring young scientists, I tried to instill the habit of incorporating scientific rigor into their science/policy activities. I also tried to help them in developing communication skills so that they could be advocates for science in hostile environments and be articulate enough to sell science to both scientists and non scientists. Several of these people have gone on to impressive careers in top academic and Federal agency management positions, in international science-based activities, and in significant research accomplishments. For subordinates who didn't have the talent to become leaders, I always tried to be honest but constructive in my communications. To this day, several former subordinates whom I had to inform that they would

not be getting promotions still thank me for my helping them to lead productive careers in positions that they initially did not want, but for which time showed them to be ideally suited.

INSIGHTS

The career milestones and scientific accomplishments for which I am most proud include those that had significant impacts on public policy decisions. While at the FDA, I provided the leadership for developing and sustaining a rigorous scientific standard for food label health claims despite considerable political pressures to water these standards down. Against strong public criticisms from many fronts, I led the FDA's successful efforts to develop and implement a folic acid fortification program to reduce the risk of pregnancies affected by neural tube birth defects. The U.S. approach was subsequently adopted by the Canadian government and several European countries are likely to follow our lead in the near future. As lead of the U.S. delegation to a United Nations (UN)-sponsored international standard-setting body, I was successful in incorporating science-based approaches into dietary supplement and infant formula standards. Recognizing the significance of my impacts on science/policy interfaces, FDA appointed me as the first and sole "Lead Scientist for Nutrition." More recently, I have successfully supported the development of a World Health Organization/Food and Agriculture Organization (WHO/FAO)-sponsored workshop and report on science-based models for safety standards for dietary supplements that is now being used by both developing and developed countries, including the U.S. Institute of Medicine.

Rebecca Bortz Costello, Ph.D.

*Director of Grants and Extramural Activities,
Office of Dietary Supplements, ODP*

EDUCATION

Ph.D.: (Clinical Nutrition) University of Maryland, College Park, 1994

M.S.: (Biology/Physiology) American University, Washington, DC, 1980

B.S.: (Biology) American University, Washington, DC, 1976

RESEARCH INTERESTS

Prevention and treatment of cardiovascular diseases through diet and lifestyle; role of minerals in the etiology of disease and disease prevention; epidemiology and clinical trial methodology



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PIVOTAL EVENTS

My key to success has been multitasking throughout my professional career. Combining my early research career in clinical cardiology, first at Georgetown University and the Veterans Administration (VA) Medical Center in Washington, DC, and then later in private practice at the Washington Adventist Hospital, Takoma Park, MD, drove my desire for higher education and learning. These clinical and academic environments provided for my success as a researcher and student. My mentor at the VA and Adventist Hospitals challenged my curiosity and quest for knowledge by supporting both my thesis and dissertation projects. I thrived on the excitement of initiating and recruiting for clinical trials, collecting the data, and publishing and presenting the results at national meetings. At times I was working at both institutions and commuting back and forth to classes at the University of Maryland. Returning to school for my doctorate in 1987, I was very focused and had a wealth of real life experiences to draw upon.

MENTORING & WORK/LIFE BALANCE

In the short tenure I had as a teaching assistant at American University and at the University of Maryland, as well as teaching Nutrition at Columbia Union College (1994–1996), I delighted in sharing experiences and lessons with my students. Similarly, I have mentored a number of graduate students during my tenure at Office of Dietary Supplements (ODS) on an array of projects and seen them accelerate on their career paths. My husband has been most supportive of my dual role as researcher and student, as we both worked full-time to meet the demands of our imposed schedules. Everything just seemed to fit together and fall in step—step—children visiting for vacations and the summer, adoption of a 6-year-old daughter when most couples were celebrating the end of their child-bearing years, and the return to school for my doctorate.

Mary Frances Picciano, Ph.D.

*Senior Nutrition Research Scientist,
Office of Dietary Supplements, ODP*

EDUCATION

Ph.D.: (Nutrition) The Pennsylvania State University, 1974

M.S.: (Foods and Nutrition) The Pennsylvania State University, 1970

B.S.: (Biology) St. Francis College, Loretto, PA, 1968

RESEARCH INTERESTS

Nutrition during growth and development, maternal nutrition (lactation), infant nutrition, early childhood nutrition, nutritional assessment, trace mineral metabolism, folate metabolism

PIVOTAL EVENTS

As an undergraduate student in biology, I read an article on nutrition as a means of combating disease and was stimulated to pursue nutrition in graduate school. I became interested in human milk as a graduate student and was fascinated with its unique properties and this fascination guided my research career for over 30 years. I had the privilege to work with two outstanding women during my graduate training and they encouraged me to pursue a career in academia. They were not only fabulous scientific models, they also were models on how to best balance a career and family life.

MENTORING & WORK/LIFE BALANCE

The main supporting individuals in my professional career were my parents and my husband. They always encouraged me to pursue whatever path I chose and provided substantial help when I needed it most. I have had the opportunity to mentor a number of graduate students during my career and follow their careers in academia, and the public and private sectors with pride. In my present position, I am responsible for training and career development activities and am continually impressed with the substantial weight keen mentoring imparts on career choices and sustained professional achievement.

Susan C. Rossi, Ph.D.

*Deputy Director, Office of Medical Applications
of Research, ODP*

EDUCATION

M.P.H.: (Public Health) The Johns Hopkins University, 1994

Ph.D.: (Chemistry) Dartmouth College, 1987

B.S.: (Microbiology) San Jose State University, 1982

RESEARCH INTERESTS

Evidence-based medicine (EBM), cancer prevention, cancer screening, chemical carcinogenesis

PIVOTAL EVENTS

The critical importance of using a proper control group has been a central mantra for the work I have been involved with as a student or as a scientist. Whether one is working in a laboratory situation doing in vitro research, or alternately, involved in studies with human participants, the control is equally important as the test group. I was surprised when I moved from the bench doing basic science to clinical medicine how often a control group is not used in medical research, for example case series and case reports. EBM came about, in part, due to the difficulty of discriminating between well-conducted clinical research and studies that, although interesting, should only be used for hypothesis generation. I have to acknowledge my

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first research advisor, the late Professor Karen Wetterhahn, for driving this point home when I started my scientific career.

MENTORING & WORK/LIFE BALANCE

I think of work/life balance as an admirable goal that I can't claim to have achieved. I am 52, married, with a 20-year-old daughter in college. When things got chaotic, and they did, I would just try to keep some forward momentum on all fronts while acknowledging that not all aspects of your life can be high priority at the same time.

Regarding mentoring, I have had the privilege of being mentored by some outstanding individuals, including Karen Wetterhahn, Michael Topal, John Gohagan, Sudhir Srivastava, Cherie Nichols, and Barry Kramer. Transmitting strong core scientific principles while allowing the person I am mentoring to develop as an individual and be ready for their own professional journey is what I hope to accomplish as a mentor.

OFFICE OF EXTRAMURAL RESEARCH (OER)

Norka Ruiz Bravo, Ph.D.

*Deputy Director for Extramural Research, NIH;
Director, OER*

EDUCATION

NRSA Postdoctoral Fellowship: (Physiological Chemistry) Johns Hopkins University, 1983

NRSA Postdoctoral Fellowship: (Biochemistry and Molecular Biology) The University of Texas

M.D. Anderson
Cancer Research Center,
1983–1986



Ph.D.: (Biology) Yale University, 1983

M.Phil.: (Biology) Yale University, 1981

B.A.: (Biology) Goucher College, 1975

RESEARCH INTERESTS

I am a scientist by training and at heart, a cell and developmental biologist. For many years, I have served as a science administrator and manager. I enjoy the big picture perspective. In my current position, I am rewarded by fostering a policy environment that promotes interdisciplinary approaches to problems, combining different areas—scientific and administrative—in ways that lead to novel outcomes.

PIVOTAL EVENTS

Rather than focus on specific events, I'd prefer to highlight categories of events that have positively affected my career as a scientist. One category is "movement." My first move was at the age of 14, from my home in Peru to boarding school in Florida. During my 18 years at the NIH, I have served in more than a dozen positions. I am always ready to embrace new challenges. Another category is "variety." I have served in various roles in several Institutes and Centers. The different "cultures," i.e., differing priorities and ways of accomplishing tasks, offer unique "laboratories" for ways to advance science. And the final category is "opportunity." When an opportunity has presented itself, I have always considered it.

MENTORING & WORK/LIFE BALANCE

I have been presented opportunities by and studied and worked with amazing people. I believe in affording others such opportunities and challenges and am committed to doing my part to develop the next generation of science professionals. This is an integral part of good science and good science management.

My career and family are all part of my life, and both are rewarding. I take time for adventures, such as my husband's and my recent Mt. Kilimanjaro climb. I also take time to read, bake, and do household chores. I derive satisfaction in such activities—a sense of closure that managing science really does not easily afford. I exercise regularly and make sure I attend at least one exercise class a week, more when possible. And when I have the chance, I relish hiking and bird watching. I have found, at least in my case, that with a bit of planning, life has a way of balancing itself.

INSIGHTS

From my laboratory work early in my career through my various roles at the NIH in administering and managing the conduct of research, I have always felt both challenged by and, at the same time, comfortable in the scientific milieu. I think this duality comes from the fact that science is about the business of learning. I love being challenged, and I am always on the lookout for the new. I am also comfortable in knowing that in taking this approach, I will always be learning.

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Sally J. Rockey, Ph.D.*Deputy Director, OER***EDUCATION**

Postdoctoral Fellowship:
(Entomology) University of
Wisconsin, 1986

Ph.D.: (Entomology) The
Ohio State University, 1985

M.S.: (Entomology) The
Ohio State University, 1982

B.S.: (Zoology) The Ohio
State University, 1980

**RESEARCH INTERESTS**

My research was focused on the physiological, biochemical, and ecological basis of insect reproduction and development. My expertise now is science administration.

PIVOTAL EVENTS

As a child, I loved animals. When I found you could actually study them, I was a goner. Late in my undergraduate career, I changed course from zoology and switched to entomology, much to the puzzlement of my parents. The next big change was accepting a position in research administration with the U.S. Department of Agriculture. I was substantially altering what I had envisioned would be my career—becoming a professor and researcher—but I knew that I would likely not return to the bench. However, something weighed on me as I made the decision and has stayed with me—my belief that a government career not only would be rewarding for me professionally, but also could have an impact on the broader direction of science and help other researchers reach their aspirations. My most recent change was in coming to the NIH after 19 years with the U.S. Department of Agriculture (USDA). As with the prior changes, it has proven to be the right move.

MENTORING & WORK/LIFE BALANCE

A high school teacher inspired me to study biology. While I never became a professor as I once had planned, my roles as Chief Information Officer, SES executive, research administrator, scientific misconduct liaison, supervisor, and communicator have afforded me many mentoring opportunities. Because of my diverse experiences and because I became a senior manager at a young age, I have had a number of young people turn to me for help in learning about becoming a leader. I guess you would say I did become a teacher of sorts.

My motto is work hard and play hard! My mantra is to put family first but to accomplish the job so that this is possible. My husband and I have an 18-year-old son and so many outside interests and friends that I can't wait to get home every day to enjoy making or listening to music, dealing a hand of cards, reading, swimming, or just relaxing.

INSIGHTS

A career in science administration is rewarding in myriad ways, particularly in that your work reaches many people and has an impact on their work and lives. A government employee places public service at the forefront of what she or he does every day. I am glad I made the choices I did. I feel my contribution is significant to biomedical research because like a bench scientist, I aspire to understand how things work and try to find creative approaches to make them work in new and better ways. I believe my efforts in turn have a positive impact on my staff and the people we serve, both in the scientific community and the global community.

Sally Ann Amero, Ph.D.*NIH Review Policy Officer,
Office of Extramural Programs, OER***EDUCATION**

Research Associate: (Biology)
Washington University, 1984–1987

Research Associate: (Biology)
University of Virginia, 1980–1984

Research Assistant: (Chemistry)
University of Virginia, 1979–1980

Ph.D.: (Developmental Biology
and Biochemical Genetics) West
Virginia University, 1979

B.S.: (Biology) Indiana University of Pennsylvania, 1974

**RESEARCH INTERESTS**

My former research interests focused on the mechanisms whereby DNA is folded into chromosomes, and certain stretches of DNA are either hidden or exposed by proteins that bind to them. These structural mechanisms are fundamental for proper replication of DNA and transmission of chromosomes to daughter cells, and for correct expression of genes in the right tissues and at the right time.

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PIVOTAL EVENTS

The most important, pivotal event in my professional career was my negative tenure decision. This godsend in disguise served as the springboard that led me to science policy, which is much more fulfilling than my former research career and suits my skills and temperament. It is important to note, however, that my training and experience in research were necessary precursors for the job that I have now.

MENTORING & WORK/LIFE BALANCE

The work/life balance is an issue that most professional people, not just scientists, work to resolve. For me, an important life lesson was learning to place boundaries on the amount of my life that I am willing to devote to my professional responsibilities. In part, this meant finding a career in which I could be successful without sacrificing the personal responsibilities and activities that are important to me.

Patricia Brown, V.M.D.

Director, Office of Laboratory Animal Welfare, OER

EDUCATION

Postdoctoral Residency and M.S.:
(Laboratory Animal Medicine)
Pennsylvania State University,
The Milton S. Hershey Medical
Center, 1982

V.M.D.: University of Penn-
sylvania, School of Veterinary
Medicine, 1978

B.S.: (Animal Science) Pennsyl-
vania State University, 1974



RESEARCH INTERESTS

Laboratory animal medicine and animal welfare policy

PIVOTAL EVENTS

My mother was raised on a farm in Pennsylvania, sparking her pursuit of a science education degree. Because of World War II, she did not teach, but worked in a Merck laboratory testing mosquito repellants. In today's times, I believe she would have pursued a medical degree instead of being a stay-at-home, 1950's mom. Her daily challenge to me and my sisters was to be the best students and to not be dissuaded in our pursuit of knowledge. My oldest sister is a Ph.D. in nutrition and behavior while my younger sisters are a computer scientist and botanist. My attachment to our pets and our summer visits to my grandparents' farm were the fuel that pushed me to pursue

veterinary medicine. "Talking to the animals" came naturally to me and I enjoy the unique challenges of comparative biology and laboratory animal medicine. Working at NIH has given me many opportunities to support and advance the health of humans and animals through scientific discoveries in basic and translational research.

MENTORING & WORK/LIFE BALANCE

Working with pigs, mice, and monkeys when you are pregnant has its own set of challenges. I was blessed to have a supervisor with four young daughters who was very supportive of my need for a flexible work schedule during my first son's early years. I was also extremely fortunate in that my husband chose to give up his career as an air traffic controller to stay at home with our boys after our second son was born. This allowed me to return to my career as a veterinarian at NIH and an officer in the Commissioned Corps of the U.S. Public Health Service. At the time of this role reversal in the early 1980s, it was a quite unheard-of practice. As a result, his bond with his sons is very special to this day.

Sherry L. Mills, M.D.

*Acting Director, Office of Extramural Programs
and Senior Policy Advisor, OER*

EDUCATION

M.P.H.: (Epidemiology) The Johns
Hopkins School of Hygiene and
Public Health, 1987

Residency: (Preventive Medicine)
The Johns Hopkins School
of Hygiene and Public Health,
1986–1988

Internship: (Internal Medicine)
Providence Hospital, George
Washington University School of
Medicine, 1984–1985

M.D.: University of Cincinnati, College of Medicine, 1984

A.B.: (Human Biology) Brown University, 1978

RESEARCH INTERESTS

My primary research interests were in social and behavioral sciences applied to cancer control. They included primary and secondary prevention in cancer control, advocacy for diverse populations, and tobacco control among diverse populations, including minority groups.



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PIVOTAL EVENTS

As a first-year medical student, I was fortunate to hear a presentation from Dr. Helene Gayle, who was then an M.P.H. candidate at Johns Hopkins, in which she described careers in public health. Her presentation was pivotal in my decision of a medical specialty: preventive medicine and public health. I appreciated most that through a public health career, populations, not just individuals, can be affected. Discovering a career in public health expanded the breadth of my career in medicine: direct patient care, scientific research, administration, and policy.

MENTORING & WORK/LIFE BALANCE

Balancing professional and personal commitments is a work in progress. Demands in one's professional and private life continuously change. It is essential that a working wife, mother, and daughter cultivate and nurture formal and informal networks to preserve balance. My role models and mentors have helped me work toward achieving balance. Some of the best advice I received: Don't live in regret; make decisions, act on them, learn from them; if they are good ones, repeat them; if they are not good, learn from them and move on.

OFFICE OF INTRAMURAL RESEARCH (OIR)

Arlyn Garcia-Perez, Ph.D.

Assistant Director, OIR

EDUCATION

Postdoctoral Fellowship:
(Kidney & Electrolyte
Metabolism), NHLBI, NIH,
1984–1987

Ph.D.: (Biochemistry)
Michigan State University,
1984

B.S.: (Cell and Molecular
Biology) Massachusetts
Institute of Technology
(MIT), 1979



RESEARCH INTERESTS

Osmotic regulation of gene expression and osmotic stress, stress-induced regulation of gene expression, regulation of gene expression, osmotically active organic solutes (osmolytes), renal molecular physiology

PIVOTAL EVENTS

Having left Cuba with only their education to count on, my parents always encouraged me to pursue the highest level of education possible and reinforced that I could do whatever I set my mind to do. My sister always led by example academically and I was exposed to MIT because she was a sophomore there when I first visited her as a freshman in high school. Having always loved science and math, I chose MIT for my undergraduate education. Although I thought I would go into medicine, at MIT, I was exposed early on to research and decided that I felt most compelled by the discovery aspect of science. Graduating from MIT was a life-changing event because it was such a test of character to achieve this that I knew from then on I could really do anything I set my mind to.

MENTORING & WORK/LIFE BALANCE

I have been blessed with diverse scientific and administrative mentors whose guidance has been critical throughout my career. Thus, I learned early on the value of outstanding mentors and I have tried to be one as well. It has been enormously gratifying to be a mentor and see my own lab trainees become capable scientists, to know that I had a positive impact on their careers. As a scientist administrator, I've also had the joy of creating new training programs (such as the NIH Academy) and mentoring more than just in my own lab. The discovery of talented youth whom I encourage to become future physician-scientists is exceedingly rewarding. Among the aspects that we always discuss is work–personal life balance. My philosophy on that is summarized by “there's a time to sow, and a time to reap.” The balance must be dynamic per stages in one's career and personal life.

INSIGHTS

The best general advice I can give is to continuously examine yourself, getting to know what you truly like and dislike along your career path. Make sure that your dreams and aspirations are truly yours and not someone else's. Exceptional opportunities tend to arise suddenly and with a very short decision-making period. If you know yourself, you can quickly decide whether to pursue an opportunity. Also, always maintain a positive attitude, looking at discouraging events or circumstances as a temporary phase. Analyze why something is not working and find alternate paths.

Joan P. Schwartz, Ph.D.

Assistant Director, OIR

EDUCATION

Ph.D.: (Biological Chemistry) Harvard University, 1971

A.B.: (Chemistry) Cornell University, 1965

RESEARCH INTERESTS

Neurotrophic factors; Glia

PIVOTAL EVENTS

The support, and unquestioning assumption, from my mother as well as male teachers and professors, starting with my biology teacher in high school, that I could be any kind of scientist I wished.

MENTORING & WORK/LIFE BALANCE

I have had a number of mentors, all of whom were balancing family and career, and all of whom offered different models for how to do so. In the end, no one can tell a person or couple what to do; they can only offer a set of potential strategies for consideration. The most important thing is the dialog between the spouses or partners so that both feel they are being heard and having input. Flexibility, open communication, and the ability to compromise are key. In our careers, my spouse and I had constantly to respond to a new situation in which one of us was making a decision that would impact both of us. Generally, the other one unexpectedly ended up in a better situation; so be open-minded!

INSIGHTS

The Vietnam War and the Doctor Draft, unfortunate as they were, resulted in our spending our professional careers at the NIH and we have never regretted it. I became tenured, set up my own lab and was happily doing neurobiology research for many years. In 1994, the opportunity to work with the Deputy Director for Intramural Research and the Office of Intramural Research came along—after much hesitation, I tried it and discovered myself in a position where I could have an impact on the lives of other women scientists at the NIH. Many scientists want to keep their noses in the lab and don't appreciate how rewarding "administration" or "policy" can be—it becomes your chance to make changes to the policies you are always complaining about, changes that affect not just you, but your fellow NIH scientists. So my recommendation is to seize the opportunity when it is offered—try it and you might discover you truly enjoy it and find it rewarding!



Bonny Harbinger, Ph.D., J.D.

Deputy Director, Office of Technology Transfer, OIR

EDUCATION

J.D.: Georgetown University Law Center, 1997

Postdoctoral Fellowship: (Clinical Psychology) Naval Regional Medical Center, San Diego, 1983

Ph.D.: (Clinical Psychology) United States International University, 1982

M.A.: (Psychology) United States International University, 1979

B.A.: (Social Work) Tel Aviv University, 1976

RESEARCH INTERESTS

I am currently interested in visual analytics.

PIVOTAL EVENTS

There were two pivotal events. The first was my mentor advising and, in fact, insisting that I continue my post-graduate education and apply to graduate schools in the United States. The second was the AIDS epidemic that started in the 1980s. Because there was so little known about the disease and its manifestations, I became involved in research on both the neuropsychiatric manifestations of the disease as well as treatment studies being conducted in San Diego. Both these events provided me with the education and expertise needed to become one of the pioneers in treating the psychological aspects of AIDS in Southern California.

MENTORING & WORK/LIFE BALANCE

Finding a good mentor is both extremely important and difficult for most people. The search, however, is well worth the effort, as learning from someone else's experience and finding a guide are invaluable. While I try to mentor and support the young women in my office, I struggle with finding a mentor of my own. For me, a good mentor is someone whom I personally admire, who has traits I wish to emulate, and who can serve as a guide and advisor in my current job as well as assist me with career development. I look for someone who can teach me from her life experiences and knowledge. Once the relationship is established and the mutual trust and respect built, the mentoring experience can be one of the richest in a person's working career.



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Yolanda Mock Hawkins, Ph.D.

Director, NIH Academy,
Office of Intramural Training and Education, OIR

EDUCATION

Postdoctoral Fellowship: (Cellular Senescence) National Institute on Aging, NIH, 1994–1998

Ph.D.: (Cellular & Molecular Biology) Meharry Medical College, Nashville, TN, 1994

M.S.: (Biology) Texas Southern University, 1990

B.S.: (Biology) Fisk University, Nashville, TN, 1986

**RESEARCH INTERESTS**

Signal transduction pathways and the role of protein kinase C

PIVOTAL EVENTS

Science, math, and engineering have always been my passion. I recall at an early age trying to make a candy machine from a shoe box; unfortunately, I could not master how to control the dispensing mechanism. Another time, while spending the summer at my grandparents, along with some other girls, I attempted to make a go-cart from spare pieces of wood and juice containers. Needless to say, our go-cart never worked like the ones built by the boys. These early experiences did not discourage me, but further fueled my curiosity. I am thankful for having parents who supported my interests and allowed me to participate in things like a summer enrichment program for junior high students at Rice University and also volunteer in Central America for the summer. The summer before entering graduate school, I volunteered in the lab of an investigator who would later serve as my department chair and graduate school dean. While volunteering in his lab, I observed female graduate students conducting experiments and, most importantly, working overnight taking samples from rats at various time points. After observing this, I knew that a Ph.D. graduate program was for me.

MENTORING & WORK/LIFE BALANCE

During the latter stages of my postdoctoral training, I decided I wanted to try science administration. After completing my postdoctoral training, I transitioned into extramural and intramural science administrative positions. I have been fortunate to be able to use my science training and background in my administrative positions. I think being trained as a scientist has taught me how to plan, be organized, be detailed-oriented, and always have a backup plan. Balancing a career and husband is a constant challenge. I make an effort to always submit the best

product because it represents me. I am thankful for having a husband that supports my interests.

Patricia Munse Sokolove, Ph.D.

Deputy Director,
Office of Intramural Training and Education, OIR

EDUCATION

Ph.D.: (Biology)
Harvard University, 1970

A.M.: (Biology)
Harvard University, 1968

A.B.: (Biology) Radcliffe
College, 1966

RESEARCH INTERESTS

My research interests include mitochondrial bioenergetics, liposomes as model membranes, and Ca²⁺ transport. Please note, however, that I closed my laboratory in 2001 and have been exclusively an academic administrator and AAAS Science & Technology Policy Fellow since.

**PIVOTAL EVENTS**

I once heard Rita Colwell, former Director of the National Science Foundation (NSF), attribute her success as a scientist to her father and her husband. Although I am far from being as successful as Dr. Colwell, I heartily agree. My father always made it perfectly clear that I could do anything my younger brother could do, reinforcing this implicitly by including me in playing catch with a football or a softball in the evenings after supper. Both my ex-husband and my current husband have been willing to take on responsibilities for children and cooking that seriously decreased the pressure I experienced to get everything done. You can't pick your father, but you can help your male partner to encourage his daughters to believe in themselves and test their limits while being a true partner in running your home.

MENTORING & WORK/LIFE BALANCE

Combining family and professional responsibilities helps one to maintain balance. There is nothing like coming home to a small child to put the stresses of the work day into perspective. Conversely, having professional duties to absorb some of one's zeal helps keep a parent from devoting a smothering amount of energy to her family. So, I see "balancing" (the verb) as contributing to "balance" (the noun). In terms of meeting both personal and professional goals, I cannot recommend organization and advance planning (plus a dose of flexibility) too highly. Creating weekly menus and shopping only once a week is a big time saver, as is cooking with an eye to creating

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leftovers. Remembering that what looks like housework to an adult can be play to a child is also useful; shop and cook and do laundry with your kids. You complete necessary tasks while spending quality time with your children.

OFFICE OF LEGISLATIVE POLICY AND ANALYSIS (OLPA)

Lenka Fedorkova, Ph.D.

Legislative Analyst, OLPA

EDUCATION

Ph.D.: (Neuroscience)
Kent State University, 2003

M.S.: (Physiology)
Youngstown State University, 1998

B.S.: (Pre-Medical)
Youngstown State University, 1996

RESEARCH INTERESTS

Neuroscience, specifically chronobiology, and science policy



PIVOTAL EVENTS

Throughout my early education, there were few role models that I could look to. There were, however, multiple factors that created a rich learning environment filled with opportunities to learn about nature, the universe, and all living systems. Beginning college-level equivalent mathematics, chemistry, physics, and biology courses in fifth grade of elementary school back in Czechoslovakia provided me with a solid foundation to draw from for years well into my higher education in the United States. The curiosity for learning, the recognition of the importance of knowing about our natural environment and our own bodies and minds were the product of influences from educators in my family and overall societal values that emphasized science education.

MENTORING & WORK/LIFE BALANCE

I had not fully appreciated the value of mentoring until later in my graduate studies, when I recognized a gap in my support network. I had many career questions my family could not help with due to their unfamiliarity with the U.S. system. I sought out both female and male instructors who I felt were giving of their time and interested in discussing my professional development decisions. There were several, mostly informal, councils that figured prominently in my professional development.

Simultaneously, while also fulfilling the role of a mentor as a teaching assistant to my students, I became involved with the Association for Women In Science in Ohio and helped organize many public lectures and weekend biology workshops to get

young girls excited about science. As I considered my professional journey, it was encouraging to meet working women with families. I knew I could do both successfully—my mom did! Busy times at work come and go, and especially when I used to travel a lot, I carved out time during weekends to recharge and stay connected with family and friends.

OFFICE OF PORTFOLIO ANALYSIS AND STRATEGIC INITIATIVES (OPASI)

Deborah Guadalupe Duran, Ph.D.

Chief, Systemic Assessments Branch, Division of Evaluation and Systematic Assessments, OPASI

EDUCATION

Ph.D.: (Social Psychology, minor in Statistics & Research Design)
University of Denver, 1995

M.S.: (Computers, minor in Mathematics)
Nova University,
Ft. Lauderdale, FL, 1987

B.S.: (Secondary Education: social science, math, biology, and health)
University of Nevada,
Las Vegas, 1981



RESEARCH INTERESTS

Assessment of scientific organizations, adaptive evaluation of research and development programs, cultural aspects of health coping, cancer prevention and coping practices in Hispanic women.

PIVOTAL EVENTS

Perhaps the most pivotal event that affected my success as a scientist was the advice to select an advisor who was established and successful. In doing such, my advisor supported my interests and enabled me to conduct my own research. I examined the cultural affects of health behaviors and the mistreatment of culturally manifested symptoms in western medicine. This line of research established me as the first scientist to explore somatic complaints in a cultural context, which resulted in an American Psychological Association award for innovative research to advance a field. I proceeded to become a principal investigator of two cancer projects focused on Hispanics my first year post doctorate. The success of these two awards moved me into government service where I began the study of science projects and programs' performance. Toward

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the end of the learning curve, scientific thinking prompted questions for more appropriate ways to assess scientific performance and the performance of science organizations. These questions initiated the quest for a new field of adaptive performance assessments.

MENTORING & WORK/LIFE BALANCE

A mentor sees value in you and connects your assets to a significant activity. This simple act makes a difference in a career, as it helps the mentee know what she can do and provides support to take risks and to be innovative. I can unequivocally state that I would not be a scientist today if it were not for my mentors, those who took special interest in me. Simultaneously, each mentee fostered my growth as well. In particular, a female mentor helped me to understand why I acted and thought differently than those around me. She taught me how to integrate my culture with the culture of science and government. Her care and guidance helped me to understand my own cultural differences and to value my skills, insights, and abilities. Fortunately, I have been able to pass these gifts onto others. The ability to pass gifts to others comes from self-awareness that recognizes both self-need as well as self-value. Although the value of self is often derived from being successful at what we do, self-awareness comes from the balance of not doing or doing different activities other than work. Sports, art, dance, and relationships with family and friends provide a balance to the stress of my work life.

INSIGHTS

Perhaps the key to my success is my mother, who told me from early childhood that I was very capable, so she consistently encouraged me to push through our poverty and deprivation in order to contribute to the greater good. From the early days of school through the early days of my career, I had key voices that saw something in me that I did not see in myself, and opened doors that I never knew existed. For instance, I was persistently recruited to play school sports even though it was counter to my peers in the inner-city environment. Sports turned into a coping mechanism that countered the violence and drugs in my neighborhoods and provided me scholarships through college. With this event and others, elders led me to the doors, but I had to have the courage to walk through. Support from others is critical to advance; yet, you are the one who has to make something of the opportunities given you. It is never anyone else's fault that you did not persevere. Although success may seem improbable because there are so many unknowns, the journey means you are never stagnate and the process often unravels unplanned successes. You have to participate with intention.

Elizabeth L. Wilder, Ph.D.

Acting Associate Director, OPASI; Acting Director, Division of Strategic Coordination, OPASI

EDUCATION

Postdoctoral Fellowship:
(Developmental Biology and Genetics) Harvard Medical School, 1990–1995

Postdoctoral Fellowship: (Molecular Biology) Northwestern University, 1989–1990

Ph.D.: (Biochemistry and Molecular Biology) Northwestern University, 1989

B.A.: (Chemistry) Hendrix College, 1984



RESEARCH INTERESTS

As a postdoctoral fellow and faculty member, my research interests were focused on signal transduction pathways during development, with an emphasis on how extracellular signals guide cell movements during organogenesis in *Drosophila*. Looking to broaden the landscape of my daily scientific pursuits, I came to the NIH as a program director to oversee extramural research in the area of kidney development for NIDDK. This later expanded to research covering basic biology of polycystic kidney disease and acute renal injury. I currently enjoy thinking about a wonderfully broad range of science via the NIH Roadmap.

PIVOTAL EVENTS

The first pivotal event that had enormous impact on my success was the first talk that I gave at a major international meeting. My thesis advisor coached me, and it was incredibly valuable, since I learned the elements of a good, brief talk. Good speaking skills have been vital for success that I have achieved. The second pivotal event was obtaining a faculty position. Although I ultimately decided to pursue a non laboratory career path, being on the faculty at a major academic center was critical for learning how to develop and lead a research program. A third major event was being recruited to the NIH as a program director/program officer of extramural research programs at NIDDK. This was a great job for me because it allowed me to think about the bigger picture of science as opposed to the intricacies of an individual lab. I learned the role of NIH scientific staff in tracking a field of science, understanding research needs of the community, and how to facilitate research in the area through program management. NIH program staff can play an incredibly valuable role in shaping a field of science as well as assisting individual investigators. I was fortunate in being recruited to the NIH as the NIH Roadmap was

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being developed. I was very interested in promoting increased interactions among scientists of differing disciplines, and the Roadmap seemed a perfect way to pursue this.

MENTORING & WORK/LIFE BALANCE

I have benefited from several outstanding mentors, both in the early stages of my training as well as at the NIH. I feel strongly that guidance from people who have taken a path before is the most instructive way to learn. Mentoring involves not simply teaching someone how to do something, it involves helping someone learn how to think productively about a particular issue and how to approach problems. It involves knowing enough about a person's interests and abilities to be helpful as they plot a career path. I take my role as mentor seriously and therefore attempt to listen first. Mentoring should absolutely be tailored to the recipient, so there are few points that I emphasize to all whom I mentor. One issue that I do emphasize, however, is the encouragement of life outside the lab or office. Each person's pursuit of a life outside the lab or office is unique, but an almost universal truth is that too much emphasis on work reduces energy, creativity, and contentment levels. My own sense of balance is maintained through my family and personal relationships, exercise and outdoor activities, and community efforts.

INSIGHTS

My primary insight into scientific careers, regardless of whether they occur in the lab, as a director of extramural programs at the NIH, in science policy, patent law, as a clinician, or anything else, is that smart, energetic people do well. "Smart" encompasses not only native intelligence, but training: one needs to be trained to think as a scientist, to write, to communicate effectively in person, and to do the specifics of any particular job at hand. Almost anyone can be trained, given the right mentors. The key element is passion: if you bring a keen interest to the job and energy to make things happen, interesting things will happen.

R. Lucille Roberts, Ph.D.

Lead Scientific Portfolio Analyst, Portfolio Analysis and Scientific Opportunities Branch, Division of Resource Development and Analysis, OPASI

EDUCATION

Staff Fellowship (Endocrinology of Parental Behavior):
NICHD, NIH, 1999–2001

Pharmacology Research Associate Training (PRAT) awardee:
(Behavioral Pharmacology)
NIGMS, NIH, 1997–1999



Smithsonian National Board Fellow (Reproductive and Social Behavioral Development): National Zoological Park, 1994–1996

Ph.D.: (Zoology) University of Maryland, 1994

M.S.: (Zoology) University of Maryland, 1991

B.S.: (Zoology) North Carolina State University, 1989

RESEARCH INTERESTS

Behavioral neuroendocrinology of social behavior, parental behavior and monogamy; etiology of child abuse, and child abuse prevention and intervention; neurobiological underpinnings of addiction and aggression

PIVOTAL EVENTS

As a college student, my career goal was to become a college professor in biology or zoology, so that I could serve as a positive role model for other students as my professors had been for me. My postdoctoral training at the National Zoological Park was important to my career, because the Zoo attracts thousands of visitors from all over the world who are eager to learn. I was able to teach college courses in the local community and continue the research that had been my full-time occupation during graduate school. I also had the opportunity to engage in public outreach and interact with educators and researchers from all over the world. I learned that education is sometimes more effective in nontraditional contexts. I decided that a career in civil service might be the most rewarding for me, where my talents can serve a mission that benefits the wider public.

MENTORING & WORK/LIFE BALANCE

I mentored college students as a postdoctoral student and during my research position at NICHD; I still provide advice to some of those students on balancing family with career and choosing their own best career path. In my current position in OPASI, the young women who seek mentorship are often just beginning their careers in science administration; the challenges and benefits offered by the field of grants administration are very different from those in their former laboratory environment, and the questions often center upon how to best navigate on their new career path. I recently also have realized that another valuable way I can serve as a mentor is by working with younger girls who are coping with adolescence and trying to define the person they want to become. Girls need to interact with adults who exemplify how they can achieve whatever goal they set for themselves. I serve as a Girl Scout leader and youth advisor at my church. I also support the interests and endeavors of my own two children and my husband, who works full time while also finishing his doctoral degree in environmental engineering. We each make family our top priority, and everyone helps out to make it all work.

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Madeleine F. Wallace, Ph.D.

Acting Chief, Evaluation Branch, Division of Evaluation and Systematic Assessments, OPASI

EDUCATION

Ph.D.: (Sociology, minor in Statistics) The University of Tennessee, 1996

M.A.: (Sociology and Statistics) The University of Tennessee, 1992

B.A.: (Sociology) Lee University, Cleveland, TN, 1987

RESEARCH INTERESTS

Evaluating the impact of biomedical research programs, tailoring cardiovascular health information for lay audiences, and adapting and disseminating evidence-based HIV behavioral risk reduction interventions and drug abuse treatment and prevention programs to meet the needs of minority populations.

PIVOTAL EVENTS

While I was involved in health programs in rural Louisiana, I became interested in evaluating such programs and higher-level policies to determine their ultimate effects on communities. I saw first-hand the consequences of implementing health programs without any evidence of their effectiveness. I realized that a multidisciplinary approach and bringing stakeholders together was needed to see problems from different perspectives and propose solutions that work. This experience reinforced my belief that health policies must be based on sound science.

MENTORING & WORK/LIFE BALANCE

I believe that determination and commitment are necessary but not sufficient conditions for a successful career. I see success on three levels. One level is the respect of peers so that you can work with those around you to implement sound policies. The second level is to mentor others. That is why I have taken an active role mentoring other scientists, especially Latinas in the sciences through organizations like the NIH Hispanic Employee Organization. And the third level is to contribute to the community. When you can achieve this balance, you view your work as an integral part of your life, and you can bring passion to your life, both at work and away from work.



OFFICE OF RESEARCH ON WOMEN'S HEALTH (ORWH)

Vivian W. Pinn, M.D.

Associate Director for Research on Women's Health, NIH; Director, ORWH

EDUCATION

Teaching Fellow in Pathology: Harvard Medical School, 1967–1970

Research Fellow and Acting Intern & Resident: (Pathology) Massachusetts General Hospital, Harvard Medical School, 1967–1970

M.D.: University of Virginia School of Medicine, 1967

B.A.: (Zoology) Wellesley College, 1962

RESEARCH INTERESTS

Immunopathology (renal, uropathology, and transplantation); health of women, minorities, and the underserved; diversity in academic and research careers

PIVOTAL EVENTS

My earliest dreams were to be a pediatrician, but several events changed my career path and provided unanticipated opportunities. During college, I took a leave of absence to care for my mother whose metastatic bone cancer was belatedly diagnosed after she had been treated instead for "arthritis." Her untimely death further confirmed my commitment to be a physician and to be one that would listen to the complaints of patients with an open mind—something that has been central to my way of approaching women's health today. Then, through my college placement service, I was offered a position as a research assistant with Dr. Benjamin Barnes and Dr. Martin Flax at the Massachusetts General Hospital, both known for their work in experimental transplant surgery and basic immunopathology research. That position, which I maintained until completing medical school and expanded upon during my postgraduate training, exposed me for the first time to the rigors and excitement of research and academic medicine—as well as a whole new field of interest that eventually shaped my career as a renal and transplant pathologist. Being the only woman and only person of color in my medical school class also made me aware of special issues that women faced in their health care, as well as an acute sensitivity to issues of women in medicine at a time when it was predominantly a male profession. My responsive-



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ness to these issues, by working with students, eventually resulted in my appointment as Assistant Dean for Student Affairs at Tufts University School of Medicine. While Professor and Chair of Pathology at Howard University College of Medicine, a chance encounter with then NIH Director, Dr. Bernadine Healy, resulted in another opportunity to make a change in my career from academic medicine to entry into science policy and administration in what was then the new Office of Research on Women's Health within the Office of the Director of NIH. Unexpected opportunities and thoughtful advice from senior colleagues have been pivotal over the years in providing me with enjoyable and diverse career horizons.

MENTORING & WORK/LIFE BALANCE

The leave of absence during my college years forced me into a more diverse undergraduate curriculum. I became aware of the need for a balanced education including poetry, arts, and other areas, in addition to the strict sciences in which pre-doctoral students usually concentrate, and the need for more balance in life and living. Admittedly, I haven't done as well in actual allocation between my own professional and personal pursuits—but I do try to advise others to do better.

I have come to value mentoring, whether it is recognized by that term or is seen as advice or counseling, as one of the most important factors for being successful in careers in science and medicine, and in preserving one's own pursuit of "life and living" as well as career. The value of mentoring or having someone from whom to seek wise counsel is based on the situations in which I did not have anyone I felt I could consult, as well as having been exposed to tremendous role models who took great interest in counseling and advising their trainees and students, including me. I consistently offer two phrases of advice to striving scientists and physicians: First, have a mentor and be a mentor; second, don't be stopped from achieving greatness—overcome barriers and exceed the lowered expectations of some who would doubt your ability to rise to success.

INSIGHTS

When I had the opportunity to join the National Institutes of Health, I remember wondering if this career change from academic medicine would be wise. But, this pathway for a different career has been stimulating and exciting, just as each of my unexpected career turns has been. So my advice to young and aspiring scientists, or even to those more advanced, is to be open to new opportunities, even if they seem risky, because the possibilities can be endless, and the excitement of new challenges and discovery, priceless.

Lisa Begg, Dr.P.H., R.N.

Director of Research Programs, ORWH

EDUCATION

Dr.P.H.: (Epidemiology) University of Pittsburgh
Graduate School of Public Health, 1985

M.P.H.: (Epidemiology) University of California at
Los Angeles School of Public Health, 1981

M.S.: (Nursing) University of California at San Francisco
School of Nursing, 1972

B.S.N.: Boston College School of Nursing, 1971

RESEARCH INTERESTS

Most of my extramural research career was in the broad area of cancer research, and within that, cancer epidemiology and specially breast cancer. I developed my own extramurally supported research career, and taught and mentored graduate students in epidemiology and nursing before joining NIH in 1998. Since joining ORWH, I have broadened my areas across all of women's health research, partnering with colleagues from across the NIH and HHS to foster greater research in this area.

PIVOTAL EVENTS

I don't have one event, as my career evolved over time as a Master's-prepared Clinical Nurse Specialist in the 1970s. I then moved into senior administrative positions with national groups conducting cancer research projects. It was in the late 1970s that I decided to return to school to obtain my doctorate and pursue my own research activities in the area of breast cancer epidemiology and the broader area of public health. I did so through all of the 1980s and through most of the 1990s until I joined the NIH.

MENTORING & WORK/LIFE BALANCE

While I worked in academia, I mentored countless graduate students in public health and nursing. I also collaborated with numerous academic colleagues as we developed complex research programs. Since joining NIH, where I initially served as Branch Chief for Cancer Training at the NCI, I created new training opportunities for extramural investigators and sought to partner with their institutional mentors, so that as many young researchers as possible could become competitive for NIH-supported research training grants. Since joining ORWH over 7 years ago, I continue to mentor investigators on all levels as they seek to charter and expand their research careers.

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INSIGHTS

If I was to suggest anything to younger investigators, it would be to look at the benefits of research collaboration, rather than focus on any negatives in your professional life. Academic career work is even harder now than when I served as a faculty member, there is no question about it, but the opportunities for creative work and professional growth far outweigh any negatives. I truly believe that. As a young investigator, I discovered some great and important insights that help guide me even now. Even the “less generous” colleague can teach you a lot about professional career issues, but also can provide important knowledge that will help your research career and advancement. These opportunities may not be obvious, but if you look for them, you can learn valuable lessons.

Eleanor Z. Hanna, Ph.D.

Associate Director for Special Projects and Centers, ORWH

EDUCATION

Clinical and Research Fellowship: (Psychiatry and Psychology) Massachusetts General Hospital, 1968–1971

Ph.D.: (Psychology)
Boston University, 1971

B.S.: (Psychology)
Boston University, 1959

RESEARCH INTERESTS

Sex/Gender and socioecological differences in health risk behaviors; factors influencing referral and treatment for modification of substance abuse; effects of treatment for substance abuse on health outcomes

Currently, Chair Trans-NIH Working Group for Research on Chronic Fatigue Syndrome (CFSWG)

PIVOTAL EVENTS

Everything I have done has been the result of unplanned junctures in what should have been a straight forward trajectory to a career as a research psychologist. I had been accepted into the graduate program at Boston University and was to be a teaching assistant; however, biology interfered and I learned during the summer that the child I was told would never arrive until there was surgical intervention was in utero. I was advised to have the baby and then matriculate into the doctoral program. The rationale was that pregnant women never finished their degrees so I was granted a 5-year window in which to do this.



During those intervening years, I had my two children; got my bearings in epidemiological research by being part of the team that developed, produced the manuals for, and helped establish the first cancer registries in Massachusetts; and my husband went on to pursue his advanced degree in electronic engineering. I entered graduate school at the right time in that everyone was beginning to take a public health approach to illness. Additionally, I was in a city divided into distinct ethnic enclaves and produced research for my dissertation that integrated personality theory, socioecologic science, and time perspective to understand alienation. Massachusetts was decriminalizing alcoholism at that point and I became involved with efforts of the Department of Public Health and the Department of Psychiatry at the Massachusetts General Hospital (MGH) to engage and treat alcoholics using multidisciplinary crosscutting approaches and where I had the good fortune to work with and be mentored by Dr. Morris Chafetz as part of his team.

Still planning on a research career, I stayed on at MGH where I had it all: my first Ro1 on the first try, teaching, and enough clinical work to keep me involved with patients. Then, my husband died. Not only had I lost my helpful partner, but I was faced with making choices so that my children could continue their lives as planned. Thus, I terminated my outside university teaching, increased my clinical and supervisory roles, and became more involved in administrative matters, remaining an active clinical researcher. Before long, I became a research consultant at the NIAAA and worked closely with the state and city in an advisory capacity, developing and evaluating alcohol programs. In 1976, I was appointed the Director of the West End Practice (Alcohol, Drugs, and HIV) to develop a diverse and professionally staffed service that was fully integrated into many of the diverse hospital services and that attracted medical students, residents, and fellows for training.

Late in 1988, I was invited by NIAAA to design the intervention for and direct their participation in the Prevention and Treatment of Hypertension Study (PATHS), the first national, controlled clinical trial in assessing whether an intervention directed at reducing alcohol intake by heavy drinkers with high blood pressure would reduce blood pressure. While at NIAAA, I had the opportunity to work with Dr. Pinn, who had the broad and inclusive approach to which I had been accustomed in Boston and which is essential in dealing with health, treatment, education, and policy. In 2002, I was invited to join the staff of the ORWH to chair the CFSWG that stimulates and develops interdisciplinary initiatives across the NIH and to develop collegial ties with other governmental and nongovernmental agencies to that same end.

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MENTORING & WORK/LIFE BALANCE

Children and their well-being should always be primary.

The sex of a mentor should not be an issue; my male mentors provided all that one could ask for. It is their humanity and strength of character, not only their expertise, that makes for greatness.

My most successful mentees have been men, many of whom remain friends and are in key leadership positions. One must remember that it was a predominately male-populated environment in my career until I arrived at NIH. The women and men who have been successful were those who were fine and decent human beings whom I was able to assist in making the choices appropriate to their lives, accepting them, and continuing to grow in their studies and careers.

INSIGHTS

No truly dedicated professional has it easier because of her sex, nor should she. Most important is seeking out opportunities that permit a reasonable balance or be willing to make and live with the hard choices you must make to get it while continuing to grow, even in adversity. My choice to remain on the research track for promotion rather than take the clinician–teacher route certainly kept me at a lower academic rank, but never hurt my career. In today’s world, that might not be possible.

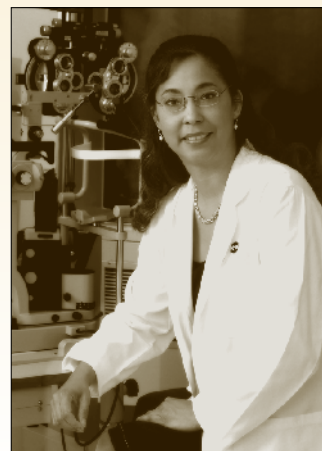
There was never a time when I was not trying to understand the world around me, especially in terms of understanding the external and internal factors involved in human behavior. Thus, I approached my schooling with the intent of learning everything: psychology, biology, sociology, and history, knowing that as a scientist, that would be the foundation on which to build.

The pivotal points in my career trajectory have been due to external life events and seemingly serendipitous; however, I had to make careful choices at each juncture. Perhaps I should/would have made different ones, but I find myself at the end of my career in exactly the right place to continue to apply lessons learned and continue to develop knowledge in health science policy and research.

Janine Austin Clayton, M.D.

*NEI Deputy Clinical Director (Former);
Deputy Director, Office of Research on Women’s
Health, Office of the Director, NIH*

*see full profile in NEI section
on page 43*



Jennifer Reineke Pohlhaus, Ph.D.

*American Association for the Advancement of Science
(AAAS) – Science & Technology Policy Fellow, ORWH*

EDUCATION

Postdoctoral Fellowship (Ethical, Legal, and Social Issues in Genomics) Duke University, 2006

Graduate Certificate (Health Policy) Duke University, 2005

Ph.D. (Biochemistry) Duke University, 2005

B.S. (Biochemistry/ Biophysics) Rensselaer Polytechnic Institute, 1999



RESEARCH INTERESTS

Biomedical: DNA damage and repair, antibiotic resistance, genomics. Policy: Women’s health, global health and health disparities, workforce capacity and diversity in STEM (Science, Technology, Engineering, and Math) fields

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PIVOTAL EVENTS

The most pivotal event in my scientific career was joining the laboratory of Dr. Ken Kreuzer at Duke University. He accepted me into his lab when I decided to part with my first graduate advisor, and he encouraged my developing interests in science policy.

His laboratory was an environment where mutual respect between the advisor and the trainee was practiced by default. I owe my success as a scientist to his willingness to accept me into his laboratory and to the subsequent mentoring that I received from him.

MENTORING & WORK/LIFE BALANCE

Supervisors and advisors are often expected to mentor their employees and trainees, especially in a system like an academic health center. The key to creating a mentoring environment, rather than simply a supervisory or advisory environment, is the presence of mutual respect. I've been fortunate to encounter this type of respectful environment several times in my career.

Like many scientists, I often work compulsively, making it hard to achieve balance between my professional and personal lives. Luckily, my husband is also a scientist, so he understands my work, and he is always willing to listen. Through the many discussions we've had over the years we've been married, I've been able to reach conclusions that were under the surface, making what seemed like a difficult decision into something much easier.

OFFICE OF SCIENCE POLICY (OSP)

Lana Skirboll, Ph.D.

*Associate Director for Science Policy, NIH;
Director, OSP*

EDUCATION

Postdoctoral Fellowship: (Psychiatry and Pharmacology)
Yale University School of Medicine

Ph.D.: (Pharmacology)
Georgetown University Medical School

Lynn Diane Hudson, Ph.D.

*Director, Office of Science Policy Analysis, OSP;
Chief, Section of Developmental Genetics,
Division of Intramural Research, National Institute
of Neurological Disorders and Stroke*

EDUCATION

Research Associate: Brown
University, 1979–1982

Postdoctoral Fellowship:
Harvard Medical School,
1977–1979

Ph.D.: (Genetics and Cell
Biology) University of
Minnesota-Minneapolis,
1977

B.S.: (Biochemistry)
University of Wisconsin-
Madison, 1973

Nicolet College, Rhinelander, WI, 1970–1972

RESEARCH INTERESTS

Deciphering the gene network that regulates the development and differentiation of oligodendrocytes, the myelin-forming cells of the central nervous system

PIVOTAL EVENTS

The eureka moment—a flash of insight in a darkroom, where a pattern of bands on a film told me something that no one else in the world yet knew—sealed my scientific calling. While the “rush” of such moments is fleeting, an addiction to research persists. I soon found that the thrills aren't limited to one's own experiments. Being surrounded by colleagues banging out results, truly a benefit of being at the NIH, along with the vicarious pleasure of reading the literature, can make each day one of discovery.

My graduate student laboratory studied lysosomal storage disorders, devising new ways to collect and analyze lysosomal enzymes from tears so that those squeamish about having blood drawn could be tested. Helping collect tears for Tay-Sachs Disease screening at a local synagogue cemented my calling for translational research—what could be better than contributing to health solutions while indulging a passion?

MENTORING & WORK/LIFE BALANCE

Not much attention was paid to mentoring in the era when I was developing my scientific identity. One well-intentioned scientist decided that I would benefit from a female role model, so he selected a gifted Yale molecular biologist. This temporary arrangement was terminated when, to his dismay, she had a



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baby. In his words, "I thought Joan was more into her science." This didn't deter me from having a family.

When mentoring women scientists, I stress that of course they, too, can juggle family and a scientist's life, and I am truly as delighted about their new babies as their experimental success. My two daughters are both math majors, even after hearing a Harvard president relate innate abilities to the small proportion of women in that field. Mentors must be positive. The worst thing a mentor can do is tell someone they cannot do something.

INSIGHTS

One of the joys of being a scientist is experiencing how science intersects with society. Serving as an officer for the American Society for Neurochemistry, working on scientific advisory boards for the Pelizaeus-Merzbacher Disease Foundation and the National Multiple Sclerosis Society, judging science fairs, helping our institute develop a curriculum supplement on the brain, engaging in peer review—all these activities sparked my interest in policy. How does our scientific enterprise work (or not work) and how can we engineer the system to facilitate research? I've been extremely fortunate both to be located at biomedical research central (= NIH) and to be mentored by savvy senior women who provided the opportunity to learn first-hand what policy is. Now as Director of the Office of Science Policy Analysis, I'm thrilled to be part of a team tackling issues that impact the Nation's health.

Amy Pate Patterson, M.D.

Director, Office of Biotechnology Activities, OSP

EDUCATION

Postdoctoral Fellowship:
(Endocrinology and
Metabolism),
NIDDK and NHLBI,
1988–1993

Assistant Chief Resident:
(Internal Medicine)
New York Hospital,
1987–1988

Residency: (Internal
Medicine) New York Hospital and Memorial Sloan Kettering,
1985–1988

M.D.: Albert Einstein Medical College, 1985

B.A.: (Biology) Harvard University, 1980



RESEARCH INTERESTS

My research focus is the molecular underpinnings of mRNA editing and the relationships between lipid metabolism, infection, and inflammation. In the policy realm, my interests are the intersections of basic science, medicine, ethics, law, society and public health—where policy options are formulated and decisions made with the goal of public service.

PIVOTAL EVENTS

Two events had profound and unexpected effects on my career path. After completing my post-doc at NIH, I was about to begin an academic research position. But due to the need to care for a family member, I postponed those plans to stay in the Washington, DC area. I accepted what I thought would be a short-term position at FDA as a medical officer in the Center for Biologics Evaluation and Research. Over the next 5 years, I learned first hand about drug development, clinical trial design, public health policy, and regulation. I also had the good fortune to be selected to represent HHS at the WHO on an emerging, controversial science policy topic. Scientists and ethicists from 30 nations developed international guidelines that are still in place today. That experience opened my eyes to the diversity of global perspectives in policy development and profoundly influenced my career path toward science policy, which offered ample opportunity for problem solving and public service, while delving into the crossroads of science, ethics, law, and society.

MENTORING & WORK/LIFE BALANCE

My first supervisor during a summer internship at NIH included me in developing and testing hypotheses as well as writing manuscripts. This was an important message for me at age 17—that ideas are tested and honed through experimentation and thoughtful, lively discourse. These lessons hold true in the lab and in science policy.

In medical school and residency, every patient was a mentor; I learned that the only "wrong" question was the one I didn't ask; the one diagnosis I didn't think of was the one I might not make and one person I would not help. One of my professors emphasized medicine as a profession for those with a passion for "eating problems for breakfast." A meticulous differential diagnosis, expecting challenge and dilemma, and finding joy in problem solving are critical in medicine and also turn out to be true assets in science policy. My current supervisor embodies these skills in spades and expects thorough analyses of issues.

Enjoying problem solving is also a skill essential for balancing work and family life. My husband and I have four children and they are our top priority. In order to make that happen, our lives have to be well organized. I have learned to expect the unexpected as a part of life and to have back-up plans in place.

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Skills for raising a family—conflict resolution, negotiation, patience, resiliency, and time management—will stand one in good stead during any work day in the sciences.

INSIGHTS

Accept challenge. I was surprised when I was asked to serve as Assistant Chief Resident in Internal Medicine. It meant supervising the residents and the medical team responding to cardiac arrests and triage admissions from the emergency room and being first on call to supervise both the cardiac and medical intensive care unit at night. I accepted not because I felt I possessed the supervisory skills, but because of my passion for medicine and working with people. Through that experience, I learned much about accepting challenge, supervision, decisionmaking, and testing my preconceived notions. Pursue passion. Through my experience at FDA and WHO, I also learned the value of pursuing one's passion while choosing a career path and being open to new and unanticipated opportunities, even if it takes you off the career trajectory you had planned. I didn't plan a career in science policy, but life intervened with unexpected personal challenges and professional opportunities, enabling self-discovery. Without passion for your work, there is little reward; caring deeply about what you do helps provide the drive to work through challenges. Third point, expect the unexpected and train yourself to enjoy challenge. Not only is this the heart of scientific inquiry but is, not surprisingly, a big part of raising a family as well. Fourth point, aim your efforts at excellence and shift your focus beyond yourself. Being a woman in science is not, for me, the issue—it is aiming for science in the service of public health. Finally, doors usually do not open unless you knock.