Research as a Tool for Empowerment

Meddelelser angaaende de højere almenskoler i Danmark

Critical and accessible, the new edition of this bestselling textbook offers valuable insight into contemporary management practices and encourages readers to reflect on the realities of the workplace. Work and Organizational Behaviour takes a unique and well-rounded approach, exploring key theories and topics through the lenses of sociology, psychology, ethics and sustainability. Firmly embedded in the latest research and the wider geopolitical environment, this new edition places OB in the context of climate change, the rise of unstable working conditions and the impact of new technologies. A strong suite of pedagogy supports student learning, demonstrating key theories in action and preparing readers for the real world of work. Cases and features illustrate contemporary organizational practices and their impact across the world, in a range of industries. With streamlined content, an improved structure, and an enhanced focus on leadership, Work and Organizational Behaviour is an essential companion for OB modules at undergraduate, postgraduate and MBA levels. New to this Edition: - New chapters on 'Work and the gig economy' and 'Human resource management' - New decision making scenarios helping readers to develop practical leadership skills - 200+ new references to recent academic literature - Inclusion of important contemporary topics, including Covid-19 and the gig economy - Coverage of new technologies, including the impact of AI, robots, remote working and big data - Increased coverage of corporate social responsibility and ethics - New end of chapter cases, Reality of Work features and Globalization and Organization Behaviour features

Meddelelser fra Akademisk architektforening

First published in 2000. Routledge is an imprint of Taylor & Francis, an informa company.

Mathematics and Technology

A complete and thorough necropsy is invaluable for diagnosing diseases in animals. In Necropsy - a Handbook and Atlas, all essential and necessary procedures for carrying out necropsies of horses, production animals, dogs and cats, laboratory animals, rabbits, mink, poultry and fish are described in separate chapters. Moreover chapters have also been dedicated to the necropsy of foetal membranes, the brain and the extensive examination of the heart. The authors of each chapter are all experienced diagnosticians, and Necropsy is used during practical courses for veterinary students in special pathology, poultry and fish diseases, and large animals at the University of Copenhagen Denmark. Due to the comprehensive description of the procedures and number of illustration, the book should also fulfill the requirements of a handbook and atlas for veterinary practitioners and researchers carrying out necropsies as a part of their work.
The Theory of Dispersion Models

Hans Christian Andersen and Community

The First Sourcebook on Nordic Research in Mathematics Education

Labor Economics, 5e is a well-received text that blends coverage of traditional topics with modern theory and developments into a superb Labor Economics book. The Fifth Edition builds on the features and concepts that made the first four editions successful, updating and adding new content to keep the text on the cusp of recent events in the Labor Economics field. The new edition continues to be the most concise book in the market, enabling the instructor to teach all relevant material in a semester-long class. Despite the book's brevity, the instructor will find that all of the key topics in labor economics are efficiently covered in the Fifth Edition. Thanks to updated pedagogy, new end-of-chapter material, and even stronger instructor support, the Fifth Edition of Labor Economics remains one of the most relevant textbooks in the market.

Encyclopedia of Monasticism

The wide availability of digital educational resources for mathematics teaching and learning is indisputable, with some notable genres of technologies having evolved, such as graphing calculators, dynamic graphing, dynamic geometry and data visualization tools. But what does this mean for teachers of mathematics, and how do their roles evolve within this digital landscape? This essential book offers an international perspective to help bridge theory and practice, including coverage of networking theories, curriculum design, task implementation, online resources and assessment. Mathematics Education in the Digital Age details the impacts this digital age has, and will continue to have, on the parallel aspects of learning and teaching mathematics within formal education systems and settings. Written by a group of international authors, the chapters address the following themes: Mathematics teacher education and professional development Mathematics curriculum development and task design The assessment of mathematics Theoretical perspectives and methodologies/approaches for researching mathematics education in the digital age This book highlights not only the complex nature of the field, but also the advancements in theoretical and practical knowledge that is enabling the mathematics education community to continue to learn in this increasingly digital age. It is an essential read for all mathematics teacher educators and master teachers.

Ind til kernen - eventyret om Niels Bohr

Iceland, Denmark and contributions from Finland provides the first comprehensive and unified treatment of historical and contemporary research trends in mathematics education in the Nordic world. The book is organized in sections co-ordinated by active researchers in mathematics education in Norway, Sweden, Iceland, Denmark, and Finland. The purpose of this sourcebook is to synthesize and survey the established body of research in these countries with findings that have influenced ongoing research agendas, informed practice, framed curricula and policy. The sections for each country also include historical articles in addition to exemplary examples of recently conducted research oriented towards the future. The book will serve as a standard reference for mathematics education researchers, policy makers, practitioners and students both in and outside the Nordic countries. This Sourcebook includes over 50 chapters from the Nordic world. Section I- Norwegian Research in Mathematics Education Section Editor: Simon Goodchild Introduction to the Norwegian part of the Sourcebook of Nordic Research in Mathematics Education Simon Goodchild The development of mathematics education as a research field in Norway - an insider's personal reflections, Trygve Breiteig and Simon Goodchild Section II- Swedish Research in Mathematics Education Section Editor: Christer Bergsten Mathematics education research in Sweden - An introduction Christer Bergsten Some theoretical orientations of Swedish research Learning difficulties and mathematical reasoning Johan Lithner, Torulf Palm Section III - Icelandic Research in Mathematics Education Section Editors: Guobjorg Palsdottir, Bharath Sriraman Mathematics Education in Iceland: Explaining the Non-homogeneity in a Homogenous System, Guony Helga Gunnarsdottir, Guobjorg Palsdottir, Bharath Sriraman The History of Public Education in Mathematics in Iceland and its Relations to Secondary Education, Kristin
The Scandinavian Model

For undergraduate and graduate courses in Organization Theory, Organizational Design, and Organizational Change/Development. Business is changing at break-neck speed so managers must be increasingly active in reorganizing their firms to gain a competitive edge. Organizational Theory, Design, and Change continues to provide students with the most up-to-date and contemporary treatment of the way managers attempt to increase organizational effectiveness. By making organizational change the centerpiece in a discussion of organizational theory and design, this text stands apart from other books on the market.

Modeling, Functions, and Graphs

This text is designed to present aspects of economic theory and analysis that are most relevant to students of business administration in an intuitive calculus-based or non-calculus based format, depending on the preferences of the instructor.

The American

The second edition of Dr. Demski's book reflects his experiences teaching undergraduates, masters and doctoral students. He emphasizes economic fundamentals as the guiding foundation coupled with an artful application of those fundamentals. This applies to product costing, decision making and evaluation art. Dr. Demski has also removed a great deal of traditional minutiae, in order to keep this theme in constant focus. This thematic approach, in his experience, works in dramatic fashion, and stands in sharp contrast to more traditional presentations of this material. The book is not only for use as a textbook but also as a reference book.

The Women’s War

What would an anatomy of the book look like? There is the main text, of course, the file that the author proudly submits to their publisher. But around this, hemming it in on the page or enclosing it at the front and back of the book, there are dozens of other texts—page numbers and running heads, copyright statements and errata lists—each possessed of particular conventions, each with their own lively histories. To consider these paratexts—recalling them from the margins, letting them take centre stage—is to be reminded that no book is the sole work of the author whose name appears on the cover; rather, every book is the sum of a series of collaborations. It is to be reminded, also, that not everything is intended for us, the readers. There are sections that are solely directed at others—binders, librarians, lawyers—parts of the book that, if they are working well, are working discreetly, like a theatrical prompt, whispering out of the audience's ear-shot Book Parts is a bold and imaginative intervention in the fast growing field of book history: it pulls the book apart. Over twenty-two chapters, Book Parts tells the story of the components of the book: from title pages to endleaves; from dust jackets to indexes—and just about everything in between. Book Parts covers a broad historical range that runs from the pre-print era to the digital, bringing together the expertise of some of the most exciting scholars working on book history today in order to shine a new light on these elements hiding in plain sight in the books we all read.

Better Than Best Practice

This open access book presents a structural model and an associated test instrument designed to provide a detailed analysis of professional competences for teaching mathematical modelling. The conceptualisation is based on the COACTIV model, which describes aspects, areas and facets of professional competences of teachers. The manual provides an overview of the essential teaching skills in application-related contexts and offers the tools needed to capture these aspects. It discusses the objectives and application areas of the instrument, as well as the development of the test. In addition, it describes the implementation and evaluates the quality and results of the structural equation analysis of the model. Teaching mathematical modelling is a cognitively challenging activity for (prospective) teachers. Thus, teacher education requires a detailed analysis of professional competence for
teaching mathematical modelling. Measuring this competence requires theoretical models that accurately describe requirements placed upon teachers, as well as appropriate evaluation tools that adequately capture skills and abilities in this field. This book presents an instrument that measures the professional competences in a sample of 349 prospective teachers.

Death Toll

The Women’s War is the gripping true story of a Danish female soldier’s tours to the Helmand Province in Afghanistan between 2007 and 2009. There she comes into contact with the Afghan women who are fighting against oppression, domestic violence and the horror regime of the Taliban, and together they initiate a covert collaboration. The women receive the necessary aid to establish dressmaking rooms, beauty salons, chicken farms and other projects while being aware of the fact that the international military forces are their only chance to get rid of the Taliban. The Women’s War emerged out of the friendships built by a soldier with Afghan women who helped the international military forces in unexpected ways. It is a book by a woman in the armed forces about what war does to women, about the looming risk of taking chances in wartime and about grief over fallen friends, but more importantly, it is about how women in one instance found the will to not only survive but to make something out of the terrible conditions that war brings.

Rhetoric in the European Tradition

Better than Best Practice offers a new way of thinking about classroom practice, professional development, and improving teaching and learning. This companion book and website together offer a selection of rich and realistic video-based case studies, context and narrative, step-by-step guidance through key issues, and commentary and debate from a range of expert contributors. Carefully chosen video clips from primary school literacy lessons show real teachers in a variety of often knotty situations: classroom conversations that take unexpected turns; grappling with assessment; managing disagreements, to name a few. The book explores the educational potential of classroom talk and, in particular, the promise and problems of dialogic pedagogy. With an emphasis on the complexity and messiness of teaching, Better than Best Practice considers how to learn from observing and discussing practice in order to develop professional judgment. It offers practical advice on how to organise and facilitate video-based professional development in which teachers share their practice with colleagues in order to learn from one another’s challenges, problems, dilemmas and breakthroughs. This exciting new resource argues that critical discussions of practice, which highlight dilemmas instead of prescribing solutions, help to develop and support thoughtful, flexible, and insightful practitioners: an approach that is better than best practice.

Managerial Economics

Everyone at Easton Academy is struggling to recover from the death of Cheyenne Martin - especially the girls of Billings Hall. With Cheyenne gone, they need to elect a new leader, and who better than Reed Brennan, the ultimate Billings Girl? Reed revels in her new-found status but she knows that Billings leaders have a tainted legacy. Now that Reed has everything she's ever wanted, she's got everything to lose. And she's about to find out just how tough it is at the top.

Online Learning Communities and Teacher Professional Development: Methods for Improved Education Delivery

"Ever since the days of Agatha Christie, the great divide in the British detective story has been between plot and character. The novels of Jim Kelly are . . . a find." -The New York Times Book Review Rookie detective Peter Shaw teams up with his father's tough ex-partner yet again to investigate both a gruesome series of present-day murders and some unfinished business from the past, in Death Toll, the third book in the Detective Shaw Mystery series.

Working with the Anthropological Theory of the Didactic in Mathematics Education
A concise exploration of globalization and its role in the contemporary era Driven by technological advancements and global corporations, more and more people are swept up by globalizing processes, creating new winners and losers. Globalization: The Essentials explores the flows, structures, processes, and consequences of globalization in the modern economic, political, and cultural landscape. This comprehensive introduction offers balanced coverage of areas such as global economic and cultural flows, environmental sustainability, the impact of technology, and racial, economic, and gender inequality – providing readers with foundational knowledge of globalization. Extensively revised and updated, this second edition includes expanded coverage of human trafficking and migration, global climate change, fake news and information wars, and transnational social movements with increased emphasis on examples from Central and South America, Africa, and Asia: Offers a straightforward approach to the multiple facets of globalization and their positive and negative influences on contemporary society Employs unique metaphors and a coherent narrative structure to promote intuitive understanding of abstract concepts Introduces cutting-edge research, updated statistics, and real-world examples in areas such as rising global populism, social justice movements, blockchain technology, and cryptocurrencies Provides an efficient and flexible pedagogical structure, allowing integration with instructor’s own course material Emphasizing student comprehension, a wide range of source material is incorporated including empirical research, relevant theories, newspaper and magazine articles, and popular books and monographs. Examples of current research and recent global developments, such as emerging economies and global health concerns, encourage classroom discussion and promote independent study. Globalization: The Essentials – a compact edition of the authors’ full-sized textbook Globalization: A Basic Text – provides concise coverage of the central concepts of this dynamic field. Offering a multidisciplinary approach, this textbook is an invaluable primary or supplemental resource for undergraduate study in any social science field, as well as coursework on economics, migration, inequality and stratification, and politics.

Organizational Theory, Design, and Change: Global Edition

This book presents the main research veins developed within the framework of the Anthropological Theory of the Didactic (ATD), a paradigm that originated in French didactics of mathematics. While a great number of publications on ATD are available in French and Spanish, Working with the Anthropological Theory of the Didactic in Mathematics Education is the first directed at English-speaking international audiences. Written and edited by leading researchers in ATD, the book covers all aspects of ATD theory and practice, including teaching applications. The chapters feature the most relevant and recent investigations presented at the 6th international conference on the ATD, offering a unique opportunity for an international audience interested in the study of mathematics teaching and learning to keep in touch with advances in educational research. The book is divided into four sections and the contributions explore key topics such as: The core concept of praxeology, including its development and functionalities The need for new teaching praxeologies in the paradigm of questioning the world The impact of ATD on the teaching profession and the education of teachers This is the second volume in the New Perspectives on Research in Mathematics Education. This comprehensive casebook is an indispensable resource for researchers, teachers and graduate students around the world.

Globalization

The theory of dispersion models straddles both statistics and probability, and involves an encyclopedic collection of tools, such as exponential families, asymptotic theory, stochastic processes, Tauber theory, infinite divisibility, and stable distributions. The Theory of Dispersion Models introduces the reader to these models, which serve as error distributions for generalized linear models, and looks at their applications within this context.

Necropsy

This special issue of Mathematical Thinking and Learning describes models and modeling perspectives toward mathematics problem solving, learning, and teaching. The concern is not only the mature forms of models and modeling in communities of scientists and mathematicians, but also the need to initiate students in these forms of thought. The contributions of this issue suggest a variety of ways that students (children through adults) can be introduced to highly productive forms of modeling practices. Collectively, they illustrate how modeling activities often lead to remarkable mathematical achievements by students formerly judged to be too young or too lacking
in ability for such sophisticated and powerful forms of mathematical thinking. The papers also illustrate how modeling activities often create productive interdisciplinary niches for mathematical thinking, learning, and problem solving that involve simulations of similar situations that occur when mathematics is useful beyond school.

Anthony Giddens

The theme of community has perhaps never been of a more vital significance than in our present day and age. The process we refer to as modernity has been synonymous with the gradual fragmentation and disintegration of traditional communities on various levels of our societies. Today, we might be facing the culmination of this process. The spectres of nationalism are undermining various national and international communities. Inequality is on the rise. If people unite it is too often in the mistrust and sometimes hatred of other people. Hans Christian Andersen lived at a time when this process was at its early stages, and he was acutely aware of its potential perils. Alongside the transformations of traditional communities, other communities seem to appear. A recurring element in these culturally specific communities is literature, and Hans Christian Andersen is a key figure here, as his literary and cultural legacy has a magnetic effect on people around the globe. A vivid example of this effect was the conference Hans Christian Andersen and Community. The conference was held at the University of Southern Denmark in 2017 to celebrate the 150th anniversary of Hans Christian Andersen's status as honourary citizen in Odense. This book presents a selection of 19 contributions to the conference. In various ways, each chapter activates the concept of community in relation to Andersen as an author and as a citizen of the world he lived in as well as the cultural icon which he has become.

Nu er der vel ikke mere?

Anthony Giddens is arguably the world's leading sociologist. In this controversial contribution to the Giddens debate, Stjepan Mestrovic takes up and criticizes the major themes of his work - particularly the concept of 'high modernity' as opposed to 'postmodernity' and his attempted construction of a 'synthetic' tradition based on human agency and structure. Testing Giddens' theories against what is happening in the real world from genocide in Africa to near secession in Quebec, Mestrovic discerns in the construction of synthetic traditions not the promise of freedom held out by Giddens but rather the ominous potential for new forms of totalitarian control.

Book Parts

Rhetoric in the European Tradition provides a comprehensive, chronological survey of the basic models of rhetoric as they developed from the early Greeks through the twentieth century. Discussing rhetorical theories and practices in the context of the times of political and intellectual crisis that gave rise to them, Thomas M. Conley chooses carefully from a vast pool of rhetorical literature to give voice to those authors who exercised the greatest influence in their own and succeeding generations. This book is valuable as both an introduction for students and a reference and resource for scholars in fields including literature, cultural history, philosophy, and speech and communication studies.

Work and Organizational Behaviour

High stakes tests are the gatekeepers to many educational and professional goals. As such, the incentive to cheat is high. This Handbook is the first to offer insights from experts within the testing community, psychometricians, and policymakers to identify and develop best practice guidelines for the design of test security systems for a variety of testing genres. Until now this information was scattered and often resided inside testing companies. As a result, rather than being able to learn from each other’s experiences, each testing entity was left to re-create their own test security wheel. As a whole the book provides invaluable insight into the prevalence of cheating and best practices for designing security plans, training personnel, and detecting and investigating misconduct, to help develop more secure testing systems and reduce the likelihood of future security breaches. Actual case studies from a variety of settings bring to life how security systems really work. Examples from both domestic and international programs are provided. Highlights of coverage include: Best practices for designing secure tests Analysis of security vulnerabilities for all genres of testing Practical cheating prevention and detection strategies
Lessons learned in actual security violations in high profile testing programs. Part I focuses on how tests are delivered for paper-and-pencil, technology-based, and classroom testing and writing assessment. Each chapter addresses the prevalence of the problem and threats to security, prevention, and detection. Part II addresses issues essential to maintaining a secure testing program such as planning and monitoring, physical security, the detection of group-based cheating, investigating misconduct, and communicating about security-related issues. Part III examines actual examples of cheating—how the cheating was done, how it was detected, and the lessons learned. Part III provides insight into security issues within each of the Association of Test Publishers’ four divisions: certification/licensure, clinical, educational, and industrial/organizational testing. Part III’s conclusion revisits the issues addressed in the case studies and identifies common themes. Intended for organizations, professionals, educators, policy makers, researchers, and advanced students that design, develop, or use high stakes tests, this book is also ideal for graduate level courses on test development, educational measurement, or educational policy.

Legacy

Measuring Professional Competence for the Teaching of Mathematical Modelling


New Theory of the Earth

De bedste af os

This volume collects most recent work on the role of technology in mathematics education. It offers fresh insight and understanding of the many ways in which technological resources can improve the teaching and learning of mathematics. The first section of the volume focuses on the question how a proposed mathematical task in a technological environment can influence the acquisition of knowledge and what elements are important to retain in the design of mathematical tasks in computing environments. The use of white smart boards, platforms as Moodle, tablets and smartphones have transformed the way we communicate both inside and outside the mathematics classroom. Therefore the second section discussed how to make efficient use of these resources in the classroom and beyond. The third section addresses how technology modifies the way information is transmitted and how mathematical education has to take into account the new ways of learning through connected networks as well as new ways of teaching. The last section is on the training of teachers in the digital era. The editors of this volume have selected papers from the proceedings of the 65th, 66th and 67th CIEAEM conference, and invited the correspondent authors to contribute to this volume by discussing one of the four important topics. The book continues a series of sourcebooks edited by CIEAEM, the Commission Internationale pour l’Étude et l’Amélioration de l’Enseignement des Mathématiques / International Commission for the Study and Improvement
of Mathematics Education.

Models and Modeling Perspectives

"This book features innovative applications for the integration of technology into everyday teaching practices"—Provided by publisher.

Classical Mechanics

TV artist and teacher Hazel Soan is well known for her watercolours of Africa. This illustrated guide is both a safari through her beloved southern Africa and an instructional journey through a range of subjects, showing different ways to see and paint them. Aimed at the more practised painter, this is an useful book for the reader looking to add adventure to their painting. Focusing on the popular medium of watercolour, Hazel travels through South Africa, Namibia, Botswana and Zimbabwe, getting to know her destinations by painting them. As the journey unfolds, she presents a series of painting projects.

Managerial Uses of Accounting Information

The Secret Lives of People in Love is the first short story collection by award-winning writer Simon Van Booy. These stories, set in Kentucky, New York, Paris, Rome, and Greece, are a perfect synthesis of intensity and atmosphere. Love, loss, human contact, and isolation are Van Booy’s themes. In radiant prose he writes about the difficult choices we make in order to retain our humanity and about the redemptive power of love in a violent world. Included in this updated P.S. edition is the new story "The Mute Ventriloquist."

Save as Many as You Ruin


Handbook of Test Security

Research as a Tool for Empowerment: Theory Informing Practice is an edited volume that includes an array of research-based chapters that not only further the field of second/foreign language research, but also provide practical implications to language classrooms in international and national settings. Chapters in this volume present a bridge between methodologically sound second/foreign language research and strong pedagogical implications. This volume includes the voices of researchers, graduate students, teachers, parents, and learners exploring the second/foreign language phenomena. The multiple voices of the contributing authors reflect the diverse readership of the Research in Second Language Learning series. Unlike previous anthologies in second/foreign language research, this volume presents studies from various research paradigms. Chapters include examples of various research methods from both quantitative and qualitative paradigms. Few previous anthologies have presented research based in multiple paradigms and from multiple perspectives. Research as a Tool for Empowerment: Theory Informing Practice not only presents these various perspectives, but it also makes the link from research to classroom implications and applications. The volume is unique as it makes a connection between different types of research and research methods and empowerment and issues of empowerment.

Technology and Testing

From early answer sheets filled in with number 2 pencils, to tests administered by mainframe computers, to assessments wholly constructed by computers, it is clear that technology is changing the field of educational and psychological measurement. The numerous and rapid advances have immediate impact on test creators, assessment professionals, and those who implement and analyze assessments. This comprehensive new volume
brings together leading experts on the issues posed by technological applications in testing, with chapters on game-based assessment, testing with simulations, video assessment, computerized test development, large-scale test delivery, model choice, validity, and error issues. Including an overview of existing literature and ground-breaking research, each chapter considers the technological, practical, and ethical considerations of this rapidly-changing area. Ideal for researchers and professionals in testing and assessment, Technology and Testing provides a critical and in-depth look at one of the most pressing topics in educational testing today.

The Freedom Writers Diary Teacher's Guide

A standards-based teacher's guide from the educator behind the #1 New York Times bestseller The Freedom Writers Diary, with innovative teaching techniques that will engage, empower, and enlighten. Don't miss the public television documentary Freedom Writers: Stories from the Heart In response to thousands of letters and emails from teachers across the country who learned about Erin Gruwell and her amazing students in The Freedom Writers Diary and the hit movie Freedom Writers, Gruwell and a team of teacher experts have written The Freedom Writers Diary Teacher's Guide, a book that will encourage teachers and students to expand the walls of their classrooms and think outside the box. Here Gruwell goes in depth and shares her unconventional but highly successful educational strategies and techniques (all 150 of her students, who had been deemed "unteachable," graduated from Wilson High School in Long Beach, California): from her very successful "toast for change" (an exercise in which Gruwell exhorted her students to leave the past behind and start fresh) to writing exercises that focus on the importance of journal writing, vocabulary, and more. In an easy-to-use format with black-and-white illustrations, this teacher's guide will become the essential go-to manual for teachers who want to make a difference in their pupils' lives.

Mathematics Education in the Digital Age

Part I of this book is devoted to the development of Scandinavian societies from agrarian societies to modern industrial economies and welfare states. Three of the chapters in Part II analyse particular welfare problems, those of inequality, poverty, and redistribution; the final essay deals with women's position in the welfare state. The papers included in Part III present theory and methods of welfare research.

Labor Economics


Sign language legislation in the European Union

Theory of the Earth is an interdisciplinary advanced textbook on the origin, composition, and evolution of the Earth's interior: geophysics, geochemistry, dynamics, convection, mineralogy, volcanism, energetics and thermal history. This is the only book on the whole landscape of deep Earth processes which ties together all the strands of the subdisciplines. It is a complete update of Anderson's Theory of the Earth (1989). It includes many new sections and dozens of new figures and tables. As with the original book, this new edition will prove to be a stimulating textbook on advanced courses in geophysics, geochemistry, and planetary science, and supplementary textbook on a wide range of other advanced Earth science courses. It will also be an essential reference and resource for all researchers in the solid Earth sciences.