Innovative new technologies for the detection and treatment of cancer

Michael Hagearty
Institute Communications and Public Affairs

Last month, Georgia Tech and Emory University announced a new fund for investigating novel treatments to target and control cancer, adding a new thread to the research ties between the two institutions.

The initiative, known as the Georgia Tech-Emory Fund for Innovative Cancer Technologies, will provide seed grants for development of any type of new technology pertinent to cancer detection, evaluation and control.

“The goal is to encourage and assist investigators at Georgia Tech and the Winship Cancer Institute at Emory University to develop innovative new technologies for the detection and treatment of cancer,” said Al Merrill, a professor in the School of Biology and chair of the Georgia Tech Cancer Research Council. "We hope this will stimulate faculty who might have a new technology concept or capability to explore its potential usefulness to cancer control.”

Merrill said different levels of awards exist. For example, investigators — either alone or with a collaborator at Emory — can apply for grants to generate data that can be used to secure future grants.

"These are intended to be seed funds to get new ideas off the ground and generate preliminary data for grant applications that would be for larger grants taken to external funding agencies,” Merrill said.

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The researchers, Assistant Professor Alex Kuzmich and graduate student Dmitry Matsukevich — both from the School of Physics — report transferring atomic state information from two different clouds of rubidium atoms to a single photon. In the photo, information about the spatial states of the atom clouds was represented as vertical or horizontal optical polarization.

A really big issue in quantum information systems today is distributed quantum networks. For that, you must be able to convert quantum bits of information based on matter into photons,” Kuzmich said. “This is the first step, one building block. What we have done is create a quantum network node, and now the next step is to create a second quantum network node and connect them.”

Quantum bits, or qubits, are very different from the bits in conventional computing. Unlike conventional bits that exist in either a 0 or 1 state, qubits can simultaneously exist in both states. Qubits can also interact with other qubits, their properties "entangled" in ways unique to quantum systems. These odd properties mean quantum computers could provide dramatic advantages over conventional systems in certain types of computation that are difficult for conventional computers.

The approach taken by Kuzmich and Matsukevich begins with two clouds of rubidium atoms, each

Qubits, page 2

Converting qubits: Physicists take first step for quantum networking

John Toon
Research News

A team of physicists at Georgia Tech has taken a significant step toward the development of quantum communications systems by successfully transferring quantum information from two different groups of atoms onto a single photon.

The work, reported in the October 22 issue of the Journal Science, represents a "building block" that could lead to development of large-scale quantum networks. Sponsored by the Research Corporation and NASA, the work is believed to be the first to demonstrate transfer of quantum information from matter to light.

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Qubits continued, page 2

Survey to track user experiences with electronic voting machines

Sean Selman
Institute Communications and Public Affairs

Researchers at Georgia Tech have developed a survey to measure the public's experiences and satisfaction with voting, particularly among those who use electronic voting machines.

The survey — being conducted online and through other means by investigators in Georgia Tech's Center for Assistive Technology and Environmental Access (CATEA) — also measures how accessible voting information is to the public before they vote.

"We've put out a new product for the voting public to use, electronic voting machines," said CATEA Associate Director Rob Bingham-Roy. "This year is the year the devices have been out in the field, so we’re interested in what the public is actually experiencing when they encounter these devices, both in the disabled community and among John Q. Public.”

Roy stresses that this not a strictly scientific survey; the actual term for it is a self-selecting sampling technique. Its purpose is to measure user experiences in the field. The responses from the public will be used to shape future research proposals that study electronic voting machines and how they perform.

"We hope to take the responses, analyze the data, and then communicate the findings to the manufacturers, to Georgia's Secretary of State, and to others so that they can get a sense of what users are experiencing in the field," Roy said.

Mimi Kessler, project director for CATEA's Information Technology Technical Assistance and Training Center (ITATC), said this survey identifies the barriers voters might

Voting continued, page 3

Students break for annual rite of October

Though you wouldn't know it by the weather, the holidays have arrived. To celebrate the season, the College of Computing held its annual pumpkin carving contest last week. Above, graduate students Khai Truong and Heather Richter work on their project, carving an aquatic life scene.

W W W. W H I S T L E. G A T E T H. E D U
Multidisciplinary center to help businesses stay ahead of change

Negan McRainey
Institute Communications and Public Affairs

In business markets driven by constant technological and commercial change, successful companies and industries must ceaselessly reinvent themselves. But rather than reacting to change, businesses can anticipate and seize advantage from technology and industry shifts to build effective and innovative business models, shared by companies large and small.

Tennenbaum Institute will address both private and public sector enterprises in areas such as aerospace, automotive, banking, computing, defense, education, health care, non-profits, pharmaceuticals, retail, telecommunications and transportation.

As a long-time veteran of Wall Street, Michael Tennenbaum has helped numerous ailing companies back from the brink of a crisis. Tennenbaum primarily invests in companies that are in desperate need of change, and he saw a need for a different approach to enterprise transformation — a need that a multidisciplinary initiative like the Tennenbaum Institute could fill.

"I think it’s going to be a big success. It’s a strong idea, and it’s housed in a good spot," Tennenbaum said. "I think that education has gotten so specialized that there’s a big opportunity to build more knowledge by combining different specialties, rather than just to keep digging down deeper into one specialty."

The Tennenbaum Institute and its members will work together to research the interdisciplinary nature of enterprise transformation, identify and evaluate the best practices for accomplishing transformation and disseminate knowledge through publications (hardcopy and online), meetings (workshops and forums), education (graduate and executive) and outreach (extension services).

"The Tennenbaum Institute represents an opportunity for Georgia Tech to excel at multidisciplinary research and education in its broadest sense and consequently impact our understanding of major economic and social issues as well as contribute to these issues being addressed," said William Rouse, executive director of the Tennenbaum Institute and the H. Milton and Carolyn J. Stewart chair of the School of Industrial and Systems Engineering.

"Our job is not necessarily to solve a business or organization’s problems today," he said. "Our job is to anticipate its emerging problems in a five year or so time horizon and to research the best ways of understanding and addressing those problems.

Dollar General Corp. will be the Institute’s first corporate member and will bring its issues, concerns, knowledge and skills to the Tennenbaum Institute’s exchange and debate.

From left, Michael Tennenbaum, Executive Director Bill Rouse and David Perdue, CEO of the Institute’s first corporate partner, Dollar General Corp.

Multidisciplinary center to help businesses stay ahead of change

Alex Kuzmich (left) and Dzmitry Matsukevich operate optical equipment used to transfer information from two different groups of atoms onto a single photon.
TEAM Buzz volunteers go to work

On Oct. 23, nearly one thousand volunteers turned out to lend a hand on 40 projects as part of TEAM Buzz, Georgia Tech’s annual service day. Here, students work at Project Open Hand, which prepares and delivers meals to home-bound, people with symptomatic HIV and AIDS or critically ill people under the age of 60.

For more information about the event, visit www.teambuzz.org.

Voting, cont’d from page 1

encounter with an electronic voting machine and their overall satisfaction with voting and casting a ballot.

“We also want to know what barriers have been removed, particularly for people with disabilities,” Kessler said. “Many of them have been looking forward to electronic voting, which would allow them to vote without assistance and with complete privacy for the first time in history.”

“We are also interested in the accessibility of voter information available to the public prior to the election, which might help them make informed decisions,” Kessler said.

She said that one impetus for the survey was the amount of public discussion on electronic voting, not only at the political level but also in the information technology community.

Evaluating electronic voting

The survey consists of four categories — voting, barriers to voting, satisfaction with voting experience and information about survey participants — and takes about 10 minutes to complete. To participate, visit www.gatech.edu/votesurvey.

The survey is designed to measure a participant’s experience since January 2004 and will collect information about all types of elections, including local, runoff, general and primaries.

Additionally, users may take the survey by phone, or request a paper copy of the survey by contacting Research Associate Robert Roy at 894-1412, or by e-mailing rob.roy@cteo.org. For TTY service, call toll-free 1-866-948-8282.

The November 2 general election will be the first time many voters use electronic ballot machines.

“There are real concerns about electronic voting machines and their usability, about the vulnerability of machines to hacking, and whether there is any kind of audit trail for votes cast,” she said.

“These concerns have merit, but we need to ensure that the progress made toward independent voting for people with disabilities does not take a step backward.”

“The manufacturers have gone to great lengths to test the machines particularly with individuals with disabilities,” she added. “So we just want to create an opportunity for everyone to have a place to put their comments, both positive and negative, about their voting experiences.”

IN BRIEF:

AWPL cited as industry’s ‘Educator of the Year’

The College of Architecture’s Advanced Wood Products Laboratory (AWPL) has received the 2004 Educator of the Year Award, given annually by the Woodworking Machinery Industry Association (WMIA). AWPL Director Karl Brohammer accepted the award at a banquet last month in Bar Harbor, Maine.

In his remarks, committee chair John Henderson applauded the way AWPL “serves to focus national attention to the secondary wood products industry in Georgia as a national wood products industrial hub.

Its mission is to move the production of finished products in the United States using wood and wood composite materials into an internationally competitive position,” he continued.

“The three components of this mission are education and training, research and development, and demonstration.”

EDI to help Georgia companies hurt by unemployment

The U.S. Economic Development Administration has awarded $400,000 to Georgia Tech’s Economic Development Institute (EDI) to provide services to manufacturing companies in areas of Georgia that have been hard hit by high unemployment and falling wages.

The services will be available to companies in Georgia counties and communities that the Economic Development Administration has designated as “distressed.”

The funds will be used to support a broad range of projects, including those designed to help companies become more competitive, meet energy or environmental management goals or develop new products and processes.

The funds will also allow representatives of companies in the affected areas to attend EDI courses at a reduced cost – or at no charge.

“These Economic Development Administration funds will allow Georgia Tech to expand its outreach to companies in areas of our state that have been severely impacted by the economic downturn,” said Larry Alford, manager of manufacturing services at EDI. “Our goal is to help companies become more innovative, productive and competitive. Using these new funds, we expect to reach at least 10 percent of manufacturers in eligible counties.”

The EDI grant funds can be used to help fund projects that will be completed by January 31, 2005. For more information, visit www.edi.gatech.edu/eda. Call 1-888-272-2104.

WLC awards ‘Women of Distinction’

The 2004 Women’s Leadership Conference honored its “Women of Distinction” with awards for: Outstanding Alumna: Lura O’Connor Hodgdon; Outstanding Faculty Member: Sue Rosser (Ivan Allen College); Outstanding Staff Member: Dana Hartley (Earth and Atmospheric Sciences); Outstanding Graduate Student: Jennifer Harper Ogle (Chemical Engineering); and Outstanding Undergraduate Student: Jennifer Melynn Smith (Industrial Engineering).
**C A M P U S   E V E N T S**

**Arts & Culture**

**Nov. 12-13**
The Ferst Center for the Arts welcomes contemporary jazz ensemble Fourplay for two performances. For tickets, call 894-9600 or visit www.ferstcenter.org.

**Nov. 3-6 & 10-13**
DramaTech presents its fall production, "Picasso at the Lapin Agile," written by Steve Martin, at 8 p.m. in the Dull Theater. For more information and to reserve tickets, visit www.dramatech.org.

**Brown Bags/Conferences/Lectures**

**Nov. 4**
The Georgia Tech Business Network (GTBN) hosts its 2004 Telecom Forum, discussing future challenges and opportunities with captains of the telecommunications industry, at 6 p.m. in GCATT. For more information or to register, visit www.gtbn.org.

**Nov. 4**
The GTISC Distinguished Lecture Series welcomes Malcolm Swinbanks, chief scientist for Vibration and Sound Solutions Ltd., on "From Mathematics to High-Speed Boats: A Shock to the System," at 3:30 p.m. in the Van Lear Auditorium.

**Nov. 8**
The School of Aerospace Engineering’s Distinguished Lecture Series welcomes NASA Associate Administrator J. Victor Lebeau, on "NASA Aeronautics in the 21st Century" at 11 a.m. in the Clary Theater. For more information, e-mail connie.iris@hrscospace.gatech.edu.

**Nov. 10**
The School of Psychology’s fall colloquium series welcomes Southern Methodist University Associate Professor Don VanderWalle on "Management Talent: Born or Made? A Social Cognitive Theory of Why the Answer Matters," at 3 p.m. in room 250, J.S. Coon Building.

**Nov. 10**
The School of Mechanical Engineering’s Woodruff Colloquium series welcomes Kenneth Bryden, associate professor of mechanical engineering at Iowa State University, on "Information Engineering: The Bridge Between Analysis and Engineering Decision Making," at 3 p.m. in room 114, MaRC. For more information, call 894-8412.

**Nov. 12**
The College of Computing’s Cognitive Science Colloquium welcomes Emory University Assistant Professor Phillip Wolff on "Causal Categories in Cognition and Language," at 2 p.m. in the MaRC Auditorium.

**Faculty/Staff Development**

**Nov. 5**
The Office of Organizational Development hosts a brown bag on "Fall foliage and more," led by members of the Georgia Tech Landscaping Team — horticulturist Donna Chronicle, tree surgeon Robert Iorns and turf expert Eddie Vinyard — who will answer questions and discuss some of the tricks of the trade. To register, visit www.trainweb.gatech.edu/mastical.asp.

**Nov. 18**
The Center for the Enhancement of Teaching and Learning’s Faculty Development Seminar Series continues with Professor Bill Long, on "Case Teaching: Live!" at 11 a.m. in the Library’s Homer Rice Center. Lunch is provided. To register, visit www.cetl.gatech.edu.

**Nov. 18**
The Office of Sponsored Programs hosts a brown bag on “Departmental Management,” in the Research Administration Building. To reserve a seat, call 894-6944.

**Miscellaneous**

**Nov. 19**
The Georgia Tech Women’s Forum hosts a silent auction from 11:50 a.m. - 1 p.m. in the Student Center Ballroom. Proceeds benefit the GTWF Scholarship Fund.

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**APPLIANCES**

- 36-inch GE stainless steel electric cooktop. Works great. $50. Call 770-944-6240 or e-mail susan.longuepee@biology.gatech.edu.
- Whirlpool microwave hood, model NHI1302N, black-on-black, 1-1/8 cu. ft. capacity microwave, two-speed ventilation hood. Brand new, open box, $180. Call 404-756-1748 or e-mail hdi289@mail.gatech.edu.

**AUTOMOBILES**

- 1998 Saturn SL2. Manual, a/c, 113K miles, new tires, good condition. $3,100. E-mail tanner@cas.gatech.edu or call 678-494-0369.
- 1998 Toyota Celica GT, 53K miles, white, fully loaded with custom leather seats. New tires, well maintained. $9,900 neg. E-mail nicole.pampin@facilities.gatech.edu or call 404-799-9977.
- 2000 Ford Mustang coupe. Manual, V-6, black, leather, a/c, CD, power everything, dual airbags, alloy wheels. One owner, all records, 51K miles. $9,500. Call 894-0236 or e-mail stephanie.aliengtli@gt.edu.
- 2001 Honda Accord EX. Excellent condition, all records, 94,500 miles, loaded, leather, sun/moonroof, 6-disc CD changer, new brakes, $10,800. Call 770-514-4413 or e-mail cindy.penley@gt.gatech.edu.

**FURNITURE**

- Natuzzi leather sofa, rose color, hardly used. Also, a glass coffee table. Look great together. Call 404-355-3888.
- Contemporary sofa/love seat, pale yellow, all original pillows. Excellent condition. Includes Sure-Fit, chestnut color slip covers w/throw pillows; $400. Looking for quick sale. Call 385-2273.
- King headboard and metal frame, excellent condition, $75. Call 770-944-6240 or e-mail susan.longuepee@biology.gatech.edu.
- Traditional styling medium-tone wood color slip covers w/throw pillows; $400. Looking for quick sale. Call 385-2273.
- Includes gas stove and refrigerator. $8,300 OBO. Photos upon request.

**REAL ESTATE/ROOMMATES**

- 1BR/1BA condo at Peachtree and North Avenue, 4th floor of secured 20-story building, concierge, covered parking, gym, pool, large balcony, hardwood floors. Walking distance to Fox, Publix, Georgia Tech. Contact for pictures. Contact at $135,900. E-mail shooges@gmail.com.
- Fully furnished 1BR condo. See www.thewhalemover.com, all utilities paid. DSL, fitness and business center, rooftop jacuzzi and clubhouse. 24-hour concierge. $780 month plus security. E-mail omarra_kees@beltsouth.net.
- 1032/B1A house in SW Atlanta. Includes gas stove and refrigerator. Fenced back yard. 1 block from MARTA, 704 pets, smokers or drugs. $800/month, plus deposit. Call Ms. Henderson after 6 p.m. at 404-696-3542.

**SPORTS/FITNESS/RECREATION**

- Ladies golf clubs: 1-3-5 woods and 2-3PW irons, brand new Winn grips. Choice of three bags. $120. Call 894-4706 or e-mail john.dorsey@ece.gatech.edu.
- Antique trunk, early 1900s, $90.

**MISCELLANEOUS**

- 2-tier weight rack for dumbbells, 4-feet long, $80; wading pool with net, $20; small rhinestones along all edging, paid $200 asking $75. E-mail nicole.pampin@facilities.gatech.edu.
- Two friendly, social, playful 3-year-old indoor cats. One male, one female, both fixed. Up to date on shots. Cats must together, go for $40 for both. Call 770-438-0599 or e-mail sivilla@beltsouth.net.
- Gary the gray tabby cat, affectionate, gentle, cooperative, cute and playful, excellent health, all shots current. Needs loving home. E-mail marymynaker@yellowmail.com with "Gary Kitty" as subject, or call 770-641-9009.
- Free yellow jacket/wasp nest removal. Please to be used for research at Georgia Tech. Call 308-6511 or e-mail michael.goodisman@biology.gatech.edu.

The classifieds are a free service provided to members of the faculty and staff. To submit an ad, e-mail the text to classifieds@gt.gatech.edu. Due to the volume of submissions, it may take several weeks for ads to appear in print.