# Contents

Dedication iii  
Acknowledgments v  
List of External Reviewers ix  

Introduction: On the Power of Interest  
*K. Ann Renninger, Martina Nieswandt, and Suzanne Hidi*  

## Section 1 Interest and Other Motivational and Demographic Variables  

1 Early Science Learning Experiences: Triggered and Maintained Interest  
*Mary D. Ainley and John Ainley*  
17  

2 The Roles of Interest and Self-Efficacy in the Decision to Pursue Mathematics and Science  
*Mimi Bong, Sun Kyoung Lee, and Yeon-Kyoung Woo*  
33  

3 One Size Fits Some: Instructional Enhancements to Promote Interest  
*Amanda M. Durik, Christopher S. Hulleman, and Judith M. Harackiewicz*  
49  

4 The Effects of Interest and Utility Value on Mathematics Engagement and Achievement  
*Sung-il Kim, Yi Jiang, and Juyeon Song*  
63  

5 Interest as Emotion, as Affect, and as Schema  
*Johnmarshall Reeve, Woogul Lee, and Sungjun Won*  
79  

6 Perceptions of Science and Their Role in the Development of Interest  
*K. Ann Renninger, Christine N. Costello Kensey, Sabrina J. Stevens, and Dana L. Lehman*  
93  

7 The Relation Between Interest and Self-Regulation in Mathematics and Science  
*Carol Sansone, Dustin Thomas, and Tamra Fraughton*  
111

## Section 2 Interest and Subject Matter  

8 Promoting Information Seeking and Questioning in Science  
*Ayelet Baram-Tsabari*  
135  

9 Play as an Aspect of Interest Development in Science  
*Mizrap Bulenutz and Olga S. Jarrett*  
153  

10 Interest, Self-Efficacy, and Academic Achievement in a Statistics Lesson  
*Ian Hay, Rosemary Callingham, and Colin Carmichael*  
173  

11 Intrinsic Motivation, Self-Efficacy, and Interest in Science  
*Shawn M. Glynn, Robert R. Bryan, Peggy Brickman, and Norris Armstrong*  
189  

12 Students’ Pathways of Entry Into STEM  
*Adam V. Maltese and Joseph A. Harsh*  
203  

13 Undergraduate Students’ Interest in Chemistry: The Roles of Task and Choice  
*Martina Nieswandt and Gail Horowitz*  
225  

14 Teachers Learning How to Support Student Interest in Mathematics and Science  
*Julianne C. Turner, Hayal Z. Kackar-Cam, and Meg Trucano*  
243
Section 3 Interest Development

15 Emerging Individual Interests Related to Science in Young Children
   Joyce M. Alexander, Kathy E. Johnson, and Mary E. Leibham 261

16 Sustaining Interest-Based Participation in Science
   Flávio S. Azevedo 281

17 Interest and the Development of Pathways to Science
   Kevin Crowley, Brigid Barron, Karen Knutson, and Caitlin K. Martin 297

18 Understanding Well-Developed Interests and Activity Commitment
   Jacquelynne S. Eccles, Jennifer A. Fredricks, and Alanna Epstein 315

19 Fostering Students' Identification With Mathematics and Science
   Brett D. Jones, Chloe Ruff, and Jason W. Osborne 331

20 Canalization and Connectedness in the Development of Science Interest
   Kimberley Pressick-Kilborn 353

21 Supporting the Development of Transformative Experience and Interest
   Kevin J. Pugh, Lisa Linnenbrink-Garcia, Michael M. Phillips, and Tony Perez 369

Conclusions: Emerging Issues and Themes in Addressing Interest and
Learning of Mathematics and Science
   Suzanne Hidi, K. Ann Renninger, and Martina Nieswandt 385

Author Index 397
Subject Index 402
About the Contributors 409