DESCRIPTION

Undergraduate research enhances the learning experience of students in science, technology, engineering, and mathematics. Undergraduate Research in the Sciences offers a groundbreaking and practical research-based book on the topic. This comprehensive resource addresses how undergraduate research benefits undergraduate participants, including those populations that are underrepresented in the sciences; compares its benefits with other types of educational activities and experiences; and assesses its long-term value to students and faculty as both a scholarly and educational endeavor.

In laying out the processes by which these benefits are achieved, this important book can assist faculty and program directors with practical guidance for design and evaluation of both new and existing undergraduate research programs.

Praise for Undergraduate Research in the Sciences

"This meticulous, definitive study of the effects of working with a faculty member on research as an undergraduate confirms the overall value of the experience by taking us deep into the minds and actions of participants#both faculty and students. As a result we now have many more compelling reasons to get more students involved with research mentors and ways to optimize the benefits for all parties."#George D. Kuh, Chancellor's Professor and director, Indiana University Center for Postsecondary Research

"This timely book offers a unique, comprehensive analysis of undergraduate research in the sciences, based on the voices of college students and faculty mentors who have participated in these voyages of discovery. As our nation struggles to train more scientists, this book will be a valuable resource for designing undergraduate research experiences that can build our country's capacity for discovery and innovation."#Arthur B. Ellis, Vice Chancellor for Research, University of California, San Diego
“The text is written in a lucid and engaging style and will be a valuable guide to policymakers, academic administrators, and faculty members who want to find ways to engage undergraduates in the 'real work' of investigation.” #Judith A. Ramaley, president, Winona State University

“This book is a 'must-read' for anyone who directs undergraduates in research. It presents an impressive and rigorous body of work that brings fresh insights into the field of undergraduate research. The next generation of scientists will benefit greatly from the findings and recommendations!” #Jo Handelsman, Howard Hughes Medical Institute Professor, Yale University

### ABOUT THE AUTHOR

**Sandra Laursen** is a codirector and research associate for Ethnography & Evaluation Research (E&ER), part of the Center to Advance Research and Teaching in the Social Sciences (CARTSS) at the University of Colorado, Boulder.

**Anne-Barrie Hunter** is lead analyst and project organizer for the undergraduate research (UR) study. An E&ER member since 1991, she played a major role in evaluations for the College Board, Los Alamos National Laboratory, and Project Kaleidoscope, and was recently the evaluator for several institutional UR programs. She is a member of the Council of Undergraduate Research Advisory Board on Assessment.

**Elaine Seymour** directed E&ER for 17 years. She coauthored a pioneering study, Talking About Leaving: Why undergraduates leave the sciences (1997), that helped to shape the national movement to reform undergraduate science education.

**Heather Thiry** has a PhD in education and has been the analyst of the comparative data sample for the UR study team.

**Ginger Melton** is a sociologist who was both analyst and consultant on minority issues for E&ER's qualitative study of the Significant Opportunities in Atmospheric Research and Science (SOARS) UR program for minority students at the University Corporation for Atmospheric Research.

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