Acknowledgments

TIMSS is a major undertaking of IEA, and together with PIRLS, comprises the core of IEA's regular cycle of studies. Responsibility for the overall direction and management of these two projects resides at the TIMSS & PIRLS International Study at Boston College. Headed by Matthias von Davier, Ina V.S. Mullis, and Michael O. Martin, the study center is located in the Lynch School of Education and Human Development at Boston College. In carrying out these two ambitious international studies, the TIMSS & PIRLS International Study Center works closely with IEA Amsterdam which manages country participation in a number of IEA international studies, IEA Hamburg which is a data processing and research center, RTI International in Research Triangle Park, North Carolina, and Educational Testing Service in Princeton, New Jersey. Especially important is close coordination with the National Research Coordinators designated by the participating countries to be responsible for the complex tasks involved in implementing the studies in their countries. In summary, it takes extreme dedication on the part of many individuals around the world to make TIMSS a success and the work of these individuals across all of the various activities involved is greatly appreciated.

With each new assessment cycle of a study, one of the most important tasks is to update the assessment frameworks. Updating the TIMSS assessment frameworks for 2023 began in September of 2020, and has involved extensive input and reviews by individuals at the TIMSS & PIRLS International Study Center, IEA, the TIMSS 2023 National Research Coordinators, and the two TIMSS expert committees—the TIMSS 2023 Science and Mathematics Item Review Committee and the TIMSS 2023 Questionnaire Item Review Committee. Of all the individuals around the world that it takes to make TIMSS a success, the intention here is to specifically acknowledge some of the many persons who had particular responsibility and involvement in developing and producing the *TIMSS 2023 Assessment Frameworks*.

TIMSS 2023 Framework Development at the TIMSS & PIRLS International Study Center at Boston College

Matthias von Davier, Executive Director

Ina V.S. Mullis, Executive Director

Michael O. Martin, Executive Director

Pierre Foy, Director of Sampling, Psychometrics, and Data Analysis

Dana Kelly, Director, Development and Reporting

Charlotte Aldrich, Research Specialist, TIMSS Mathematics and Special Projects

Victoria A.S. Centurino, Assistant Research Director, TIMSS Science and Special Projects

Bethany Fishbein, Assistant Research Director, Psychometrics and Data Analysis

Katherine Reynolds, Assistant Research Director, Questionnaire Development and Policy Research

Liqun Yin, Research Psychometrician

TIMSS 2023 Science and Mathematics Item Review Committee

The Science and Mathematics Item Review Committee (SMIRC), comprised of internationally recognized mathematics and science experts, reviewed and recommended updates for the *TIMSS 2023 Mathematics and Science Frameworks*. The SMIRC also reviews the TIMSS 2023 items at key points in the development process.

Mathematics

Ray Philpot
Australian Council for Educational Research
Australia

Kiril Bankov
Faculty of Mathematics & Informatics
University of Sofia
Bulgaria

Franck Salles
Direction d'l'Évaluation, de la Prospective et de la Performance (DEPP)
Ministère de l'Éducation Nationale, de l'Enseignement Supérieur et de la Recherche
France

Khattab Mohammad Ahmad Abulibdeh
National Center for Human Resources Development
Jordan

Hege Kaarstein
Department of Teacher Education & School Research
ILS, University of Oslo
Norway

Cheow Kian Soh
Curriculum Planning & Development Division, Mathematics Branch
Ministry of Education
Singapore

Mary Lindquist
United States

Science

Yun-Ping Ge
National Taipei University of Education
Chinese Taipei

Svatava Janoušková
Department of Teaching & Didactics of Chemistry
Charles University, Prague
Czech Republic

Christian Christrup Kjeldsen
Aarhus University
Denmark

Ute Harms
Department of Biology Education
IPN Leibniz Institute for Science and Mathematics Education
Germany

Berenice Michels
Faculty of Science
Utrecht University
The Netherlands

Galina Kovaleva
Federal Institute for the Strategy of Education Development
Russian Academy of Education
Russian Federation

Alicia Alonzo
Department of Teacher Education
Michigan State University
United States

TIMSS 2023 Questionnaire Item Review Committee

The TIMSS 2023 Questionnaire Item Review Committee (QIRC) is comprised of educational policy analysis experts and TIMSS 2023 National Research Coordinators who have a special responsibility for participating in the development of the *TIMSS 2023 Context Questionnaire Framework* and context questionnaires for TIMSS 2023.

Sue Thomson
Australian Council for Educational Research
Australia

Josef Basl
Czech School Inspectorate
Czech Republic

Heike Wendt
Institute for School Development Research (IFS)
TU Dortmund University
Germany

Kit-Tai Hau
Faculty of Education
The Chinese University of Hong Kong
Hong Kong SAR

Kyongah Sang
Center for Global Education
Korea Institute for Curriculum & Evaluation
Republic of Korea

Laura Palmerio
Istituto Nazionale per la Valutazione del Sistema Educativo di Istruzione e di Formazione (INVALSI)
Italy

Trude Nilsen
Department of Teacher Education & School Research
ILS, University of Oslo
Norway

Anabela Serrão
Instituto de Inovação Educacional
Portugal

Barbara Japelj Pavešić
Educational Research Institute
Slovenia

TIMSS 2023 National Research Coordinators

The TIMSS 2023 National Research Coordinators (NRCs) are responsible for implementing the study in their countries, and participated in a series of reviews of the updated frameworks

Albania
Aurora Balliu
Educational Services Center

Armenia
Arsen Baghdasaryan
Assessment & Testing Center

Australia
Nicole Wernert
Australian Council for Educational Research

Austria
Lisa Wiesinger
Federal Institute for Quality Assurance of the Austrian School System (IQS)

Azerbaijan

Aygun Gurbanli
The Institute of Education
Ministry of Education of the Republic of
    Azerbaijan

Bahrain

Samah Al Ajjawi
Ministry of Education

Belgium (Flemish)

Lies Appels
University of Antwerp

Belgium (French)

Doriane Jaegers
Virginie Dupont
Université de Liège

Bosnia & Herzegovina

Žaneta Džumhur
Agency for Pre-primary, Primary & Secondary
    Education

Brazil

Pedro Ramos
National Institute for Educational Studies &
    Research (INEP)
Ministry of Education

Bulgaria

Marina Vasileva Mavrodieva
Center for Assessment in Pre-School & School
    Education (CAPSE)

Canada

Kathryn O'Grady
Tanya Scerbina
Council of Ministers of Education, Canada
    (CMEC)

Chile

Carolina Leyton Faundez
Departamento de Estudios Internacionales
Agencia de Calidad de la Educación

Chinese Taipei

Che-Di John Lee
National Taiwan Normal University

Cote D'Ivoire

Joseph François Déesiré Kauphy
Direction de la Veille et Suivi des Programmes/
    METFP
Ministere de l'Education Nationale et de
    l'Alphabetisation

Cyprus

Yiasemina Karagiorgi
Center of Educational Research & Evaluation
    Pedagogical Institute

Czech Republic

Libor Klement
Czech School Inspectorate

Denmark

Christian Christrup Kjeldsen
Aarhus University

Egypt

Khaled Mohamed Sayed Ahmed
Test Development Department
National Center of Examinations & Educational
    Evaluation

England

Grace Grima
Pearson UK

Finland

Jouni Vettenranta
Finnish Institute for Educational Research
University of Jyväskylä

France

Marc Colmant
Franck Salles
Direction de l'évaluation de la prospective et de
    la performance (DEPP)
Ministère de l'éducation nationale

Georgia

Giorgi Ratiani
National Assessment & Examinations Center

Germany

Knut Schwippert
University of Hamburg

Hong Kong SAR

Kit-Tai Hau
Faculty of Education
The Chinese University of Hong Kong

Hungary

Ildikó Szepesi
Educational Authority
Department of Assessment & Evaluation

Iraq

Huda Salah Kareem
Ministry of Education

Ireland

Sylvia Denner
Fionnuala Shortt
Educational Research Centre
Dublin City University, St. Patrick's Campus

Israel

Georgette Hilu
National Authority for Measurement &
    Evaluation in Education (RAMA)

Italy

Elisa Caponera
Laura Palmerio
Istituto Nazionale per la Valutazione del Sistema
Educativo di Istruzione e di Formazione
    (INVALSI)

Japan

Fumi Ginshima
Department for Curriculum Research
National Institute for Educational Policy
    Research (NIER)

Jordan

Khattab Mohammad Ahmad Abulibdeh
National Center for Human Resources
    Development

Kazakhstan

Aiymgul Myrzabekova
JSC Information-Analytic Center

Korea, Republic of

Minhee Seo
Korea Institute of Curriculum & Evaluation
    (KICE)

Kosovo

Mirlinda Dehari-Zeka
Vjollca Ymerhalili
Ministry of Education, Science, & Technology
    of Kosovo

Kuwait

Asia Hashem Hajiya
National Centre for Education Development

Latvia

Linda Mihno
Faculty of Education, Psychology, & Art
Education Research Institute
University of Latvia

Lithuania

Asta Buineviciute
National Agency for Education

Macao SAR

Kin Mou Wong
Education & Youth Development Bureau
    (DESDJ)

Malaysia

Rusliza Abdullah
Wan Raisuha Wan Ali
Educational Planning & Research Division
    (EPRD)
Ministry of Education

Malta

Louis Scerri
Educational Assessment Unit
Ministry of Education & Employment

Montenegro

Marina Radović
Examination Center of Montenegro

Morocco

Mohammed Sassi
Centre National de l'Evaluation et des Examens
  et de l'Orientation
Ministere de l'Éducation Nationale et de la
  Formation Professionnelle

The Netherlands

Martina Meelissen
Department of Research Methodology,
  Measurement & Data Analysis
University of Twente

New Zealand

Jessica Forkert
Steve May
Educational Measurement & Assessment Team
Ministry of Education

North Macedonia

Beti Lameva
National Examination Center

Northern Ireland

Michael Woods
National Foundation for Educational Research
  (NFER)

Norway

Hege Kaarstein
Department of Teacher Education & School
  Research
ILS, University of Oslo

Oman

Zuwaina Saleh Al-Maskari
Ministry of Education

Palestinian National Authority

Mohammed O. Matar Mustafa
Center for Educational Research &
  Development (CERD)
Ministry of Education

Poland

Michał Sitek
Wioleta Dobosz-Leszczyńska
Educational Research Institute

Portugal

Anabela Serrão
Instituto de Inovação Educacional

Qatar

Asmaa Yousef Al-Harqan
Evaluation Institute
Supreme Education Council

Romania

Dragos Iliescu
Vlad Burtaverde
University of Bucharest

Russian Federation

Galina Kovaleva
Sergey Stanchenko
Federal Institute for the Strategy of Education
  Development
Russian Academy of Education Center for
  Evaluating the Quality of Education

Saudi Arabia

Abdullah Aljouiee
Education & Training Evaluation Commission
National Center of Assessment

Serbia

Danijela Djukic
Branislav Randjelovic
Institute for Education Quality & Evaluation

Singapore

Hui Leng Ng
Research & Management Information Division
Ministry of Education
Huiyuan Lin
Planning Division, Research & Evaluation
    Section
Ministry of Education

Slovak Republic

Andrea Galadova
National Institute for Certified Educational
    Measurements

Slovenia

Barbara Japelj Pavešić
Educational Research Institute

South Africa

Mark Chetty
Lolita Winnaar
Department of Basic Education

Spain

Francisco Javier Garcia Crespo
National Institute of Educational Evaluation

Sweden

Maria Axelsson
Stella Rössborn
Swedish National Agency for Education
    (SKLOVERKET)

Turkey

Emine Özedemir
Ministry of National Education

United Arab Emirates

Hessa Al Wahhabi
Shaikha Ali Al Zaabi
Ministry of Education UAE

United States

Lydia Malley
National Center for Education Statistics
U.S. Department of Education

Uzbekistan

Abduvali Ismailov
National Center for Conducting International
    Studies on the Assessment of the Quality of
    Education

Benchmarking Participants

Ontario, Canada

Jeannette Amio
Council of Ministers of Education, Canada
    (CMEC)
Jennifer Hove
Education Quality & Accountability Office

Quebec, Canada

Caroline Hamelin
Ministère de l'Éducation, et de l'Enseignement
    Supérieur

Moscow City, Russian Federation

Elena Zozulya
Moscow Center for Quality of Education

Abu Dhabi, UAE

Nada Abu Baker Husain Ruban
Ministry of Education (UAE)

Dubai, UAE

Mariam Al-Ali
Knowledge & Human Development Authority