# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Acknowledgments</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>ix</td>
</tr>
<tr>
<td><em>Lee S. Shulman</em></td>
<td></td>
</tr>
</tbody>
</table>

## SECTION I: INTRODUCTION

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

## SECTION II: THE LITERATURE

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

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

   *Shirley Magnusson, Joseph Krajcik & Hilda Borko*  
   95

5. Domains of Teacher Knowledge  
   *William S. Carlsen*  
   133
# 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