

CELEBRATING INNOVATION AND ENTREPRENEURSHIP

NC State's history of contributing to the state and national economies includes sending more than 500 products to market and launching more than 100 startups. That tradition continued in fiscal year 2015: In addition to executing 139 commercialization agreements during the year, the Office of Technology Transfer (OTT) created 12 startups and generated \$7.6 million in revenue — both of which were all-time highs.

In November, OTT hosted its 26th annual Celebration of Innovation and Entrepreneurship to recognize outstanding NC State faculty innovators. The awardees included:

Innovators of the Year

- **Sylvia Blankenship** is an inventor of one of the most successful technologies ever developed at NC State. Along with co-inventor Edward Sisler, Blankenship discovered, developed and commercialized 1-methylcyclopropene, a material that blocks the activity of the naturally occurring plant hormone ethylene.

This technology extends the storage life of fruit and floral products and is used in dozens of countries around the world, leading to revolutionary changes in the way apples and other products are handled in the postharvest environment. Blankenship, a professor of horticultural science at NC State, has worked on postharvest problems in a number of crops including apples, peaches, pears, tomatoes, peppers, sweet potatoes, bananas and flowers.

Now associate dean for administration in the College of Agriculture and Life Sciences, Blankenship received her bachelor's and master's degrees from Texas A&M University in 1977 and 1979, respectively. She received her doctoral degree from Oregon State



• ABOVE: *Sylvia Blankenship*

University in 1983, specializing in postharvest physiology. She joined the faculty at NC State in 1983.

- **Todd R. Klaenhammer** is a visionary in the area of food microbiology and biotechnology. Klaenhammer and his research team have a distinguished portfolio of intellectual property that has resulted in 36 issued patents and 22 licenses and executed options.

In 2009, the University of North Carolina Board of Governors awarded Klaenhammer's group the prestigious O. Max Gardner award for outstanding research contributing to the welfare of the human race. His group has published more than 280 articles on lactic acid bacteria and their bacteriophages, and on probiotic cultures and their genomic traits.

A William Neal Reynolds Professor of food, bioprocessing and nutrition sciences, he was elected to the U.S. National Academy of Sciences in 2001. He is a fellow in the American Association for the Advancement of Science, the American Academy of Microbiology, the Institute of Food Technologists and the American Dairy Science Association. He earned a bachelor's degree in microbiology, and master's



• ABOVE: *Todd Klaenhammer*

and doctoral degrees in food science, from the University of Minnesota. He joined NC State in 1978.

Dr. John S. Risley Entrepreneur of the Year

- **Lewis Sheats** has an extensive background in new venture planning, concept consulting, logistics, opportunity identification and analysis, manufacturing organization, marketing and strategic planning. As a serial entrepreneur, he focused on opportunity identification, execution and education.

Sheats has leveraged his experience to develop and lead an undergraduate entrepreneurship curriculum in the Poole College of Management based on experiential learning and individual student development.

He also is the driving force and visionary behind the NC State Entrepreneurship Clinic, located at HQ Raleigh. Launched in January 2015, the E-Clinic enables NC State students to connect with startup companies to build the next generation of businesses in Raleigh. E-Clinic students already have logged more than 2,400 hours on projects for more than 60 local entrepreneurial ventures.



• ABOVE: *Lewis Sheats*

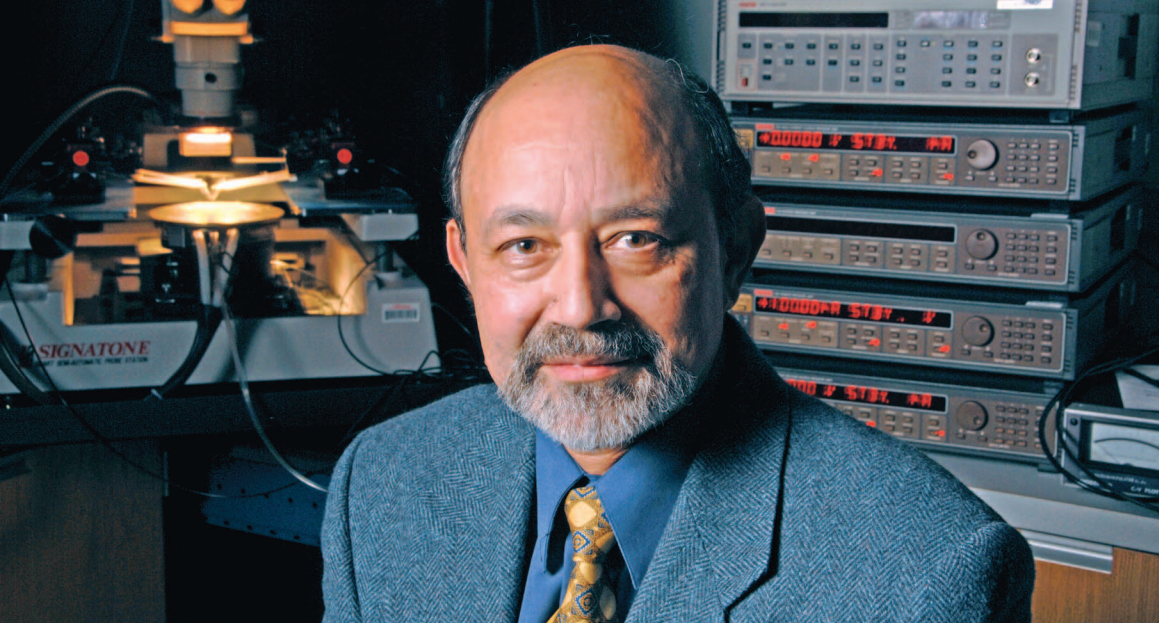
A member of Beta Gamma Sigma, an international honor society, Sheats has a bachelor's degree in finance from NC State and an MBA from the Lundy-Fetterman School of Business at Campbell University.

ELFENBEIN RECEIVES NIH AWARD

Johanna Elfenbein, an equine internal medicine specialist and assistant professor of equine medicine, was awarded first place in the Young Investigator Award competition at the 2015 Merit NIH Veterinary Scholars Symposium.

The competition, sponsored by the American Veterinary Medical Association and its charitable foundation, recognizes the scientific advancements made by veterinarians who are pursuing advanced research training through doctoral or postdoctoral programs. Elfenbein presented her work in a talk titled "Multicopy Single-Stranded DNA Directs Intestinal Colonization of Enteric Pathogens."

Elfenbein was selected as one of five finalists from 47 national and international submissions. Her work was honored for its innovation, experimental design, potential impact of results and outcomes, and



• **TOP:** B. Jayant Baliga will be honored for his invention of the insulated-gate bipolar transistor. • **BOTTOM:** Robert Handfield is a Bank of America Distinguished Professor.

relevance to comparative biomedicine.

For four of the past five years, this award has been given to an NC State researcher.

GORE LAUDED AS MENTOR, TEACHER

The Ethnic Minority Society of the National Recreation and Park Association selected Kathy Hamilton Gore of NC State's College of Natural Resources as the recipient of the 2015 Ernest T. Attwell Award, for contributions "to the development of new professionals through teaching, mentoring and programming for over 10 years and professional service activities for more than 20 years at the local, state and national levels."

Gore has been a member of the Department of Parks, Recreation and Tourism Management at NC State for

more than 22 years, where she has taught courses on diversity, finance, administration, programming and management. Gore has earned numerous awards and has been a member of NC State's Academy of Outstanding Professors since 2002.

HANDFIELD HONORED FOR RESEARCH EXCELLENCE

A paper co-authored by Robert Handfield, Bank of America Distinguished Professor of Supply Chain Management in Poole College's Department of Business Management, was awarded the 2015 Emerald Literati Network Award for Excellence.

Winners are selected annually by Emerald Group Publishing's journal and book series editorial

boards. Entrants are judged based on their research excellence, rigor and relevance. The awards recognize novel, interdisciplinary research that makes a difference within its academic field and is used more broadly by practitioners, policy makers and more.

"This is a great honor for me to be recognized, and it reflects the fact that research can be both relevant to practitioners and rigorous at the same time," Handfield said.

BALIGA TO JOIN NATIONAL INVENTORS HALL OF FAME

B. Jayant Baliga, Distinguished University Professor of Electrical Engineering at NC State, will be inducted into the National Inventors Hall of Fame in May 2016. He will be honored for his invention of the Insulated-Gate Bipolar Transistor, or IGBT – a power semiconductor device used as an electronic switch around the world in all sectors of the economy, ranging from transportation to consumer appliances to factory robots and medical devices in hospitals.

The improved efficiency gained by using the IGBT in a wide range of applications has resulted in saving more than 1.5 trillion gallons of gasoline and reducing electrical energy consumption by more than 75,000 terra-watt-hours (equivalent to not having to build 1,366 one-gigawatt coal-fired power plants). Since its invention, the IGBT has saved consumers \$24 trillion while

reducing carbon dioxide emission by more than 100 trillion pounds.

The National Inventors Hall of Fame was launched in 1973 to inspire the next generation of inventors by celebrating the achievements of visionary U.S. patent holders who, through their innovations, have changed the world. The 516 previous inductees include Thomas Edison and Nikola Tesla.

His past honors include: the 2015 Global Energy Prize, the 2014 IEEE Medal of Honor, the 2012 North Carolina Award for Science, the 2011 National Medal of Technology and Innovation from President Obama, the 1999 IEEE Lamme Medal, the 1998 O. Max Gardner Award, and the 1992 Pride of India Award.

A member of the National Academy of Engineering, he is an IEEE Life Fellow. He has been issued 120 U.S. patents, many of them commercialized via his four successful start-up companies in North Carolina.

POOLE PAIR EARNS GOLD LYBRAND MEDAL

Two professors in the NC State Poole College of Management received the Institute of Management Accountants' 2015 Lybrand Gold Medal for their article on enterprise risk management and sustainability.

Recognized were Mark Beasley, Deloitte Professor of Enterprise Risk Management and director of the ERM Initiative at Poole College, and Scott Showalter, chair of the college's Sustainability Initiative leadership team.

Their article, "ERM and Sustainability: Together on the Road Ahead," was published in a March issue of IMA's Strategic Finance magazine. It was the highest-ranking manuscript in the Lybrand Competition, which included all manuscripts published during 2015 in the IMA's Strategic Finance and Management Accounting Quarterly journals, both of

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- **RIGHT:** *Juntos is an NC State program to empower Hispanic youth to succeed in high school.*



which are rated within the top five practitioner journals in their field.

Beasley and Showalter discussed benefits of integrating an organization's sustainability and ERM efforts into a single, coordinated process linked directly to the company's core strategies. They also provide a strategic process for doing so, along with examples of companies that have taken this approach.

6 FACULTY SELECTED AS FULBRIGHTS SCHOLARS

Several NC State faculty members have been selected to take part in the Fulbright scholars program in 2015-16.

A program of the United States Department of State's Bureau of Educational and Cultural Affairs, Fulbright scholars are awarded the opportunity to increase mutual understanding and support friendly and peaceful relationships between the United States and other countries.

NC State faculty members and their Fulbright country assignments and topics are:

- **Darrell Britt**, Israel, mathematics/numerical methods;
- **Michael Bustle**, Japan, international education;
- **Robert Kochersberger**, Slovak Republic, journalism
- **Lucian Lucia**, Brazil, polymer chemistry;
- **Patricia Marshall**, Ecuador, multicultural education; and
- **Michelle Schroeder-Moreno**, Croatia, agriculture.

KHATER EARNS STUDENT HISTORY HONOR

Micah Khater, who graduated in May from NC State with a bachelor's degree in history, won the 2015 Hugh T. Lefler Award from the North Carolina Literary and Historical Association for the best undergraduate history paper. "There

Will Be Political Dirty Work: Gendered Expressions of Black Resistance in United States v. John Cashion (1936)," is Khater's senior honors thesis.

The paper documents how the white registrar of Wilkes County unlawfully denied about a dozen African-Americans the right to vote in 1934. Three of the disenfranchised citizens sued the registrar in federal court, and in a landmark decision, the judge ruled in the plaintiffs' favor.

"I became really interested in Southern history, particularly African-American history, after taking a class in Southern history my freshman year," Khater says. "I began to see that I really didn't understand the context of the society I had spent my whole life in. I grew up in North Carolina, but I didn't really understand where I lived."

Khater's thesis adviser, history professor Katherine Mellen Charron, praises the breadth and depth of her student's work.

"Her writing is clear, it's erudite and it makes a convincing argument about the importance of protecting black voting rights," she says.

WHITE HOUSE LAUDS 'JUNTOS' PROGRAM

A presidential initiative recently named an NC State program to empower Hispanic youth as a Bright Spot in Hispanic Education.

The White House Initiative on Educational Excellence for Hispanics, designed to address disparities faced by the Hispanic community in the United States, selected Juntos as

one of the signature programs, models, organizations and initiatives helping to close the achievement gap.

Pronounced "hoon-tose," the word means "together" in Spanish. Fittingly, the program unites community partners, parents and schools in helping Latino youth, many of whom are struggling in school. The youth are encouraged to achieve high school success, graduate on time and pursue college education.

Developed in 2007 by the North Carolina Cooperative Extension, Juntos has since expanded to Iowa, Oklahoma, and Oregon. A \$2 million grant awarded earlier this year by the National 4-H Council will launch the program in locations including New York City and San Antonio, Texas.

An online catalog listing the honored programs calls Juntos "an invaluable asset to the North Carolina Latino communities."

Juntos serves more than 600 Latino youth and parents across numerous N.C. counties. Andrew Behnke, Cintia Aguilar, Diana Urieta and Juana Hernandez, of NC State's Department of Youth, Family and Community Sciences, lead the program.

NC STATE COMPLETES HEALTH INITIATIVE

NC State, an inaugural partner in the national Healthier Campus Initiative, is the first to complete its commitment.

The initiative works with the private sector and the nonprofit Partnership for a Healthier America, a non-

partisan effort supported by some of the nation's most respected health and childhood obesity advocates, including First Lady Michelle Obama. NC State was one of 38 colleges and universities selected for a three-year commitment to adopt guidelines around nutrition, physical activity and programming.

Building on existing efforts, NC State was the first to implement all 23 guidelines in the first year of its commitment. "Our commitment to providing a healthier campus and the strengths of our campus wide partnerships are reflected in this significant achievement," NC State Chancellor Randy Woodson notes.

Each of the 23 guidelines has been verified. NC State's accomplishments include:

- Offering a Dietitian's Dish wellness meal daily at breakfast, lunch and dinner.
- Designating healthier food and beverage options in vending machines, C-stores and dining facilities using the Wolf-Approved healthy icon program.
- Ensuring that free water is available at all dining, recreational and educational facilities.
- Providing more than 150 group fitness classes each week in addition to more than 25 intramural activities each year.
- Opening a Functional Training area on campus.
- Combatting food insecurity on campus and throughout the community via the Feed the Pack Pantry.