

7 big venture capital investments | 10 impressive scientific advances
12 major grants for future discovery | 3 new world-class scientists
8 promising endeavors | 10 notable honors and accolades
50 MILESTONES THAT DEFINED THE YEAR 2012



GEORGIA RESEARCH ALLIANCE

ECONOMIES TEND TO GROW

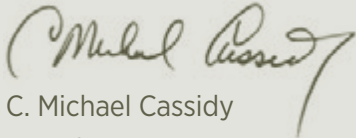
not from a single big bang, but through a series of intricately connected chain reactions. Developments and events have a way of fueling and feeding off each other, providing fresh economic momentum.

A venture capital investment may propel an enterprise forward, creating jobs. A scientific discovery can pave the way for further exploration, sparking new grant funding. A major award can honor an achievement, burnish a reputation and plant new seeds for the future.

We've compiled 50 such developments and events that we believe have contributed to the economic development story in the state of Georgia during 2012. While some examples are large and others small, all are significant, as they promise to support direct economic growth in Georgia and the enrichment of our state's stature as a center of science and technology.

It's also important to note that these kinds of developments don't just happen. On the contrary, chain reactions often require a catalyst. For our state, that is just what we enjoy in the Georgia Research Alliance. GRA was a factor — and quite often the deciding factor — in every example in this report.

We're proud of what was achieved in 2012, and we're now focused on leveraging these events in 2013 and beyond. To secure Georgia's future growth, we know the chain reaction must continue. And we thank you for your support of economic development in our state.



C. Michael Cassidy
President



Clyde C. Tuggle
Chair

7 START-UPS that won the confidence of investors



1 | \$15 million in the war against cybercrime

Market demand for Damballa's network security offering climbed so fast that the company sought capital to expand sales and distribution channels. So in September, Adams Street Partners led a \$15 million round of investment in Damballa, a GRA VentureLab graduate. The need for Damballa's network security solution was driven in part by a rise in employees using their own tablets or laptops in the workplace, which complicates efforts to protect organizational networks from cyber attacks. The GRA Venture Fund also participated in the new investment round.

2 | \$4 million to extend the reach of telemedicine

Stroke victims nationwide have benefited from the long-distance, life-saving diagnoses made possible through REACH Health, a telemedicine company. Now, that technology is being applied to help people suffering from other conditions — from cardiac problems to psychiatric disorders — thanks to \$4 million in new investment in April. REACH Health was the first winner of the GRA-TAG Business Launch Competition and received GRA support in its early stages.

3 | \$6 million to promote smarter energy decisions

Energy costs are rising, and so is the pressure on large companies to reduce their carbon footprint. Those trends have raised the value of Urjanet's service, which gathers real-time data on energy pricing and usage from hundreds of utilities and delivers it straight to the business intelligence software of its clients. In 2012, Urjanet closed on \$6 million in Series B funding, led by Grotech Ventures, with additional funds from previous investors Imlay Investments and the GRA Venture Fund.

4 | \$4 million to prevent blindness

Millions of Americans may someday have their vision saved by Clearside Biomedical's innovative microneedle injection system. A \$4 million Series A round led by Hatteras Venture Partners closed in January and enabled GRA VentureLab graduate Clearside to reach its first human safety study in November. In those tests, the microneedle achieved its target: safely depositing medication into the space between the inner and outer layers of the membrane surrounding the eye. Medicine spreads within this space to the diseased area but doesn't get into other parts of the eye, where it can cause harmful side effects, including glaucoma. The GRA Venture Fund participated in the Series A financing.

5 | \$3.9 million to protect valuable electronics

With 2011 revenues nearly six times higher than in 2010, it's no wonder electronics company Innovolt received local and national awards in 2012 for spectacular growth — along with \$3.9 million in new investment to expand its sales and R&D teams. Innovolt's microprocessor prevents unexpected failures in mission-critical equipment and prolongs the lifespan of high-value devices. Whether embedded in electronics or housed in a separate unit, the technology senses fluctuation in the electrical current from the power grid and then regulates the flow. GRA provided early-stage support to Innovolt.

6 | \$3.2 million for sophisticated research tools

Axion Biosystems has done what was thought to be impossible: develop a laboratory instrument that can simultaneously stimulate cells and record their activity. With an infusion of \$3.2 million in May, researchers continue to refine their microelectrode array tools, which can measure how isolated neural or cardiac cells respond to potential drug therapies and chemicals found in the environment. Axion is another GRA VentureLab graduate.

7 | \$1 million to tackle telephone fraud

Phone fraud costs American banks, businesses and individuals an astounding \$10 billion a year. Short-circuiting the scammers is the goal of Pindrop Security, which closed on \$1 million in seed funding in May, including an investment from the GRA Venture Fund. Pindrop's technology analyzes a call's "acoustic fingerprint," the inaudible signals that become part of the data stream as the call is transmitted from place to place. The system then assigns each call a risk score based on such factors as where a call originated or whether it came from a landline, cell phone or computer. The score helps banks and companies know when to be on guard.



2012 START-UPS RECEIVING SUPPORT FROM GRA

Accuitis, Inc.

Treatments for skin, eye diseases

APK Advanced Medical

Devices for heart failure patients

DDM Systems, Inc.

Technology to make, repair metals in turbines

Dx/Rx Device for Autism

Early diagnostics for autism spectrum disorders

HemoHome Diagnostics

Patient-operated tests for anemia

Ratrix Technologies

Circuits to enhance wireless communication

SVT Analytics

Customer behavior analysis for product placement

Sytheros Communications

Wireless environmental monitoring

Plus...

Carbice Nanotechnologies

Cell Precision

Enlighta

Glycoscientific

ImmunoMetrix

MicroBplex, Inc.

MSM-Eko

Novab

QUE Oncology

Terminal Velocity Aerospace

SciStem Therapeutics, LLC

SISENE Oncology

Softwear Automation

10 pioneering **ADVANCES** in science



1 | Gel heals broken bones with surprising speed

A special stem cell-derived “gel” invented at the University of Georgia showed great promise in animal studies in 2012 — and could revolutionize the treatment of broken bones. GRA Eminent Scholar Steve Stice and colleague John Peroni at UGA worked with other institutions to develop the gel, using adult stem cells that produce a protein essential to bone development. The gel healed broken bones in rats in two weeks and generated bones in sheep in less than four weeks.

2 | A deadly disease is dealt a blow

If the human gene *CLYD* fails to function as it should, the body’s response to repairing tissue sometimes goes haywire, leading to the fatal disease pulmonary fibrosis. That was the finding of an international team of scientists led by GRA Eminent Scholars J. D. Li and Binghe Wang at Georgia State University. The breakthrough is believed to be a key building block in developing new therapies for the disease, which eventually robs a person of the ability to breathe.

3 | Map of a grass genome points the way to better crops

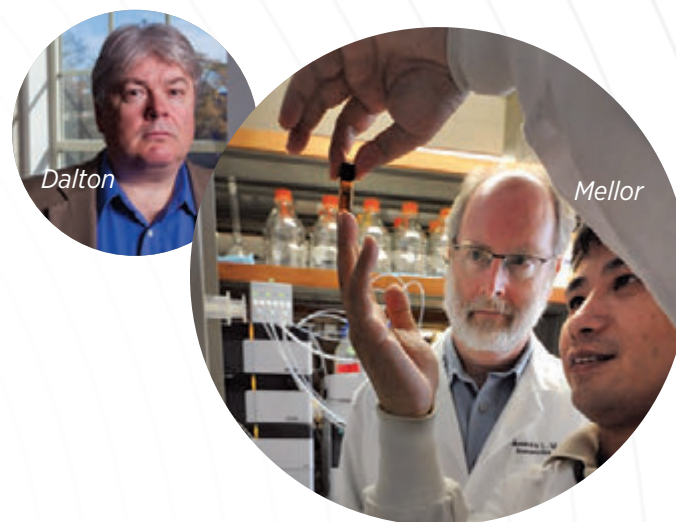
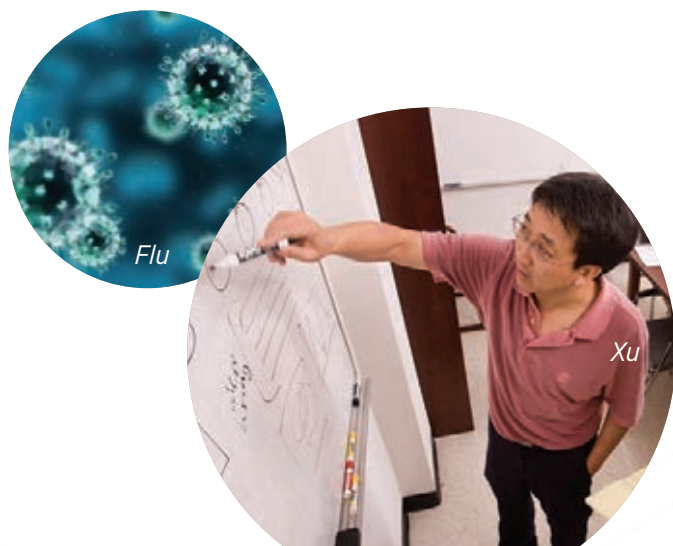
From now on, scientists will have an easier time targeting genes in their research on various types of grass to make them more resistant to drought and disease — and better suited for conversion to biofuel. That’s because GRA Eminent Scholar Jeffrey Bennetzen at the University of Georgia led nearly 40 scientists at eight universities in mapping the genome of foxtail millet, a small-seed grass that is also a major food source in Asia.

4 | New hope for a single flu vaccine

Scientists moved closer to the elusive “universal” vaccine to treat all forms of influenza with this year’s discovery that the 2009 vaccine against H1N1 flu can generate antibodies to fight other forms. GRA Eminent Scholar Rafi Ahmed — head of the Emory Vaccine Center, which worked with researchers at the National Institutes of Health and the University of Chicago — called the finding “a key step” in developing a vaccine that protects against multiple flu strains, “including challenging mutations.”

5 | Potential breakthrough in why tumors grow

The growth of some cancerous tumors is believed to be tied to genetic mutations, but GRA Eminent Scholar Ying Xu has offered a new explanation: low oxygen levels in cells. He and colleagues at the University of Georgia and Baylor University analyzed RNA in seven different cancer types and found that long-term lack of oxygen may be a primary driver of tumor growth. The finding would explain why cancer often defeats common drugs that target certain mutations, Xu says, and may open up a whole new avenue for treating cancer.



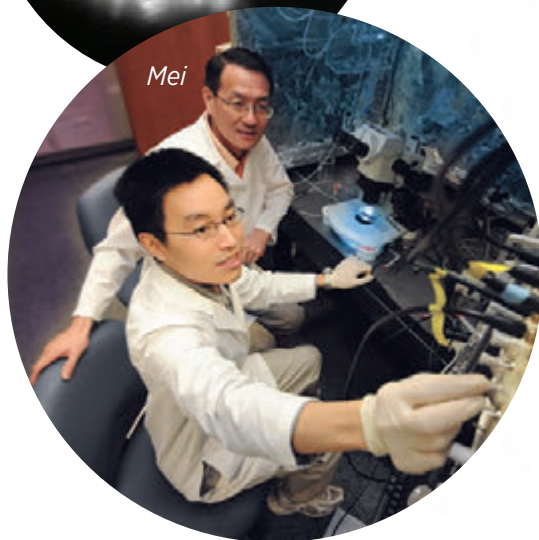
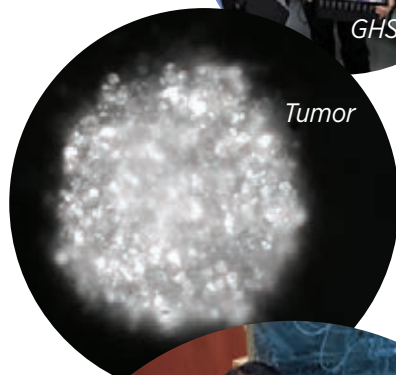
6 | A stem cell riddle is finally solved

How to turn stem cells into specific cell types so that they can become more reliable therapies has long perplexed scientists, but GRA Eminent Scholar Stephen Dalton has solved the riddle. The University of Georgia scientist created the first-ever blueprint of how stem cells are wired to respond to molecules that signal them. Dalton called the advance “an instruction book to control the behavior of stem cells.”

7 | Experimental approach eases rheumatoid arthritis

Inflammation and swelling from rheumatoid arthritis were reduced in animal models after GRA Eminent Scholar Andrew Mellor and others at Georgia Health Sciences University were able to stimulate an enzyme that calms immune response. The scientists injected DNA nanoparticles to increase the expression of the enzyme, called IDO, which created an effect Mellor likens to “pouring water on [the rheumatoid arthritis] fire.” Their discovery also shows promise for type 1 diabetes and other diseases.

10 pioneering **ADVANCES** in science



8 | Astounding acceleration of gene-mapping

The more that is known about the genetic mutations of tumors, the more precisely doctors can treat them. But identifying such mutations has been a slow and costly process. However, Georgia Health Sciences University in 2012 sequenced the entire human genome in 24 hours for about \$6,000 – a leap of efficiency made possible by GRA-funded technology. The GHSU Cancer Center can now accelerate personalized therapies for patients suffering from a range of cancers, including hard-to-treat tumors.

9 | Scientists stop brain tumors from spreading

Tumors in small animals were kept from invading healthy tissue thanks to a molecule developed by GRA Cancer Scientist Ravi Bellamkonda. Called imipramine blue, the molecule also made chemotherapy more effective. Bellamkonda, a professor in the Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory, collaborated with other scientists in the effort and says the results “reveal a new strategy for treating brain cancer that could improve clinical outcomes.”

10 | Missing protein could spell muscular problems

A protein in muscles known to be essential in communication with the brain must also be present in the brain – or else the body may suffer from forms of muscular dystrophy, a GRA Eminent Scholar has learned. Lin Mei of Georgia Health Sciences University and his colleague, Haitao Wu, made the discovery in 2012, and their findings may point the way to new therapies to bolster the protein, LRP4, in patients with some forms of MD.



1 | \$30.7 million to translate science into medicine

The first human hand transplant in the Southeast and a new drug to keep the body from rejecting surgically transplanted organs are two major medical advances made possible in part by a research partnership strongly backed by GRA. The National Institutes of Health's renewal of the five-year grant to support the Atlanta Clinical & Translational Science Institute (ACTSI) will enable Emory University, Georgia Tech, Morehouse School of Medicine and others to build on this early success. Said Georgia Governor Nathan Deal: "The re-funding demonstrates confidence in our academic, research and health care leadership."

12 GRANTS
that will push
the boundaries
of discovery

2 | \$1.5 million to turn trees into fuel

Knowing how certain wood plants form at the cellular level provides clues to how they might be genetically altered to resist drought and become better suited for biofuel. That's the focus of the U. S. Department of Energy grant to further the work of GRA Eminent Scholar C. J. Tsai at the University of Georgia. Tsai will build on earlier exploration of how the plant protein tubulin regulates wood development and plant water use. Her next target: Find a way to manipulate tubulin in poplar and other trees to help them weather drought and burn more easily.

3 | \$5.8 million to wage war on prostate cancer

African-American men are much more likely to suffer from prostate cancer than men of other races – and are twice as likely to die from the disease. Clark Atlanta University has the nation's only research center focusing entirely on prostate cancer in African-American men – an enterprise headed by GRA Eminent Scholar Shafiq Khan. This year's NIH renewal of a five-year grant for that center will add momentum to Clark Atlanta's efforts to understand better the biology of prostate cancer and to continue promoting practices that prevent the disease.

4 | \$9 million to stop AIDS

For the third time, NIH has designated Emory University as a Center for AIDS Research (CFAR) site, awarding the center a new five-year grant. The award will advance the study of immunology, prevention behavior, vaccine development and other areas of AIDS research at Emory. GRA has invested in technology at the center – one of just 21 in the United States – and GRA Eminent Scholar Eric Hunter is a co-director of the center.



12 GRANTS

that will push
the boundaries
of discovery



5 | \$4.2 million to ID breakthrough cancer drugs

Massive amounts of data on the genomic changes of cancers may hold the key for new drug therapies. But sorting through the data, collected through years of research, is daunting. A five-year National Institutes of Health grant to Emory University will enable scientists to analyze one dimension of data: how interactions among networks of proteins send signals that promote the growth of tumors. With this knowledge, the researchers hope to be able to identify which signals make good targets for drugs. Through the grant, GRA Eminent Scholar Joel Saltz will co-lead a new cancer genomics center and direct the complex effort in bioinformatics that provides the data analysis.

6 | Nearly \$1 million to investigate communication among cells

Communication breakdowns between cells can lead to disease and even death. One protein family, called kinases, plays a key role in cellular communication — and GRA Cancer Scientist Natarajan Kannan believes new knowledge about the origins of these proteins will reveal potential new strategies for treating cancer, Alzheimer's and other diseases. Kannan, of the University of Georgia, will use a five-year, \$970,000 National Science Foundation CAREER Award to study the evolution and role of kinases. The CAREER Award is NSF's most prestigious award for young faculty.

7 | \$20 million to make transplants safer

Emory University scientists have already developed a less toxic anti-rejection drug for organ transplant recipients. Now, NIH is supporting Emory's exploration of multiple new methods of preventing organ rejection without the need for the lifelong use of drugs, which often carry significant medical risks. In the new study, GRA Eminent Scholar Allan Kirk, a project leader, hopes that by injecting an organ donor's bone marrow cells into the organ recipient, doctors can alter the recipient's immune system so that it will tolerate the donated organ. His work will be complemented by other investigators attacking the problem from different angles.

8 | \$1.3 million to reset the body's clock

The circadian clock inside the brain is the center for regulating the body's processes. Finding out how the clock is set — and how it can be reset — is the purpose of the NIH grant to the Center for Behavioral Neuroscience at Georgia State University, which has received significant investment from GRA in advanced technology. The newest grant could not only help doctors treat sleep disorders but also uncover new knowledge about how all brain cells communicate.

9 | \$20 million for groundbreaking chemistry

Emory University chemists are doing what was always deemed impossible: forcing chemical reactions at non-reactive sites on molecules. Huw Davies, recruited to Emory with help from GRA, says that creating reactions at the sites of inert carbon-hydrogen bonds is a complete paradigm shift in organic chemistry. A \$20 million National Science Foundation grant will continue the work that promises to synthesize organic materials never before seen or even imagined.



10 | \$4.1 million to find cancer sooner

When cancer originates and the body's cells begin to mutate, blood sugars called glycans start changing, too. If doctors could find these altered sugars in the bloodstream, they could get earlier warnings of ovarian and pancreatic cancer, two types that are especially deadly because they are hard to detect. Two NIH grants will support research at the University of Georgia's Complex Carbohydrate Research Center — long supported by GRA — to work toward a blood test for abnormal glycans.



11 | \$8.3 million to intervene earlier in autism

Children with autism and related disorders would benefit tremendously from earlier intervention, but detecting the condition early in life has proved problematic. An NIH grant to a cooperative headed by GRA Eminent Scholar Ami Klin will enable some of the nation's top experts in autism to investigate ways to diagnose children as young as six months old — and thus introduce ways to minimize the disability's impact. Klin directs the Marcus Autism Center, the world's largest such enterprise. Partners in the effort include Children's Healthcare of Atlanta, Emory School of Medicine and Yerkes National Primate Research Center.

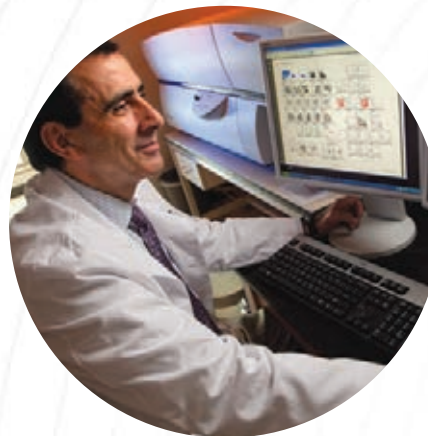


12 | \$3.5 million to supersize wireless communications

Communications companies can tap the brainpower of experts such as GRA Eminent Scholar G. K. Chang to solve a vexing problem: how best to combine disparate fiber-optic and radio-frequency technologies to supersize voice/data bandwidth. Chang, of Georgia Tech, is co-directing a new National Science Foundation center (along with Penn State) that will engage industry in identifying new "optical wireless" applications — the integration of optical light and radio wireless — to make high bandwidth more accessible. A five-year, \$700,000 NSF grant, combined with \$2.8 million in anticipated industry funding, will support the research effort.



3 SCIENTISTS other states wish they had



1 | The expert in autoimmune diseases, Dr. Ignacio Sanz

Like an arborist spray-painting dead trees for removal, B cells in the human body put their mark on other cells that are destructive. But malfunctioning B cells sometimes confuse healthy cells with harmful ones, leading the body to attack its own vital tissues and organs.

Few scientists in the world know more about these B cells than Ignacio “Iñaki” Sanz, whom GRA helped recruit to Emory University in 2012 as a GRA Eminent Scholar. Sanz discovered that a commonly prescribed cancer drug could thwart the work of rogue B cells – a breakthrough in autoimmune disease research.

At Emory, Sanz is continuing to study how B cells function, how the body regulates them, and how they can be managed to control diseases and chronic infections including HIV and malaria. He hopes to create targeted B cell therapies, identify subsets of autoimmune diseases, and develop biomarkers that can predict and measure the effects of various drugs in patients.



2 | The nanoparticle engineer, Dr. Younan Xia

Nanotechnology – the science of working with structures on the smallest imaginable scale – is widely believed to be the future of medicine. But nanomedicine requires particles with exactly the right size, shape and properties to travel through the body and deliver therapies.

Engineering these nanoparticles is the research focus of GRA Eminent Scholar Younan Xia, one of the world's foremost materials scientists in nanotechnology. Recruited to Georgia Tech in 2012, Xia studies how atoms collect into small clusters that eventually form nanocrystals. He has discovered different ways to create nanocrystals that have specific electronic, magnetic, catalytic and optical properties, making them potentially suitable for drug delivery inside the body.

So far, Xia has created nanofibers that allow the body to heal tendon torn from bone and has designed a copper wire with a diameter of just 24 nanometers. (By contrast, a human hair is 60,000 nanometers wide.) In his prior work at Washington University in Saint Louis, Xia ventured below the nanoscale to design at the atomic level, building a network of platinum atoms that could be used to create a more affordable fuel cell.



3 | The glaucoma investigator, Dr. Ross Ethier

Glaucoma is the second most common cause of blindness in America. It results from a build-up of fluid in the eye, which heightens pressure and ultimately damages the optic nerve. Exactly why the drainage system fails and how the increased pressure causes damage have always been a mystery.

New GRA Eminent Scholar Ross Ethier, a leading researcher of glaucoma, believes the answer may lie in the way cells respond to mechanical stress. Ethier has developed new understanding of how pressure within the eye is regulated in mice, and he seeks new, better ways to protect cells and improve drainage of fluid in the human eye. He even hopes to find a way to repair damaged cells — something current medicine cannot do.

Recruited to Georgia Tech in 2012, Ethier also studies the role of biomechanics in osteoarthritis and arterial disease, seeking new understanding about their causes and potential treatments.

8 ENDEAVORS you'll hear more about in the future

1 | First-ever conference unites Georgia's cancer fighters

Top representatives from many segments of Georgia's oncology community came together in November to share knowledge about preventing and treating cancer in a first-ever joint conference, sponsored by GRA. More than 130 oncologists, executives and healthcare providers met at Georgia Tech to hear nationally acclaimed speakers and explore "best and promising practices" that meet Commission on Cancer accreditation standards. Georgia CORE, a nonprofit dedicated to strengthening cancer care in Georgia, organized the event.

2 | On TV: Scholars show how they fight the flu

The threat of influenza – and the inventive work of Georgia scientists to stop it – are the focus of the pilot episode of "The Future Files," a new TV series GRA developed in 2012 with Georgia Public Broadcasting. The series premiere, which aired in November on all GPB stations across the state, showcased how GRA Eminent Scholars Ralph Tripp and Rafi Ahmed, as well as other top researchers, are pioneering new defenses against flu. GRA is working to develop additional episodes for the series to air in 2013. • *Watch the pilot: GPB.org/future-files*

3 | GRA helps French company put down roots in Augusta

The brain tumor that kills more people than any other is the target of a novel therapy being developed by Georgia Health Sciences University and a leading French biotech company, SISENE. GRA awarded a \$100,000 grant to the GHSU Cancer Center to help launch SISENE Oncology, a spinout partnering with the center to develop the therapy, which seeks to treat glioblastoma multiforme, the most common malignant brain tumor. The business enterprise will evolve as researchers build on the therapy's early success in stopping tumor growth in mice.

4 | GRA-backed cancer center conducting high-profile clinical trial

In a clinical trial being watched closely, scientists at Georgia Health Sciences University seek to increase the survival rate of patients with advanced prostate cancer who take the drug Provenge, the first immunotherapy drug approved by the FDA to fight the disease. The GHSU Cancer Center, established in 2006 with significant investment from GRA, is partnering with Dendreon Corp., maker of Provenge, in conducting the trial.



5 | UGA launches massive effort for a leaner Georgia

The statistics are troubling and alarming: Two out of every three adult Georgians are overweight or obese; the state's obesity rate has doubled in the past 15 years; and obesity costs Georgia an estimated \$2.4 billion each year. So in June, the University of Georgia launched a major initiative, headed by GRA Eminent Scholar Cliff Baile, to help the state address this health epidemic. Experts and offices across the UGA campus are involved in an array of research and knowledge-sharing efforts to promote widespread action to reduce obesity.



6 | Health leaders convene to accelerate breakthrough treatments

How can Georgia healthcare providers better capitalize on promising new treatments for disease and illness? That question was at the heart of the first Clinical Trials in Georgia Conference, with GRA serving as a founding partner and sponsor. Doctors, scientists, policymakers and healthcare leaders convened to learn about new ways to make clinical trials faster, more efficient and more compliant. The Metro Atlanta Chamber presented the event, which was held in November.

7 | Novel shampoo, chewing gum emerge from GHSU

A potent compound from green tea delivers health benefits in a new chewing gum and an anti-dandruff shampoo, both invented at Georgia Health Sciences University. MighTeaFlow, an all-natural gum engineered to ease chronic dry mouth, and ReviTealize, a shampoo that relieves dandruff, are being marketed by GRA VentureLab company Camellix. Developed by Professor Stephen Hsu, they are the first consumer products to emerge out of GHSU. • *Try them: Camellix.com*



8 | Organizations become better poised to battle cancer

The year 2012 brought a realignment of several cancer-fighting assets in Georgia, adding to GRA's research capacity in cancer. The research component of the former Georgia Cancer Coalition merged into GRA, thus re-designating a class of top researchers as GRA Cancer Scientists. Meanwhile, the Coalition's efforts in community outreach and patient support were moved to Georgia CORE, expanding that organization's work beyond clinical trials. In 2012, Georgia CORE also launched GeorgiaCancerInfo.org, a first-of-its-kind online portal to address the information needs of cancer patients and the oncology community.

10 ACCOLADES bringing greater acclaim to Georgia

1 | Accutis wins best business plan award

GRA VentureLab company Accutis Pharmaceuticals, which develops and markets new medicines for skin and eye diseases, captured the top prize in the 2012 Southeast BIO business plan competition. Two other GRA VentureLab companies shared the semifinalist stage with Accutis before the announcement: MicroBplex, creators of a fast-diagnosis assay for RSV and strep, and Cell Precision, developer of a cell therapy delivery system.

2 | International society hails pioneering contributions of GRA Eminent Scholar

Two decades of groundbreaking science, including the genetic engineering of animal models used in medical research, earned Joe Tsien the 2012 Distinguished Investigator Award from the International Behavioural and Neural Genetics Society. Tsien is a GRA Eminent Scholar in neurobiology at Georgia Health Sciences University.



3 | Federal agency deems Axion Biosystems a “model of excellence”

Creating new jobs and advancing scientific frontiers made Axion Biosystems winner of a Small Business Administration Tibbets Award in 2012. Axion, a GRA VentureLab graduate, produces the only instrument capable of simultaneously stimulating neural tissue and recording its response. Also in 2012, Axion CTO Jim Ross received the Business Person of the Year Innovation Award from the Metro Atlanta Chamber of Commerce.

4 | Prolific research lands Georgia Tech scientists at the top

Add up the articles they’ve published, along with the number of times other scientists cited those articles, and Younan Xia and Jean-Luc Brédas – both GRA Eminent Scholars at Georgia Tech – rate in the Top 100 researchers in their fields. Thomson Reuters ScienceWatch, which analyzes scientists’ research performance, listed Xia at number four in materials science and number 35 among chemists; Brédas was ranked number 84 on the materials science list.

5 | Four GRA VentureLab start-ups share Venture Atlanta spotlight

Looking to connect investors with the most promising new technology enterprises, Venture Atlanta selected four GRA VentureLab companies to showcase at its 2012 event. The finalists: Pindrop Security, whose technology detects phone fraud; Lumense, which develops chemical and biological sensors; LiquidText, which offers touch-based tools to manipulate electronic documents; and Sytheros Communications, creator of wireless sensor networks to monitor environmental data.

6 | Esteemed society welcomes three GRA Eminent Scholars as Fellows

Major contributions to science earned three GRA Eminent Scholars appointments as 2012 Fellows of the American Association for the Advancement of Science, the world's largest general scientific society. Chosen by their peers, the new Fellows are Xiaodong Cheng of Emory University; Peng George Wang of Georgia State University; and Eberhard Voit of the Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory.

7 | Southeast BIO showcases GRA VentureLab companies

The prestigious showcase at the 2012 Southeast BIO Investor Forum included four GRA VentureLab companies: NeurOP, developer of medicines to treat central nervous system disorders; REACH Health, producer of telemedicine systems for acute care; NeuroTrack Technologies, creator of tools to diagnose Alzheimer's Disease early; and Hypercell Technologies, developer of animal health applications.

8 | Georgia plays host to nation's science and technology strategists

GRA was the key catalyst for bringing the nation's premier event for technology-based economic development to Georgia in 2012. Several hundred entrepreneurs, academics and economic development experts convened in October at the annual conference of the State Science and Technology Institute (SSTI). Calling Georgia "an excellent backdrop" for the conference, SSTI President Dan Berglund praised the state's distinct partnerships and "vibrant technology community." Georgia Tech and INVEST Atlanta co-hosted the event.



9 | Intel seals its approval of Georgia company's 'groundbreaking' technology

The coveted Intel Innovation Award for healthcare technology was bestowed in December to GRA VentureLab graduate CardioMEMS, which develops wireless devices to monitor health conditions inside the body. Intel Americas Director Dan Rivera said the selection of CardioMEMS reflects its "groundbreaking technology and novel use of health IT to reduce the burden on our healthcare system."

10 | Prominent scientific organization honors GRA Eminent Scholar

Yunan Xia's career accomplishments in nanomedicine were celebrated by the American Chemical Society, which presented the GRA Eminent Scholar with top honors in materials chemistry. With more than 164,000 members, ACS is the world's largest specialty scientific society. Xia joined Georgia Tech in 2012. (See story on page 11.)

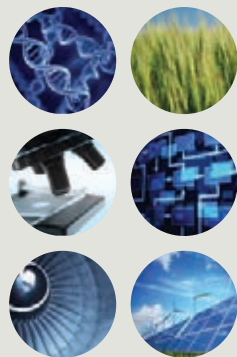
1 ORGANIZATION that helps ignite multiple chain reactions

1. GRA recruits the world's top scientists and invests in technology to grow university R&D capacity.

2. University researchers advance science. They discover and invent.

3. GRA helps shape and seed companies around the most promising discoveries.

4. New companies are launched, new high-value jobs are created ...



... and the world is
better served.



The Georgia Research Alliance drives the state's strategy to develop a technology-rich economy. To date, GRA has leveraged \$565 million of state funding into \$2.6 billion in direct federal and private investment. That's a return of almost \$5 for every \$1 invested.

GRA'S EFFORTS HAVE HELPED:

- launch more than 300 companies
- create 6,000 highly skilled science and technology jobs in Georgia
- develop technologies to improve the health and well being of people everywhere

HOW GRA IS FUNDED:

- Public funding (through state of Georgia appropriations) is invested directly into core programs, such as GRA Eminent Scholars® and GRA VentureLab.
- Private funding (from individuals, companies, foundations and partner universities) supports GRA program management. GRA operates with a lean staff and low overhead to maximize return on investment in its programs.

THANKS TO OUR GENEROUS SUPPORTERS

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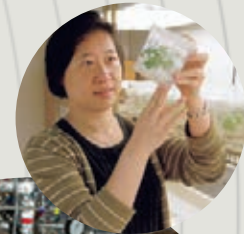
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