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A Proud History

We are delighted to welcome you to a very special 30th Anniversary Emerging Issues Forum!

For three decades, the Forum’s consistent purpose has been to enhance North Carolina’s economic competitiveness. Once more, a great and diverse group of North Carolinians plus invited guests from across the nation and around the world gather with a shared conviction: by working together, we can build a brighter future for North Carolina.

As Forum themes evolve from year to year, the cumulative impact of the Forum grows. Take the most recent years by way of example. In 2012, we gathered to find consensus about how best to advance the interests of our Generation Z cohort; in 2013, to spark the expansion of high-quality jobs in the advanced manufacturing sector; and last year, to explore how best to recruit, reward, and retain world-class teachers in classrooms across our state. The trajectory of this work, toward a more prosperous future for our state, is clear.

In 1986, the first-ever Emerging Issues Forum took on “The Challenge of Innovation and Competition” as its theme. For our 30th Anniversary Forum, we again lift up innovation as our focus.

Innovation and the Urgency of Now

During the last 30 years, North Carolina has innovated to compete in the global economy. By getting stronger in key sectors, we became more prosperous. We built a reputation – and the North Carolina brand – around biotechnology and life sciences, finance, and modern agriculture, all powered by superior universities.
But these accomplishments were just a first step. North Carolina remains in the middle tier of innovation states. That’s not good enough in a world of accelerating everything. Global connections enable vast, ever-increasing flows of people, finance, goods and services, and data and communications. With a small device in one hand, we connect to oceans of information, to the entire world. Immense networks increasingly map these oceans, creating extraordinary new opportunities but also significant new risks for companies and communities.

To move to the top tier of innovation states and ensure North Carolina’s future economic competitiveness, we must foster a capacity for innovation across the state appropriate for this age of new and accelerating global connections. There’s no time to waste. Today, innovative ideas and technologies appear out of nowhere, disrupting traditional models for companies and communities. In our connected world, the impacts are felt everywhere and at once.

Together, We’ll Build a Prosperous Future for North Carolina

Tomorrow’s centers of wealth creation will be defined by their thriving innovation systems. North Carolina must be such a place.

This Forum not only examines why North Carolina must reconstruct its innovation system, but our best options for how to do that. The conversation will not hinge on where, since all areas of the state can and will benefit if we can revamp our innovation infrastructure. We know from our pre-Forum focus and working groups, and from the overwhelming response to IEI’s three innovation-related Forum challenges, that the spirit of innovation is alive in every corner of our state (see pages 32-41).

As we take up the challenge of reconstructing our innovation system, each of us – leaders in business, community organizations, nonprofits, government, and education – has a critical role to play. Let’s get to work.

Together, we will do great things.

John F.A.V. Cecil
President, Biltmore Farms Inc.
Chair, IEI National Advisory Board

Anita Brown-Graham
Director, IEI
Way back in 1985, NCSU Chancellor Bruce Poulton asked me to chair at my alma mater a new annual gathering which we would call the Emerging Issues Forum. I agreed on the spot because I believed much good would result from convening important leaders — from business, education, nonprofits, government, and communities large and small, and from every part of the state — to focus not on urgent matters of the moment, but on the future. We’d pick a big issue critical to North Carolina’s long-term well-being, invite top experts from North Carolina, the nation, and around the world and work together to identify consensus priorities for moving our state forward.

The Emerging Issues Forum grew quickly to become a unique and very special gathering. It has done much to strengthen the North Carolina economy and improve our quality of life.

At the very first Forum in 1986, we featured among others the Republican governor of Pennsylvania, the CEO of Hewlett-Packard, and a young North Carolina State alum then building what seemed a promising software company. I think it’s wonderful that this last fellow, Dr. Jim Goodnight, who has been a great supporter of the Forum from the very first, is again a featured speaker at this special 30th Anniversary session.

Over the years, Forum topics have included enhancing our economic competitiveness, improving education at all levels, bettering human health, and safeguarding the environment.
Today, these are the four key issue areas that define the work of the Institute for Emerging Issues, created in 2002 not only to lead the annual Forum but to expand related efforts statewide.

We certainly have done well with our roster of speakers over the years – so well, in fact, that a short summary roster is hardly sufficient. The Forum has hosted two U.S. Presidents, one Vice President, various Cabinet officials, and many members of the Congress; top foreign officials; every sitting North Carolina governor in these years; CEOs of many of the largest U.S.-based corporations; highly respected economists, one of them a Nobel laureate; and a long, long list of North Carolina’s most visionary and creative leaders from all sectors. Not least, we have also celebrated our state’s rising generation of civic, entrepreneurial, and public service leaders.

While the Forum themes have been well chosen and our speakers insightful, the aspect of the Forum that has most inspired me over the years is the extraordinary commitment of the many thousands of Forum attendees to roll up their sleeves and do the hard work of getting things done afterward. I want to thank each and every one of them, and I thank all of you here this year, including the many joining us via the livestream. At least a few of you, I believe, have attended all thirty Forums!

As we convene for the 30th Anniversary Forum, let’s be sure to celebrate all that the Forum has meant to each of us, to our state, and to North Carolina’s progress.

I look forward to being with you for another great Forum.

Governor James B. Hunt, Jr.
Chair
Emerging Issues Forum
1985–2014
Monday, February 9, 2015

8:00-8:20 AM  OPENING SESSION
   Randy Woodson
   Chancellor, NC State University

   Jack Cecil
   President, Biltmore Farms Inc.;
   Chair, Institute for Emerging Issues
   National Advisory Board

   Anita Brown-Graham
   Director, Institute for Emerging Issues

8:20-8:30 RTP INNOVATORS’ SPOTLIGHT
   Hosted by Allin Foulkrod
   President, Creative Visions

   Chris Heivly
   Managing Director,
   The Startup Factory, Raleigh

8:30-9:20 THE URGENCY OF THE MOMENT
   Introduction by Jennifer Weber
   Executive VP,
   External Affairs & Strategic Policy,
   Duke Energy

   Don Tapscott
   Author, The Digital Economy -
   20th Anniversary Edition;
   Co-author, Macrowikinomics
   and Wikinomics
9:20–10:20  INNOVATION IN NC: THEN, NOW AND NEXT

Moderated by Christopher Chung  
CEO, Economic Development Partnership of North Carolina

Jim Goodnight  
CEO & Co-founder, SAS

Robert Ingram  
General Partner, Hatteras Venture Partners

Steve O'Donnell  
Executive VP of Racing Operations & Chief Racing Development Officer, NASCAR

Sepi Saidi  
President & CEO, SEPI Engineering

RTP Innovators' Spotlight
Jennifer McCall  
Co-founder & CEO, SeaTox Research, Inc., Wilmington

10:20–10:25  OUR INNOVATION IN NC, OVER TIME

North Carolina’s Innovation Reconstruction Imperative
powered by SAS analytics and the minds of IEI and the North Carolina Board of Science, Technology & Innovation

10:25–10:45  BREAK
THE POLICIES THAT SUPPORT OR HINDER INNOVATION

Introduction by Hon. Janet Cowell
Treasurer, State of North Carolina

Competing in the Innovation Economy

Robert D. Atkinson
President, Information Technology and Innovation Foundation

Protecting the Right to Innovate

John A. Allison
President & CEO, Cato Institute;
Retired Chairman & CEO, BB&T Corporation

RTP Innovators’ Spotlight

Adam Hill
Executive Director, Packard Place, Charlotte

CIVIC CONNECTIONS DRIVING THE HEART OF INNOVATION
(Lunch Session, Day One)

Introduction by Jean Davis
President & CEO, MCNC

Ilir Zherka
Executive Director, National Conference on Citizenship

Victor Hwang
CEO, Co-founder & Managing Director,
T2 Venture Creation

Activity by Anita Brown-Graham

RTP Innovators’ Spotlight

Robin Emmons
Founder & Executive Director, Sow Much Good, Charlotte
1:45-1:55  BREAK

1:55-3:20  INNOVATION LABS

Learn about some of North Carolina’s next big innovation opportunities and identify strategies to enhance the state’s innovation ecosystem

- The Sensor Revolution & The Internet of Things
- The Promise of Ag-Biotech
- Open Source Government & Our Civic Engagement
- Future of Energy in North Carolina
- North Carolina’s Innovation Ecosystem

3:20-3:30  BREAK

3:30-4:55  RESPONDING TO NEW THREATS IN A NEW WORLD

Cyber Challenges in the Digital Domain

Moderated by Joan P.H. Myers
Co-founder & Chief Operating Officer, Strategic Link Partners

Kevin Mandia
Chief Operating Officer, FireEye

Admiral Michael S. Rogers, USN
Commander, U.S. Cyber Command, Director, National Security Agency, Chief, Central Security Service
RESPONDING TO NEW THREATS IN A NEW WORLD

Cyber Challenges in the Digital Domain (cont’d)

Hon. Mike Rogers
Former Member, United States Congress (MI) (2000-2014);
Former Chair, House Intelligence Committee (2011-2014)

Reaching Resilience

Introduction by James B. Hunt, Jr.
Governor, North Carolina

David Woods
Lead, Initiative on Complexity in Natural, Social & Engineered Systems,
The Ohio State University

CLOSING FOR DAY ONE

Jack Cecil

INNOVATORS’ SOCIAL
Tuesday, February 10, 2015

8:00-8:15 AM

YOUR STRATEGIES FOR RECONSTRUCTING INNOVATION

Anita Brown-Graham

John Hardin
Executive Director, Office of Science, Technology & Innovation, NC Department of Commerce

8:15-8:45

BUILDING A WORKFORCE FOR TOMORROW’S INNOVATIVE COMPANIES

Introduction by Stelfanie Williams
President, Vance-Granville Community College

Jeffrey M. Lacker
President, Federal Reserve Bank of Richmond

8:45-8:50

RTP INNOVATORS’ SPOTLIGHT

Hosted by Allin Foulkrod

Melvin Hines
President & Founder, Upswing Retention, Durham

8:50-9:35

NEW DELIVERY MODELS FOR HIGHER EDUCATION

Co-Moderated by Lew Ebert
President & CEO, NC Chamber

Co-Moderated by Joan Siefert Rose
President, Council for Entrepreneurial Development

Randy K. Avent
President, Florida Polytechnic University
NEW DELIVERY MODELS FOR HIGHER EDUCATION (cont’d)

Jessica Mitsch
Campus Director,
The Iron Yard | Smashing Boxes

RTP Innovators’ Spotlight
Garrett D. Hinshaw
Founder, Innovation Fund North Carolina;
President, Catawba Valley Community College, Hickory

FINANCING OUR MARKET AND COMMUNITY INNOVATIONS

Moderated by William Burckart
Co-founder, Impact Economy (North America) LLC

Scott Case
Chief Executive Officer, Main Street Genome

Jenny Kassan
CEO, Cutting Edge Capital

Daniel A. Nissenbaum
Managing Director, Urban Investment Group,
Goldman Sachs Bank USA

RTP Innovators’ Spotlight
Meg Ragland
Co-founder, Plum Print, Asheville

BREAK

THE SPACES WE NEED

Moderated by Chancellor Randy Woodson

Miquel Barceló
President, Innopro Consulting;
Executive President (2004-2007),
22@Barcelona Innovation District
10:40-11:25 AM  THE SPACES WE NEED (cont’d)

Robert Geolas
President & CEO, Research Triangle Foundation of North Carolina

Adam Klein
Chief Strategist, American Underground

Todd Roberts
Chancellor, NC School of Science and Mathematics
Winner, “Spaces for Innovation” Challenge

11:25-12:05 THE INNOVATORS’ RESPONSE

Moderated by Deborah Hooper
Chief Operating Officer, Greensboro Partnership

David Gardner
Serial Entrepreneur, Writer, Advisor, Early Stage Investor

H. Christian Hölljes
Serial Entrepreneur, Award Winning Designer, Professor of Innovation + Design at NCSU

Maureen O’Connor
President, Mosaic Health Solutions & Executive VP of Diversified Businesses, BCBSNC

12:05-12:10 NC’S INNOVATION RECONSTRUCTION PLAN
Forum participants prioritize next steps for enhancing North Carolina’s potential for innovation.

Anita Brown-Graham

12:10-1:15 THE THIRD VERTEX (Lunch Session, Day Two)
Introduction by Chancellor Randy Woodson

Hon. Pat McCrory
Governor, State of North Carolina
1:15-1:30 PM
AWARDING THE EMERGING ISSUES PRIZES FOR INNOVATION

Governor Pat McCrory
Chancellor Randy Woodson
Anita Brown-Graham
McKinley Wooten
Chairman, Board of Directors, SECU Foundation

1:30-2:25
MOVING INTO A FUTURE OF POSSIBILITIES

Introduction by Leah Brown
President & CEO, A10 Clinical Solutions

Ray Kurzweil
A Director of Engineering, Google;
Co-founder & Chancellor, Singularity University

2:25-2:30
CLOSING

Jack Cecil
Anita Brown-Graham

2:45-3:30
SUPPLEMENTAL SESSION (Room 306B)

Connecting Our Communities: Innovation at Work
Presented by the Federal Reserve Bank of Richmond

William Burckart
Scott Case
Jenny Kassan
Daniel A. Nissenbaum
We wish to thank the Federal Reserve Bank of Richmond for graciously presenting the following sessions:

- FINANCING OUR MARKET AND COMMUNITY INNOVATIONS
- CONNECTING OUR COMMUNITIES: INNOVATION AT WORK
- BUILDING A WORKFORCE FOR TOMORROW’S INNOVATIVE COMPANIES

Jeffrey M. Lacker
President
Federal Reserve Bank of Richmond
When IEI plans an Emerging Issues Forum, we begin by listening. We reach across the state, convening Focus Groups and a Working Group to help develop the Forum theme, agenda, and aspects of our post-Forum program of work.

**Focus Groups**

This year, thirteen focus groups helped IEI learn how North Carolina’s businesses, educational and nonprofit organizations, state and local government, and communities are responding to the innovation opportunity. This diverse group of more than 130 leaders and stakeholders sounded common themes. They described how new and increasing global connections are driving change in all sectors and disrupting every traditional business and operational model. They emphasized that organizations must innovate on shorter timelines, around bigger and more complex challenges.

**Sector-Based Groups**
- Agriculture
- Banking
- Government
- Healthcare
- Higher Education
- Retail and Tourism
- High Tech

**Community-Based Groups**
- Boone
- Elizabeth City
- Fayetteville
- Granville County
- New Bern
- Qualla Boundary
Focus group members confirmed that innovators today increasingly are empowered by new networks and collaborative relationships. They lamented that resource inequalities can limit access to these connections, even as they shared examples of the innovative spirit alive and active in every corner of our state.

The focus groups agreed on a central message: North Carolina faces many challenges in building the top-notch innovation capacity needed to sustain our future economic competitiveness in a challenging global economy. If we are to ensure innovation leadership, we must work together to strengthen the institutions and connections that help us to innovate.
To build on the insights contributed by our focus groups, IEI convened a Working Group charged with identifying North Carolina’s “next big innovation opportunities.”

Seeking to pinpoint North Carolina’s competitive edge in innovation, Working Group members studied economic, demographic, and technological trends while evaluating the state’s current innovation profile.

Through careful analysis and discussion, the Working Group resolved on four highly promising innovation opportunities for North Carolina: the sensor revolution and the “Internet of things”; ag-biotech; open source government and civic engagement; and energy production and efficiency. The group determined that strengthening North Carolina’s overall innovation ecosystem is critical to the success of all four opportunities. The group thus directed that enhancing the state’s full innovation ecosystem be examined as a fifth breakout opportunity.

These five ideas are the focus of the Forum’s “Innovation Labs,” where Forum participants will discuss and debate these opportunities and identify potential action steps.

After the Forum, Working Group members will advise IEI on how best to move forward with successful implementation of the priorities endorsed by the full Forum audience. The Working Group will identify prospective stakeholder partners and other key champions for post-Forum work.
Working Group Statement on North Carolina’s INNOVATION ECOSYSTEM

Strengths we can **celebrate:**
- Well-developed research and workforce development through education;
- Natural environmental beauty and thriving cultural arts;
- Robust public-private partnerships, thriving entrepreneurial hubs;
- Large military installations that directly stimulate the economy;
- Central location on the eastern seaboard near major metro areas; and
- Drawing creative, highly educated individuals and innovative organizations.

Weaknesses we must **address:**
- A risk-averse culture and history;
- Ineffective educational approaches and funding;
- Economic disparities and competition between urban and rural areas;
- Inadequate infrastructure for a growing, globalized population;
- Insufficient investment capital, particularly for startups; and
- Lack of leaders championing innovation as a powerful economic driver.

Opportunities we should **pursue:**
- Infuse creativity into all levels of education;
- Encourage entrepreneurialism in university research;
- Build vital infrastructure for connectivity;
- Leverage military and federal market opportunities;
- Reverse the “brain drain” in all sectors; and
- Innovation-friendly public policies across the spectrum of stakeholders.

Actions we will **prioritize:**

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*Please see following pages for Roster of Working Group members.*
MEMBERS OF THE 2015 EMERGING ISSUES FORUM WORKING GROUP

Zach Ambrose  
*Principal, Ambrose Strategy*

Kitty Barnes  
*County Commissioner, Catawba County*

Rob Bencini  
*Economic Futurist, Author, and Certified Economic Developer*

Elizabeth Benefield  
*Social Entrepreneurship Program Manager, Institute for Nonprofits, North Carolina State University*

Jack Cecil  
*President, Biltmore Farms Inc. and Chair, IEI National Advisory Board*

Scott Dorney  
*Executive Director, North Carolina Military Business Center*

Jennifer Facciolini  
*Education Specialist, SAS*

Liana Fryer  
*Director of Planning and Strategy, Office of Research, Innovation & Economic Development, North Carolina State University*

Robert Geolas  
*President and CEO, Research Triangle Foundation of North Carolina*

Dan Gitterman  
*Chair, Public Policy, University of North Carolina at Chapel Hill  
Designee: Chris Medley*

Marie Griffin  
*Manager of Innovation Initiatives, Outreach and Engagement, Industrial Extension Service, North Carolina State University*

Jason Gray  
*Consultant*

John Hardin  
*Executive Director, Office of Science, Technology & Innovation, North Carolina Department of Commerce*

Christian Hölljes  
*Professor of Innovation & Design, Chancellor’s Faculty Excellence Program, Colleges of Design & Management, North Carolina State University*
MEMBERS OF THE 2015 EMERGING ISSUES FORUM WORKING GROUP

Bob Ingram
General Partner, Hatteras Venture Partners
  Designee: Clay Thorp

Randall Johnson
Executive Director, Southeastern Office, North Carolina Biotechnology Center

Craig McAnsh
Founder, Mojo Coworking

Sean Moser
President, Sage Strategies

Mital Patel
Start-up and Corporate Attorney, Wyrick Robbins Yates & Ponton LLP

Brooks Raiford
President and CEO, North Carolina Technology Association

Matthew Rascoff
Vice President, Learning Technology & Innovation, University of North Carolina

Joan Siefert Rose
President, Council for Entrepreneurial Development
  Designee: Jane Royall

Michael Tiemann
Vice President, Open Source Affairs, Red Hat Inc.

Rebecca Tippett
Director of Carolina Demography, Carolina Population Center,
University of North Carolina at Chapel Hill

Michael Todd
Executive Director, North Carolina Research Campus, University of North Carolina

Paul Ulanch
Executive Director, Crop Commercialization, North Carolina Biotechnology Center

Mike Walden
Professor of Agricultural and Resource Economics, North Carolina State University

Melissa Waller
Chief of Staff, North Carolina Department of State Treasurer

Penny Whiteheart
Managing Director, North Carolina Aerospace Initiative
INNOVATION LABS

The Forum features five Innovation Labs. Each focuses on one of the IEI Working Group’s five “next big innovation opportunities for North Carolina.”

As an in-person Forum participant, you are essential to your Innovation Lab team. (Your nametag is color-coded with your Lab selection.) During the Labs, a facilitator will guide your team through group exercises to promote careful examination of your respective innovation opportunity. Working together, your team will synthesize its best ideas and recommend strategies for moving North Carolina forward.

On Day Two of the Forum, the full Forum audience will review recommendations from the five Innovation Lab teams. Forum participants will then vote to select a slate of consensus post-Forum action priorities designed to “reconstruct” North Carolina’s overall innovation effort.
North Carolina, where five of the world’s six largest ag-biotech companies have major operations, is already an important global player in this sector. But the sector continues to evolve very rapidly, spurred on by a combination of pressing global challenges (food, energy, environment, health, etc.), emerging technologies, and the great passion of scientists, researchers, and entrepreneurs. From plant-generated cancer therapeutics, to new marine aquaculture models, to environmental hazard mitigation, ag-biotech continues to attack the world’s biggest problems.

**Q:** How can North Carolina best exploit the state’s existing ag-biotech assets, natural resources, climate, and agricultural history to ensure a future of global ag-biotech leadership?
The open government initiative, Government 2.0, aims to revolutionize government by providing citizens with the one-two punch of open source data and online technologies. Together, these boost transparency, enhance efficiency, and inspire citizen engagement, driving innovation across government and creating huge new opportunities for unlocking social and commercial value.

Q: What steps must North Carolina take now to launch an open source revolution in government and citizen engagement?
Soon, a vast “Internet of Things” (IoT) is expected to enfold smart devices, sensors embedded in nearly everything, and whole networked systems in a vast web of connectivity that will move us far, far beyond today’s primarily machine-to-machine communication. Coupled with big data analytics, the IoT promises to touch and reshape every part of our lives: communications, home, transport, health, industry, infrastructure, etc. By 2020, the IoT will include some 50 billion connected devices (up from 7 billion in 2013).

Q: Experts say that the IoT will represent $14-$33 trillion in new economic value within a decade. How can North Carolina best claim its share?
Across the entire energy sector, technological innovation is coming fast. Sources of energy production, whether traditional, sustainable, or emerging, are rapidly being enhanced, while huge efficiency gains are envisioned for energy storage, transmission, and use. Relatively speaking, we haven’t seen such gains in energy production and efficiency since the early Industrial Revolution. Certain new technologies are already accelerating economic growth and reaching market sustainability. In the view of some experts, the world is fast approaching a tipping point where emerging energy technologies completely disrupt existing business models in the energy sector and beyond.

Q: What are the right choices for North Carolina’s future energy economy?
What’s the right mix of ingredients needed now to support a world-class innovation ecosystem? Traditionally, the mix starts with a critical mass of institutions and infrastructure, including top-flight universities, businesses, organizations, and other institutions that focus on technology and innovation and have ample research and commercialization facilities. Educational opportunity, developed human capital, and R&D and venture funding are essential inputs. A culture that celebrates innovation and entrepreneurship, coupled with a policy framework that enables the system as a whole, tie the whole system together – the many parts and players connect, ideas flow, partnerships unfold. If this remains the right mix, how’s North Carolina doing? If not, what’s missing?

Q: How would you reconstruct North Carolina’s innovation ecosystem to ensure a future of global innovation leadership?
IEI is proud to announce the release of The 2015 North Carolina Civic Health Index.

The report highlights an extraordinary opportunity: to strengthen our communities, lift our statewide economy, and improve the bottom lines of businesses of every size by improving “civic health.” In authoring the report, IEI extends its tradition of helping North Carolinians identify consensus strategies for enhancing our future economic prosperity.

What is civic health? It is the social and economic vitality that results when citizens interact productively with their neighbors, involve themselves in community institutions, and actively engage in public issues. Communities with high levels of civic health benefit from strong social networks characterized by trust and common purpose. These networks offer essential advantages, including an enhanced innovation capacity that bolsters economic resilience and increasingly drives wealth creation. Improved civic health has proven to be a powerful potential economic differentiator.

To help guide the report’s creation and use, IEI established a Business Committee on Civic Health whose members are integrating the report’s recommendations into their respective company strategies for civic engagement.

The report also highlights IEI’s Emerging Issues Commons as a powerful tool for boosting civic engagement. Through use of the Commons, a transformative digital civic participation platform, IEI has greatly expanded its connection to citizens and their concerns statewide.

A full copy of The 2015 North Carolina Civic Health Index can be accessed via the Forum app and at emergingissues.org.
IEI extends special thanks to our Business Committee on Civic Health:

Frank Ayscue, Bank of America
Jonathan Bailey, Mission Health
Melissa Blakely, 3M
Melanie Chernoff, Red Hat
Marty Clayton, Duke Energy
Emily Crow, Bank of America
Michael David, BASF
Robert Doreauk, AT&T
Girish Hoogar, Citrix
Tim Inglis, 3M
Chris Isley, BB&T
Kalen Jaworski, BASF
Maureen O’Connor, BCBSNC and Mosaic Health Solutions
Rebecca Quinn-Wolf, PNC
Jo Anne Sanford, Sanford Law Office
Grace Terrell, Cornerstone Health
Leslie Walden, Fidelity Investments
Tina Wilson, IBM
IEI’s “Spaces for Innovation” Challenge

WHERE DOES INNOVATION HAPPEN BEST?

Our search for North Carolina’s most promising innovation spaces resulted in 23 nominations from across the state. We’re excited to celebrate the seven finalists featured here. The Challenge winner will join our “Spaces We Need” panel.

ASHEVILLE CLIMATE COLLIDER

Asheville’s desirable climate has always been one of its charming qualities. When the Asheville Climate Collider opens in 2015, this mountain community will stake its claim as the center of a world-wide climate services network. A multi-sector nonprofit collaboration, the Collider will provide B2B networking events, resources, and workshops. The Collider is housed just two blocks from the National Climate Data Center in the Gold LEED-certified Callen Center.

DURHAM INNOVATION DISTRICT

The Durham Innovation District, or Durham.ID, achieves a North Carolina first: it places a world-class life sciences research and technology hub, including a Duke lab specializing in personalized medicine, amid a vibrant downtown. With 500,000 sq. ft. of Class-A research and office space, an additional 1.5 million sq. ft. of housing and retail is under development. A $260,000 Longfellow Real Estate Partners grant will create a pipeline of future STEM leaders.

HQ RALEIGH CO-WORKING SPACE

HQ Raleigh is a shared workspace that cultivates companies that produce long-term job growth while having a positive social impact. Founded in October 2012, HQ Raleigh operates in a 15,000-sq. ft. Warehouse District space that is now home to nearly 100 companies that have raised $20 million in funding and created more than 150 jobs. HQ Raleigh partners with the Wireless Research Center of NC, RTP, CEDNC, and other organizations. The NC State Office of Technology Transfer and Blackstone Entrepreneurs Network have offices in the space, as do Startup Madness, NC DataPalooza, the ThinkHouse, Innovate Raleigh, and other entrepreneurial initiatives.
MANUFACTURING SOLUTIONS CENTER, CONOVER

In 1990, officials in the Western Piedmont resolved to launch a technology center to support existing businesses facing skilled labor shortages. Two years later, with public and industry support, the Hosiery Technology Center was created at Catawba Valley Community College. Today's topflight product-testing center is a conduit between local mills and national retailers, encourages business start-ups, and helps develop markets for North Carolina’s apparel, hosiery, and furniture producers.

NORTH CAROLINA INNOVATION CRESCENT

The NC Innovation Crescent envisions using existing rail tracks to transform Raleigh, Greensboro, and Charlotte into one powerful regional market. The Crescent will connect communities that include 12 universities, four medical schools, four engineering schools, 21 Fortune 1000 headquarters, four renowned research parks, three international airports, six million residents, and 1.5 million skilled workers. With comfortable commutes cut to an easy hour, the Crescent has the potential to increase the state’s output by more than $50 billion per year.

NORTH CAROLINA SCHOOL OF SCIENCE AND MATH

The North Carolina School of Science and Math’s goal is to boost rates of NC STEM graduates. One of the largest providers of live video conference education in the state, NCSSM provides STEM courses to underserved and under-resourced schools statewide. In addition to its online program, its residential school, the largest of its kind in the U.S., serves 680 high-potential 11th and 12th grade students from about 90 N.C. counties. NCSSM alumni have contributed an estimated $500 million to the state’s economy.

YES! YOUTH AND ADULTS CREATING CHANGE

At Youth Empowered Solutions (YES!), high school-aged youth are the driving force. Embracing equity in youth-adult partnerships, YES! pursues a vision where youth voices are as valued and respected as those of adults. Youth identify sustainable change campaigns, shape policies, and plan the organization's future, while adult staff help navigate external bureaucracy. YES! advocates for sustainable environmental and social policy. YES! initiatives have promoted smoke-free restaurants and tobacco-free schools; increased choice of healthy foods sold at corner stores; and improved health care access. Founded in 2008 in Raleigh, YES! has offices in Charlotte, Asheville, and Washington, DC.
For the second consecutive year, IEI is proud to partner with the State Employees’ Credit Union Foundation to award the SECU Emerging Issues Prizes for Innovation. The competition rewards student teams that channel their creativity and talent to address critical issues affecting our future economic competitiveness and well-being.

To solve the challenges facing our state, we need the fresh perspectives and innovative instincts that engaged young adults bring to the table. The Prizes empower teams of students – undergrads or graduate/professional students from any of North Carolina’s two- and four-year colleges and universities – to help solve a problem affecting North Carolinians in one or more of these areas: the economy, education, the natural and built environments, and health.

North Carolina’s college and graduate students are ardent innovators, and IEI received 31 applications from across the state. From this pool of proposals, a group of expert external judges selected the Grand Prize Winner, the First Runner-Up, and four groups that competed in an online Fan Favorite competition Jan. 26-30, 2015. IEI staff selected the IEI Emerging Idea winner.

All SECU Emerging Issues Prizes for Innovation winners will be announced and recognized at the Forum on Tuesday, February 10.
Our judges have selected the following two projects as Grand Prize and First Runner-Up finalists. Specific awards will be announced at the Forum.

**Duke University**

**Canopy Scientific**

North Carolina’s forests provide forestry jobs and products, wildlife habitat, recreational opportunities, and a range of natural ecosystem services, including absorbing and storing carbon dioxide from the atmosphere. Lucrative carbon offset projects that pay landowners not to cut or develop forestland are aimed at preserving this acreage. However, these projects are technically challenging to implement and require expensive forest measurement. The solution for this emerging issue: reliable and cost-effective measurement of forest carbon for landowners using forest biometric data collection and analysis, satellite imagery, laser-equipped small drones, and modern statistical models that accurately measure forest carbon. Giving small North Carolina landowners access to lucrative carbon markets is critical to our state’s long-term environmental health, economic competitiveness, and natural identity. Canopy Scientific offers a sustainable, market-based solution to conserving family forestland for future generations.

**University of North Carolina at Chapel Hill**

**Seal the Seasons, LLC**

UNC-CH students lead this for-profit venture, which hopes to increase access to healthy food across North Carolina while bolstering the economic viability of small-scale farms. Seal the Seasons aims to create a market for blemished crops and to extend the local food season from harvest to year-round by processing these foods. The company is piloting a program to process, freeze, and distribute such produce via Durham’s Bull City Food Hub. Seal the Seasons, which has partnered with local farmers, food aggregators, and potential customers, is poised to launch a second pilot this spring. Company founders have strong local food and business backgrounds. Patrick Mateer, an economics undergraduate, has helped execute a local wholesale produce program and spent the last semester accelerating the business through Watson University. William Chapman, a nutrition public health graduate student, has five years of experience with a large food distributor and took Seal the Seasons through UNC-Chapel Hill’s Launch the Venture Accelerator Program.
Fan Favorite Finalists

Our judges have selected the following four projects as Fan Favorite finalists. Two winners, chosen by an online public vote, will be announced at the Forum.

**Duke University**

*Ellerbe Creek Litter Trap*

Duke Engineers for International Development (DEID) is a student organization that sends student teams around the globe to assess and implement engineering projects. Students work with communities to identify needs, and then collaborate with faculty and engineering professionals on design solutions and fundraising. DEID is now partnering with Durham-based Ellerbe Creek Watershed Association (ECWA). The creek runs through residential areas and is open to the public, and consequently absorbs an overwhelming amount of trash. The litter then moves downstream to Falls Lake, which serves as a drinking water source for Raleigh, flood-control area for Eastern Carolina, and a community recreational area. DEID’s proposal is to install specially engineered litter traps to capture trash without disturbing the creek ecosystem and natural surroundings. Commercially available traps can cost as much as $120,000, but DEID’s goal is to develop a more cost-efficient solution applicable to Ellerbe Creek and other similar water courses. The team, which includes 15 students in disciplines from public policy to civil and biomedical engineering, will design and implement the project over the next year under the oversight of a faculty advisor in civil and environmental engineering.

**East Carolina University, University of North Carolina at Chapel Hill, North Carolina State University**

*FreshSpire Incorporated*

North Carolina suffers from a gap in effective food distribution. The state ranks high nationally in food insecurity and childhood obesity. Yet, every day grocery stores send large amounts of expired food to landfills, where this waste produces 20% of all landfill methane gas emissions. *FreshSpire* aims to reduce food waste, food insecurity, and food sent to landfills by implementing a mobile app to facilitate communication between grocery stores and consumers. The app will announce grocers’ daily markdowns of foods nearing expiration dates. Shoppers on limited budgets will gain increased access to healthy foods, grocery stores will enjoy higher profits, and the environment will benefit. The team includes college students who developed this idea as high school seniors. They have taken their proposal through the UNC Undergraduate Social Entrepreneurship Challenge (1st place), Eastern North Carolina Innovation Competition, American Dream Seekers competition, and Global Entrepreneurship Week. They are in touch with officials at several grocery chains. Their mentors include Dr. Fred Eshelman and Maya Ajmera, founder of the Global Fund for Children.
Elon University
Simply Local North Carolina

Simply Local is a platform that marries a grassroots cooperative business model with modern communication technologies to address food deserts, obesity, affordability of healthy foods, and food marketing to our youth. The Simply Local interface includes a mobile app designed to help consumers quickly locate locally produced food and a website designed to advocate environmental responsibility and stimulate local entrepreneurship in North Carolina. The team is currently seeking funding to design and develop the interface, to conduct usability research, and to test the network. They have identified test groups: two local food cooperative businesses in Burlington, and The 10% Campaign, a statewide food organization. The Simply Local team is made up of Elon University interactive media graduate students skilled in design and development for web and mobile interfaces. The team has conducted food desert research, analyzed local food networks, and performed prototype testing of the Simply Local platform. Simply Local has adopted The 10% Campaign’s mission to redirect 10% of North Carolina’s food spending to local products and establishments, which would generate $3.5 billion annually for the North Carolina economy.

North Carolina State University
Bee Downtown

Every third bite of food we eat is directly linked to honeybee pollination, but managed honeybee colonies have declined in recent years as a result of Colony Collapse Disorder. Bee Downtown, a Durham-based nonprofit, promotes urban beekeeping. As studies confirm, bees in urban areas are healthier than those in rural locations, benefiting from increased foraging sites and reduced pesticide exposure. In March 2014, Bee Downtown launched a pilot program on the American Tobacco Campus, which is now home to three hives, including North Carolina’s largest educational observation hive at Burt’s Bees World Headquarters. The Bee Downtown team fosters community support for honeybees through educational events and classes. Principals Leigh-Kathryn Bonner and Amelia Harms are members of NC State’s Entrepreneurial Institute. Bonner, a nonprofit management minor, is a third-generation beekeeper. Harms is a fashion and textile management major who appreciates the importance of bees to the fashion industry, primarily through the pollination of cotton. Bonner manages the bees, while Harms leads the planning and execution of Bee Downtown events in the Triangle.
The 2015 Emerging Issues High School Prize for Innovation

The 2015 Emerging Issues High School Prize for Innovation challenged teams of high school students to reflect on the past in order to help improve their community's future.

Teams began by investigating the historical roots of a community challenge involving the economy, education, the natural and built environments, health, or civic health. Next, teams developed innovative solutions and accompanying plans for engaging community members in constructive responses.

In total, 13 high school teams from the mountains to the coast submitted proposals. Expert external judges selected our five finalists. Each was awarded $1,000 to support the creation of a short video highlighting their respective proposals.

On February 2, 2015, IEI opened an online voting competition to select a winner. Forum attendees are encouraged to review the five proposal videos and cast a vote to help determine which finalist team takes home a $5,000 grand prize. The Forum App includes a link to our online voting page. Voting closes at 5:00 p.m. on Monday, February 9.

The High School Emerging Issues Prize for Innovation winner will be announced and recognized at the Forum on Tuesday, February 10.
Students are generally afraid to report bullying for fear of becoming a target. NoBullying.com states that 64% of bullying in school goes unreported. We want to empower students to discreetly submit reports of bullying via Bye-Stander, a phone app we are designing. For students without phones, a corresponding website would be created. Students would have the ability to submit photos and videos along with their anonymous reports. The app would be compatible with all phone operating systems and interfaces. In order to encourage use of the app, we would hold informative assemblies for the faculty and students. All five members of our team are devoted the table leadership, organizational and computing skills, plus experience in budgeting and editing.
John A. Holmes High School  
**Campaign to Stop the Spread of the Aquatic Plant Hydrilla in the Chowan River**

Water quality in the Chowan River Basin is a major concern for citizens who depend on the river for their domestic water supply, commercial use, and recreation. The Chowan River was the site of a large-scale algal bloom in 1972, prompting the NC Division of Water Quality to identify the basin as “nutrient sensitive waters.” More recently, an invasive species of aquatic plant known as *Hydrilla* is spreading rapidly, threatening to choke off access to the waterway. Our objective is to raise awareness by posting videos, posters, brochures, and digital boat ramp signs. We are also placing compost barrels at boat ramps and designing a rake that will be used to remove *Hydrilla* from boats and trailers to prevent the plant from spreading to other waterways. We have also enlisted help from the community, government officials, students in various grades, and our mentor.

Penn-Griffin School for the Arts  
**Student-to-Student Leadership Program** (*Note: The Penn-Griffin team has voluntarily withdrawn from the competition.*)

The Student-to-Student Leadership Program will serve the greater High Point community by providing leadership training and mentoring to “at-risk” students. Our participants will come from Kirkman Park Elementary School and Penn-Griffin Middle School. Students will be identified by data collection, including academic performance and disciplinary records. The program will offer eligible students the opportunity to meet regularly with student mentors to participate in literacy-driven discussions and team-building activities. It will provide basic academic skills enrichment, and consistent monitoring and support. We hope to intervene as early as possible so students leaving elementary school will be better prepared for the challenges of a rigorous course of study. We also hope that students who might not apply to Penn-Griffin High School, a nationally ranked academic/arts magnet, will be equipped and encouraged to do so. Our peer mentors will develop and implement lessons and maintain data for the program, thus helping them develop crucial leadership skills.
Obesity is a growing epidemic in the United States, but it can be countered with healthy lifestyles. Our product is a mobile app that utilizes a reward system to encourage healthy living. The app provides motivation and encouragement to users making good choices, and allows consumers to associate their healthy decisions with immediate positive feedback. The app allows users to set their preferences, creating a customized experience. Its learning software allows for further adaptation to each individual’s needs, making the experience unique. Our team brings together people with different backgrounds and different strengths, including experience in app programming, business, and marketing. Most importantly, we are dedicated to healthy lifestyles and are passionate about creating a product that can improve the way users live.

As members of the IDEA Academy at South Mecklenburg High School, we plan to utilize a 25’ x 50’ greenhouse, which we built at our school last year, to give more community members access to fresh produce. The convenience of fast food, the use of GMOs and preservatives, and the distance many Charlotte residents have to travel to reach markets with fruits and vegetables has made healthy eating a greater challenge than ever. While we grow organic food for our school now, we would like to use Project Greenhouse to expand our outreach to other schools and surrounding neighborhoods. We are seeking funding to buy a flatbed truck we will call the Veggie Valet to transport free samples to other schools and the community. It is our hope that we will inspire generations both old and new to include more fresh produce in their diets.
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Skanska USA Building, Inc. is the proud builder of the James B. Hunt, Jr. Library, which houses the Institute for Emerging Issues. Just as the Institute for Emerging Issues is a think tank that convenes leaders from business, non-profit organizations, government and higher education, Skanska brings together leaders in construction innovation. From implementing Hunt Library’s two-million-volume automated book retrieval system to achieving LEED® Silver certification, Skanska helped bring NC State University’s innovative vision to life.
The Institute for Emerging Issues (IEI), a non-partisan public policy organization, exists to enhance North Carolina's long-term prosperity. IEI connects North Carolinians across sectors, regions, and perspectives for collaborative work on key emerging issues affecting our state's future economic competitiveness. As a unit of North Carolina State University, IEI advances the University's research, service, and outreach contributions statewide.

IEI helps North Carolinians build consensus, then move to action. Every February, IEI's signature Emerging Issues Forum attracts leaders in business, education, and public policy to discuss a single issue of significant importance for North Carolina's future prosperity. For three decades, the Forum has helped catalyze the policy reforms, investments, and other proactive responses required to build an enduring capacity for progress in North Carolina.

In 2013, IEI launched the Emerging Issues Commons, an award-winning “civic engagement gallery” located in the James B. Hunt, Jr. Library on NC State’s Centennial Campus. The Commons, which includes a digital platform, transforms our opportunities for civic participation. IEI has explosively expanded its connection to citizens and their concerns through the Commons, which allows North Carolinians to connect to ideas, data, and each other.

Visit us at emergingissues.org and emergingissuescommons.org
Sneak Peek:
A Look Ahead to the
2016 Forum Theme

Kickstarting Greater Job Growth:

What are the best ways to create great jobs in an ever more tech-centered economy for our state’s increasingly diverse population?