

Society for the Study of Measurement (SSM)
Inaugural Conference
Draft Agenda
June 17 Version

Dates: August 4-August 8, 2024

Location: Berkeley Way West Building
University of California, Berkeley
2121 Berkeley Way West
Berkeley, CA 94720
USA



Rooms: 1st Floor, 1102
4th Floor, 4215, 4310, 4401, 4424,

Pre-conference Workshop Day
Sunday, August 4th

Note: All workshops are in-person

9:00-12:00 Workshop A

Measurement Across the Sciences Workshop
Luca Mari & Mark Wilson

9:00-12:00 Workshop B

The Berkeley Assessment System Software (BASS) Workshop
David Torres Iribarra

9:00-1:00 Workshop C

Open Strategy Workshop: Developing AI-powered Futures for Learning & Work
Luciano Oviedo & Tiburon Batriedo

1:30-4:30 Workshop D

Learning Machines and Measurement-Related Issues Workshop
Alessandro Giordani, Luca Mari & Mark Wilson

2:30-4:30 Workshop E

ACER ConQuest Software Workshop
Perman Gochyyev

Day 1
Monday, August 5th

8:15-8:45 Opening Session:

8:45-9:30 Invited Talk 1: Chair, Eran Tal
Patient Centered Measurement
Leah McClimans
University of South Carolina

9:35-11:05 Session 1A & 1B

1A. Educational and Psychological Measurement Applications, I: Chair, Weeraphat Suksiri
When Knowledge Measures Need Epistemological Frameworks & How to Build Valid
Knowledge Items: Insights from a Validation of Teachers' Propositional Knowledge of
Dyslexia and Dyslexia Screening

Tyler Ogata, Jill Yochim
UC Berkeley, USA

Identification of Measurement Disturbances in Affective Item Types

Judy R. Wilkerson, W. Steve Lang
University of South Florida, USA

Designing and developing a high-stakes testing system of personnel selection

Weeraphat Suksiri, Ruangdech Sirikit
Srinakharinwirot University, Thailand

An item response theory analysis of The Implicit Theories of Intelligence Scale in
teachers of a developing country

Carmen Maura Taveras
Pontificia Universidad Católica de Chile, Chile

1B. Measurement and Data Science: Chair, Alessandro Giordani

Philosophical Challenges with Using Deep Learning to Measure Animal Behavior in
Neuroscience

Nedah Nemati, Andrew Matheson
Columbia University, USA

Rethinking the Relationship between Measurement and Simulation

Alessandro Giordani, Luca Mari
Università Cattolica del Sacro Cuore di Milano, Italy

Machine-Learning for Explanatory Educational Measurement: Combining the power of
decision trees and the four-building blocks for auto-scoring

Yunting Liu, Alexis Ava Fernandez, Cindy Zhang, Yijun Xiang, Alexis Ava
Fernandez

University of California, Berkeley, USA

Inq-ITS: Leveraging learning sciences and computational sciences for real time, AI-
driven assessment of students' science competencies and implications for learning and
teaching

Janice Gobert
Rutgers University & Apprendis, USA

11:05-11:35 Morning Break (30 mins.)

11:35-1:05 Sessions 2A & 2B

2A. Measurement Applications: Chair, Svetlana Beltyukova

Validation of a French-speaking version of Motivated Strategies for Learning

Nadine Talbot

Université du Québec à Trois-Rivières, Canada

Belonging in Science: A focus on the Construct

Linda Morell

University of California, Berkeley, USA

Rasch-Informed vs. Rasch-Based Objective Standard Setting: A case study of designing and validating an assessment tool to measure clinical performance of medical students during their clerkship phase

Svetlana Beltyukova, Stephanie Mann, Rjat Kaul

The University of Toledo, USA

2B. Models in Measurement: Chair, Denis Federiakin

Democratizing the Democratization of Measurement: From the Three Estates of Expertise to the Encounter of Values

Chris Borst

Dept. of Sociology, McGill University, Montreal, Canada

Semi-Identification Issues in Neural-Network-Parameterization of the Dichotomous Logistic Rasch Model

Denis Federiakin, Lidia Dobria, Olga Zlatkin-Troitschanskaia

Johannes Gutenberg University, Mainz, Germany

Phenomenological Measurement

Gabriel Siegel

Washington University, St. Louis, USA

A Keyword Network Analysis of Published Articles in the Journal of Educational Measurement From 1964 to 2024

Eunjung Myoung, Hyemin Park

Stanford University and University of California, Berkeley, USA

1:05-2:35 Lunch and Posters: History, Philosophy and Sociology of Measurement,

Chair: Alexander Blum

Defining the Theoretical and Empirical Domains of Structural Racism in American Schools

Norma Hancock, A. B. Fox, T. P. Hogan

MGH Institute of Health Professions, Boston, MA, USA

Communication of Measurement

Mona Wehming

Physikalisch-Technische Bundesanstalt (PTB), Berlin, Germany

Integrating Item Response Theory into Korea's CSAT: Challenges and Opportunities for Enhanced Educational Assessment

Hyemin Park, Eunjung Myoung

University of California, Berkeley, and Stanford University, CA, USA

Impact of Seasonality on Rasch Calibration and Equating

Chunyan Liu, Richard Feinberg, Raja Subhiyah
National Board of Medical Examiners, USA

AI and Measurement concerns: Dealing with imbalanced data in autoscoring

Yunting Liu, Xutao Feng, Yukie Toyama
University of California, Berkeley, USA

An interdisciplinary approach to measuring well-being in office spaces

Vivien Peltason, Jeanette Melin, Daniel Hutzschenreuter, Barbara Jung
Physikalisch-Technische Bundesanstalt (PTB), Berlin, Germany

2:35-4:05 Session 3 Spotlight: History, Philosophy and Sociology of Measurement

Symposium: What's So Great about Uncertainty? Chair, Kent Staley

How uncertainty allows measurement to produce useful results

Pierre Hugues Beauchemin, Kent Staley
Tufts University, Medford, MA, USA; Saint Louis University, St. Louis, MO,
USA

Quantum uncertainty and metrological uncertainty

Jacques Pienaar, Eran Tal
University of Massachusetts, Boston, MA, USA; McGill University, Montreal,
Quebec, Canada

Measurements of carbon in soil

Aja Watkins
University of Wisconsin-Madison, WI, USA

The role of uncertainty in the measurement of inequality

Alessandra Basso
University of Cambridge, UK

4:05-4:35 Afternoon Break (30 mins.)

4:35-6:05 Sessions 4A & 4B

4A. Modernizing vs Ecologizing? Implications of Measurement for Social and Economic

Organization: Chair, William Fisher

Modern vs unmodern measurement and science: Consequences for co-produced social
orders

William Fisher
BEAR Center, UC Berkeley, USA; Living Capital Metrics LLC

Ecologizing STEM education: Using Caliper to measure and manage for stakeholder
empowerment

Jan Morrison
TIES, Cleveland, OH, USA

Use of the Activity Inventory in the Low Vision Rehabilitation Network

Robert Massof
Johns Hopkins University, Baltimore, MD, USA

False dichotomies: Tensions & Opportunities for the evolution of scientific measurement

Celeste Combrinck
University of Pretoria, South Africa

4B. Symposium: Back-End Construct Map Development using an Exploratory Item Response Modeling Approach: Chair, Jerred Jolin

Developing a Teacher Professional Development Progress Variable Using Exploratory Item Response Modeling"

Jerred Jolin; College of Education; Department of Special Education; Eastern Oregon University

Alexander Mario Blum; Stanford Graduate School of Education; Enrich Your Academics

Proposing Construct Maps for Teacher Development of an Anti-Racism Value Stance Using Exploratory Item Response Modeling

Jerred Jolin; College of Education; Department of Special Education; Eastern Oregon University

Alexander Mario Blum; Stanford Graduate School of Education; Enrich Your Academics

Mark Wilson; Graduate School of Education; University of California, Berkeley

Uncovering Patterns of Difficulty in Oral Production of Inflected Words Among Students with Dyslexia Compared to Typical Readers

Robin Irey, Alexander Blum, Jet Vonk, Marilu Gorno-Tempini

UC San Francisco, CA, USA

6:30 Happy Hour (no-host bar)

Cornerstone Berkeley

2367 Shattuck Ave, Berkeley, CA 94704-1552

Day 2
Tuesday, August 6th

8:30-10:00 Sessions 5A & 5B

5A. Symposium: The Praxis of Measurement for Liberation towards the Development of the Soul of HBCU STEM Leadership Assessment: Chair, David Sul

The Theoretical Infrastructure for the Liberatory Praxis of Large-Scale Culturally Specific Assessment

David Sul

University of the Virgin Islands, USA

Putting Liberatory Measurement Theory into Practice: Constructing the CASL Soul of HBCU STEM Leadership Assessment

Angelique Tucker-Blackmon

University of the Virgin Islands, USA

Reflection on the Liberatory Praxis of HBCU-Specific Assessment: HBCU Assessment Developers Reflect on their Journey towards Assessment Autonomy

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University of the Virgin Islands, USA

5B. Symposium: Rethinking Ongoing Debates in Measurement from the Perspective of Theory, Instrumentation, Scales & Units, Modeling: The TISM framework: Chair, David Torres Irribarra

The TISM framework and validity: reinterpreting longstanding debates

David Torres Irribarra

Pontificia Universidad Católica de Chile, Chile

The TISM framework and the concept of multidimensionality

Derek Briggs

University of Colorado

The TISM framework and reliability: Communicating uncertainty in human measurement

Joshua McGrane

10:00-10:30 Morning Break (30 mins.)

10:30-12:00 Sessions 6A & 6B

6A. History and Social Studies of Measurement: Chair, Bob Massof

Modelling of measurements—Base of their understanding and trustworthiness

Nadine Schiering

ZMK & ANALYTIK GmbH, Bitterfeld-Wolfen, Germany

Non-Epistemic Values in Health-Related Quality of Life Measurement Design

Sebastian Rodriguez Duque

McGill University, Canada

“Exacte measuryng, and speady reckenyng all maner lande [and] squared tymer”:

Innovation and Resistance in Early Modern Anglophone Measurement

Jennifer Egloff

NYU Shanghai

- Measurement in the Dictator Game: Constructs, validity and the threat of methodological artifact
 Maria Jimenez-Buedo
 Logic, History and Philosophy of Science Dept. UNED-Madrid
- 6B. Models and their Assessment: Chair, Perman Gochyyev
 Tidal Volume, Vital Capacity, and Mechanical Measures of Breathlessness
 Lindsay LeBlanc
 University of Toronto, Canada
- Towards a Model Agnostic Assessment of Metric Invariance
 Noah Padgett, Tyler VanderWeele
 Harvard University, USA
- Extending four building blocks to secondary data and with composite model
 Ka-Ho Tam, Perman Gochyyev, Mark Wilson
 University of California, Berkeley, USA
- Novel psychometric indicator assessments: The relative excess correlation and associated matrices
 Tyler VanderWeele, Noah Padgett
 Harvard University, USA
- 12:00-1:00 Lunch
- 1:00-2:30 SSM Business Meeting
- 2:30-4:00 Session 7: Spotlight: Issues in Measurement and Generative AI: Chair, Namsoo Shin
 The Gen AI intern – Adventures in using ChatGPT as a measurement assistant
 Celeste Combrinck
 University of Pretoria, South Africa
- Utilizing Generative AI in Measurement Development: Under the Guidance of Mari et al.'s Hexagon Framework
 Perman Gochyyev, Mark Wilson, University of California, Berkeley
- Using Generative Artificial Intelligence to Measure Student Performance in Usable Knowledge
 Namsoo Shin, Sangeetha Suresh, Parisa Kordjamshidi, Joseph Krajcik
 Michigan State University
- The rising use of ChatGPT in education: A blessing or threat to students' evaluations and measurement in tertiary education
 Paul Kwame Butakor
 University of Ghana
- 4:00-4:30 Afternoon Break (30 mins.)
- 4:30-6:00 Sessions 8A & 8B
- 8A. Structure in Measurement: Chair, Eran Tal
 Measurement and the Riddle of Factuality
 Eran Tal

- McGill University, Montreal, Quebec, Canada
- The Intransitivity of Indifference
James Norris
University of Cambridge, UK
- Measurement and instrument development in the human sciences
Mariam Thalos
University of Tennessee Knoxville, USA
- Some pathologies of measurement in the human sciences
Mark Wilson
Berkeley School of Education, UC Berkeley, USA
- 8B. Educational and Psychological Measurement Applications, III: Chair, David Sul
- On the Validity of Self-Report Surveys of Racial Discrimination
Morgan Thompson
Cornell University, USA
- Beyond Modularity: Constitutive Models of Racial Discrimination
Florence Robinson Adams
University of Cambridge, UK
- Inheritance and Development of Self-love: A Measurement Study on Chinese Adults
Liming Xue, Yuling Wang, Kaishan Du, Xiaolin Yu
Yangzhou University, China
- The Problem of Isolating and Measuring Empathy
Riana Betzler
San Jose State University, USA
- 7:00 Conference Dinner
Faculty Club, UC Berkeley campus

Day 3
Wednesday August 7th

8:30-8:45 Opening Session

8:45-9:30 Invited Talk 2: Chair, Mark Wilson
Scaling and its Relationship with Measurement: Past, Present and Future
Derek Briggs
University of Colorado, Boulder, CO, USA

9:35-11:05 Session 9A & 9B

9A. Symposium: Measuring and Managing STEM Learning Ecosystem Success and Stakeholder Empowerment: Chair, Jan Morrison

Introducing the Caliper STEM Ecosystem Success Assessment

Jan Morrison

TIES, Cleveland, OH, USA

Designing and Calibrating Caliper

William Fisher

BEAR Center, UC Berkeley, USA

Caliper results for STEM Learning Ecosystems in Ohio

Christa Krohn

TIES, Cleveland, OH, USA

Caliper results for STEM Learning Ecosystems in Alabama

Sadie Norwick

TIES, Cleveland, OH, USA

9B. Educational and Psychological Measurement Applications, II: Chair, Sun-Geun Baek

Do the scales measuring school engagement have equivalent meaning for students in kindergarten, primary and secondary education?

Catalina Miranda

Pontificia Universidad Católica de Chile, Chile

A Psychometric Investigation of the Self-Directed Online Learning Scale (SDOLS) Through Rasch Rating Scale Modeling

Hongwei Yang, Jian Su, Kelly D. Bradley

University of West Florida, USA

The Role of Gender and Depressive Symptoms in Measuring Religiosity in Elderly

Pawel Zagodzón, Kacper Jagiełło, Tomasz Zdrojewski

Medical University of Gdansk, Poland

The Effect of 'Mathematics Self-Efficacy' Mediated by 'Effort and Persistence in Mathematics' on 'Mathematics Achievement' Using PISA 2022 Data: A Comparison of South Korea, the USA, and Finland

Sun-Geun Baek, Seojin Kim, Yunah Kang, Woori Song

Department of Education, Seoul National University, Korea

11:05-11:35 Morning Break (30 mins.)

11:35-1:05 Sessions 10A & 10B

10A. Epistemic Issues: Chair, Luca Mari

Signposts on the Path from Nominal to Ordinal Scales

Roza Nalbandyan, Ben Domingue

Stanford University, USA

Navigating uncertainty --- climate models as epistemic tools

Matthias Ackermann

Leibniz Universität, Hannover, Germany

Measurement and Mind

Lugh Corcoran

Keele University, UK

Unit Standards: Towards a Realist Conventionalism about Measurement

Gerald Teng

University of Toronto, Canada

10B. Philosophy of Measurement: Chair, Russell Almond

Rescuing TCM from Measurement Circularity? “Vicious Circularity”, Hermeneutic Circle and “Artisanal” Hermeneutics in De Mensura Medica

Yang Wang

Fudan University, China

Analogy and Measure: Overview of a Thomistic Approach to Measurement

Thomas Ciavatti

Center for Thomistic Studies

Divergent Measurement

Alex Mussgnug

University of Edinburgh

Context, Claims and Constructs in the Evidentiary Argument

Russell Almond

Florida State University, USA

1:05-2:35 Lunch and Posters: Narratives and Literacy: Chair, Smriti Mehta

Use of Narrative Story Production assessment in a Universal Screener

Mónica Zegers, Lillian Durán, Cengiz Zopluoglu, Amy Pratt, Javier Jasso, Gabriella Parham-Cruzado

University of California San Francisco, USA

Parents’ Perceptions of the Importance of Phonics Instruction to Produce Proficient Readers

Qing Cai

University of California, Berkeley, USA

Measuring Adults’ Digital Data and Safety Literacy (DDSL)

Shinyi Kang

Harvard Graduate School of Education, USA

Using explanatory item response models to investigate factors that influence word recognition

Yukie Toyama, Elfrieda H. Hiebert, Robin Irey

University of California, Berkeley, USA

A neural network paradigm for modeling psychometric response data
Longfei Zhang, Chen Ping
Beijing Normal University

2:35-4:05 Session 11: Spotlight: Validation and Explanatory Models: Chair, Florian Kaiser
Have validity theories run their course? A model-based, metrological alternative from a psychometric perspective

Daniel Katz
NWEA, USA

Validating the construct specification equation and gross motor unit as a universal measurement scale and standardized, reproducible unit for gross motor development

Bryant Seamon, Cindy L. Sears, Emily Anderson, Craig A. Velozo
Medical University of South Carolina, USA

Using the Linear Logistic Test Model to Explore Item-Related Characteristics and Their Effects on Item Difficulty on an Isometric Perspectives Test

Andrew Krist, Daniel Oyeniran, Stefanie Wind, Joni Lakin
The University of Alabama, USA

The Campbell paradigm: A model for measuring attitudes

Florian Kaiser, Mark Wilson
Otto-von-Guericke University Magdeburg, Germany

4:05-4:35 Afternoon Break (30 mins.)

4:35-6:05 Sessions 12A

12A. On the Measurable and Immeasurable: Chair, Smriti Mehta

Measurement of Sensory Magnitudes: Reinterpretation of the Weber-Fechner Law

Robert Massof
Johns Hopkins University, USA

Which (if any) psychological constructs can be measured?

Smriti Mehta
University of California, Berkeley

Leibniz Against the Absolute View of Quantity

Jen Nguyen
Bucknell University, USA

Integrating history and philosophy of measurement: Reflections on its past, present and future

Rebecca L. Jackson, Michele Luchetti
Max Planck Institute for the History of Science, Germany

6:05-6:20 Closing Session

Day 4
Thursday, August 8th

9:00-10:30 Campus Tour: Chair (Walking), Smriti Mehta

Meet at the BWB Building entrance on Berkeley Way West