AGENDA

Goals of the meeting:

- Inform and promote dialogue in states, districts, and schools about the recommendations and implications for schools from the NRC report, *Successful K-12 STEM Education**
- Identify and highlight a group of promising practices and resources relevant to effective STEM schools and programs
- Emphasize the *importance of partnerships* in creating positive STEM programs and improving student learning
- Encourage reflection on how to integrate the information provided in the report and other experiences at the workshop into practice

8:00–8:30 am	**Registration** (Continental breakfast served) ENTRANCE
8:30–9:30	**Welcome and Opening Remarks** MAIN HALL A & B • *Joan Ferrini-Mundy*, Assistant Director, Directorate for Education and Human Resources, National Science Foundation • *Lon Kaufman*, Vice Chancellor for Academic Affairs and Provost, University of Illinois at Chicago • *Governor Patrick Quinn*, State of Illinois [Invited]
9:30–10:00	**What Everyone Should Know About the Successful K–12 STEM Education Report*:** *Glenn "Max" McGee*, President, Illinois Mathematics and Science Academy MAIN HALL A & B
10:00–10:15	**Break**
10:15–11:15	**Elements of Successful STEM Education—*Breakout Sessions*** ***Effective Instruction:*** The *Successful K–12 STEM Education* report notes that "effective instruction capitalizes on students' early interest and experiences, identifies and builds on what they know, and provides them with experiences to engage them in the practices of science and sustain their interest." This session highlights programs in which teachers use what they know about students' understanding to actively engage students in science, mathematics, and

*National Research Council. (2011). *Successful K–12 STEM education: Identifying effective approaches in science, technology, engineering, and mathematics.* Committee on Highly Successful Schools or Programs for K–12 STEM Education. Board on Science Education and Board on Testing and Assessment, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

engineering practices. As stated in the report, "in this way, students successively deepen their understanding both of core ideas in the STEM fields and of concepts that are shared across areas of science, mathematics, and engineering."

- ***iPhone App for School Data Collection and Critical Thinking About Ecology and Biodiversity***: *Nancy Butler Songer*, Professor of Science Education and Learning Technologies, University of Michigan BREAKOUT ROOM G

- ***National Inventors Hall of Fame® School ... Center for Science, Technology, Engineering and Mathematics (STEM) Learning and the Ohio STEM Learning Network (OSLN) Akron Hub*****:** *Traci Buckner*, Instructional Leader, National Inventors Hall of Fame School, Center for Science, Technology, Engineering, and Mathematics Learning, Akron Public Schools; *Alison White*, Grant Communications Coordinator, University of Akron and the Ohio Stem Learning Network's (OSLN) Akron Hub BREAKOUT ROOM H

- ***STEM Literacy Through Computational Simulation*****:** *Thom Dunning Jr.*, Professor and Director of the National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign; *Edee Wiziecki*, Assistant Director, National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign; *Rebecca Canty*, Superintendent, A-C Central CUSD #262, Ashland, IL; *Brett Block*, Teacher, Paris High School, IL BREAKOUT ROOM D

- ***STEM Teacher Knowledge in the Common Core Era: Building the Standards for Mathematical Practice into Professional Development*****:** *Kevin McLeod*, Associate Professor, Department of Mathematical Sciences, University of Wisconsin-Milwaukee; *Henry Kepner*, Professor, Mathematics Education, University of Wisconsin-Milwaukee BREAKOUT ROOM E

- ***The UTeachEngineering Project at The University of Texas*****:** *Cheryl Farmer*, Project Director, The University of Texas at Austin; *Lisa Guerra*, Research Fellow, University of Texas at Austin and Senior Advisor for Policy, NASA Headquarters BREAKOUT ROOM F

11:15–11:30 **Break**

11:30 am–12:30 pm **Elements of Successful STEM Education—*Breakout Sessions***

Equal Access to Quality STEM Experiences: The report discusses findings that draw a direct line between a nation's competitiveness and K–12 STEM education to support the next generation of scientists and innovators. Thus, a goal for K–12 STEM education is a focus on the flow of students into STEM courses, majors, and careers. An important dimension of this goal is to increase the participation of groups that are underrepresented while ensuring equal access to quality STEM learning experiences for all students. Therefore, this session will highlight practices that lead to opportunities for all students to become engaged in strong STEM learning.

- ***Math & Science Achievement Gaps for Minority Students*:** *David Grissmer*, Research Professor, Center for Advanced Study of Teaching and Learning, University of Virginia BREAKOUT ROOM D

- ***Metro Early College High School*:** *Mindy Wright*, Assistant Provost, Ohio State University; *Andrew Bruening*, founding teacher and Dean of Students, Metro Early College High School BREAKOUT ROOM G

- ***Preparing to Assess Students' Readiness for College and Careers:*** *Susan Van Gundy***,** Associate Director for Assessment Technology, Achieve, Inc. BREAKOUT ROOM I

- ***School Conditions to Support Successfully Teaching Challenging Coursework*:** *Elaine Allensworth*, Interim Director, University of Chicago Consortium on Chicago School Research BREAKOUT ROOM H

- ***The Chicago Pre-College Science and Engineering Program*:** *Kenneth Hill*, President & CEO, Chicago Pre-College Science and Engineering Program, Inc.; *Margo Corona De Ley*, Partnership Coordinator, Office of Access and Enrollment, Chicago Public Schools; *Suzanne Wasson*, K–3 and Middle School Program Administrator, Detroit Area Pre-College Engineering Program BREAKOUT ROOM E

- ***Why Linking In- and Out-of-School Experiences Matters for Students Historically Underrepresented in STEM*:** *Gabrielle Lyon*, Co-founder and Senior Explorer, Project Exploration; *Diane Miller*, Chief Educational Outreach Officer, Saint Louis Science Center; *Rafael Rosa*, Vice President of Education, The Chicago Academy of Sciences and its Peggy Notebaert Nature Museum BREAKOUT ROOM F

12:30–1:45 **Networking** (Lunch served)
Plenary Presentation: ***Assessment Challenges and Opportunities Accompanying the New Math and Science Standards: Will We Create Tests Worth Teaching To?*:** *James Pellegrino,* Liberal Arts and Sciences Distinguished Professor, Distinguished Professor of Education, Co-director of Learning Sciences Research Institute, University of Illinois at Chicago MAIN HALL A & B

1:45–2:00 **Break**

2:00–3:00 **Elements of Successful STEM Education—*Breakout Sessions***
Supportive Infrastructure for STEM Learning: The *Successful K–12 STEM Education* report highlights that "research suggests that although teacher qualifications matter, the school context matters just as much [including]. . . multiple factors that strengthen and sustain those learning communities (e.g., school and district leaders, parents, and community)." This session highlights programs that have proven strategies to develop the essential infrastructure required to support teachers and students.

- ***Educational Policy, School Administration, and the Technical Core: The Local Infrastructure and Instructional Improvement Challenge*:** *Megan Hopkins*, Postdoctoral Research Fellow, Northwestern University BREAKOUT ROOM D

- ***Illinois Pathways*:** *Jason Tyszko*, Deputy Chief of Staff, Illinois Department of Commerce and Economic Opportunity; *Jeff Mays*, President, Illinois Business Roundtable; *Steve Parrott*, Technology and Engineering Education Consultant, Career and Technical Education, Illinois State Board of Education BREAKOUT ROOM E

- ***Providing Ongoing Support for STEM Teachers:*** *Joan Pasley*, Senior Research Associate, Horizon Research, Inc. BREAKOUT ROOM F

- ***UIC College Prep: Building a Strong University Partnership with a STEM High School*:** *Audrey Borling*, Dean of Instruction, UIC College Prep; *Martin Gartzman*, Executive Director, Center for Elementary Mathematics and Science Education, The University of Chicago and former Assistant Vice Chancellor for High School Development, The University of Illinois at Chicago; *Babette J. Neuberger*, Associate Dean for Academic Affairs & Director of Graduate Studies, School of Public Health, The University of Illinois at Chicago BREAKOUT ROOM G

- ***What Do The Next Generation Science Standards and NRC Framework Mean for Teaching and Curriculum Materials*?:** *Brian J. Reiser*, Professor, Learning Sciences, SESP, Northwestern University BREAKOUT ROOM H

3:00–3:15 **Break**

3:15–4:30 **Synthesis and Discussion** MAIN HALL A & B

Reflections from synthesizers and participants on the day's presentations and conversations, highlighting major issues, concerns, and recommendations of participants

- *Jeanne Century*, Director of Science Education, Research and Evaluation, The Center for Elementary Mathematics and Science Education, University of Chicago
- *Janice Earle* (moderator), Coordinator, EHR Evaluation Activities, National Science Foundation
- *Brad Findell*, Math Education Consultant
- *Karen King*, Director of Research, National Council of Teachers of Mathematics
- *Michael Lach*, Director of STEM Policy and Strategic Initiatives, Urban Education Institute and Center for Elementary Mathematics and Science Education (CEMSE), University of Chicago

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