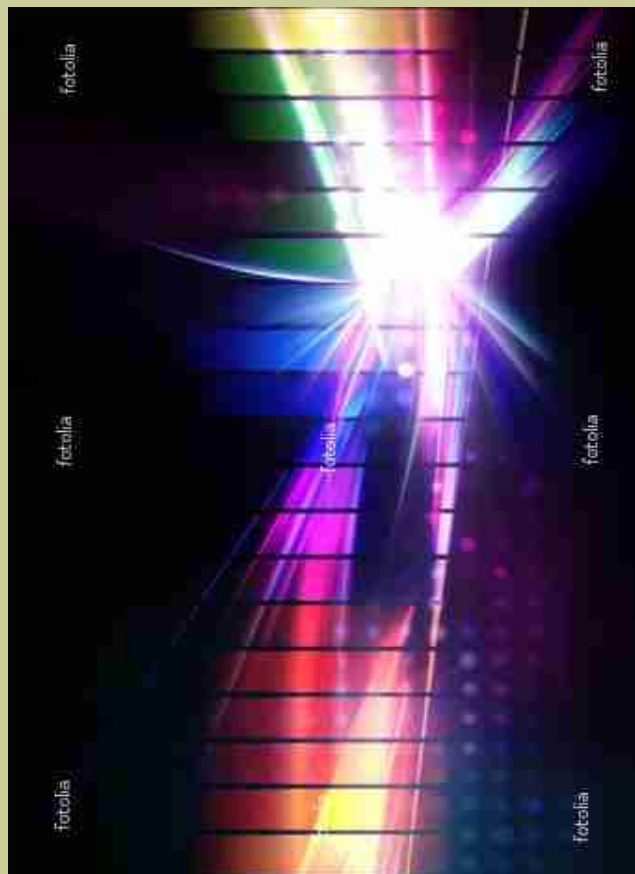




# Seeing the Future Resource Guide Series

## *Technology & Innovation*

February 23, 11:00 – 11:45



# Today's Objectives



- Who is Southern Growth Policies Board?
- What is the *Seeing the Future* series?
- Key trends in technology and innovation
- Tips for getting started
- Rising Above the Gathering Storm, Revisited, The National Academies

The screenshot displays a web conference interface with several panels. On the left, the 'Attendees' panel shows a video feed for 'Linda Hoke' and a list of attendees. Below it are 'Feedback' and 'Chat' panels. The 'Chat' panel has 'Public' and 'Private' tabs. On the right, the 'Start' panel contains session details and audio information.

**Attendees | 0 / 1**

**Start** **Content**

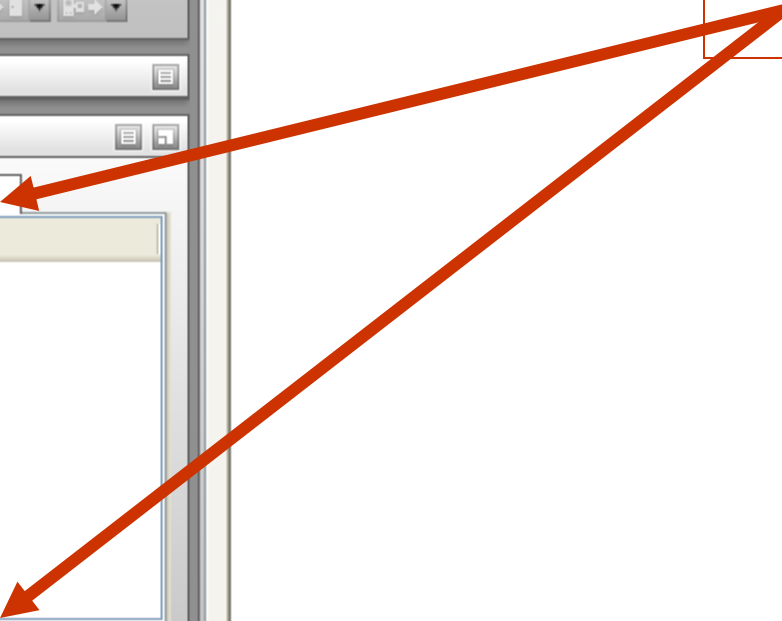
**Session Details**  
Session Name: Leadership and Social  
Leader: Linda Hoke

**Audio Details**  
Primary Dial-In: 1-800-371-9219  
Passcode: 4215367

**Chat**  
Public Private

Double-click an attendee to chat privately.

Asking Questions



# Who is the Southern Growth Policies Board?



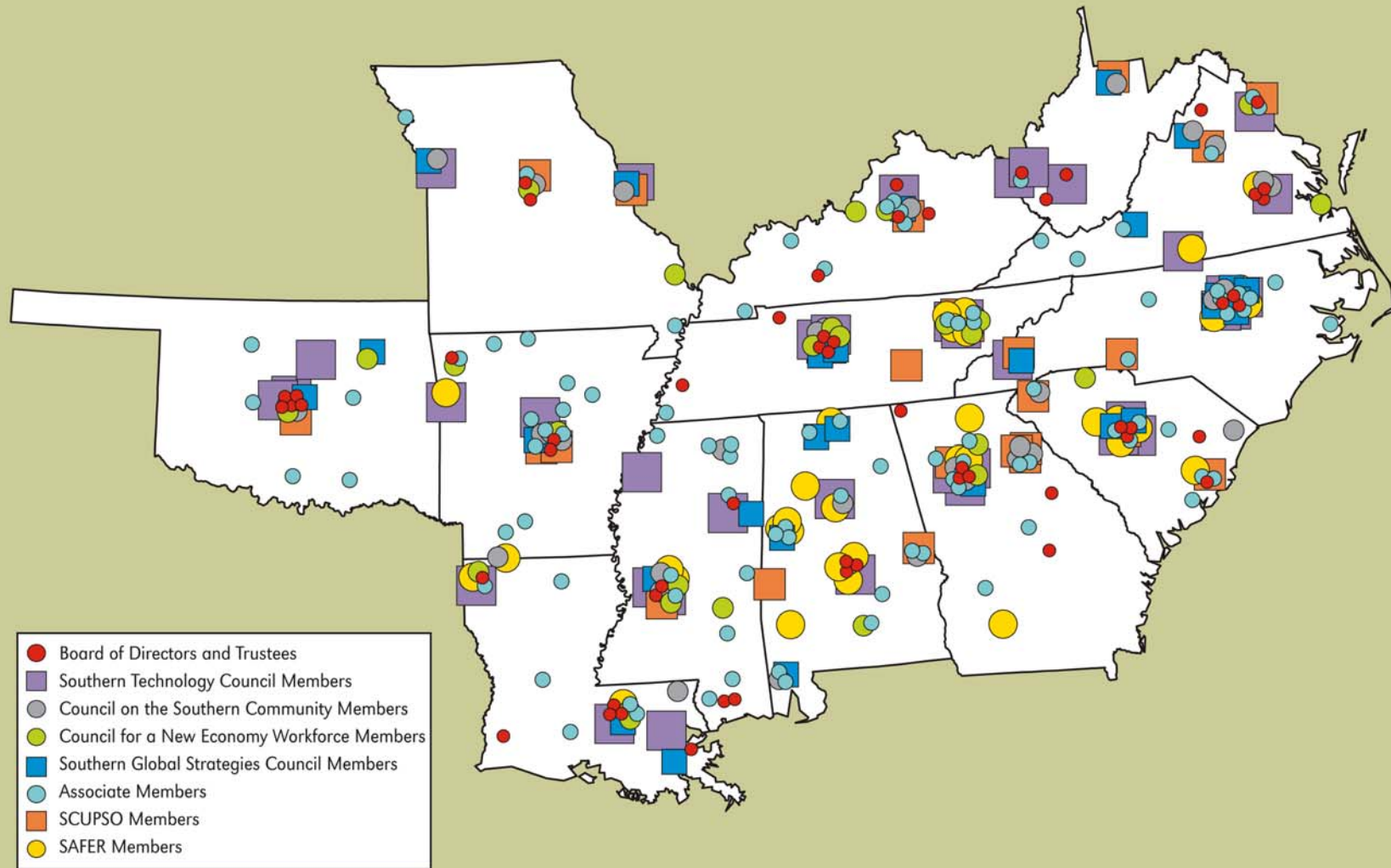
**Ted W. Abernathy, Jr., CecD,**  
*Executive Director – Southern Growth Policies Board*



# Southern Growth Policies Board

- Created by Southern Governors in 1971
- Brings together Governors, state legislative leaders, business leaders, higher education leaders, and citizens
- Secretariat for the Southeast Agriculture & Forestry Energy Resources Alliance & the Southern Consortium of University Public Service Organizations

# Southern Growth Membership

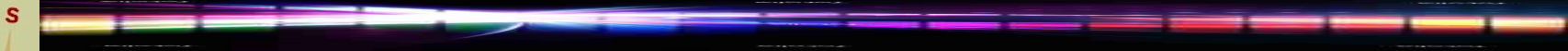


# Annual Future of the South Reports



# What's *Seeing the Future?*

- Series of resource guides to help Southern communities better understand current economic trends and to plan ahead for the opportunities of the future
- Key topic areas range from *Leadership and Social Capital* to *Technology and Innovation* to *The Green Economy*
- New guides will be released monthly via webinar



# Each Resource Guide Includes:

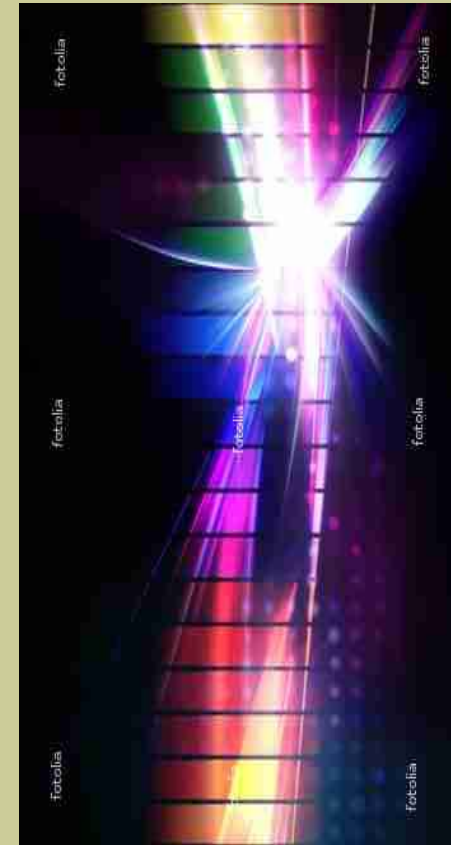
- Introduction to topic
- Key points or trends
- Ideas for getting started
- Resources for more information
- Program examples

# Technology & Innovation



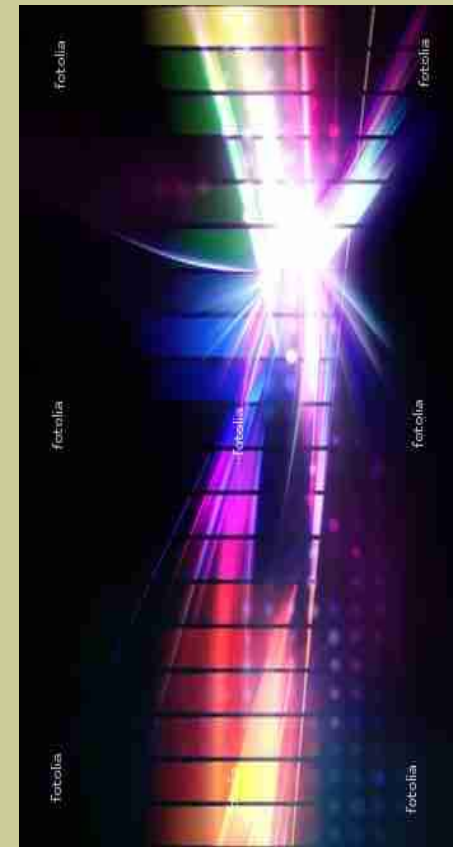
# Definitions: Innovation

**Innovation:** the application of new knowledge to products, processes, or business models in the pursuit of **profits.**

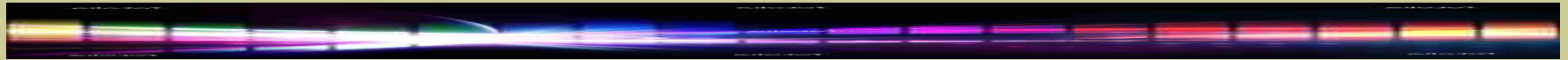


# Definitions: Technology

**Technology:** the new knowledge, usually scientific, used in innovation.



# Why?



- **Half** of productivity growth comes from new technology.
- **Wages** in most tech jobs are twice the median for all jobs.
- **ROI** in basic R&D equals 3 times the return in applied R&D, which equals twice the return on physical capital.

# Why?



**“The vitality of the U.S. economy depends on creating innovation and competitiveness at the regional level.”**

Michael Porter. *Clusters of Innovation*, Regional Foundations for U.S. Competitiveness

# *Why?*



**“...high tech was the biggest factor in explaining why some communities recorded exceptional growth.”**

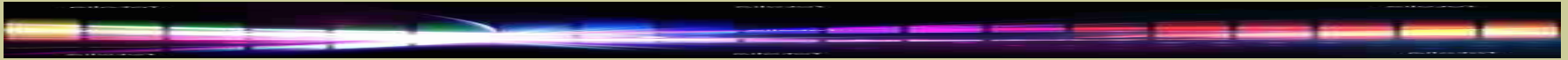
Milken Institute

# Key Points

- Every company needs innovation to survive.
- Networking inside and outside the community is critical for innovative companies and communities.
- The U.S. leads in global innovation, but others are catching up.



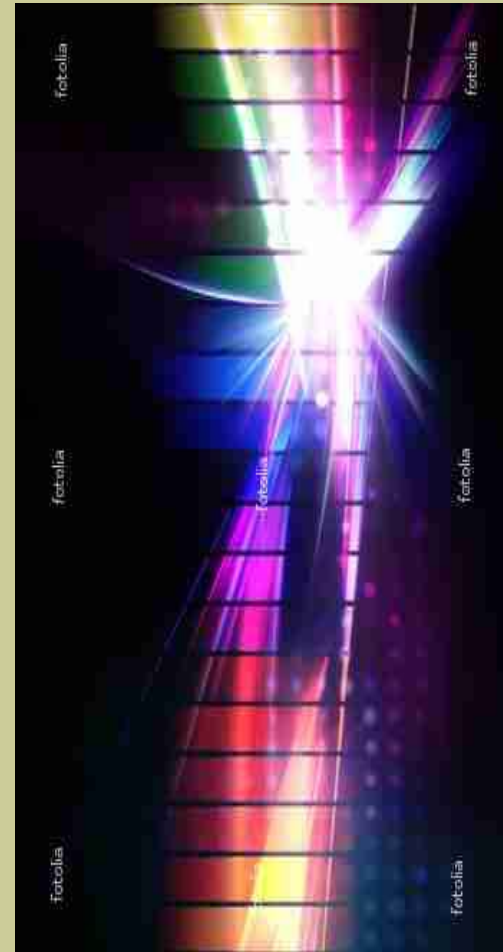
# Four Ingredients for Innovation



- 1. Ideas (Knowledge)**
- 2. Money**
- 3. Skilled Workforce**
- 4. Community and Political Support**

# Ideas for Getting Started

- Identify regional innovation assets.
- Ensure internet usage.
- Raise importance of math and science education and careers.
- Provide skills training for technology employment.



# Too Late?



**US consumers  
spend more on potato chips  
than the government  
spends on R&D.**

# Too Late?



**GE has the majority of its R&D staff outside the U.S.**

# Too Late?



**An American company  
recently opened the world's  
largest private solar R&D  
facility.....  
In China.**

# Today's Speaker

**Tom Arrison**

Senior Staff Officer

Policy and Global Affairs

National Academies

▪

THE NATIONAL

POLICY AND GLOBAL AFFAIRS

# Rising Above the Gathering Storm, Revisited: Rapidly Approaching Category 5

Webinar on Innovation and Growth  
Southern Technology Council

February 23, 2011

Tom Arrison  
Senior Staff Officer  
Policy and Global Affairs  
Tel: 202-334-3755  
Email: [tarrison@nas.edu](mailto:tarrison@nas.edu)

THE NATIONAL ACADEMIES  
*Advisers to the Nation on Science, Engineering, and Medicine*

National Academy of Sciences  
National Academy of Engineering  
Institute of Medicine  
National Research Council

## **What is the National Academies?**

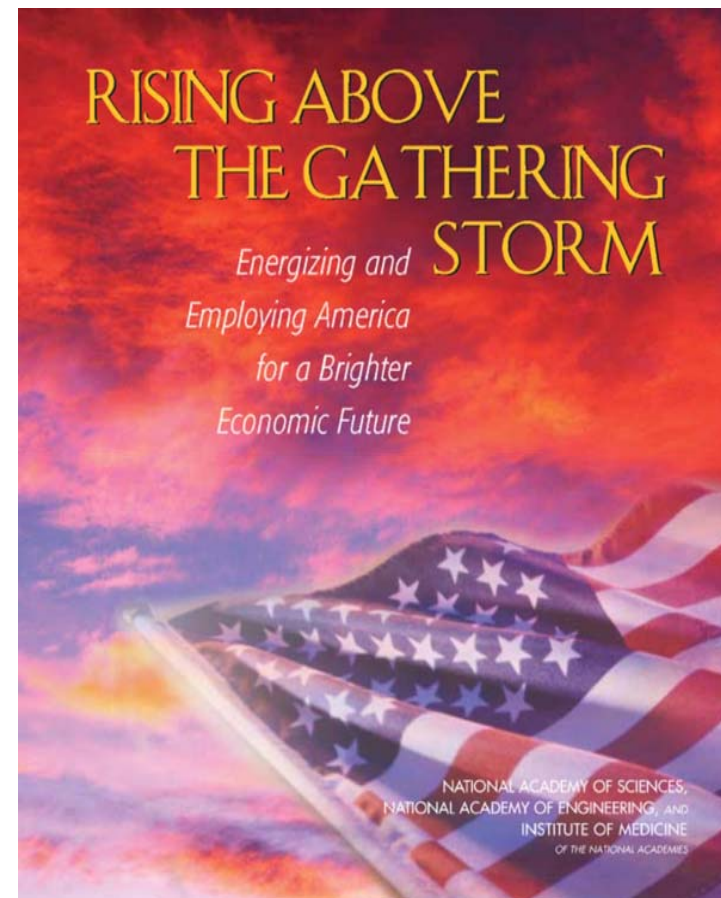
**Private, non-profit, self-selecting membership organizations of eminent scientists, engineers, medical professionals**

**Congressional charter to advise the Federal government**

**Committee on Science, Engineering, and Public Policy (COSEPUP) serves as a “special projects” committee, addresses important cross-cutting policy issues**

## Context for the Original Report

- 2004-2005 concerns about off-shoring, rise of innovative capacity in other nations (China, India)
- Tom Friedman's *World is Flat*, reports from Council on Competitiveness, BRT, AEA, etc.



# **Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future**

**Concern that S&T building blocks critical to economic leadership are eroding when many other nations are gathering strength.**

**“Death of Distance”: skilled labor with strong drive to succeed is just a mouse-click away in growing economies**

**Challenge of creating high-quality jobs for all Americans**

**Need to renew nation’s commitment in education, research, and innovation policies**

# Education Factoids

**48<sup>th</sup>** of 133 countries in science and math education (WEF IT report)

**US** 15 year-olds 21<sup>st</sup> in science literacy and 25<sup>th</sup> in math out of 30 OECD countries (PISA 2006)

**US** is 27<sup>th</sup> in OECD in percentage of science/engineering baccalaureates (OECD Education at a Glance)

# Innovation Factoids

**In** 2009, for the first time, over half of U.S. patents were granted to non-U.S. companies

**China** is now the world's leading exporter of high-technology products

**Federal** funding of research in the physical sciences as a fraction of GDP fell 54% in the 25 years after 1970; the decline in engineering research funding was 51%

## **Four Recommendations:**

10,000 Teachers, 10 Million Minds and K-12  
Science and Mathematics Education

Sowing the Seeds Through Science and  
Engineering Research

Best and Brightest in Science and  
Engineering Higher Education

Incentives for Innovation

# Implementation and Follow up

Passage and signing of the America  
COMPETES Act in August 2007

Assessments/convocations by  
individual states (AR, AL, CA, MD,  
MI)

# Conclusion

Long-term focus on US national competitiveness in science and technology still needed

Reauthorization of America COMPETES and supporting appropriations essential

## Next?

*Rising Above the Gathering Storm,  
Revisited: Condensed Version* currently  
being prepared, expected out in the next  
few weeks

Meetings and outreach to the new Congress

State and regional workshops

# State and Regional Workshops

**Picking** up on the interest states had in the original report

**Examine** ways to strengthen K-12, research, higher education, innovation environment

**Focus** on catalyzing follow up

**First** workshop will likely be in Madison, Wisconsin

## More info....

*Gathering Storm, Revisited* free download:

[http://www.nap.edu/catalog.php?record\\_id=12999](http://www.nap.edu/catalog.php?record_id=12999)

Original *Gathering Storm* report free download:

[http://www.nap.edu/catalog.php?record\\_id=11463](http://www.nap.edu/catalog.php?record_id=11463)

For printed copies, and other questions, feel free to contact me:

Tom Arrison

Tel 202-334-3755

tarrison@nas.edu

The logo features a stylized, elongated shape resembling a drop or a leaf, colored in shades of brown and tan. A small red letter 'S' is positioned at the top tip of this shape.

s uthern growth policies board

**Download the  
Resource Guide at**

<http://www.southern.org>

**Click on Publications and Toolkits**



# Q&A



# **Innovation Initiative – Southern Governors' Association**



- **Template for the Innovative State**
- **Regional Actions for the Innovative South**
- **Actions Needed on the Federal Level**
- **Presented at SGA's Meeting in Late August**

# Next Seeing the Future Webinar: Entrepreneurship



- **March 28**
- **2:00**
- **<https://southern.ilinc.com/register/bbzrrzV>**.



**S**  
southern growth policies board

P.O. Box 12293  
Research Triangle Park, NC 27709  
Phone: 919-941-5145 • Fax: 919-941-5594

<http://www.southern.org>