TABLE OF CONTENTS

Acknowledgments vii

Foreword ix
Lee S. Shulman

SECTION I: INTRODUCTION

1. Pedagogical Content Knowledge: An Introduction and Orientation 3
   Julie Gess-Newsome

SECTION II: THE LITERATURE

2. The Complex Nature and Sources of Teachers’ Pedagogical Knowledge 21
   Greta Morine-Dershimer & Todd Kent

3. Secondary Teachers’ Knowledge and Beliefs about Subject Matter and their Impact on Instruction 51
   Julie Gess-Newsome

4. Nature, Sources and Development of Pedagogical Content Knowledge for Science Teaching 95
   Shirley Magnusson, Joseph Krajcik & Hilda Borko

5. Domains of Teacher Knowledge 133
   William S. Carlsen
### TABLE OF CONTENTS

#### SECTION III: EMERGING LINES OF RESEARCH IN SCIENCE TEACHER EDUCATION

6. Assessment and Measurement of Pedagogical Content Knowledge  
   *Juliet A. Baxter & Norman G. Lederman*  
   147

7. Changing our Teaching: The Role of Pedagogical Content Knowledge in Elementary Science  
   *Deborah C. Smith*  
   163

8. Reconceptualizing Secondary Science Teacher Education  
   *Norman G. Lederman & Julie Gess-Newsome*  
   199

9. Pedagogical Content Knowledge and Co-Participation in Science Classrooms  
   *Kenneth Tobin & Campbell J. McRobbie*  
   215

#### SECTION IV: IMPACTS OF PCK ON THE DEVELOPMENT OF SCIENCE TEACHER EDUCATION PROGRAMS

10. Constructing a Framework for Elementary Science Teaching Using Pedagogical Content Knowledge  
    *Carla Zembal, Mary Starr & Joseph Krajcik*  
    237

11. Incorporating Subject Matter Specific Teaching Strategies into Secondary Science Teacher Preparation  
    *Margaret L. Niess & Janet M. Scholz*  
    257

12. The TRIAD Approach: A Consensus for Science Teaching and Learning  
    *Cheryl L. Mason*  
    277

Notes on Contributors  
293

First Author Index  
299

Subject Index  
305
Examining Pedagogical Content Knowledge
The Construct and its Implications for Science Education
Gess-Newsome, J.; Lederman, N.G. (Eds.)
1999, XII, 307 p., Hardcover
ISBN: 978-0-7923-5903-6