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**The Graduate Student's**  
**Backpack**  
**It's What You Need on the Research Path**

# The Graduate Student's **Backpack**

**It's What You Need on the Research Path**

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## FOREWORD

Clearly, the choice to pursue graduate studies is a decision that can have tremendous ramifications on one's professional development. The journey from structured undergraduate degree programming to largely unstructured graduate education is a significant and deliberate paradigm shift, one that few students are well equipped to manage. This book provides a practical guide to the graduate education experience, beginning with the critical task of choosing graduate advisers, committee members, and a research topic, and ending with how to present yourself to employers when you have completed your graduate studies. Every student contemplating the pursuit of an M.S. or Ph.D. degree should use this book as a guide.

Dr. Taskey has provided very useful universal hints on becoming a successful graduate student and "closing the deal" with your thesis and scholarly publications. This book examines the personal and professional challenges that most graduate students encounter and offers insightful solutions to these trials and tribulations. It also provides direction on developing resumes and interviewing skills.

We believe that graduate students and graduate-student advisers will frequently refer to this publication. Before long, this guide to graduate school will feel as comfortable as that backpack you carry every day. Enjoy the journey through this book.

**Ken Barbarick**, 2012 American Society of Agronomy President  
**Gary Pierzynski**, 2012 Soil Science Society of America President  
**Jeffrey J. Volenec**, 2012 Crop Science Society of America President

## PREFACE

**N**ew graduate students usually begin their advanced academic career in a state of excitement and anticipation. They have before them an opportunity that only a tiny fraction of the world's people can experience—indeed, they are privileged individuals. As they settle in, meet new people, and learn their new environment, they begin to grasp the reality of their situation. They begin to see the responsibilities that go with privilege, and all too soon the process of earning a research-oriented advanced degree looms as arduous and confusing.

The new student must select a graduate committee, plan course work, find an original research topic, and design a research plan that leads to a defensible thesis or series of publishable research articles. Whether the student plans a research career or not, he or she typically must complete an original, independent, analytical study, even though few beginning students know how or where to begin. Clearly, the student needs help.

This process-oriented manual holds the fundamentals students in the sciences need to trek the graduate school path—it is their “backpack.” Here's what it will do for you:

- Suggest ways to get started with a graduate committee, select a research topic, and deal with the challenges of life as a graduate student.
- Outline the requirements of quality graduate research, summarize research philosophies, and present intellectual tools to inspire and exploit your creativity.
- Present a time- and student-tested model for research planning that will put you firmly on the path to success.
- Spell out techniques for finding, reading, and evaluating scientific reports and offer reliable hints to help you write clearly and concisely.
- Show you how to keep track as you struggle to keep on track.
- Provide pointers to help you favorably present yourself and your work to your graduate committee and the broader scientific community.
- Offer a final thought on the hereafter of graduate school—the so-called but misnamed “real world.” (When you're in it, graduate school is the real world. Don't let anyone convince you it's not.)

What it will not do: This is not a research methods book. It offers no instruction in experimental protocols, designs, or analyses. Those are related but

distinctly different subjects that can vary greatly among disciplines and about which numerous excellent volumes have been written. Rather, this handbook is intended to come before the methods manuals. It addresses needs, concerns, and concepts that are common to nearly all graduate students.

Use it, and this guide will serve you well—whether your interests are in physical science, life science, social science, or engineering and whether you pursue a master's degree or a doctorate. For the most part, the problems and challenges dealt with are universal. Still, you will scale your own obstacles and rejoice in your own triumphs, and the timing and intensity of downs and ups and deadlines will vary among you and your colleagues. So go forth and back through the chapters, scribbling notes in the margins to suit your needs. The more worn and dog-eared your book becomes, the better.



Numerous people spurred me on and offered helpful critique in developing this book. First, thanks go to hundreds of former students who encouraged—and to a few who discouraged—me in this endeavor. While the encouragements kept me going, the discouragements led to a better product. I'm grateful to both groups and I wish them well.

A great deal of credit and my heartfelt thanks go to mentors from my own graduate-student days. Although there were many, on the topics in this book I feel most indebted to Dr. Thomas Nimlos, Dr. Robert Wambach, and Dr. Moyle Harward. Numerous friends and colleagues—at least one of whom repeatedly discussed some of the philosophical points well into the night—offered valuable comments and encouragement: Dr. Merton Richards, Dr. J. Michael Kelly, Dr. Robert Graham, Dr. Thomas Rice, Dr. William Preston, Dr. Lynn Moody, and Dr. George Cotkin. Finally, the artistry of Ms. Tina Vander Hoek injected levity into some otherwise humorless topics. It's good to have good people on your side.

And now that it's done, I feel ready to begin.

**Ronald D. Taskey**