PACE

Policy Analysis for California Education

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FORMATIVE ASSESSMENT IN THE CLASSROOM, THE CURRICULUM, AND THE CULTURE OF SCHOOLS

Tuesday, January 13, 2015

Laney College, 900 Fallon Street, Forum Lecture Hall
Oakland, CA

Featuring presenters and facilitators from leading assessment and research centers: National Center for Research on Evaluation, Standards, & Student Testing (CRESST), Institute for Learning at the University of Pittsburgh (IFL), Stanford Center for Assessment, Learning, and Equity (SCALE), SRI International, University of California, Berkeley, WestEd, and California Office to Reform Education (CORE).

Presenter & Session Facilitator Biographical Statements

David N. Plank

David Plank is the Executive Director of PACE, Professor (Research) in the Stanford University Graduate School of Education, and Researcher in the Stanford Lemann Center for Educational Entrepreneurship and Innovation in Brazil. Before joining PACE in January 2007, Plank was a Professor at Michigan State University, where he founded and directed the Education Policy Center. He was previously on the faculties at the University of Pittsburgh and at the University of Texas at Dallas, where he taught courses and conducted research in the areas of educational finance and policy. Plank is the author or editor of six books, including the *AERA Handbook of Education Policy Research*. He has published widely in a number of different fields, including economics of education, history of education, and educational policy. His current interests include the role of the state in education, the relationship between academic research and public policy, and the development of state policies to encourage and support the use of digital technologies in schools. In addition to his work in the United States, Plank has extensive international experience. He has served as a consultant to international organizations, including the World Bank, the United Nations Development Program, the Organization for Economic Cooperation and Development, the United States Agency for International Development, and the Ford Foundation, and also to governments in Africa and Latin America. He received his Ph.D. from the University of Chicago in 1983.

Eva Baker

Distinguished Professor in the divisions of Psychological Studies in Education and Social Research Methodology at the UCLA Graduate School of Education and Information Studies, Eva L. Baker has directed the UCLA Center for the Study of Evaluation (CSE) since 1975. She is also Director of the National Center for Research on Evaluation, Standards, and Student Testing (CRESST), a competitively awarded national instituion funded by the U.S. Department of Education.

Dr. Baker is a member of the National Academy of Education and a recipient of the 2007 ETS Henry Chauncey Award for Distinguished Service to Assessment and Educational Science. She was a congressionally appointed member of the National Council on Education Standards and Testing and chair of the Board on Testing and Assessment, National Research Council, The National Academies (2000-2004). Dr. Baker is a former president of the American Educational Research Association (2006-2007), former president of the Educational Psychology Division of the American Psychological Association, and a former editor of Educational Evaluation and Policy Analysis. She was co-chair of the committee to revise the Standards for Educational and Psychological Testing (1999). She has an extensive bibliography.

Dr. Baker's research is focused on the integration of instruction and measurement, including design and empirical validation of principles for developing instructional systems, and new measures of complex human performance. She is presently involved in the design of technologically sophisticated testing and evaluation systems of assessment in large-scale environments for both military and civilian education.

Noelle Griffin

Noelle Griffin is Associate Director of CRESST at UCLA. Through her work at CRESST she has led program evaluations in a variety of educational settings, including evaluations of professional development, science instruction, math instruction, and social services programs. Dr. Griffin has particularly focused on the evaluation of arts-based education and its integration into the K-12 curriculum and, in addition to her work with the Webplan program, she also led the national evaluation of the Leondard Bernstein Center Artful Learning Model. Prior to returning to CRESST in 2006, she served as director of assessment for Loyola Marymount University and has a continued interest in assessment and evaluation issues at the higher education level.

Ayesha Madni

Ayesha Madni is a CRESST Senior Researcher. Her research interests include educational games, student motivation, social and emotional learning, and human learning and memory. Her current work involves students' self-efficacy and social and emotional learning within educational games. She also has a strong interest in enhancing performance of students with special needs. Prior to her work at CRESST, Dr. Madni taught at the Rossier School of Education at the University of Southern California, and worked as a senior researcher for Intelligent Systems Technology, Inc. She has also workded as a learning specialist, providing targeted interventions to facilitate student learning and motivation across a variety of student populations. She received her doctorate in Educational Psychology from the University of Southern California.

Julia Phelan

Julia Phelan is a CRESST Senior Research Associate. Currently, she is working on a large-scale study of the effects of assessments of conceptual understanding on mathematics learning and performance at the middle school level. Previously, she worked on a project to integrate science education and assessment research in the construction of web-based assessment tools for middle school science teachers. Her experience also includes curriculum and assessment development in math and science at the K-12 and college level, with a focus on developing materials based on a deep understanding of big ideas across the curriculum. Other research interests include elementary math education, the development of mathematical concepts across grade levels, and social/emotional development in young children with developmental disorders She was the recipient of the UCLA College of Letters and Sciences Certificate in Distinction in Teaching in 2001. She holds a B.A. in Psychology and a Ph.D. in Educational Psychology from UCLA.

INSTITUTE for LEARNING
UNIVERSITY OF PITTSBURGH

Anthony Petrosky

Anthony Petrosky, the Associate Dean of the School of Education at the University of Pittsburgh, co-directs the Institute for Learning (IFL) with Lauren Resnick at the Learning Research and Development Center. He holds a joint appointment as a Professor in the School of Education and the English Department. He has worked with professional learning and curriculum development in English and literacy for school and district leaders in the public schools of Austin, Boston, Dallas, Denver, El Paso, New York Cty, Fort Worth, Prince George's County, and Pittsburgh. He headed up the design team to develop assessment prototypes in English language arts and literacy for the Partnership for the Assessment of Readiness for College and Careers (PARCC).

He was the principal Investigator and Co-Director of the Early Adolescence English Language Arts Assessment Development Lab for the National Board for Professional Teaching Standards that developed the first national board certification for English teachers. He has also served as Co-Director of the Western Pennsylvania Writing Project. He was a senior researcher for the MacArthur Foundation's Higher Literacies Studies, where he was responsible for conducting and writing case studies on literacy efforts in the Denver, Pittsburgh, Toronto, and Ruleville and Mound Bayou school districts in the Mississippi Delta. He is past Chair of the National Council of Teachers of English (NCTE) Committee on Research and a past elected member of the NCTE Research Foundation.

His first collection of poetry, *Jurgis Petraskas* received the Walt Whitman Award from the Academy of American Poets and a Notable Book Award from the American Library Association. Petrosky has published two other collections of poetry, *Red and Yellow Boat* and *Crazy Love*. Along with David Batholomae, Petrosky is the co-author and co-editor of five books: *Facts, Artifacts, and Counterfacts: Theory and Method for a Reading and Writing Course*, *The Teaching of Writing*, *Ways of Reading*, *Ways of Reading Words and Images*, and *History and Ethnography: Reading and Writing About Others*. With Stephanie McConachie, he co-edited *Content Matters: A Disciplinary Literacy Approach to Improving Student Learning*.

Victoria Bill

Victoria Bill is a former elementary and middle school mathematics teacher. She is currently a Fellow with IFL at the Learning Research and Development Center, University of Pittsburgh. She serves as the Chair of the Mathematics Disciplinary Literacy Team for the Institute for Learning, where she works closely with Margaret Schwan Smith on the design and coordination of the practice-based professional development model for mathematics. She also developed and implemented a research-based elementary mathematics professional development course of study, which has been used in several of the IFL partner school districts. Collaborations that have added to her knowledge core and awareness of school systems include work with the National Alliance for Restructuring Education, the New Standards Partnership, and the North Central Regional Laboratory. Bill's completion of a principal internship has also contributed to her understanding of school systems. She has co-authored several articles on mathematics instruction. Her most recent publications include a chapter in the book, *Content Matters: A Disciplinary Literacy Approach to Improving Student Learning*, and an article on a lesson planning protocol, "Thinking Through a Lesson Plan." She has presented at professional conferences such as the National Council of Teachers of Mathematics, the National Supervisors of Mathematics, the Pennsylvania Council of Mathematics Teachers, and the American Education and Research Association. She also teaches a Methods of Mathematics Instruction course for pre-in-service teachers at the University of Pittsburgh and an Instructional Leadership course at the University of Pittsburgh School of Education for teachers who aspire to be elementary or secondary principals. Bill completed her studies at Carlow University and the University of Pittsburgh.

Vivian Mihalakis

Vivian Mihalakis is a Senior English Language Arts Fellow at IFL. She joined the IFL in 2005. Her work includes designing educative English language arts (ELA) curriculum, assessments, and professional development. Mihalakis has worked with educators in public school districts from coast to coast, including Boston, Fort Worth, Dallas, Half Hollow Hills, Los Angeles, Minneapolis, New York City, and Pittsburgh. She led the design of the high school prototype performance assessments and instructional tasks for the Partnership for the Assessment of Readiness for College and Careers (PARCC). From 2013-2014, she worked as the Director of Product Development at Inquiry By Design, where she led the development of ELA curriculum and professional development.

Mihalakis has taught in public, private, urban, and rural schools. She has presented at national and international conferences, including the National Council of Teachers of English (NCTE), American Educational Research Association (AERA), and the International Conference on Learning (ICL). Her recent publications

include a chapter in *Content Matters: A Disciplinary Literacy Approach to Improving Student Learning* and an article in a forthcoming AERA book on sequencing tasks and talk in ELA. She is currently working with David Bartholomae, Stephanie McConachie, and Anthony Petrosky on a textbook for high school students, *Essential Ways of Reading*, which will be available in 2015 from the Institute for Learning. Mihalakis holds a doctorate in Education from the University of Pittsburgh.

Margaret Smith

Margaret (Peg) Smith is a Professor in the Department of Instruction and Learning in the School of Education and a Senior Scientist at the Learning Research and Development Center, both at the University of Pittsburgh. She works with pre-service middle and high school mathematics teachers at the University of Pittsburgh, with doctoral students in mathematics education who are interested in becoming teacher educators, and with practicing teachers and teacher leaders locally and nationally.

Over the past 20+ years she has been developing research-based materials for use in the professional development of mathematics teachers and studying what teachers learn from the professional development in which they engage. She secured funding for four NSF projects to support these efforts. She is currently the principle investigator of the NSF-funded CORP (Cases of Reasoning and Proving in Secondary Mathematics) Project that is creating materials intended to develop teachers' knowledge related to reasoning and proof and their ability to support students' engagement in these mathematical practices.

She has authored or co-authored over 75 books, edited books or monographs, book chapters, and peer-reviewed articles. Her most recent book, *5 Practices for Orchestrating Productive Mathematics Discussion* (co-authored with Mary Kay Stein), was published in April 2011, and it has been the best-selling book at NCTM since its release. The science version of the book, co-authored with Jennifer Cartier, Mary Kay Stein, and Danielle Ross, was co-published by NCTM and NSTA in Fall 2013.

She was a member of the Board of Directors of the Association of Mathematics Teacher Educators (2001-2003; 2003-2005) and of the National Council of Teachers of Mathematics (2006-2009). She is currently a member of the Board of Directors of Teachers Development Group. In 2006, she was selected to receive the Chancellor's Distinguished Teaching Award given annually to honor outstanding faculty at the University of Pittsburgh. In 2009, she received the award for Excellence in Teaching in Mathematics Teacher Education from the Association of Mathematics Teacher Educators. In 2010, she received the Susan Loucks-Horsley Award from the National Staff Development Council in recognition of her efforts to promote professional learning in mathematics. She is currently the editor of the *Mathematics Teacher*, a journal co-published by NCTM and AMTE.

SCALE
Stanford Center for Assessment, Learning, & Equity

Dr. Raymond Pecheone

Dr. Ray Pecheone is a Professor of Practice at Stanford University and the founder and Executive Director of the Stanford Center for Assessment, Learning, and Equity (SCALE), which focuses on the development of innovative performance-based assessment tasks. SCALE creates curriculum-embedded assessments "for and as learning" to support schools in focusing on deeper learning and alignment to next generation standards. SCALE provides comprehensive supports for standards-based teaching and learning and is built around the development of interactive assessment and multimedia instructional tools to support college and career readiness.

Prior to launching SCALE, Dr. Pecheone held a variety of leadership positions in the Connecticut State Department of Education as the Bureau Chief for Curriculum, Research and Assessment; the Co-director of the first Assessment Development Lab for the National Board for Professional Teaching Standards (NBPTS); Teacher Scholar-in-Residence at Teachers College, Columbia University; and project director to support the redesign of the New York State Regents. At Stanford University, SCALE is focused on

influencing and shaping national policy around the use of performance-based assessments to support teaching and learning.

Vinci Daro

Vinci Daro is Associate Director of Mathematics Learning at SCALE. Prior to her work with SCALE, she worked with Ann Shannon & Associates on professional development with teachers in NYC and KY focused on the Shell Centre Formative Assessment Lessons (Classroom Challenges). She has served as a developer of K-12 mathematics curriculum, assessment, and professional development on many projects, including consultant work for Learning in Motion, Better Lesson, and the Achievement Network. She holds a Ph.D. in Cultural Anthropology from the University of North Carolina, Chapel Hill, and a B.A. in Mathematics and Anthropology from the University of California, Santa Cruz. She was involved in the development of the TRU Math Rubric during her postdoctoral work in mathematics education at the University of California, Berkeley.

Jack Dieckmann

Jack Dieckmann is the Associate Director of Curriculum at SCALE. In previous projects, he has assisted with the development of the Quality Science Teaching (QST) instrument, an initiative funded by the Bill & Melinda Gates Foundation. His research interests center around conditions and processes that support the changes in beliefs and practices in teachers as they come to implement performance assessments in their teaching.

In the twenty years prior to joining SCALE, Dieckmann has worked as a high school math teacher, a professional developer, and research associate in educational research. He also provided technical assistance to the U.S. Department of Education, Migrant Division, in conceptualizing the design of state-wide needs assessments. Following that, Dieckmann provided technical support for the California needs assessment from 2004-2008.

Dieckmann is an instructor in the Stanford Teacher Education Program (STEP) in both methods and language courses. He is certified in Secondary Mathematics in Texas. Dieckmann completed his doctorate in mathematics education at Stanford in 2009.

Nicole Holthuis

Nicole Holthuis is a Research Associate at SCALE, with a focus on science education. She specializes in research, curriculum and assessment design, and evaluation in science and environmental education. Her work focuses on programs that seek to improve the educational experience and outcomes of students who are traditionally under-represented in science, engineering, math and technology.

Dr. Holthuis has over 15 years of experience designing and evaluating curriculum, teaching, leading educator workshops, and providing solutions for teachers, schools, and institutions. She has directed and conducted both internal and external evaluations from small-scale/course-level to large-scale/nationally-funded studies. By combining state-of-the-art qualitative and quantitative methods, she provides a rigorous, robust, and holistic examination of instructional programs.

Dr. Holthuis holds a Ph.D. in Curriculum and Teacher Education and an M.A. in Design and Evaluation of Educational Programs, both from Stanford University. She also holds a B.A. in Biology from UC Davis and a California Secondary School Science Credential.

Kari Kokka

Kari Kokka is a Performance Assessment Development and Research Associate at SCALE. Prior to her work with SCALE, she was a math teacher and math coach for ten years in New York City at Vanguard High School, a member of the New York Performance Standards Consortium. At Vanguard she designed performance assessments and rubrics, prepared students, and conducted professional development for colleagues. She is currently a doctoral student at the Harvard Graduate School of Education in the dissertation stage of study. She completed her M.A. with the Stanford Teacher Education Program and her B.S. in Mechanical Engineering at Stanford University. She is co-founder and co-organizer of the Creating Balance in an Unjust World Conference on Math Education and Social Justice.

Daisy Martin

Daisy Martin directs the history/social studies work at SCALE. Previously, she was the Director of History Education at the National History Education Clearinghouse (Teachinghistory.org) and cofounded the Stanford History Education Group. She co-authored the award-winning book, *Reading Like a Historian: Teaching Literacy in Middle and High School Classrooms* (2nd edition, 2012), and website Historical Thinking Matters. A former history and civics teacher in California public schools, she currently teaches teacher-candidates. Her current projects focus on the research, development, and use of performance-based history assessment and its role in putting historical thinking and literacy at the center of the history classroom.

Nicole Barrick Renner

Nicole Barrick Renner is a Research Associate at SCALE. She specializes in student performance assessment in English Language Arts, focusing primarily on curriculum, assessment, and rubric development for secondary English education. Prior to joining SCALE, she taught high school English at East Nashville Magnet School in Tennessee, where she trained with the National Paideia Center and the Buck Institute for Education to support school-wide implementation of Paideia Active Learning and Project Based Learning strategies.

Renner holds an M.Ed. in Learning and Instruction (Secondary English Education) from Vanderbilt University's Peabody College of Education and Human Development; she also holds an M.A. and a B.A. in English Language and Literature from the University of Virginia. Her research interests include multimodal composition, meaningful use of technology in the classroom, and talk-based pedagogy as tools for student engagement and deeper learning.

Susan Schultz

Susan Schultz is the Director of Teaching, Learning, and Assessment for SCALE. Her primary responsibilities involve designing and piloting science performance assessments in California, New York, and Ohio as well as developing a science teacher observation instrument to be used in the Measuring Effective Teaching (MET) study being funded by the Bill & Melinda Gates Foundation.

Schultz's background in science education is extensive, including serving as the Education Officer for the Stanford Linear Accelerator Center and as Vice President of Education for Yosemite National Institutes. Prior to teaching high school biology and chemistry for ten years, she was an ecologist for the U.S. Army Corps of Engineers in Los Angeles and a biologist for the U.S. Fish and Wildlife Service in Long Island, NY. After earning her Ph.D. at Stanford in 1999, she was the Stanford Project Director for the Center for Assessment and Evaluation of Student Learning (CAESL), an NSF-funded multi-university research project focusing on improving assessment development and classroom assessment strategies with the goal of improving student science achievement. As a Stanford Teacher Education Program (STEP) Instructor, she taught science curriculum, instruction, and assessment

courses to teacher candidates emphasizing curriculum design, inquiry-based instruction, cooperative learning techniques, and alternative assessment strategies.

Schultz holds a B.S. degree in Biology and Chemistry at Elmira College, NY (1978); an M.A. in Education and a California Secondary Science Teaching Credential at Stanford University (1986); and a Ph.D. in Curriculum and Teacher Education in Science Education at Stanford University (1999). Her teaching and research interests focus on science education, for pre-service as well as professional development for in-service teachers, with particular emphasis on issues of alternative assessments, inquiry-based learning, cooperative learning strategies, and equity. She is the author of cases in *Groupwork in Diverse Classrooms: A Casebook for Educators* and *Using Assessments to Teach for Understanding: A Casebook for Educators*, as well as the author of numerous journal articles on the reliability and validity of alternative assessment techniques (i.e., concept mapping and performance assessments).

SRI International

Barbara Means, Ph.D.

Barbara Means is Director of the Center for Technology in Learning (CTL) at SRI International. She is an educational psychologist whose research focuses on ways in which technology can support students' learning of advanced skills and the revitalization of classrooms and schools. Recently named as a fellow of the American Educational Research Association, Means is regarded as a leader in defining issues and approaches for evaluating the implementation and efficacy of technology-supported educational innovations. Currently, she leads SRI's evaluation work for the Next Generation Learning Challenge, sponsored by the Bill & Melinda Gates Foundation.

Her published works include the edited volumes *Evaluating Educational Technology*, *Technology and Education Reform*, and *Teaching Advanced Skills to At-Risk Students*, as well as the jointly authored volumes *Using Technology Evaluation to Advance Student Learning*, *The Connected School*, *Comparative Studies of How People Think*, and *Learning Online*, which was published in April 2014.

Means earned her B.A. in psychology from Stanford University and her Ph.D. in educational psychology from the University of California, Berkeley.

Dr. Geneva Haertel

Dr. Geneva Haertel is Director of Assessment Research and Design in CTL at SRI International. She is a renowned leader in the field of assessment design, with over 30 years of experience conducting research on assessment, student learning, and K–12 education programs. She has published more than 60 articles and book chapters on assessment design, student learning, and the conditions that promote student achievement. Her publications focus on the development of valid and reliable assessments for use with a wide range of students. She has worked with several state departments of education across the country and is considered a forerunner in the application of Evidence Centered Design (ECD) in large scale assessment.

Dr. Haertel has conducted numerous trainings for large-scale assessment item writers that incorporated the use of Evidence Centered Design in state and national assessment development. Her expertise includes rubric development for scoring performance-based assessments, constructed response items, and formative assessment tasks that are aligned with research-based learning progressions. She has guided assessment teams through the process of developing scoring training materials, selecting anchor papers of student work samples to use as exemplars for scoring, and documenting inter-rater reliability during the scoring process. Dr. Haertel's current projects include serving as the Principal Investigator for the five-year project entitled, *Strategic Planning for NAEP Design, Analysis and Reporting* contract. Dr. Haertel was awarded this sub-contract by the Educational Testing Service to support the application of ECD to the design and development of tasks and items for the National Assessment of Educational Progress (NAEP) in Math, ELA, and Science. She earned her Ph.D. in education/educational psychology from Kent State University.

Terry Vendlinski, Ph.D.

Terry Vendlinski is Co-Director of Assessment Research and Design in CTL at SRI International. Vendlinski has extensive background in assessment design, development, implementation, and evaluation. He has experience with formative, diagnostic, and summative assessments at the classroom level and at the state and national level, including for the Partnership for Assessment of Readiness for College and Careers (PARCC) and the SMARTER Balanced Assessment Consortium (SBAC).

Vendlinski has decades of classroom teaching experience, including C++ and Java programming for California State University, Sacramento and at MIT; math at the community college level; chemistry, math and computer programming at the secondary level; and algebra in middle school.

Vendlinski has practical educational policy experience as well. Most recently, he has concentrated on improving the ability of middle school math teachers to use data from formative assessments, developing computer gaming technology to serve a formative purpose, and using Evidence Centered Design to create math, ELA, and science assessments.

Ron Fried

Ron Fried is a Senior Instructional Designer and Education Researcher in CTL at SRI International. He has more than 20 years of experience as a senior instructional design consultant and researcher focusing on the areas of science education, assessment, evaluation, and curriculum design. For this project, he will contribute to the support for science assessment framework development, blueprint and item specifications, and the development of technology enhanced science prototype items. Prior to joining SRI, Fried worked as a high school and middle school science teacher with an emphasis in general and physical science. He has used his background in teaching to support SRI projects focusing on science education, assessment, and evaluation. Fried has designed, developed, implemented, and evaluated multi-source human performance assessments, including performance simulation testing, interview-based evaluation of occupational experience assignments, paper and pencil knowledge testing, technology-enhanced assessments, and group performance scenarios. He has extensive experience in science assessment item development, rubric creation and assessment implementation. He also has experience in logistical planning and implementation of advisory panels, faculty training, program pilots, and program launches. Additionally, Fried has reviewed various large-scale science curricula programs and compared and aligned the content covered with current national science standards and tests.

Teresa Lara-Meloy

Teresa Lara-Meloy is a Mathematics Education Researcher in CTL at SRI International. Lara-Meloy is passionate about finding better ways of teaching math to all kids, and improving the ways we support teachers. She is particularly interested in exploring the intersecting ways in which curriculum, technology, and professional development improve teaching and learning in classrooms and out-of-school activities.

Lara-Meloy currently designs materials for middle school mathematics students, teachers, and professional development leaders. She is an experienced professional development leader, working with in-service, pre-service teachers and out-of-school providers. She has designed and led the development of assessments in English and in Spanish. Over the years, she has observed schools and classrooms for evaluation projects and provides research-based recommendations to some of CTL's.

Dr. Daisy Rutstein

Dr. Daisy Rutstein is an Education Researcher in CTL at SRI International. Dr. Rutstein's work focuses on the application of Evidence Centered Design to develop assessments. She works through the different stages of the development process, starting with the initial conception of the assessment and moving through the development of items, the creation of a complete assessment, and the validation of the assessment. This assessment development work has included the application of ECD to the development of scenario-based technology-enhanced assessment items. Dr. Rutstein's work in this has included the development of design patterns, scenarios and items, as well as the identification of measurement models for these tasks. Additional recent work has included the development of assessments for pre-school science, assessments for computation thinking for high-school students, and the development of assessments for middle school mathematics. Dr. Rutstein received her doctoral degree in measurement, statistics, and evaluation from the University of Maryland.

Dr. Cindy Ziker

Dr. Cindy Ziker is a Senior Researcher in Assessment in CTL at SRI International. She has over a decade of experience developing and conducting assessment literacy trainings for districts, state departments of education, and education service agencies. As the former psychometrician, Senior Research Scientist, and NAEP Coordinator for the Arizona Department of Education, Dr. Ziker provided state-wide professional development in the design and use of assessments for formative, summative, and diagnostic purposes. At SRI, she has conducted field tests of scenario-based, technology enhanced assessments and developed scoring rubrics for scoring these assessment tasks. Her expertise includes national and international experience, with an emphasis on professional development in assessment literacy. Dr. Ziker earned a doctorate in Education Psychology from Arizona State University and a post- doctorate graduate certificate in large scale assessment from the University of Maryland and the National Center for Education Statistics. She also earned a Master's degree in Public Health Practice from the University of Arizona.

Alan Schoenfeld

Alan Schoenfeld is the Elizabeth and Edward Conner Professor of Education and Affiliated Professor of Mathematics at the University of California at Berkeley. His career has been devoted to the study of mathematical thinking, teaching, and learning. Author of *Mathematical Problem Solving* and *How We Think*, Schoenfeld is a Fellow of the American Association for the Advancement of Science and of the American Educational Research Association (AERA), and a Laureate of the education honor society Kappa Delta Pi. He holds the International Commission on Mathematics Instruction's Klein Medal, AERA's Distinguished Contributions to Research in Education Award, and the Mathematical Association of America's Mary P. Dolciani Award for contributions to the mathematical education of K-16 students. His most recent work has been devoted to issues of formative assessment (Mathematics Assessment Project) and what makes for powerful math classrooms (The Algebra Teaching Study).

Edys Quellmalz

Edys Quellmalz is a national leader in the field of technology assessment and learning. She is the Director of Technology Enhanced Assessments and Learning Systems in the Science, Technology, Engineering, and Mathematics program at WestEd. She leads research, development, and evaluation projects related to the designs of technology-based learning environments and assessments.

As Principal Investigator of multiple grants from the National Science Foundation, the Institute of Education Sciences, the Office of Secondary and Elementary Education, and the Carnegie Corporation, she has built the SimScientists project portfolio to promote and assess deep science learning.

Quellmalz co-directed development of the 2014 Framework for the National Assessment of Educational Progress in Technology and Engineering Literacy, served on the Steering Committee for the 2011 NAEP Writing Framework, and on national advisory committees and editorial boards. She was Associate Director of the Center for Technology in Learning at SRI International and Director of Assessment Research and Design. There she was Principal Investigator for NSF research, development, and evaluation projects.

Quellmalz served on the faculty of the Stanford School of Education, taught graduate education courses at the University of California, Los Angeles (UCLA), led assessment design studies at the UCLA Center for the Study of Evaluation, and directed the RMC Research Title I Technical Assistance Center for nine western states.

She has over 40 years of experience consulting for state, national, international, student, and teacher assessment programs. She has presented her work extensively at national conferences and has published in the areas of assessment, technology, and 21st century learning. Quellmalz received a B.A. in psychology, and an M.A. and Ph.D. in educational psychology from UCLA.

Cathy Carroll

Cathy Carroll, Senior Research Associate and Project Director in WestEd's Science, Technology, Engineering, and Mathematics program, is engaged in several mathematics education projects. Carroll is recognized nationally for her expertise in mathematics leadership and professional development. She consults with districts and projects across the country to design and facilitate leadership seminars and conduct professional development with teachers. Carroll co-directs two Institute of Education Sciences-funded projects—Linear Functions for Teaching Efficacy Study and Making Middle School Mathematics Accessible to All Students.

She is also co-author of *Learning to Lead Mathematics Professional Development* (2007) and *Making Mathematics Accessible to English Learners: A Guidebook for Teachers* (2009). She also coordinates workshop opportunities related to both of these resources.

Carroll's previous projects include the National Science Foundation-funded Researching Mathematics Leader Learning, Leadership Curriculum Development for Mathematics Professional Development, and Mathematics Renaissance K-12.

She also served as Director of the Mathematics Renaissance Leadership Alliance, an initiative of the California Department of Education, working with district-based leadership cadres to develop teacher leadership and administrative support for quality mathematics programs. Prior to joining WestEd, Carroll taught middle school mathematics in the San Francisco Bay Area for nearly 20 years. She received the 2008 Susan Loucks-Horsley Professional Development Award from the National Staff Development Council.

Michelle Steagall

As the California Office to Reform Education (CORE) Chief Academic Officer, Michelle Steagall is responsible for bridging the work to support the implementation of Common Core Standards and promoting teacher and principal effectiveness across the eight CORE partner districts. Steagall brings 23 years of school district experience to her work at CORE. She began her educational career as a multi-graded classroom teacher amidst thousands of acres of wheat fields in rural North Eastern Oregon. In 1990, she moved to California to join the Clovis Unified School District family where she served as a teacher, assistant principal in intermediate and elementary schools, an elementary principal and the associate superintendent for curriculum and instruction. Additionally, she served for six years as the superintendent of the Clay Joint Elementary School District and the Chowchilla School District, both located in the diverse heart of California, the San Joaquin Valley.

Steagall earned a Master's degree in Educational Administration from California State University, Fresno, a Doctorate degree in Educational Leadership from the University of La Verne in Southern California, and is a licensed curriculum auditor. As a superintendent, she was selected and served on various state-wide committees with the California School Boards Association.