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# THE WHISTLE

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THE GEORGIA INSTITUTE OF TECHNOLOGY

## Marcus Foundation takes the lead in supporting nanotechnology research

*A \$15 million commitment from local businessman and philanthropist*

*Dan Treadaway  
 Institute Communications  
 and Public Affairs*

The man who gave Atlanta the largest aquarium in the world has helped secure an eight-figure commitment for Georgia Tech's Nanotechnology Research Center Building (NRCB).

Bernie Marcus, the civic leader and philanthropist whose vision and investment made the Georgia Aquarium a reality, is also founder of the Marcus Foundation and serves as chairman of the board. The Marcus Foundation recently announced a \$15 million commitment for the Nanotechnology Research Center Building. The commitment was triggered by the state of Georgia's recent allocation of \$38 million for the facility, which completes the state's total project commitment of \$45 million.

"We are delighted to make this commitment for Georgia Tech's Nanotechnology Research Center Building," said Marcus. "Nanotechnology holds such amazing promise for truly revolutionizing many facets of our lives, specifically in medicine, while having the added benefit of economic development. The discoveries that will be possible as a result will prove the wisdom of this investment. I am pleased to partner with the state and Georgia Tech in making this research facility a reality."

Marcus, who was the featured



Bernie Marcus, delivering the spring commencement address last month.

speaker at Georgia Tech's Spring Commencement exercises, has focused the Foundation's philanthropic efforts on medicine, Jewish causes, free enterprise and children.

"As a son of Russian emigrants to our country, Bernie Marcus represents one of America's great stories of what determination, hard work and intelligence can accomplish in our great country," said President Wayne Clough. "In spite of setbacks, he realized his dream late in life as a businessman in creating The Home Depot and leading it to a level of success undreamed of. In retirement, he once again is demonstrating his passion for life through his good works and philanthropy. He inspired our graduates at our May commencement with his insights, an address given in the shadow of the remarkable Georgia Aquarium, built because of his support and vision.

"This complex man, however, also is committed to helping conquer the diseases that plague mankind," Clough continued, "and we are proud to announce the grant of \$15 million from the Marcus Foundation towards Georgia Tech's Nanotechnology Research Center Building. This generous commitment will be used to build this unique facility that will open the doors for studies that focus on using breakthroughs from nanotechnology to fight cancer and other diseases."

The Nanotechnology Research Center Building will have 30,000 square feet of cleanroom research space, one of the nation's largest and an essential element of nanotechnology research.

The potential of nanotechnology is unprecedented because it will produce materials 10 times stronger than steel but much lighter in weight, digital storage units the size of sugar cubes that can hold all the information in the Library of Congress, and tiny medical devices that can detect individual cancer cells and target them with specialized treatment.

Coupled with a \$5 million commitment from the Woodruff Foundation last year, the Marcus Foundation's commitment pushes the total private funds for the project past the \$20 million mark, the minimum amount required to begin construction. The total private funds goal is \$40 million.

## Provost Chameau named president of Caltech

President Wayne Clough has announced that Jean-Lou Chameau, Georgia Tech's provost and vice president for academic affairs, has been named president of the California Institute of Technology and will be departing the Institute at the end of August.

"Jean-Lou has played an indispensable role in the evolution of Georgia Tech's stature as one of our nation's top 10 public universities," Clough said. "We are very proud of his appointment and hope to take advantage of this link between two of the nation's leading technological universities. We consider ourselves fortunate to have enjoyed the benefits of his talents for such an extraordinary length of time."

The 53-year-old Chameau has been provost and vice president for academic affairs since June 2001, after having served the previous five years as dean of the College of Engineering.

As provost, he had programmatic, strategic, and financial responsibilities for the academic and research programs of the university, including

the Georgia Tech Research Institute. In addition, his office oversaw the continuing and executive education, economic development and commercialization programs of Georgia Tech. Clough has formed a special committee to initiate an internal search for a successor.

Gary May, chair of the School of Electrical and Computer Engineering called Chameau "one of the smartest administrators on campus."

"Aside from his own research expertise and status as a Georgia Research Alliance Eminent Scholar, he has been instrumental in numerous areas, including interdisciplinary research and education, economic development, and diversity initiatives, to name a few. He has also been a personal mentor, role model and friend to me."

In addition to continuing to enhance the strengths of its core disciplines, Chameau has been instrumental in making Georgia Tech a worldwide model for interdisciplinary

*Chameau continued, page 3*

### Masters Series graduation



Associate Vice President for Human Resources Chuck Donbaugh thanks Paul Arnold, Sherman Lofton, Kassandra Hester and Chuck La Fleur for their evaluation of a common pay cycle, a presentation that signaled the completion of the group's participation in the Office of Organizational Development's Masters Series, one of Tech's key leadership development programs. At Donbaugh's request, the team spent several months assessing whether it was feasible for all employees to be on the same pay schedule.

QUOTE  
UNQUOTE

"Some of these things were poorly designed and were almost pre-ordained to fail. Just because they've been restored to their condition pre-Katrina doesn't mean they are perfectly safe."

—President Wayne Clough, the head of a National Research Council team that formed at the request of the Department of Defense in order to assess the Army Corps of Engineers' investigation of the disaster. Parts that did not fail in Hurricane Katrina, he said, could still have been weakened by the stress of last year's storms. (New York Times)

## NCAA rules that Tech may keep football records

*Upholds scholarship reduction*

*Athletic Association*

The NCAA Division I Infractions Appeals Committee has announced its decision to reverse all penalties against Georgia Tech involving the vacation of football results but uphold other penalties imposed by the NCAA Committee on Infractions last November.

The violations and penalties involve the improper certification of student-athletes due to an inadvertent misapplication of NCAA eligibility certification rules by Athletic Association and Institute staff members. The NCAA Committee on Infractions announced its decision to place Georgia Tech on two years probation, vacate results in several sports and add additional scholarship reductions to those already self-imposed by the Institute. In January, Georgia Tech appealed the severity of the penalties.

Georgia Tech originally self-imposed penalties to reduce the

number of initial counters in the sport of football by six for the 2005-06 and 2006-07 academic years. The Committee on Infractions imposed additional penalties limiting the Institute to 79 overall counters for the 2006-07 and 2007-08 academic years, which Georgia Tech appealed. The Infractions Appeals Committee upheld these additional scholarship limitations.

"We appreciate the consideration Georgia Tech received from the NCAA Division I Infractions Appeals Committee, and we accept its findings," said President Wayne Clough. "We take certification of athletic eligibility seriously and have strengthened the system to help ensure that we are fully compliant in the future."

"Additionally, we are particularly appreciative that the committee determined that the football team's records should stand. I am personally pleased that we are now able to close this issue and put it behind us."

Paul Griffin, the senior associate director of Athletics who has managed Tech's NCAA appeal, said, "Although the decision of the Infractions Appeals Committee was

### "The Good Word with Dan Radakovich"

The Director of Athletics has initiated a series of letters aimed at fans, friends and supporters of Georgia Tech athletics. Current and archived installments of "The Good Word" can be accessed at [www.ramblinwreck.com](http://www.ramblinwreck.com).

not exactly what we had hoped, we accept the Committee's decision, and we can now put this behind us and move forward."

Dan Radakovich, Tech's director of Athletics since April 1 of this year, said, "Georgia Tech has a tradition of integrity and academic excellence that we are committed to upholding and enhancing."

"We're confident that the Institute and the Athletic Association now have the structures, procedures and personnel in place to effectively manage this process. In particular, the addition of experienced staff members in the positions of director of Compliance and associate director of Athletics for Academic Services have fortified our operations."

## Tech develops self-training gene prediction program

*David Terraso  
Institute Communications  
and Public Affairs*

Researchers at Georgia Tech have developed the first ever computer program capable of training itself to predict genes in genomic DNA sequences of eukaryotic organisms such as animals, plants and fungi. The software program, GeneMark.hmm-ES, may help researchers save a year or more in a genome sequencing and interpretation project. The program is a new addition to the family of GeneMark gene prediction programs developed at Georgia Tech and is freely available to academic researchers.

Currently, there are more than 600 ongoing genome sequencing projects of eukaryotes that carry nuclei within cells. Decoding the DNA sequences that come out from even a single genome project is an enormous task. Still, unraveling the genetic code of living creatures allows scientists to understand the details of the cellular machinery. This knowledge helps generate ideas for a variety of further research directions. Understanding the specific features of individual genomes may lead to the development of personalized medicine, while comparing the genomes from related species can help scientists trace their evolution.

"The genomic sequence is a foundation and blueprint of molecular cellular networks and processes that needs to be reconstructed to

understand how the cell works. These networks are specific for each organism, so once you know the list of the genes, you start to assemble all the parts into a picture," said Mark Borodovsky, Regents' professor in the School of Biology and the Department of Biomedical Engineering, and director of the Center for Bioinformatics and Computational Genomics.

Borodovsky developed the first version of GeneMark in 1993. In 1995, this program was used by Craig Ventor and his Institute for Genomic Research to find genes in the first ever completely sequenced genomes of the organisms representing the two prokaryotic domains of life, bacteria and archaea.

A self-training version of the gene finding program for prokaryotic genomes was created by Borodovsky's group in 2001. Since 1998, it has been frequently used for gene finding in eukaryotes, particularly in plant genomes such as rice. By now, use of the GeneMark programs by the researchers around the globe was registered for discoveries of more than 400,000 genes in various genomes, from viruses and bacteria to rice and humans.

Now Borodovsky and his team at Tech have taken a leap forward and built a program that can train itself to make accurate gene prediction in the numerous newly sequenced genomes of eukaryotes. The program uses established general principles of genetic code organization — adjusted

to the general compositional features of a particular genome — to help identify at least a few regions of the anonymous genome that contain protein coding sequences. Once they have the initial predictions, they separate the coding and non-coding sequences. This clusterization allows scientists to apply machine-learning techniques to refine the parameters of the recognition algorithm to the specific patterns found in the newly identified protein-coding sequences. A researcher then repeats this prediction and training step, each time detecting a larger set of true coding sequences that are used to further improve the model employed in statistical pattern recognition. The last run, when no innovation is reached at the prediction step, produces the desirable final set of predicted genes.

Because the self-training method uses established general principles of eukaryotic gene organization to reconstruct the species specific nucleotide sequence patterns, it speeds things up, since scientists don't have to wait for an outside expert to develop a sequence large enough to use as a training set. That can shave a year or more off a sequencing project. With the self-training method, the program does the work itself.

For more information...

**Borodovsky Group**  
[opal.biology.gatech.edu](http://opal.biology.gatech.edu)

**Georgia Tech**



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Institute Communications and Public Affairs  
Wardlaw Center  
177 North Avenue  
Atlanta, Georgia 30332-0181

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On May 23, Georgia Tech honored 75 faculty and staff during the annual Retirement Dinner. The Whistle extends its appreciation to each of the retirees for their tireless effort in the name of Georgia Tech and wishes them well in their future endeavors.

1969–2006  
**Yvette L. McDonald**  
Management

1970–2005  
**Russ Callen Jr.**  
Electrical and Computer Engineering

1971–2006  
**Thomas P. Barnwell III**  
Electrical and Computer Engineering

1971–2005  
**William T. Rhodes**  
Electrical and Computer Engineering

1971–2005  
**Richard D. Teach**  
Management

1972–2006  
**Richard A. Duke**  
Mathematics

1972–2006  
**Robert N. Trebits**  
GTRI

1973–2006  
**J. Narl Davidson**  
Engineering

1973–2006  
**E. Larry Keating**  
Architecture

1975–2005  
**John J. Havick**  
Public Policy

1975–2005  
**L. Kathryn Kinard**  
Bioengineering and Bioscience

1975–2005  
**Mary C. Trauner**  
Information Technology

1976–2006  
**Alice R. Jackson**  
Facilities

1976–2006  
**Pamela A. Luther**  
Bioengineering and Bioscience

1976–2006  
**Sara M. Putzell**  
Literature, Communication, and Culture

1976–2005  
**Gerald E. Smith**  
Campus Recreation Center

1976–2005  
**James A. Thomas**  
Security and Police

1977–2006  
**James D. Higgins**  
GTRI

1977–2006  
**Kirk D. McQueen**  
Campus Recreation Center

1977–2006  
**Andrew R. Muzio**  
GTRI

1977–2006  
**Alan T. Raville**  
Facilities

1977–2006  
**John T. Scoville**  
GTRI

1977–2006  
**Mark G. White**  
Chemical and Biomolecular Engineering

1978–2006  
**William A. Clark**  
GTRI

1978–2006  
**Derek M. Cunnold**  
Earth and Atmospheric Sciences

1978–2005  
**Ricky L. Moore**  
GTRI

1978–2006  
**George A. Smedberg Jr.**  
Information Technology

1979–2005  
**William W. M. Butler**  
GTRI

1979–2005  
**Ekkehart O. Rausch**  
GTRI

1979–2005  
**Garland K. Stewart**  
Chemistry and Biochemistry

1979–2005  
**Gayle H. Warren**  
Georgia Tech Enterprise Innovation Institute

1980–2006  
**Toby F. Block**  
Chemistry and Biochemistry

1980–2005  
**Michael J. Brandon**  
Information Technology

1980–2006  
**Cassie Jean Fuller**  
Human Resources

1981–2006  
**Hans B. Püttgen**  
Electrical and Computer Engineering

1981–2006  
**Steven M. Sharpe**  
GTRI

1981–2005  
**Charles B. Sheets**  
GTRI

1982–2005  
**Kathy F. Hardwick**  
Physics

1982–2005  
**Revonda B. Mullis**  
Aerospace Engineering

1983–2006  
**Gregory H. Heagerty**  
GTRI

1983–2006  
**Linda C. Hodge**  
Information Technology

1983–2006  
**Brian J. Lindberg**  
Sponsored Programs

1985–2005  
**Linda D. Craddock**  
Housing

1985–2005  
**James F. Morgan**  
Health Services

1985–2006  
**Betsy Williams**  
Human Resources

1985–2006  
**Frederick Leigh Winn**  
Budget Planning and Administration

1986–2005  
**Mary J. Davis**  
Biomedical Engineering

1986–2006  
**Loren H. Hill**  
Procurement Services

1987–2005  
**L. Suzanne Renaud**  
GTRI

1988–2006  
**Donna E. Brown**  
Bioengineering and Bioscience

1988–2005  
**Michael W. M. Jenkins**  
Aerospace Engineering



Charles Duffy was among those recognized at the dinner.

1988–2006  
**Georgia L. Simons**  
Information Technology

1988–2006  
**Raymond Warner**  
Housing

1989–2006  
**Sarah S. Andrews**  
GTRI

1989–2005  
**W. Jack Lackey**  
Mechanical Engineering

1989–2006  
**Terry M. Parrott**  
Engineering

1990–2005  
**Mary Louise Barnett**  
Capital Planning and Space Management

1990–2006  
**Grace B. Blalock**  
Career Services

1990–2006  
**Gwendolyn Brown**  
Industrial and Systems Engineering

1990–2006  
**Peter Freeman**  
Computing

1990–2005  
**Marie V. McVay**  
Institute Communications and Public Affairs

1991–2005  
**Anthony G. Gilmer**  
Information Technology

1991–2006  
**Joan C. Morton**  
Computing

1991–2006  
**Tongfan Sun**  
Chemical and Biochemical Engineering

1992–2005  
**Jon H. Fraker**  
Facilities

1993–2006  
**Lucy A. Grosko**  
Library

1994–2006  
**Charles T. Duffy**  
Grants and Contracts Accounting

1994–2006  
**Lorenzo Ridenhour**  
Housing

1994–2006  
**RoseMary H. Wells**  
Student Affairs

1995–2005  
**Hugo R. Alfaro**  
Facilities

1995–2006  
**Martha R. Godfrey**  
Facilities

1995–2005  
**Carlton S. Willacey**  
Housing

1996–2006  
**Mahmoud M. Azari**  
Civil and Environmental Engineering

1996–2006  
**Jane S. Boyd**  
Student Financial Planning and Services

1996–2006  
**Carolyn H. Cole**  
Center for Education Integrating Science, Mathematics, and Computing

Chameau, cont'd from page 1

activities, technology innovation, and entrepreneurship, and a catalyst for economic development. In addition, during his tenure he placed a strong focus on efforts to improve the educational experience of students, increase diversity on the campus, recruit women into engineering and science, and to foster entrepreneurship and international opportunities for faculty and students.

"As a student, professor, and administrator, I have been fortunate to be part of great institutions and work with smart colleagues and students," he said. "In my time at

Georgia Tech, I have developed a passion for working with faculty and students, for helping them create opportunities, and securing and providing the resources they need to be successful.

"I love science and technology, and playing a leadership role at creative and innovative institutions such as Georgia Tech, and now Caltech, is a dream for me. The incredible successes and escalating reputation of Georgia Tech, which is truly due to the outstanding people here, made it possible for me to be selected for this position. I thank my colleagues and friends at Georgia Tech for making my time here so memorable and worthwhile."

### Provost search committee

**William Koros** (chair), School of Chemical and Biomolecular Engineering

**Jean-Luc Bredas**, School of Chemistry and Biochemistry

**Steve Cross**, Georgia Tech Research Institute

**Reginald DesRoches**, School of Civil and Environmental Engineering

**Ellen Dunham-Jones**, College of Architecture

**Alison Graab**, undergraduate student

**Mitch Keller**, graduate student

**Richard Lipton**, College of Computing

**William Long**, School of International Affairs

**William Schafer**, Office of Student Affairs

**Steve Swant**, Office of Budget and Planning

**Marie Thursby**, College of Management

**Dorcas Wilkinson**, Office of Development

The committee invites nominations to [lynn.durham@carnegie.gatech.edu](mailto:lynn.durham@carnegie.gatech.edu).