

PIAAC Methodological Seminar:

The use of test scores in secondary analysis

14 June 2019

OECD Headquarters, Paris

BIOGRAPHIES OF THE SPEAKERS

PRESENTERS



Timothy N. Bond is an assistant professor of economics at the Krannert School of Management in Purdue University, and a Research Fellow at the Institute for the Study of Labor (IZA). His research focuses on labor economics and the economics of education, with a particular focus on issues related to discrimination, personnel economics, and measurement. He has previously worked on topics related to information about prejudice, the impact of Japanese trade on racial disparities, and measurement issues in the black-white test gap and happiness; and has been published in internationally recognized journals including the *Journal of Political Economy*, the *Review of Economics and Statistics*, the *Journal of Labor Economics*, and the *Journal of Human Resources*. He received his Ph.D. in economics from Boston University in 2012.



Daniel Caro is an economist with a PhD in education from Freie Universität Berlin interested in the study of equity and effectiveness in education with advanced quantitative methods. He works as independent consultant for UNICEF and other international agencies. Previously, he was Research Fellow and course leader for the MSc Research Design and Methodology at the Department of Education, University of Oxford. He has also worked as Research Analyst at the International Association for the Evaluation of Educational Achievement (IEA). Daniel is alumnus of the OECD's Thomas J. Alexander Fellowship Programme and International Max Planck Research School on the Life Course (LIFE). He is main author of the R package 'intsvy' for the analysis of international large-scale assessment data.



Matthias von Davier holds the Distinguished Research Scientist position at the National Board of Medical Examiners (NBME), in Philadelphia, PA since January 2017. Until then, he was a Senior Research Director in the Research & Development Division at Educational Testing Service (ETS), and co-director of the center for Global Assessment at ETS, leading psychometric research and operational analysis of the center for assessments such as PISA, PIAAC, TIMSS and PIRLS. He earned his Ph.D. in psychology from University of Kiel, Germany, in 1996, specializing in psychometrics.

In the Center for Advanced Assessment at NBME, he works on psychometric methodologies for analyzing data from technology-based high-stakes assessments. He was one of the founding editors of the Springer journal Large Scale Assessments in Education which is jointly published the International Association for the Evaluation of Educational Achievement (IEA) and ETS. He was editor-in-chief of the British Journal of Mathematical and Statistical Psychology (BJMSP, 2013-2018), and is co-editor of the Springer book series Methodology of Educational Measurement and Assessment. He is the executive editor of Psychometrika (2019-2022), the journal of the Psychometric Society.

Dr. von Davier received the 2006 ETS Research Scientist award and the 2012 National Council of Measurement in Education (NCME) Brad Hanson Award for Contributions to Educational Measurement, and the American Educational Research Association's (AERA) Division-D 2017 award for Significant Contributions to Measurement and Research Methodology. His areas of expertise includes topics such as item response theory, latent class analysis, diagnostic classification models, and more broadly classification and mixture distribution models as well as computational statistics, person-fit, item-fit, and model checking, as well as hierarchical extension of models for categorical data analysis, and the analytical methodologies used in large scale educational surveys. His current work is concerned with extending, implementing and applying multidimensional IRT, IRTree, and latent response models, as well as speed/accuracy models to process data research using log-file and timing data from NBME such as USLME, as well as data from OECD's PISA and PIAAC.



Jesse Rothstein is professor of public policy and economics at the University of California, Berkeley, with affiliations in the Department of Economics and the Goldman School of Public Policy. He is also the director of the Institute for Research on Labor and Employment (IRLE); the co-director of the California Policy Lab; and the co-director of the Opportunity Lab. He previously served as Chief Economist at the U.S. Department of Labor and as Senior Economist with the Council of Economic Advisers, Executive Office of the President, both in the Obama Administration.

Rothstein's research focuses on education policy and on the labor market. His recent work includes studies of teacher quality, of school finance, of intergenerational economic mobility, and of the labor market during the Great Recession. His work has been published in leading journals in economics, public policy, education, and law. He testified as an expert witness regarding teacher evaluation in the Vergara v. California trial in 2014.

Rothstein received a Ph.D. in economics and a Masters in Public Policy, both from the University of California, Berkeley, and an A.B. from Harvard. He is a member of the editorial boards of the American Economic Review, Industrial Relations, and the National Education Policy Center. He was named the John T. Dunlop Outstanding Scholar by the Labor and Employment Relations Association in 2011. He is a research associate of the National Bureau of Economic Research and a fellow of the National Education Policy Center, the CESifo Research Network, the IZA, and the Learning Policy Institute.



Lynne Schofield is currently the Associate Provost for Faculty Diversity and Development and an associate professor in the Department of Mathematics and Statistics at Swarthmore College. She also serves as a Senior Fellow in the Economics, Justice, and Society Department at the National Opinion Research Center. Prior to joining the faculty at Swarthmore, she worked as the Special Assistant to the Dean at the College of Education at Temple University. She also spent time as a Research Associate at the National Academies of Sciences with the Board on Testing and Assessment. Recently, Dr. Schofield received the Waller Education Award from the American Statistical Association in recognition of her outstanding contributions to and innovations in the teaching of elementary statistics. Schofield received her Ph.D. in Statistics and Public Policy in 2008 from Carnegie Mellon University. Her interdisciplinary research includes areas of statistics, psychometrics, primary, secondary and tertiary education, cognition, public health, and public policy. She focuses primarily on latent variable modeling, measurement error, and educational and economic policy.



Sergio Urzua is an associate professor in economics at the University of Maryland. He is a research associate at the NBER, a research fellow at IZA and an international research fellow at Clapes-UC. His research has focused on the role of cognitive and socio-emotional abilities, and uncertainty as determinants of schooling decisions, labor market outcomes and social behavior. He has contributed to the literature by showing the relevance of unobserved factors in the context of developing countries, particularly on issues such as income inequality, and access to public services. He has estimated structural models computing the gender and racial differentials in labor market outcomes. Urzua has shown how self-confidence, locus of control, agreeableness and other socio-emotional skills are as important as cognitive ability in explaining these outcomes. He holds a Ph.D. in economics from the University of Chicago.

MODERATORS



Andrew Ho is the Charles William Eliot Professor of Education at the Harvard Graduate School of Education. He is a psychometrician whose research aims to improve the design, use, and interpretation of test scores in educational policy and practice. Professor Ho is known for his research documenting the misuse of proficiency-based statistics in state and federal policy analysis. He has also clarified properties of student growth models for both technical and general audiences. His scholarship advocates for designing evaluative metrics to achieve multiple criteria: metrics must be accurate, but also transparent to target audiences and resistant to inflation under perverse incentives. Professor Ho is a member of the National Assessment Governing Board that sets policy for the National Assessment of Educational Progress. He also chairs the Research Committee for the Harvard University Vice Provost for Advances in Learning, where he leads research initiatives in online learning at scale. He holds his Ph.D. in Educational Psychology and his M.S. in Statistics from Stanford University. Before graduate school, he taught middle school creative writing in his hometown of Honolulu, Hawaii, and high school Physics and AP Physics in Ojai, California.



Edwin Leuven is Professor of Economics at the University of Oslo. Previously he held positions at the ENSAE in Paris, and the University of Amsterdam. He holds a Ph.D. in Economics from the University of Amsterdam. His research centers around human capital and covers topics such as class size, teacher labour markets, school choice, technology in teaching, student incentives, adult skills and returns to schooling. His work is published in leading general and specialized economics journals and he is a contributor to the Handbook of the Economics of Education.



Wim J. van der Linden is a Professor Emeritus of Measurement and Data Analysis, University of Twente, The Netherlands and a former Distinguished Scientist and Director of Research and Innovation, Pacific Metrics Corporation (now: ACT, Inc.), Monterey, CA. He received his PhD in psychometrics from the University of Amsterdam. His research interests include test theory, computerized adaptive testing, optimal test assembly, test equating, modeling response times on test items, as well as decision theory and its application to problems of educational decision making. He is the author of *Linear Models for Optimal Test Design* published by Springer in 2005 and the editor of a new three-volume *Handbook of Item Response Theory: Models, Statistical Tools, and Applications* published by Chapman & Hall/CRC in 2016-2018. He is also a co-editor of *Computerized Adaptive Testing: Theory and Applications* (Boston: Kluwer, 2000; with C. A. W. Glas), and its sequel *Elements of Adaptive Testing* (New York Springer, 2010; with C. A. W. Glas). Wim van der Linden has served on the editorial boards of nearly all major test-theory journals and is co-editor for the Chapman & Hall/CRC *Series on Statistics for Social and Behavioral Sciences*. He is a former President of both the National Council on Measurement in Education (NCME) and the *Psychometric Society*, Fellow of the *Center for Advanced Study in the Behavioral Sciences*, Stanford, CA, was awarded an Honorary Doctorate from Umea University in Sweden in 2008, and is a recipient of the ATP, NCME and Psychometric Society Career Achievement Awards for his work on educational measurement.



Sabine Meinck works for the IEA in Hamburg, Germany, being head of both its Research and Analysis Unit and Sampling Unit. Since 2006, she has been involved with the sampling, weighting, variance estimation, and analysis of nearly all contemporary large-scale assessments in education. Her experience as a member of the project management teams for IEA's TIMSS and PIRLS, with the consortia of the IELS and TALIS Starting Strong Surveys, and on the joint management committees of IEA's ICILS, ICCS, ECES and TEDS-M, have enabled her to develop a diverse knowledge and expertise; she is also a project advisor for the Organizational Perspectives on Accountability and Learning (OPAL), and serves on the board of the IERI Institute.

Dr Meinck coordinates, guides and supports all research activities within the IEA. Her main research interest lies with the science of cross-national large-scale assessments, and the methodological challenges of complex survey data.

In support of the IEA's enduring commitment to knowledge dissemination, Dr Meinck has conducted multiple workshops for international audiences designed to share her experiences, and teach best practices and methodologies in educational research. In addition to teaching a Masters Course at the University of Hamburg on "Quantitative methods in educational research", she is an associate editor of the Springer journal *Large-scale Assessments in Education*. She is honored to serve as a peer reviewer for several scientific journals on educational research, and many educational research networks (such as AERA and CIES).



Irimi Moustaki is a professor of Social Statistics at the London School of Economics and Political Science. She received her Bachelor degree in Statistics and Computer Science from the Athens University of Economics and Business and her MSc and PhD in Statistics from the LSE. Her research interests are in the areas of latent variable models and structural equation models. Her methodological work includes treatment of missing data, longitudinal data, detection of outliers, goodness-of-fit tests and advanced estimation methods. Furthermore, she has made methodological and applied contributions in the areas of comparative cross-national studies and epidemiological studies on rare diseases.

She has co-authored two books on latent variable models and published extensively in journals such as *JRSS A and C*, *Psychometrika*, *JASA*, and *Biostatistics*. She received an honorary doctorate from the Faculty of Social Sciences, Uppsala University in 2014 and she has been an Honorary Professor in the Department of Psychological Studies at The Education University of Hong Kong, July 2015 to July 2018. She was the Executive Editor of the journal *Psychometrika* from November 2014 to December 2018. She was elected in 2016 a member of the society of Multivariate Experimental Psychology. She has been twice a member of the committee for evaluating research output of Italian Universities and a member of the Technical Advisory Group of the PIAAC project I and II (Program for the International Assessment of Adult competencies) of the OECD. She is a co-investigator in a recently awarded grant by the Economic and Social Research Council to work on *Methods for the Analysis of Longitudinal Dyadic Data with an Application to Intergenerational Exchanges of Family Support*. She has given keynote talks at various conferences in the US and in Europe.



William Thorn is a Senior Analyst in the Skills Beyond School Division in the Directorate for Education and Skills of the Organisation for Economic Cooperation and Development. He joined the OECD in August 2007. He currently manages the OECD's Programme for the International Assessment of Adult Competencies (PIAAC). Prior to joining the OECD, Mr Thorn held a wide range of senior positions in the Australian federal Departments of Education and Employment. This included the management of units responsible for research into education and the labour market, programme evaluation, statistical collections and analysis, tertiary education funding policy and the Commonwealth government's role in the testing and monitoring of basic skills such as literacy and numeracy in Australian schools.