

Women Rock Science

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A Pocket Guide for Success
in Clinical Academic
Research Careers



Springer

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Preface

If you are a woman in clinically relevant science, we wrote this book for you. This includes MDs, such as physician scientists or physician educators doing research alongside teaching and clinical work. This includes PhDs or master's level scientists, doing work that will improve people's health and our understanding of disease. All of you may be bench scientists, health services researchers, or medical education research fanatics. You may do research in lab coats, scrubs, jeans, or tutus (just kidding on the tutus, though that would be cool). You may have large teams backing you up or fly solo in most of your work. In all of these cases, we wrote this book for you. This book centers on ways to think about rocking your science and being part of the larger community of women scientists.

We had a few motivations in writing this book. One motivation was we noticed when reading other texts that provided strategies and advice about scientific careers, the pronouns were typically male, and the case studies were usually focused on male scientists (unless talking about cases of women scientists struggling to balance career and child-rearing). Another motivation was the tremendous growth in the scientific and business literature on women and leadership. There are data that illustrate particular strategies for leadership and organization centered in areas that many women already have as strengths. We wanted a book with female pronouns and a book that honored the unique contributions and strategies that women can use in contributing to science. However, our goal was *not* to exclude those who do not identify as female. If you are reading this book and belong to another gender category, we are thrilled to have you along.

How to Use This Book

We suggest that it may be helpful to read, or skim, this book as a whole the first time through. The book is organized in a purposeful manner, as you will learn in chapter “[The Framework for This Book: The Socioecological Model.](#)” Chapter “[The Framework for This Book: The Socioecological Model](#)” establishes the framework of the book: the socioecological model. In that model, you as a scientist are in the middle, surrounded by your research team, then your institution, and then your professional societies. We explain the model and then nudge you to apply this framework and sketch out how it may apply to you and your science. We visit these themes in chapters “[You as a Scientist,](#)” “[Your Team: Mentors, Staff, Colleagues, and Mentees,](#)” “[Your Institutional Support/Academic Environment,](#)” and “[Your Scientific Community](#)” for junior faculty and then again in chapters “[Expanding Your Team,](#)” “[Your Institution: Growing Within,](#)” and “[Advancing in the Larger Scope of Your Field and Community](#)” for the transition to the next stage of one’s career. Each of these chapters provides information, evidence, and case studies of women scientists. Each chapter concludes with the opportunity to apply what you have learned to create sketches, lists, plans, or reflections that apply to your own science. Chapter “[Your Promotion](#)” focuses on academic promotions and chapter “[Your Forever Skills: An Epilogue](#)” has short case studies, illustrating ways to approach the necessary skills you will need to grow as a researcher throughout your career.

We welcome you to refer back to these chapters at different stages or when facing different experiences throughout your career. Chapter “[Your Promotion,](#)” focused on academic promotions, may be helpful to read when just starting a junior faculty position, so you know how to begin to build your promotion package successfully from the start. It then may also be helpful to revisit chapter “[Your Promotion](#)” yearly with your annual reviews and carefully read once more as your promotion process begins. Before going to your yearly

academic conference, you may find it helpful to revisit chapter “[Your Scientific Community](#)” on national organizations and conferences. Even as you advance in your field and focus more on the topics in chapters “[Expanding Your Team](#),” “[Your Institution: Growing Within](#),” and “[Advancing in the Larger Scope of Your Field and Community](#),” we invite you to reread the earlier chapters as you become a mentor to junior scientists and want to center your advice and insights on their current issues.

How to Use Each Chapter

Each chapter begins with learning objectives to clarify the information we hope you will get from your reading. Throughout the chapter, we wanted to include a balance of evidence, advice, strategies, and voices from other women scientists. Therefore, you will note callout sections in each chapter. One callout is called *Lessons from the Lab*. This is a section in which we, as your authors and tour guides, share a little of our personal experiences. In another callout section, *Meaningful Moments*, we share pearls of wisdom, often from senior scientists in the field that we would consider role models. For each of these callouts, we credit the woman who was generous in sharing her reflections. We also highlight three *Stories* in this book from women whose career paths have been winding and fruitful. Finally, in the section *Women at Work*, we share real-life situations of women we have known, with details changed to protect the innocent (and guilty). These sections are intended to highlight successful strategies and challenging situations.

Each chapter ends with *take-home points* we hope you will carry with you, as well as suggestions for *homework*. Yes, homework. Studies have shown that you learn more when you directly apply what you have learned; we wanted to provide some suggestions on direct application of content in each chapter. Some people may find it helpful to consider this true homework, while others may choose to think of it as extra credit.

At the end of the book, we include *references and resources*. There are many great resources out there, and we highlight the ones linked to the content in and topic of each chapter.

Embrace Curiosity

We hope you will enjoy and benefit from this book, and it will spur you to continue to be curious about the process of rocking your science. We hope this curiosity will inspire you to continue to grow and learn your science, as well as continue to pursue learning about the experience of being a woman scientist. We wrote this book inspired by our own curiosity. What we would learn? What could we share? And even, can we do this? And with this spirit of inquiry and curiosity, we share our first Meaningful Moments quote:

Meaningful Moments

The characteristic that has been the most powerful and sustaining in my career has been “curiosity.” It has been the driver in both my clinical and research work. I like to understand and learn things about clinical conditions and understand or be able to explain (teach) as best as possible how things work together. For example, my interest in acute sinusitis in children stemmed from taking care of youngsters with orbital and central nervous system complications of sinusitis. Young children presenting with dramatic swelling and discoloration of the tissues surrounding the eye and teenage boys with fever, altered consciousness, and focal neurologic signs were the stimulus to my interest. I wondered, what did sinusitis look like when it wasn’t complicated? Some URIs become complicated by sinusitis but the majority don’t. Why is that? How often do complications occur? Some cases of acute sinusitis resolve spontaneously, while oth-

ers require treatment with antibiotics. Why is that and how can you tell?

I sit in Grand Rounds every week and listen attentively.

I am interested in almost every topic even though it may fall outside my realm of clinical care.

I am curious.

– Ellen Wald, MD

Stay in Touch

Writing this book started as a coffee conversation at a national meeting and grew over time to be a dream, and then a goal, and then an actual...thing. We hope it gives you strategies, new ideas, and a reminder of your own value. We also hope you will feel free to keep in touch; you can tweet to our hashtag #WomenRockScience or send us an email with feedback or your ideas on how best to rock science.

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Finally, to our families. You inspire us to be better doctors and scientists and to lead by example for the next generation of academicians:

- Barney, Sydney, and Arthur
- Peter, Merritt, and Corinne and our beloved but departed Fiona.

Thank you ~

Contents

The Framework for This Book:

The Socioecological Model	1
The Socioecological Model	3
The Academic Three-Legged Stool and the SEM	6
Mentorship: It Takes a Village (or a SEM)	8
Transformational Leadership: Women and Context.	10
The Third Person for This Book	12
Take-Home Points	13
Homework.	14

You as a Scientist	15
Unique Strengths of Women Scientists	16
What Is Your Passion?	16
WHAT and WHY.	18
HOW	20
WHO	22
I.CAN'T.EVEN.	25
When Things Do Not Go as Planned	26
What Do You Value? What Are Your Strengths?	28
Tools to Consider	30
What Is Your Work Style? Daily Time Management and Long-Term Tasks	31
Do Not Forget Self-Care	35
A Note About Haters.	36
Your Mission Statement	36
Take-Home Points	39
Homework.	39

Your Team: Mentors, Staff, Colleagues, and Mentees	41
Your Mentors	42
Finding Your Mentors	46
What Are You Seeking in a Mentor?	54
You Have Found Some Mentors, Now What?	55
Risks of Mentorship	56
Your Research Lab and Team	59
Setting Expectations for Your Team	60
Developing Your Own Manager Skills	61
Your Colleagues	62
Your Close Collaborators	62
Your Mentees	63
Take-Home Points	66
Homework	66
Your Institutional Support/Academic Environment	67
What Is Your “Institution?”	68
What <i>Does</i> Your Institution Offer to You?	68
What <i>Should</i> Your Institution Offer to You?	71
How Does Your Institution Assure Their Faculty Advance?	74
Where Do You Find Your Institution’s Resources?	76
What Is Your Academic Environment? How Is that Different than Your Institution?	80
Take-Home Points	82
Homework	82
Your Scientific Community	85
Joining Professional Societies	86
What Can You Get Out of a Professional Society?	88
Why Would You <i>Not</i> Join a Professional Society?	90
What Can You <i>Do</i> in a Professional Society?	91
What if I Have More than One Professional Society?	92
Attending Scientific Conferences	93
Strategies to Get the Most Out of Your Yearly Conference	94
Being a Reviewer	98

Reviewing Manuscripts 98

Reviewing Grants 100

Involvement in Your Local Community:

Contribute Where You Live and Work 102

 Students 103

 Community Organizations and Organizers 103

 Balancing Multiple Requests 105

Take-Home Points 106

Homework 106

Your Promotion 107

What Is Tenure? 108

Know the Tracks and the Lingo 109

Create a Mentorship Committee
for Your Promotion 111

How Do You Get Promoted? 112

 Documentation 113

 Annual Reviews 113

 Funding 115

 External Reviews 116

 Midterm Review 116

The Promotion Portfolio 117

What Happens After Your Promotion
Portfolio Is Made? 119

Homework 120

Expanding Your Team 121

Start with Yourself 122

You as a Mentor 123

 WIFM? 123

 When a Potential Mentee Approaches You 124

 When Your Mentees Bring You an Idea 125

 Actions of Effective Mentors 126

Expanding Your Work Group 126

 When It Is Time 126

 Congratulations, Now You Are a Manager 127

 Ways to Expand Your Work
 with New Team Members 127

Diversity and Equity	128
Cultivating New Relationships with Research Groups	129
What Do These Collaborations Look Like?	129
How Do I Foster These Collaborations?	130
WIFM?	130
Time Management	131
Time for a Coach?	132
Take-Home Points	133
Homework	134
Your Institution: Growing Within	135
What Is “Growing”?	136
Who, Me?	137
Types of Leadership Positions Within Your Institution	138
Section, Division, or Department Chairs	138
Deans	141
Research Center Director	142
Interdisciplinary Research Team Leader	143
Administrative Clinical Management	144
Administrative Educational Leadership	144
Administrative Faculty Development Leadership	146
What Kind of Leader Do You Want to Be?	147
Being a Leader Means Building More Teams Around You	148
Take-Home Points	149
Homework	150
Advancing in the Larger Scope of Your Field and Community	151
Leadership: Getting Ready	152
Your Professional Society	154
Journal Involvement: Beyond Reviews	156
Editorial Board Positions	157
Associate Editors and Editor in Chief	158
Grant Review	159
Community Involvement	161

Big One-Time Projects	163
Multicenter Trials	165
Homework	166
Your Forever Skills: An Epilogue	167
A Few Favorite Resources	171
Index	175

Notes on Contributors

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Marsha Lopez, PhD, MHS has been involved in the study of health and disease for more than 26 years, participating in various aspects of projects ranging from medical and

behavioral pharmacology to women's health and disability issues, to epidemiology and surveillance, offering expertise in hands-on laboratory work, grant writing, study design, data collection, data analysis, and outcomes evaluation. In 2006, after training and career stops at Georgetown University, the Johns Hopkins University School of Hygiene and Public Health, the University of Maryland, and the Walter Reed Army Medical Center, she landed at the National Institute on Drug Abuse, where she is currently the Chief of the Epidemiology Research Branch in the Division of Epidemiology Services and Prevention Research. In recognition of the impact early support made on her career trajectory, particularly as a woman who did not always take the traditional STEM route, Dr. Lopez is now able to provide some of that reinforcement from the other side. She is thankful for the few but powerful women whose collaboration, humility, and humor continue to make the journey worthwhile (especially BDG, KE) and for the opportunity to model for her kids Marco and Gigi how women truly rock.

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In 1997, Dr. Wald received the Pediatrician of the Year award from the Pennsylvania Chapter of the American Academy of Pediatrics, and in 2001, she was honored with the

Howard Mermelstein Award for Excellence in Pediatrics. She received an Alumni Achievement Award in 2018 from SUNY Downstate Medical Center for her significant contributions to the medical profession. Dr. Wald has been recognized for her teaching ability on many occasions, including in 2001 when she received the Resident Teaching Award at the Children's Hospital of Pittsburgh and in 2008 when she was the recipient of a clinical teaching award from the pediatric house staff at the University of Wisconsin. She has served as Chair of the Department of Pediatrics at the University of Wisconsin-Madison School of Medicine and Public Health since 2006.

Dr. Wald would like to recognize Jane Pitt. "I met Jane when I was a PL3 which was also the year that I served as chief resident. She was a young scientist who had recently completed her training at Columbia University, and she came to my residency to join the Division of Infectious Disease. She seemed very self-assured and knowledgeable and was an excellent teacher. Jane was the only faculty member who ever invited me to her home with a small group of other residents. She was the first person I ever heard use the word 'aminoglycoside' to describe a class of antimicrobials to which gentamicin and kanamycin belonged and provide a framework in which to consider the appropriate use of antibiotics. She was my inspiration to pursue Infectious Diseases as a specialty. I can't say that she mentored me but did serve as a role model."

Susanne Wells, PhD is a Professor of Pediatrics and the Director of the Epithelial Carcinogenesis and Stem Cell Program. She received her PhD in Molecular Genetics at the State University of Stony Brook, and her postdoctoral training was in Molecular Virology at Harvard Medical School. Dr. Wells studies the biology of squamous cell cancer development and progression due to infection- and non-infection-related causes.