



**BEST PRACTICES IN STEM EDUCATION:  
Building Momentum for Science, Technology, Engineering,  
and Mathematics Education in North Carolina**

**April 19–20, 2009**

**Embassy Suites Raleigh-Durham/Research Triangle  
Cary, North Carolina**





*“It’s now more important than ever that we ensure our graduates are ready to work in this global economy. Rigorous standards in all subjects, but especially science and math, must be part of every classroom to ensure all students have the opportunity to succeed. The Summit will provide policymakers and educators with ideas for how to accomplish this goal.”*

— *Dr. Judith Rizzo, Executive Director and CEO  
James B. Hunt, Jr. Institute for Educational Leadership and Policy*

## About the Summit

In order to continue the momentum for improving science, technology, engineering, and mathematics (STEM) education in North Carolina, the North Carolina Science, Mathematics, and Technology Education Center and the James B. Hunt, Jr. Institute for Educational Leadership and Policy, will co-sponsor the *2009 North Carolina Science Summit*, with program support from the International Center for Leadership in Education. This event is designed to further the conversation on building a systemic approach to reforming STEM education by highlighting innovative models and successful practices.

### Who Should Attend?

North Carolina business leaders, state-level education policy leaders, and K-16 educators are invited to attend, including:

- Teachers, department chairs, and coordinators of math, science, and technology education
- Other subject-area educators in STEM-focused academies and small learning communities
- Career and technical education and engineering department chairs, coordinators, and teachers
- District and school leaders for curriculum and instruction
- State-level education policy leaders

### At the 2009 Summit, you will:

- Hear from national education and policy leaders, including James B. Hunt, Jr., former Governor of North Carolina, John Bransford, editor of *How People Learn* and noted researcher in cognition and technology, Bill Daggett, President, and Ray McNulty, Senior Vice President of the International Center for Leadership in Education.
- Participate in how-to sessions with strategies and practices that you can put into immediate use.
- Review cutting-edge research on STEM best practices and the skills and knowledge students need for success.
- Learn about instructional practices and leadership approaches that support STEM education, infuse rigor and relevance, and promote dramatic improvement in student performance.



*“For schools to flourish in today’s education environment, they must prepare students with the skills and knowledge needed in the increasingly sophisticated workplace. Collaborative efforts and innovative models in K-16 STEM education are proving to be effective at engaging students and also developing 21<sup>st</sup> Century skills.”*

— *Dr. Bill Daggett, President  
International Center for Leadership in Education*

*“The bedrock of our future is the commitment to provide young people with education experiences and opportunities to prepare them for a knowledge-based economy and world that is much more interconnected. By enabling students to engage in the use of new technologies and new resources, they can build a solid foundation of science, mathematics and technology understanding — keys to the global future.”*

*— Dr. Sam Houston, President and CEO  
NC Science, Mathematics, and Technology Education Center*



## Agenda Highlights

### **Pre-Conference Workshop – 21<sup>st</sup> Century Assessment: Measuring Learning for Ever-Changing Environments**

**Dr. John Bransford, Professor, University of Washington**

Assessments are extremely important for measuring the quality of learning and teaching, but existing assessments tend to tell us what individual students have learned in the *past* and not necessarily how prepared they are to learn in the *future*. With this problem in mind, and using findings from the learning sciences to guide us, this pre-conference will examine how well students are being prepared to use a variety of resources, including technology-enhanced access to information, virtual and actual tools (e.g., simulations), and social networks in order to learn to solve new complex problems. (\$20 fee includes lunch)



### **Concurrent sessions will feature the following presentations:**

- *NASA's Best Practices in STEM Education* with Joyce Winterton, Assistant Administrator for Education at NASA
- *A Visual Tour of the Microsoft School of the Future* with Mary Cullinane, Director of U.S. Partners in Education at Microsoft
- *Keys to Success – Kennesaw Academy of Mathematics, Science and Technology* with Dr. Mimi Dyer, Program Coordinator at Kennesaw Mountain High School, Georgia
- *Interdisciplinary Math and Science Strategies in a Brain-Compatible K-8 Classroom* with Linda Jordan, Associate Professor at Hope College, Michigan
- *Using the Rigor and Relevance Framework to Improve Instruction in the STEM Classroom* with Dr. Richard Jones, Senior Consultant at the International Center for Leadership in Education
- *McKinley Technical High School – A Model STEM Education Program* with David Pinder, Principal at McKinley Technical High School, Washington, DC
- *How to Successfully Integrate the STEM Curriculum* with Lee Dedmon, Principal at Highland School of Technology, North Carolina
- *The Importance of Technology and Assessment in STEM Education* with Dr. John Bransford, Professor at the University of Washington
- *Tools for Improving Student Achievement in Reading and Math* with MetaMetrics, Inc.
- *Inquiry Science for Administrators – Observing and Evaluating Inquiry-Based Science Teaching* with John Cafarella, Independent Education Consultant

# Schedule, Location, and Accommodations

The Summit will explore the growing importance of STEM education and describe the structures and information needed by state, district, and school leaders to enhance student learning in mathematics and science.

## SUMMIT AT A GLANCE

### Sunday, April 19

8:00 AM-12:30 PM	Registration
10:00 AM-12:00 PM	Pre-Conference Workshop (\$20 fee applies) <i>21<sup>st</sup> Century Assessment: Measuring Learning for Ever-Changing Environments</i> Dr. John Bransford, Professor University of Washington
1:00-1:15	Welcome and Conference Overview Dr. Sam Houston, President and CEO North Carolina Science, Mathematics, and Technology Education Center Dr. Judith Rizzo, Executive Director and CEO James B. Hunt, Jr. Institute for Educational Leadership and Policy
1:15-2:45	Opening Keynote Presentation – <i>Preparing Students for Their Future</i> Dr. Bill Daggett, President International Center for Leadership in Education
2:45-3:15	Break
3:15-4:45	Concurrent Sessions
5:00-6:30	Reception
6:30-8:30	General Session – <i>Effective STEM Partnerships: The Role of Business in Education</i> Ray McNulty, Senior Vice President International Center for Leadership in Education

### Monday, April 20

8:30-9:15 AM	Opening Remarks James B. Hunt, Jr., Foundation Chair James B. Hunt, Jr. Institute for Educational Leadership and Policy
9:15-10:15	General Session – <i>Preparing U.S. Schools for the 21<sup>st</sup> Century</i> Dr. Bill Daggett, President International Center for Leadership in Education
10:15-10:45	Break
10:45 AM-12:15 PM	Concurrent Sessions
12:15-1:15	Lunch
1:15-2:45	Concurrent Sessions
2:45-3:00	Break
3:00-4:00	Closing General Session – <i>Bringing Best Practices to Scale</i> Ray McNulty, Senior Vice President International Center for Leadership in Education

## SUMMIT LOCATION AND ACCOMMODATIONS

### Embassy Suites Raleigh-Durham/Research Triangle

201 Harrison Oaks Boulevard • Cary, North Carolina 27513  
phone: (919) 677-1840 • fax: (919) 677-1841  
www.embassyraleighdurham.com

Hotel rooms can be reserved in advance for \$139 per night for single or double occupancy. This rate includes continental breakfast. Be sure to mention the North Carolina Science Summit when making your reservation!

**HOTEL RSVP DEADLINE: MARCH 30, 2009**

## The registration fee includes:

- Admission to all general and concurrent sessions
- Case studies from presenters describing their programs
- Dr. Daggett's latest report on his research
- Morning and afternoon refreshments, evening reception on Sunday, box lunch on Monday
- Handouts and other materials.

## Registration

Space is limited, so please register early to ensure your participation. You will receive confirmation of your Summit registration, so please provide an e-mail address. You can register online at [www.LeaderEd.com/NCSTEMregister.html](http://www.LeaderEd.com/NCSTEMregister.html).

## Cancellation Policy

Cancellations requested in writing before April 1 will be subject to a \$50 processing fee. Cancellations requested between April 1 and April 10 will receive a 50 percent refund. No refunds will be issued after that date, but you may send another person in your place.

## Purchase Orders

Each individual on a purchase order must complete a registration form. Please indicate a contact person on purchase orders for more than one person.

## Special Services

If you require special services, please attach a description of your needs. Requests must be received by April 1 to allow ample time to accommodate. Special housing requirements should be discussed directly with the hotel.

## Payment

Payment can be made online, by fax, or by mail. Provide credit card information or make check or purchase order payable to:

International Center for Leadership in Education  
1587 Route 146 • Rexford, New York 12148-1137  
phone: (518) 399-2776 • fax: (518) 399-7607  
info@LeaderEd.com • www.LeaderEd.com

## Registration Form

Registration Fee  \$195  
Pre-Conference Workshop: *21<sup>st</sup> Century Assessment: Measuring Learning for Ever-Changing Environments*, with Dr. John Bransford, Professor, University of Washington (includes lunch)  \$20

Check  
 Purchase order (PO) enclosed. This form must accompany PO.  
Charge to:  VISA  MC

# \_\_\_\_\_

Expires \_\_\_\_\_

Signature \_\_\_\_\_

Mr.  Mrs.  Ms.  Miss  Dr.  other

Name \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_

Fax (\_\_\_\_) \_\_\_\_\_ Organization \_\_\_\_\_

Position \_\_\_\_\_

Address \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

E-mail \_\_\_\_\_

Do you have any specific physical or dietary needs for which you require accommodations?  YES  NO

If yes, please describe: \_\_\_\_\_

### How did you hear about the Summit?

- Mail
- E-mail
- Presentation
- Web site
- Word of Mouth

### Subject area

- Career/Technical
- English
- Foreign Language
- Mathematics
- Music/Arts
- Science
- Social Studies
- Special Education
- Other

### Affiliation/Level

- Elementary school
- Middle school
- High school
- District
- State
- Postsecondary
- Business/Community
- Other

### Title

- Superintendent
- Assistant Superintendent
- Principal
- Assistant Principal
- Teacher
- Department Chair
- Guidance Counselor
- Curriculum Specialist
- Staff Developer
- Board Member
- Legislator
- Other

### Send Registration Information to:

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You can also register online at: [www.LeaderEd.com/NCSTEMregister.html](http://www.LeaderEd.com/NCSTEMregister.html)

## **NORTH CAROLINA SCIENCE, MATHEMATICS, AND TECHNOLOGY EDUCATION CENTER**

The North Carolina Science, Mathematics, and Technology Education Center (SMT Center) promotes and supports innovation in science, mathematics, and technology learning. Focusing on the state's elementary and secondary schools, the SMT Center works to provide all children in North Carolina with the necessary knowledge and skills to have successful careers, be good citizens, and advance the economy of the state — goals increasingly dependent on a student's proficiency in science and mathematics.

Founded in 2002, the SMT Center advances its mission by serving as a catalyst for innovation and change in education; providing tools, learning methods, and technical help to educators; advocating for research-based instructional programs in schools; and recruiting community and business leaders to encourage and promote advanced science and mathematics as essential knowledge for North Carolina citizens.

## **JAMES B. HUNT, JR. INSTITUTE FOR EDUCATIONAL LEADERSHIP AND POLICY**

Created by the University of North Carolina Board of Governors in 2001, the James B. Hunt, Jr. Institute for Educational Leadership and Policy works with leaders to secure America's future through quality education. Working at the intersection of policy and politics, the Hunt Institute connects leaders with the best strategies for developing and implementing policies and programs to improve public education.

To that end, the Institute convenes governors, policymakers, legislators, and business and civic leaders across the nation to provide them with the best information to make informed policy decisions. An affiliated center of the University of North Carolina at Chapel Hill, the Institute is a non-partisan, non-profit entity that does not lobby for, or take positions on, state and federal legislation.

## **INTERNATIONAL CENTER FOR LEADERSHIP IN EDUCATION**

Founded in 1991 by Willard R. Daggett, Ed.D., the International Center for Leadership in Education has a wealth of experience in helping schools and districts implement organizational changes that translate into world-class curriculum, instruction, and learning. The International Center's work is based on the premise that students are living in a world that is changing dramatically and the education system needs to adapt to those changes in order to prepare students for the global society in which they will live and work.

Staff, senior consultants, and master teachers share their expertise in managing change and achieving high standards through customized solutions. International Center resources help districts and schools identify specific learning goals and focus on priority standards. These resources can be used to make data-driven decisions regarding curriculum, instruction, assessment, and learning.

*This event is also sponsored by the North Carolina Association of School Administrators, the North Carolina School Superintendents' Association, the Kenan Fellows Program, the North Carolina New Schools Project, and the North Carolina Department of Public Instruction.*