Compound Halts the Spread of Brain Cancer Cells

ABBY ROBINSON
RESEARCH NEWS

Using a combination of chemotherapy and radiation to treat brain tumors has improved clinical outcomes — but few patients survive more than two years after their condition is diagnosed.

The effectiveness of the treatment is hindered by how aggressively the tumor invades healthy brain tissue, which makes it difficult for the chemotherapy to reach the cancer cells and complicates surgical removal of the tumor. To address this challenge, researchers from Georgia Tech and Emory University have designed a new treatment approach that appears to stop the spread of cancer cells into normal brain tissue in animals.

The researchers treated animals that had invasive tumors by inserting a membrane pouch containing a molecule called “imipramine blue” into the animal. This treatment was followed by conventional chemotherapy with doxorubicin.

With this treatment strategy, the tumors stopped expanding into the healthy tissue, and the animals survived longer than animals treated with chemotherapy alone. “Our results show that imipramine blue stops tumor invasion into healthy tissue and enhances the efficacy of chemotherapy, which suggests that chemotherapy may be more effective when the target is stationary,” said Ravi Bellamkonda, Carol Ann and David D. Flanagan Chair in Biomedical Engineering. “These results reveal a new strategy for treating brain cancer that could improve clinical outcomes.”

In addition to Bellamkonda, collaborators on the project include Jack Arbiser, a professor in the Emory University Department of Dermatology; Daniel Brat, a professor in the Emory University Department of Pathology and Laboratory Medicine; and the paper’s lead author, Jennifer Munson, who was a bioengineering graduate student in the School of Chemical and Biomolecular Engineering when the research was conducted.

“I formulated the imipramine blue compound as a triphenylmethane dye because I knew that another triphenylmethane dye, gentian violet, exhibited anti-cancer properties,” Arbiser said. “I decided to use imipramine — a drug used to treat depression — as the starting material because I knew it could get into the brain.”

CANCER, continued on page 2

‘Rent’ Due at DramaTech this Month

ARMINA KHWAJA
COMMUNICATIONS & MARKETING

Georgia Tech’s campus is filled with integral pieces of history, one being its very own theater company, DramaTech.

The company began in 1947 and, despite periodic economic and political turmoil, has operated ever since, making it the oldest continually running theater company in Atlanta. DramaTech is located in a small theater in the rear of the Robert Fertl Center for the Arts.

All this month, DramaTech is performing the rock musical Rent, winner of the 1996 Tony Award for Best Musical, which was reincarnated as a motion picture in 2005. The script is based on Puccini’s “La Bohème” and follows a year in the life of eight friends in the late 1980s. The characters are faced with social issues while struggling to make a living in New York City and follow the tagline, “No day but today.”

The culture of DramaTech, a student-run organization, can be described as nothing short of unique, according to Melinda Gutierrez, crime prevention officer for the Georgia Tech Police Department, crime prevention classes are available to all students, faculty and staff members. The crime prevention officers will provide classes on an as-needed/ basis. To request a class, visit http://police.gatech.edu/services.

Have a Tech-related question that you’d like answered? Email it to editor@comm.gatech.edu.

RENT, continued on page 2
Campus News

Chair Named for Civil, Environmental Engineering

Reginald DesRoches has been appointed the new Karen and John Huff Chair in the School of Civil and Environmental Engineering, effective May 15.

“Without a doubt, Reggie is the very best person to lead civil and environmental engineering into the future,” said Gary S. May, dean of the College of Engineering. “He is an active researcher and highly regarded educator. Reggie has the vision, scholarship, experience, temperament and outstanding reputation in fields critical to the school that make him ideally suited and prepared to lead.”

As chair, DesRoches will oversee a school that is consistently ranked as one of the nation’s most prominent programs of its kind in both graduate and undergraduate education. “I am honored to be chosen as the next school chair, and I look forward to working with an outstanding group of students, faculty, staff and alumni,” DesRoches said. “This is an exciting time for the civil and environmental engineering profession, and I believe that our program is well positioned to lead in educating and empowering our students to solve future global challenges.”

DesRoches earned his PhD in structural engineering from the University of California at Berkeley. His primary research interests are design of buildings and critical infrastructure subjected to extreme loads, seismic risk assessment of transportation systems, and application of smart materials in seismic-resistant design and retrofit.

CANCER, continued from page 1

Because imipramine blue is hydrophobic and cannot mix with water, and the chemotherapy drug (doxorubicin) is toxic to the body’s cells, the researchers placed the compounds in membranous pouches called “liposomes” so that the drugs would actually reach the brain.

Animals received one of the following four treatments: liposomes filled with saline, liposomes filled with imipramine blue, liposomes filled with doxorubicin chemotherapy, or liposomes filled with imipramine blue followed by liposomes filled with doxorubicin chemotherapy.

All animals that received the sequential treatment of imipramine blue followed by doxorubicin chemotherapy survived for 200 days — more than 6 months — with no observable tumor mass. Of the animals treated with doxorubicin chemotherapy alone, 33 percent were alive after 200 days with a median survival time of 44 days.

Animals that received capsules filled with saline or imipramine blue — but no chemotherapy — did not survive more than 19 days.

“Our results show that the increased effectiveness of the chemotherapy treatment is not because of a synergistic toxicity between imipramine blue and doxorubicin,” Bellamkonda said. “Imipramine blue is not making the doxorubicin more toxic; it’s simply stopping the movement of the cancer cells and containing the cancer so that the chemotherapy can do a better job.”

The results of this work were published on March 28 in the journal Science Translational Medicine. In the future, the researchers are planning to test imipramine blue’s effect on other types of cancer such as prostate and breast.

CULTURE

Georgia Tech is the most easternmost university to earn the silver designation among the 2012 Bicycle Friendly University honorees.

http://bike.gatech.edu
2012 Faculty/Staff Honors Recipients

Congratulations to the following faculty and staff members who were honored at the 2012 Faculty and Staff Honors Luncheon on April 12.

Recognition of the Georgia Tech Chapter Sigma Xi Awards
Young Faculty Awards
Rupali L. Laher
ter Research Award
Chemistry and Biochemistry
Kostas T. Kontostantinidis
Environmental Engineering
Faculty Best Paper Awards
Robert A. Goldberg
Mechanical Engineering
Hang Lu
Chemical and Biomolecular Engineering
Sustained Research Award
Barbara D. Brayton
College of Engineering

Faculty Research Awards
Outstanding Doctoral Thesis Advisor
Ling Liu
Computer Science
Outstanding Achievement in Research Program Development and Support
Christopher W. Jones
Chemical and Biomolecular Engineering
Outstanding Faculty Research Author
Outstanding Faculty Leadership
Civil and Environmental Engineering

Outstanding Graduate Research Assistants
Women’s Doctoral dissertation
Computer Science
ANAK Award
T. Hugh Crawford
Literature, Communication and Culture

Administrative Service Award
Didier Contis
Information Technology
Management in Action Award
Limesco
Electrical and Computer Engineering

Faculty Award for Outreach
H. Bruce Drinkwine
Civil and Environmental Engineering

CETL Undergraduate Educator Awards
Lindsey N. Eckel
Biology
Raghav V. Pucha
Mechanical Engineering

CETL/BRF Junior Faculty Teaching Excellence Awards
A. David Webb

25-Year Service Awards
Said I. Abdel-Khalik
Chemical and Biomolecular Engineering
Terre Adair
Student Center
Cynthia A. Aeckbacher
GTRI
Ian F. Akins
Electrical and Computer Engineering
Pearl Alexander
Research Resources
Jeffrey T. Andrews
Chemical and Biomolecular Engineering
Ronald C. Arkin
Computing
Philip Auslander
Literature, Communication and Culture
Richard P. Barke
Public Policy
Ellen A. Barrett
GTRI
Willie J. Belton
Economics
Patricia D. Senese
Communications and Marketing
Kathy B. Boyd
Business Services
Daphne W. Brenner
Electrical and Computer Engineering
Tom C. Brown
GTRI
Vicki Bryan
Enterprise Innovation Institute
Barbara Christopher
Industrial and Systems Engineering
Julie M. Ciabattoni
Institutional Research and Planning
Daniel M. Craft
Facilities
Carol C. Croy
GTRI
Lucia Dieci
Mathematics
William Dunmond
City and Regional Planning
Russell Earnest
Housing
David G. Erickson
GTRI
Lee M. Evans
GTRI
Arthur D. Fisk
Psychology
Amelia R. Gambino
Communications and Marketing
Bill Halabi
Facilities
Anna L. Hawkins
Environmental Health and Safety
Amos Hayes
Facilities
Colletta R. Holmes
Information Technology
Glenn D. Hopkins
GTRI
Stanley Hughes
GTRI
William Hunt
Electrical and Computer Engineering
Jeffery A. Jenkins
GTRI
Neil W. Lance
GTRI
Andre J. Lovas
GTRI
Kevin P. Martinez
Microelectronics Research Center
James H. McClellan
Electrical and Computer Engineering
William A. Maffett
Enterprise Innovation Institute
Mark A. Mitchell
GTRI
Richard L. Moser
GTRI
Sidhar
Narasimhan
Management
Delores P. Negri
GTRI
Cheryl A. Parker
Library and Information Center
Stihle Pendleton-Parker
Enrollment Services
Ronald J. Prado
GTRI
Anna M. Race
Industrial and Systems Engineering
Samantha A. Ramos
GTRI
Pamela S. Romano
Business Services
Stefan P. Roth
GTRI
Pamela D. Rountree
Manufacturing
Ronald W.
Rousseau
Chemical and Biomolecular Engineering
Richard F. Salant
Mechanical Engineering
Thomas H. B. Sanders
Materials Science and Engineering
Ann J. Scott
Management
Purnima Sharma
Electrical and Computer Engineering
Susan P. Sipp
Athletic Association
Walter Smith
Athletic Association
Donald E.
Thompson
GTRI
Stephen A.
Thompson
GTRI
John D. Toner
Enterprise Innovation Institute
Eric F. Trevena
Architecture
Robert E.
Tschhart
GTRI
Karen L. Tucker
Professional Education
Carlos Valdes
GTRI
Donald A.
Thompson
GTRI
Steven A.
Thompson
GTRI

Faculty Honors Committee Awards
Class of 1940 W. Boone Beard Outstanding Teacher Jennifer K. Leavoy
Biology

Class of 1940 W. Howard Ector Outstanding Teacher Award Lawrence A. Bottomley
Chemistry and Biochemistry

Outstanding Service Award
Bahareh Azizi
Chemistry and Biochemistry
Tucker R. Balfour
Interactive Computing

Outstanding Undergraduate Research Mentor (Faculty) Award
Maria O. Platt
Biomedical Engineering

CETL Curriculum Awards
Curriculum Innovation Award
Wendy C. Nesseltritt
Biomedical Engineering
Innovation in Curricular Education Award
Cara L. Gormally
Biology

Eichholz Faculty Teaching Award
Douglas Flanning
History, Technology and Society
Colin Potts
Interactive Computing

Steven A. Denning Faculty Award for Global Engagement
Raquel L. Lieberman
Chemical and Biomolecular Engineering

Academic Advisor Awards
Outstanding Undergraduate Academic Advising Staff Margaret J. Sapp
Georgia Tech Savannah

Outstanding Undergraduate Academic Advising Faculty
J. C. Reilly
Literature, Communication and Culture

Faculty Honors Committee Awards
Class of 1940 W. Boone Beard Outstanding Teacher Jennifer K. Leavoy
Biology

Class of 1940 W. Howard Ector Outstanding Teacher Award Lawrence A. Bottomley
Chemistry and Biochemistry

Outstanding Service Award
Bahareh Azizi
Chemistry and Biochemistry
Tucker R. Balfour
Interactive Computing

Outstanding Undergraduate Research Mentor (Faculty) Award
 Maria O. Platt
 Biomedical Engineering

MISCELLANEOUS
April 20
Georgia Tech faculty, staff, and fans are invited to Tech’s free Friday Night on the Flats Spring Game. The fun begins at 5:30 p.m. at Gagey Plaza. Pre-game concert begins at 6 p.m. Stadium gates open at 7 p.m., with kickoff at 7:45 p.m. A post-game fireworks show will take place at 9:30 p.m., and a post-game concert will begin at 9:45 p.m.

www.tinyt.com/cbhb6d

Tech’s annual Earth Day Celebration is free and open to the public, and features 70 exhibitors, eco-friendly giveaways, recycling opportunities, a clothing swap, an office supply swap, live music, a green market, free organic popcorn and more. The event will run from 10 a.m. to 3 p.m. on Tech Walk.
http://earthday.gatech.edu/calendar.

CLASSIFIEDS

AUTOMOBILE

1991 Harley-Davidson XLH180 Sportster motorcycle; 28,300 miles, five-speed, ball drive, black. One owner. $3,000. Call 404-894-9599 or email mcwilsoe@live.com.

2004 BMW Z4 2.5i five-speed manual, silver with black convertible top; 70K, good condition and dealer serviced. New tires, powerful engine is a blast to drive. $12,500 (negotiable). Email greg.romanticos@gt.edu or call 404-683-3791.

2001 Silver Nissan Sentra GXE. Excellent condition, 1.8 L engine, 120K miles, manual transmission, 21 mpg city/28 highway, AC, 5-speed CD stereo. $3,600. Single owner. Reliable transportation to campus. Email: djurenin@gmail.com or call 404-492-6350.

REAL ESTATE/ROOMMATES
2BR/2BA condo for rent. Piedmont Park is your front yard. Private entrance, two reserved parking spaces just steps from your front door - Five miles to campus, $1,450/month. Call 770-331-7497 or email mlkay283@bellsouth.net.


www.whistle.gatech.edu
Register for 2012-13 Parking Permit by June 15

Registration is an opportunity for current students, faculty and staff to select their preferred parking areas for 2012-13. All customers should register for parking permits, including those who want to keep their current permits.

Registration is currently open for annual and carpool permits. All other permits will be available on July 30. The cost of an annual permit is $690 and a carpool permit is $590. For more information, visit www.pts.gatech.edu

Review Ethics Policy by April 30

Faculty, researchers, staff and student employees are asked to confirm their understanding of the Board of Regents’ (BOR) ethics policy by April 30.

To do so, visit the website provided below. (This confirmation is required, as it is a condition of employment.) The website also provides links to the BOR policy and an online tutorial to help employees understand the policy. www.ohr.gatech.edu/ethics

Julie Hawkins: Event Planner and Troubleshooter

AMELIA PAVLIK COMMUNICATIONS & MARKETING

Imagine that you’re hosting a breakfast event for more than 50 people, and you’ve shown up to the venue to discover that the power is out.

For Julie Hawkins, this wasn’t a hypothetical situation—it was one of the many on-the-job challenges she’s faced.

“I was in Rome, Ga., to host a breakfast event promoting Campaign Georgia Tech,” said Hawkins, who is stewardship event coordinator for the Office of Development. “When I arrived at the venue the morning of the event, I discovered that a drunk driver had hit a power pole nearby, which took out the electricity. Initially, I had a moment of panic.”

Then her focus shifted to creating a quality event, in light of the situation. For example, since there were no refreshments, she asked others to pick up coffee and breakfast food from Starbucks and area grocery stores.

Thanks to good weather, she was able to move the event from inside the venue to an outside area, which the guests enjoyed more than being in the original space.

“About 75 percent of my job is trouble-shooting and solving problems before anyone discovers them,” Hawkins said. “This actually ended up being one of the best campaign events so far.”

Recently, The Whistle had a chance to learn more about Hawkins and her time at Tech.

Did you always want to work in event planning?

I guess it was destiny, given I was basically the social chair of my preschool class. But no, I didn’t expect to end up in this field. In college, I wanted to go into broadcast journalism, which led to an internship working in the promotions department at a radio station. After college, I worked as a marketing assistant at a concert venue and had an opportunity to organize a fundraising event for a musical group. I loved being able to put my organizational skills to good use.

What is an average day in your job like?

While the campaign is on, I have two types of days: office and on-the-road. When I’m in the office, I spend time on tasks such as prepping schedules and materials, gathering RSVPs and putting together presentation materials for people who will be attending the events, including Dr. Peterson and John Brock, alumni, campaign chair and CEO of Coca-Cola Enterprises Inc. When I’m on the road, I’m usually doing things such as troubleshooting with the venue.

What are three things that you always take with you when traveling to events?

I have a big blue case that contains everything I need for a mini office—including Sharpies and tape, which can fix almost anything. I also take a first aid kit and pictures of my dogs.

Where was your favorite campaign event location?

I really enjoyed San Juan, Puerto Rico, where we hosted a dinner for 130 people. I was surprised at how many people in that area had a connection to Tech.

How will your job evolve as the campaign winds down?

I will travel less and my focus will shift to planning more on-campus events for donors.

Where is your favorite place to have lunch?

I like to go to Ms. Ruthie’s Deli in the Student Center and get a veggie wrap. With all of the traveling and eating out I do, it’s nice to be able to get something to eat that is familiar and always tastes the same.

If you were stranded on an island, what is the one book you would want with you?

“Jane Eyre” by Charlotte Bronte. This is my go-to book whenever I need an old favorite.

Tell us something about yourself that others might not know.

I love to run half marathons. Also, my family is a “Tech family.” My dad, Pete Dawkins, is a Dyson professor, and my brother, Arne, is a student.

For Julie Hawkins, this wasn’t a hypothetical situation—it was one of the many on-the-job challenges she’s faced.