

DIVERSITY AND DISCRIMINATION IN RESEARCH ORGANIZATIONS

EDITED BY CLEMENS STRIEBING,
JÖRG MÜLLER AND
MARTINA SCHRAUDNER

 OPEN ACCESS
BOOK

Diversity and Discrimination in Research Organizations

This page intentionally left blank

Diversity and Discrimination in Research Organizations

EDITED BY

CLEMENS STRIEBING

Fraunhofer Institute for Industrial Engineering, Germany

JÖRG MÜLLER

Universitat Oberta de Catalunya, Spain

AND

MARTINA SCHRAUDNER

Fraunhofer Institute for Industrial Engineering, Germany



United Kingdom – North America – Japan – India – Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2023

Editorial matter and selection © 2023, Clemens Striebing, Jörg Müller and
Martina Schraudner.
Individual chapters © the respective Author/s Published by Emerald Publishing under
an exclusive licence.



This work is published under the Creative Commons Attribution (CC BY 4.0) licence.

Anyone may reproduce, distribute, translate and create derivative works of this book (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>



Open Access The ebook edition of this title is Open Access and is freely available to read online.

Reprints and permissions service

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-80117-959-1 (Print)
ISBN: 978-1-80117-956-0 (Online)
ISBN: 978-1-80117-958-4 (Epub)



Certificate Number 1985
ISO 14001

ISOQAR certified
Management System,
awarded to Emerald
for adherence to
Environmental
standard
ISO 14001:2004.



INVESTOR IN PEOPLE

Contents

List of Figures	<i>ix</i>
List of Tables	<i>xi</i>
About the Contributors	<i>xiii</i>
Foreword	<i>xix</i>
Acknowledgments	<i>xxv</i>

Introduction

Chapter 1 Diversity and Discrimination in Research Organizations: Theoretical Starting Points <i>Jörg Müller, Clemens Striebing and Martina Schraudner</i>	<i>3</i>
--	----------

Part I: Empirical Findings of Discrimination in Research Organizations

Chapter 2 The Psychological Work Climate of Researchers: Gender, Nationality, and Their Interaction with Career Level and Care for Children in a Large German Research Organization <i>Clemens Striebing</i>	<i>33</i>
Chapter 3 Workplace Bullying in Academia: Interaction of Gender, Nationality, Age, and Work Context of Scientific and Non-Scientific Employees in a Large German Research Organization <i>Clemens Striebing</i>	<i>75</i>

Chapter 4 Exploring Gender Aspects of Self-Reported Bullying and Sexual Discrimination <i>Clemens Striebing</i>	131
Chapter 5 The Hidden Problem: Sexual Harassment and Violence in German Higher Education <i>Heike Pantelmann and Tanja Wälty</i>	209
Chapter 6 Eliminating Bullying in the University: The University of Wisconsin-Madison's Hostile & Intimidating Behavior Policy <i>Jennifer Sheridan, Russell Dimond, Tammera Klumpyan, Heather M. Daniels, Michael Bernard-Donals, Russell Kutz and Amy E. Wendt</i>	235
Chapter 7 Gender Differences in the Scientific Achievement of Social Sciences and Impact Factors: A Survey Study of Researchers in the Social Sciences in Vietnam <i>Huu Minh Nguyen, Thi Hong Tran and Thi Thanh Loan Tran</i>	259
Part II: Cultural Context Conditions of Academia for Diversity and Discrimination	
Chapter 8 Beliefs About Gender and Meritocracy and the Evaluation of Sexual Harassment in a University Research Setting <i>Julie A. Kmec, Lindsey T. O'Connor and Shekinah Hoffman</i>	289
Chapter 9 Managerial Discourse as Neutralizer? The Influence of the Concealment of Social Categories on the Experience of Workplace Bullying in Research Organizations <i>Agnès Vandevælde-Rougale and Patricia Guerrero Morales</i>	331
Chapter 10 Perceiving Diversity – An Explorative Approach in a Complex Research Organization <i>Linda Steuer-Dankert and Carmen Leicht-Scholten</i>	365
Chapter 11 Intersectionalities and Perceived Discrimination in German Research Organizations: A Post-Soviet Migrant Women's Perspective <i>Irina Valerie Gewinner</i>	393

Conclusion

**Chapter 12 Promoting Diversity and Combatting Discrimination
in Research Organizations: A Practitioner's Guide**

*Clemens Striebing, Jörg Müller, Martina Schraudner,
Irina Valerie Gewinner, Patricia Guerrero Morales,
Katharina Hochfeld, Shekinah Hoffman, Julie A. Kmec,
Huu Minh Nguyen, Jannick Schneider, Jennifer Sheridan,
Linda Steuer-Dankert, Lindsey Trimble O'Connor and
Agnès Vandeveldde-Rougale* 421

Index 443

This page intentionally left blank

List of Figures

Fig. 1	Conditional Differences Between the Estimated Marginal Means for the Hypothetical Relationships of Group Climate. 95% Confidence Interval	51
Fig. 2	Conditional Differences Between the Estimated Marginal Means for the Hypothetical Relationships of Perception of Leader. 95% Confidence Interval	53
Fig. 3	Gender-related Conditional Differences Between the Estimated Marginal Means for the Hypothetical Relationships of Scientific Staff's Self-ascription to Occasional or More Frequent Bullying (Yes/No). 95% Confidence Interval	98
Fig. 4	Nationality-related Conditional Differences Between Estimated Marginal Means for the Hypothetical Relationships of Scientific Staff's Self-ascription to Occasional or More Frequent Bullying (Yes/No). 95% Confidence Interval	103
Fig. 5	Gender- and Age-related Conditional Differences Between Estimated Marginal Means for the Hypothetical Relationships of Non-scientific Staff's Self-ascription to Occasional or More Frequent Bullying (Yes/No). 95% Confidence Interval	109
Fig. 6	Regression Coefficients of the Interaction Effects of the NAQ-rev Items With Gender, Related to the Self-ascription to Having Been Bullied Occasionally or More Frequently (Yes/No), Model 4. 95% Confidence Interval	152
Fig. 7	Positioning of the NAQ-rev Items According to Their Descriptive Mean Values (Their Relative Frequency) and Their Parameter Estimates for the Interaction With Gender (Taken From Model 4)	154
Fig. 8	Regression Coefficients of the Interaction Effects of the SEQ-DoD Items With Gender, Related to the Self-ascription of Having Experienced Sexual Discrimination and/or Harassment, Occasionally or More Frequently (Yes/No), Model 4	157
Fig. 9	Positioning of the SEQ-DoD Short Items According to Their Descriptive Mean Values (Their Relative Frequency) and Their Parameter Estimates for the Interaction With Gender (Taken From Model 4)	158

Fig. 10	How Seriously is HIB Treated on Campus? Change in Mean From 2016 to 2019	249
Fig. 11	How Effective is HIB Complaint Process? Change in Mean From 2016 to 2019	250
Fig. 12	Personal Experience of HIB at Least Once in Past Three Years: Faculty	251
Fig. 13	Personal Experience of HIB at Least Once in Past Three Years: Academic Staff	251
Fig. 14	Percentage of Principal Investigators in Ministry or Higher-level Research Projects by Sex	268
Fig. 15	Mean Number of Scientific Publications by Sex	269
Fig. 16	Entrepreneurial Frame: Sub-systems and Their Functional Tasks (After Aretz and Hansen, 2003a)	372
Fig. 17	Influencing Factors on a Research Organization (Steuer et al., 2017a)	376
Fig. 18	Organizational Structure of the Second Funding Phase (in Accordance With RWTH Aachen University, 2011; Steuer-Dankert and Leicht-Scholten, 2019)	379
Fig. 19	Clusters Perceived Diversity and Perceived Importance of Diversity (Steuer-Dankert, 2020)	383
Fig. 20	Cluster Perceived Importance of Diversity and Perceived Benefit of Diversity	384
Fig. 21	Clusters Perceived Importance of Diversity and Leadership Style at the Research Institute (Steuer-Dankert, 2020)	385
Fig. 22	Building Blocks of a Coherent and Comprehensive Program to Ensure a Discrimination-Free and Diversity-Friendly Workplace	424

List of Tables

Table 1	Chart of Risk Factors for Harassment and Responsive Strategies (Copied in a Shortened Version From US EEOC, 2021)	15
Table 2	Comparison of Various Employee Groups at the MPG, as a Proportion of the Survey Population (According to HR Statistical Data), and as a Proportion of Respondents	44
Table 3	Descriptive Statistics of the Outcome Variables for the Performed Analyses	46
Table 4	Descriptive Statistics of the Predictor Variables for the Analyses Performed	47
Table 5	Interpretation of the Hypotheses According to Effect Sizes	56
Table 6	Cross-tabulation of the Proportion of the Respective Nationality Groups of Researchers in the Sections of the Max Planck Society ($n = 3,904$)	87
Table 7	Descriptive Statistics of Outcome, and Predictor Variables in the Two Regression Models.	93
Table 8	Test Statistics for $H2$	99
Table 9	Test statistics for $H3$	100
Table 10	Test Statistics for $H4$	101
Table 11	Test Statistics for $H6$	104
Table 12	Test Statistics for $H7$	106
Table 13	Test Statistics for $H9$	110
Table 14	Test Statistics for $H10$	111
Table 15	Test Statistics for $H11$	112
Table 16	Interpretation of the Hypotheses According to Effect Sizes	113
Table 17	Descriptive Statistics of Dependent, Independent, and Control Variables in the Two Regression Models	141
Table 18	Introduction of the Question and Queried Items on the Frequency of Self-reported Experiences With Workplace Bullying.	144
Table 19	Introduction of the Question and Queried Items on the Frequency of Self-reported Experiences With Sexual Discrimination.	146
Table 20	Model Summary Statistics for the Estimation of the Average Proportion of MPG Employees Who Self-label as Having Been Bullied	150

xii List of Tables

Table 21	Statements by Individuals Who Stated They Had Experienced Bullying in the 12 Months Prior to the Survey, Categorizing the People From Whom the Bullying Originated, Differentiated by Gender	154
Table 22	Model Summary Statistics for the Estimation of the Average Proportion of MPG Employees Who Self-label as Having Been Sexually Discriminated Against	155
Table 23	Statements by Individuals Who Stated They Had Experienced Sexual Discrimination and/or Harassment in the 12 Months Prior to the Survey, Categorizing the People From Whom the Bullying Originated, Differentiated by Gender	159
Table 24	Interpretation of the Hypotheses	160
Table 25	Timeline for HIB Policy and Measurement at UW-Madison	242
Table 26	Response Rates, Climate Surveys	243
Table 27	Improved Knowledge of HIB by Workshop Attendees	245
Table 28	Knowledge Gains for HIB Workshop Attendees	246
Table 29	HIB Knowledge on UW-Madison Campus	248
Table 30	Percentages of Female Scientists Who Received PhD Degree and Were Granted a Title of Associate Professor and Full Professor by Year	261
Table 31	Main Characteristics of Interviewed Researchers by Sex (%)	267
Table 32	Percentage of Principal Investigators in Ministry or Higher-level Projects by Respondent Characteristics	270
Table 33	Factors Having an Impact on Being Principal Investigators in Ministry or Higher-level Projects (Logistic Regression Results)	271
Table 34	Mean Number of Scientific Publications by Respondent Characteristics	273
Table 35	Factors Having an Impact on the Number of Scientific Publications (MCA Analysis)	274
Table 36	Sample Descriptives (Mean, Standard Deviation), $n = 210$	302
Table 37	Perception of Engineering Culture, $n = 210$	305
Table 38	Multinomial Logistic Model Predicting Reaction to Mark and Sally's Interaction With Gender Belief Scales (Columns A and B) and Merit Scale (Columns C and D), $n = 210$ (Beta Coefficients)	306
Table 39	Socio-Demographic Characteristics of the Respondents	400

About the Contributors

Prof. Dr Michael Bernard-Donals is the Chaim Perelman Professor of Rhetoric and Culture, and the Nancy Hoefs Professor of English, at the University of Wisconsin-Madison. During his term as Vice Provost for Faculty and Staff, he helped create the policy to prevent Hostile and Intimidating Behavior.

Heather Daniels is the Secretary of the Faculty at the University of Wisconsin-Madison. She facilitates shared governance for the faculty including serving as the institutional resource for faculty policy. She worked on developing policies and processes related to Hostile and Intimidating Behavior as well as serving as a facilitator of campus-wide training on the topic.

Russell Dimond is a Statistical Consultant and Associate Director of the Social Science Computing Cooperative at the University of Wisconsin-Madison. He received a Master's degree in Economics from the University of Wisconsin-Madison and a Bachelor's degree in Economics from Brigham Young University.

Dr Irina Valerie Gewinner is a postdoctoral researcher at the Institute of Sociology, Leibniz Universität Hannover (DE). Her research interests include social inequalities in education and labor market; skilled migration, mobility and tourism; and cultural and gender studies. Her recent publications are "Understanding patterns of economic insecurity for post-Soviet migrant women in Europe" (Frontiers in Sociology), and "Geschlechtsspezifische Studienfachwahl und kulturell bedingte (geschlechts)stereotypische Einstellungen" (Career Service Papers).

Katharina Hochfeld heads the Center for Responsible Research and Innovation (CeRRI) at Fraunhofer IAO. She also leads the "Corporate Culture and Transformation" team. With her team, she works on research and implementation projects to shape responsible transformation and innovation processes. Her work focuses on researching and supporting corporate cultural change processes against the backdrop of technological and social developments. Before joining Fraunhofer, she worked in political consulting and studied political science, intercultural business communication, social psychology, and European Studies in Jena and Czech Republic. She regularly gives talks to audiences from industry, science and politics and moderates strategy and multi-stakeholder formats.

Shekinah Hoffman is a doctoral student at Washington State University. Her dissertation research explores gender discrimination in the workplace with an emphasis on sexual harassment. She earned her Master's in Sociology from the University of Nevada, Las Vegas in 2018.

Dr Tran Thi Hong is a Senior Researcher and a Head of the Department of Women and Gender Studies of the Institute for Family and Gender Studies, Vietnam Academy of Social Sciences. She received her PhD in Sociology in 2014 from the Ho Chi Minh National Academy of Politics. She has published many book chapters and articles in Vietnamese on family relation and gender equality in politics, economics, education, etc., in Vietnam.

Tammera Klumphyan is a Program Manager of Inclusion@UW in the Department of Learning and Talent Development at the University of Wisconsin-Madison. Within this role, she develops, designs, and delivers employee learning through the lens of equity, inclusion, and diversity. The primary focus and scope of her work is building faculty and staff capacity to engage as self-aware, effective, and thriving contributors and colleagues within the UW Madison community.

Dr Julie A. Kmec is a Chair and Professor of Sociology at Washington State University. Her research focuses on gender and race-based workplace inequality. She has published on topics ranging from gender differences in work effort, family caregiving penalties at work, the glass ceiling, and factors related to employment discrimination and sexual harassment. She holds a PhD in sociology from the University of Pennsylvania and teaches courses on research methods, labor markets, and social inequality.

Russell Kutz is a Microbiologist for the Wisconsin Veterinary Diagnostic Lab (WVDL) at the University of Wisconsin-Madison. He represented the University Staff through shared governance to help create and pass a Hostile and Intimidating Behaviors (HIB) Policy, and continues to serve as an HIB Liaison and facilitate HIB Workshops for UW-Madison employees.

Prof. Dr Carmen Leicht-Scholten, Political Scientist by training is Director of the RRI Hub at the Technical University in Aachen (RWTH). She is a Professor for Gender and Diversity in Engineering at the Faculty of Civil Engineering and a Professor at the Faculty of Arts and Humanities. The Chair for Gender and Diversity investigates, places and publishes new themes in gender and diversity research in engineering and technology. As "bridging professorship," the chair is designed to strengthen the interdisciplinary communication between technology and societal issues. The aim is to integrate gender and diversity perspectives into the wide range of science and technology to realize socially responsible innovation and technologies. She is acting as expert in national and international research projects and associations.

Dr Nguyen Huu Minh is a Professor of Sociology, High Senior Researcher of the Institute for Family and Gender Studies (IFGS), Vietnam Academy of

Social Sciences and is the President of Vietnam Sociological Association. He is a Former Director of the IFGS. He received his PhD in Sociology in 1998 from University of Washington, Seattle, USA. His publications include many books, articles in Vietnamese and some monographs, book chapters, articles in English on urbanization, family relation, and gender equality in Vietnam.

Dr Patricia Guerrero Morales is Assistant Professor at the Faculty of Education of Pontificia Universidad Católica de Chile (Chile). Her research addresses the work of teachers under the new public management. Both in her research and teachings, she adopts a clinical approach that uses artistic and cultural expression to cooperatively reflect on change and transformation in the classroom, in management and in public policy. She is a Psychologist and holds a PhD in sociology from the University Paris Diderot (now Université Paris Cité).

Jörg Müller is a Senior Researcher at the Internet Interdisciplinary Institute at the Universitat Oberta de Catalunya in Barcelona, Spain. He obtained his PhD in Communications at the European Graduate School (EGS) in Switzerland and holds a degree in Sociology and Computer Science from the Free-University in Berlin, Germany. He has been involved in several European projects on gender equality in research and innovation as partner and coordinator.

Dr Lindsey T. O'Connor is an Associate Professor of Sociology at California State University Channel Islands (CSUCI). Her research focuses on gender, work, and family. Much of her recent work examines the social psychological underpinnings of people's perceptions of discrimination and harassment. Before joining CSUCI, she worked as a postdoctoral research fellow at the Michelle R. Clayman Institute for Gender Research at Stanford University. She earned her PhD in Sociology from Washington State University in 2012.

Dr Heike Pantelmann is Managing Director of the Margherita von Brentano Center for Gender Studies at Freie Universität Berlin. She holds a doctorate in business administration. Her fields of work are gender and diversity in teaching and internationalization of gender studies. Her research interests lie in the following topics: sexual harassment in higher education contexts; gender order/gender relations; power and control in organizations.

Jannick Schneider is a Research Assistant at the Center for Responsible Research and Innovation at Fraunhofer IAO. Here he supports projects on organizational culture and climate as well as on gender equality in the research and innovation system. He studies work and organizational psychology at MSB Berlin.

Prof. Dr Martina Schraudner holds the Chair "Gender and Diversity in Technology and Product Development" at the Technical University of Berlin and developed the Center for Responsible Research and Innovation at Fraunhofer IAO. She deals with methods, instruments and processes that make diversity accessible to organizations and companies. She is active in national and international

committees for application-oriented research and innovation projects, among others as Director of the Gendered Innovations Webpage and member of the Gender Summit Committee. She is among others member of the German Dialogplattform Industrielle Bioökonomie and Zukunftskreis of the Federal Ministry of Research and Education.

Dr Jennifer Sheridan is the Executive & Research Director of the Women in Science & Engineering Leadership Institute (WISELI) at the University of Wisconsin-Madison. Trained as a sociologist, she develops and oversees the workshops and grant programs administered by WISELI, as well as the research and evaluation produced by WISELI including seven waves of the Study of Faculty Worklife climate surveys. She was a member of the original ad hoc committee on bullying in the university, and also helped develop the curriculum for HIB training for the campus.

Dr Linda Steuer-Dankert is a Senior Researcher at the GDI, working at the Cluster of Excellence “Internet of Production.” Her research is focusing on change management, diversity management, and organizational management. Furthermore, she deals with the human-centered perspective on technology acceptance and is teaching design thinking, entrepreneurship, and social innovation. Her dissertation in the context of the cluster of excellence “Internet of Production” was funded by the DFG (German Research Foundation). She received her PhD from the School of Business and Economics.

Dr Clemens Striebing is a Senior Researcher at the Center for Responsible Research and Innovation at Fraunhofer IAO. Here he leads national and international projects on organizational culture and climate as well as on gender equality in the research and innovation system. He studied political science at the FU Berlin and holds a PhD in sociology from the University of Heidelberg. He teaches gender-sensitive innovation development at the TU Berlin.

Thi Thanh Loan Tran, PhD student, is a Researcher in the Department of Women and Gender Studies of the Institute for Family and Gender Studies, Vietnam Academy of Social Sciences. She has published some articles in Vietnamese on family relation and gender equality in Vietnam, especially among ethnic minorities.

Dr Agnès Vandeveld-Rougale is a Research Fellow at the Laboratoire de changement social et politique (LCSP) at Université Paris Cité (France). Her research focuses on managerial discourse and its subjective influence. She first studied business administration and international relations and holds a PhD in Anthropology and Sociology from the University Paris Diderot (now Université Paris Cité).

Dr Tanja Wälty is a Research Associate in the research “Sexual Harassment, Discrimination, and Violence in the Context of Higher Education” at the

Margherita von Brentano Center for Gender Studies at Freie Universität Berlin. She wrote her doctoral dissertation as part of the International Research Training Group “Between Spaces” of the Institute for Latin American Studies at Freie Universität on the topic of bodies and body politics in the female punk movement of Mexico City. Her main research topics are sexual violence, body and body politics, feminisms, social movements, and punk.

Prof. Dr Amy E. Wendt is a University of Wisconsin (UW) – Madison Professor of Electrical and Computer Engineering, and serves as an Associate Vice Chancellor for Research-Physical Sciences and Co-director of the Women in Science and Engineering Leadership Institute (WISELI) at UW. She is committed to removing barriers to diversity, equity, and inclusion through institutional policies and practices. She chaired a Campus Committee to advise implementation of UW hostile and intimidating behavior (HIB) policy in 2016, and subsequently participated on the design team and as a presenter/facilitator for a curriculum on HIB prevention and response developed for UW employees.

This page intentionally left blank

Foreword

We all know that science is about asking deep questions and finding answers through appropriate methodologies and rigorous academic analysis:

The women did what they were told to do. They didn't ask questions or take the task any further. I asked questions; I wanted to know why. They got used to me asking questions and being the only woman there.

These words by Katherine Johnson, famous black mathematician at NACA-NASA 1953–1986, illustrate the spirit of inquiry that drives research activity and leads to gaining deeper understanding of the phenomena that surround us. One could easily replace the word “women” with “men,” or “African,” or any other name expressing humankind, and the sentence is equally as meaningful. The spirit of inquiry is ubiquitous in humankind regardless of country of origin, race, sexual orientation or social condition.

It is an honor for me to write this foreword for co-editors Dr Clemens Striebing, Dr Jörg Muller, and Prof. Dr Martina Schraudner, as they are bravely dedicating many years of their lives as scientists to comprehending the nuances of the complex interrelations between factors at play in discrimination, and using their knowledge to promote diversity in academic environments. Why do I say that their research activity is brave? On the one hand, because this is one of the research fields in which “hard data” are not easy to collect, that is, often it is not even legal to ask factual gender-related data. On the other hand, because there are important “soft factors” at play, that is, education, personal and social circumstances, therefore making data difficult to interpret. Moreover, as the co-editors say in their theoretical starting points, “discrimination has become more subtle while still producing adverse effects for disadvantaged social groups.” There is no capacity to act on discrimination and diversity if problematic situations are covered up or escape the attention of institutional leadership.

I met Dr Striebing through Dr Elizabeth Pollitzer, Founder and Director of Portia, Coordinator of the GenSET project (European Commission, Framework Programme 7) which established the Gender Summits (GS). I had been collaborating with Dr Pollitzer on gender actions in universities as part of my work as Director for Research and Innovation at the European University Association (EUA). Dr Striebing was one of the GS17 participants (October 3–4, 2019), where I presented for the first time the work of Science Europe on gender

in my third week as its Secretary General. Later, he invited me to moderate a session that was part of GS21 (April 14–16, 2021). We discussed with a panel of experts the challenges and requirements for the development of a standardized survey across Europe to capture gender-sensitive working conditions in research and innovation. Among other conclusions, the discussion clarified the limitations in developing appropriate and reliable benchmarks and highlighted the need to find new ways of including softer factors for policy development, in a way that would allow better comparisons.

Readers will find in this book a collection of rigorous scientific studies on sensitive issues that can lead to discrimination in the workplace in academia or be interpreted as discriminatory behavior. I can see how the outcomes of the discussion held in April 2021 were taken into account in the conduct of these studies: they have integrated into their analysis the “hard” and “soft” aspects in their surveys to produce a series of refined lessons for developing policies targeting discrimination in academia and promoting inclusion and diversity in healthy research environments.

There are many dimensions and intersections in diversity and discrimination issues in academia. Nowadays, many European universities and research organizations are reviewing their policies to include, in addition to gender issues, policies for broad social inclusiveness (ethnicity, disability, sexual orientation – LGBTIQ+ social background, etc.). Science Europe works toward an inclusive research culture (I will come back to this point at the end of the preface), yet our experience so far is mainly on gender.

Let me put this work in the context of my experience on gender equality in European universities and in research funding and performing organizations:

In broad terms, the figures tell us that there is a low percentage of female university leaders, that is, rectors and vice-rectors (18–30% according to EUA figures, 2021), compared with the apparent balanced ratio of female/male doctoral candidates throughout European countries (between 40% and 60% according to Eurostat, no field distinction). In order to promote the role of women in leadership positions in the academic sector and advocate gender equality in higher education and research, a group of women rectors, almost all former members of the EUA Board, created in 2015 the European Women Rectors Association (EWORA). Their regular workshops and conferences are an excellent example of how women leaders can support other women in academia.

For its part, Science Europe published in January 2017 its “Practical guide to improving equality in research organizations.” The guide provided recommendations to research funding and performing organizations in order to: (i) minimize unconscious bias in peer-review processes for project selection and career promotion; (ii) monitor gender equality; and (iii) improve grant management practices from the gender perspective. These recommendations were extracted from policies and experiences of numerous Science Europe members who conscientiously analyzed their gender policies to propose common European guidelines. The recommendations and case studies in the guide fed several projects on gender-sensitive issues funded by the Framework Programmes of the European Commission, namely GENPORT (FP7), ACT (Horizon 2020)

and GENDERACTION (Horizon, 2020). Specifically, Science Europe has been a member of FORGEN, one of the “community of practices” set up in the framework of ACT.

These projects, as well as others funded by the European Commission have been instrumental in sparking and disseminating awareness of gender issues in universities, research centers and the entire academic sector across Europe. In this respect, Science Europe welcomed the initiative of the European Commission to meet the conditions in the Gender Equality Plan as an eligibility criterion for receiving funds from the Framework Programme. I see this as an achievement of many years of work in European Research Area (ERA) policies, in which gender has always been a priority addressed by the European Institutions and pan-European stakeholders such as EUA and Science Europe. I am convinced that this policy will contribute to eliminating gender inequalities, help raise awareness and address intersectoral socio-economic inequalities throughout research and innovation systems.

At global level, hallmark days such as the *International Day of Women and Girls in Science* and the *International Women's Day* are milestones in achieving recognition of the need to address the specificities of women in research and beyond worldwide. The Global Research Council (GRC) – a virtual organization, comprised of the heads of science and engineering funding agencies from around the world, dedicated to promoting the sharing of data and best practices for high-quality collaboration among funding agencies worldwide – published in 2016 its “Statement of Principles and Actions: Promoting the Equality and Status of Women in Research.”

Science Europe is co-chairing the Working Group that the GRC set up in 2017 to contribute to the implementation of these principles. It supports the participation and promotion of women in the research workforce, and the integration of the gender dimension in research design and in the analysis of research outcomes. Regarding the monitoring of gender data, a report that the GRC Gender Working Group published in May 2021 indicated that while over 80% of the funding organizations worldwide collected gender-related data in project-funding applications, only a small number of funders collected data related to the other aspects of the grant management process (and these were mainly in Europe).

Discrimination in academia is detrimental first and foremost to researchers experiencing it, as it affects their mental health. It can also affect colleagues who notice the discrimination and may find themselves in awkward positions, having to choose between being silent witnesses or risk violent treatment themselves if they speak up. Beyond the emotional suffering, there are long term consequences for the careers of researchers, as the adverse conditions may affect their scientific performance.

An important area where universities and research funding and performing Organizations can have a strong impact in promoting equality, diversity, and inclusion (EDI) is through the processes that they use to assess and evaluate researchers and research. Between 2019 and 2020, Science Europe conducted an extensive study of the assessment processes of its members, in order to produce recommendations at institutional level. The study showed that bias,

discrimination, and the unfair treatment of researchers and research projects were central concerns for research organizations. The potential bias that was most often monitored was gender (by 82% of surveyed organizations). Ethnicity and disability were monitored by 31% and 25% of organizations respectively. Science Europe recommended collecting more data to take account of all possible types of bias and discrimination in assessment processes, and also to consider their interconnected nature. In addition, it recommended regular training and guidance on EDI to all research staff and reviewers involved in research assessment processes, as well as continuously evaluating assessment processes against all possible sources of bias. Furthermore, it promoted diversity in evaluation panels and expert reviewer pools that inform assessments.

I find this book to be in line with these recommendations, offering excellent in-depth analysis of the available data and going deeper into the soft aspects of discrimination and diversity to end with a series of nuanced recommendations to both institutional policy makers and research managers. Institutional policy makers strive for policies that can be properly implemented and that fulfill the objectives for which they were created. In this context, defining specific objectives and defining clear positive behaviors, expectations and consequences are essential. Research managers need all possible support and training from their institutional leadership to implement policies effectively.

The three recommendations for policy makers, two recommendations for research managers and the six lessons learned, are not just ready-to-implement advice: The “practitioner’s guide” invites all of us to reflect upon our own perceptions on team processes, on how idealistic or realistic our perspectives on diversity and discrimination are, and on the limits between the institutional and other policies, for example, government policies.

The studies in this book merge hard and soft factors in their analysis on discrimination and diversity, including very sensitive aspects such as implicit or explicit violence toward an individual or a group of individuals due to being “different” from what is considered normal in a research unit, department or institution. While there can be cases of discrimination clearly related to a condition (sometimes intersectional), for example, black and poor women, LGTBI and disabled people, etc., I wonder if typical pressures related to research career progression such as the need to meet certain objectives as in the “publish or perish” dilemma, precarious career paths, and poor reward and incentive systems, should not be an additional factor worth adding in the intersectionality approach.

This brings me to my final point of this foreword: the need to reflect on the research culture(s) in academic environments to foster healthy academic environments

that improve the conditions for researchers and research alike by further advancing European and global research systems towards a more sustainable, attractive, and effective research system. (Science Europe Position Statement on Research Culture – November 2021).

Furthermore, Science Europe strives for an ERA

that focusses on the quality of the research process, full support of scientific autonomy, and the promotion of diversity and inclusion, acknowledging that these conditions will, in turn, foster a productive research system. We envisage a research culture in the European Research Area where a) all participants in the research endeavor are appropriately recognized for their diverse contributions, b) the broad skills and competencies of researchers are fostered and supported by suitable training, appropriate infrastructure, and responsible management and governance, c) research integrity and high ethical standards are promoted effectively, and d) careers in research are attractive and sustainable.

Through the series of studies and their authors' thorough analysis and thinking, this book goes beyond the state-of-the-art in making recommendations for policy makers and research managers, and sets the basis for the design of new group discrimination and diversity policies, creating a fine balance between too general measures, for example, one-size-fits-all policies, and too individualized case treatment. In this vein and in line with the vision above, Science Europe will take into account these recommendations and lessons learned in the action that is about to be initiated to assess the degree of implementation and usefulness of the 2017 Gender Guide and which will expand its remit to incorporate elements of EDI and intersectionality, based on good practice case studies.

I believe that this timely book will bring inspiration to many organizations that are in the process of reviewing and implementing diversity and discrimination policies, and that are moving from exclusive gender male-female policies to diversity policies, thus creating more open and welcoming research environments. While collecting data on individual researchers' racial, ethnic, sexual or religious identities can still be complicated depending on the legal framework and social tolerance, decision makers are in a position to take action by defining their vision for the research culture that they envision in their institutions.

Dr Lidia Borrell-Damián
Secretary General of Science Europe
Brussels, April 2022

This page intentionally left blank

Acknowledgments

The edited collection presented here would not have been possible in this form without a number of individuals and institutions. In particular, we would like to thank ...

... the open access funds of the Fraunhofer-Gesellschaft, the Cluster of Excellence “Internet of Production” (390621612) at RWTH Aachen University, the Université Paris Cité, and Freie Universität Berlin without whose funding we would not have been able to publish our book in the spirit of open science principles;

... the Max Planck Society (MPG) for setting the basis of this collection by allowing us to evaluate one of the largest data sets worldwide on work culture in science in the context of the articles published by Striebing;

... Fabian Ochsenfeld, Verena Mauch, and Stefanie Unger from the MPG for the constructive coordination process on the three articles concerning the MPG. In particular, we would like to thank Fabian Ochsenfeld, whose expert feedback and patience with us made a considerable contribution to raising the quality of the articles in question;

... Sascha Schneider and Jannick Schneider, who strongly supported us in their role as research assistants in the publication process, in the coordination of the review process and in the revision of the articles.

We would especially like to thank the anonymous reviewers and those listed here. Each contribution has gone through a double-blind peer-review process with two to three reviewers and two to three rounds of feedback. We thank the reviewers for their indispensable contribution to the scientific quality of the chapters edited in this volume!

Berlin/Barcelona, April 19, 2022

Clemens Striebing, Jörg Müller and Martina Schrauder

Reviewer List

Akella, Devi

Albany State University, GA
USA

Bespınar, Fatma Umut

Department of Sociology, Gender
and Women's Studies
Middle East Technical University
Turkey

Björklund, Christina

Karolinska Institute
Institute of Environmental Medicine
Unit of Intervention and
Implementation Research for Worker
Health
Sweden

Desivilya Syna, Helena

The Max Stern Yezreel Valley College,
Israel

Einarsdóttir, Thorgerdur J.

Faculty of Political Science
University of Iceland
Iceland

Fàbregues, Sergi

Universitat Oberta de Catalunya
Spain

Gardner, Dianne

School of Psychology,
Massey University
New Zealand

Hodgins, Margaret

Health Promotion
National University of Ireland, Galway
Ireland

Hüttges, Annett

Helmholtz-Zentrum Potsdam
Deutsches GeoForschungsZentrum
GFZ
Germany

Kalpazidou Schmidt, Evanthia

Aarhus University
Department of Political Science
The Danish Centre for Studies in
Research and Research Policy
Denmark

Keashly, Loreleigh

Wayne State University
Detroit, MI
USA

Lee, Ju Young

Max Planck Institute for Biological
Cybernetics
Eberhard-Karls University of
Tübingen
Germany

Näser-Lather, Marion

Institut für Geschichtswissenschaften
und Europäische Ethnologie
Universität Innsbruck
Austria

Pasamar, Susana

Pablo de Olavide University
Spain

Sorin, Cierra Raine

Department of Sociology
University of California, Santa
Barbara
USA

Thomson, Aleksandra (Ola)

The Elizabeth Blackwell Institute for
Health Research at
the University of Bristol

Vinkenburg, Claartje

Independent expert consultant
Netherlands

Petroff, Alisa

Universitat Oberta de Catalunya
(IN3, GenTic research group)
Spain