Employees Invited to Apply to Mentoring Program

TRESHEA WADE
HUMAN RESOURCES

What do Bill Gates, Harry Potter, and Oprah Winfrey have in common? They each were greatly impacted by dynamic mentors: Warren Buffett, Professor Dumbledore, and Maya Angelou, respectively.

In response to feedback from the campus community, Georgia Tech Human Resources is launching MentorTech. Professionals Partnerships, an employee mentoring program, starting in February. Georgia Tech faculty and staff are all invited to participate in this formal mentorship program. We are seeking both mentors and mentees interested in participating. Applications are now open.

MentorTech is designed to meet a wide variety of needs for a diverse population. Mentee participants will be paired with mentors who can share experiences related to the mentee’s desired developmental goals.

Fast facts:
• The first Professional Partnerships will run February through August.
• The time commitment requires a minimum of six hours over the six months, about one hour per month, although more interaction is suggested.

Participation requirements:
• Mentors must have at least two years of service with Tech
• Mentees must have at least one year of service at Tech

Partnerships (the mentor/mentee pairs) are created along multiple dimensions, including professional experience, specific competencies, and a five-factor personality assessment.

Creating the best possible partnerships is paramount. If a good fit for your goals is not available during this application period, you will be invited to participate when we open the application process again.

Throughout the six-month partnership, mentors and mentees will have access to resources to support and enrich the professional partnership, including development opportunities and career guidance.

Are you interested in mentoring? Are you interested in being mentored? Perhaps you’re interested in both? Learn more by visiting ohr.gatech.edu/mentoring.

Applications will be accepted until Wednesday, Jan. 17.

USG Expands Tuition Assistance Benefit

MICHAEL HAGERTY
INSTITUTE COMMUNICATIONS

A modification in a University System of Georgia (USG) policy may mean less out-of-pocket costs for staff and faculty who want to go back to school.

During its November 2017 meeting, the Board of Regents voted to amend its policy for the Tuition Assistance Program (TAP), a supplemental benefit intended to encourage professional development. TAP provides a tuition waiver for full-time, benefits-eligible employees who have maintained this status for at least six months within the USG. The latest revisions allow USG employees to receive a waiver for the full tuition under TAP-eligible programs, and expands the number of academic programs eligible under the program.

A document outlining the recommended changes and prepared for the Board of Regents stated, “Professional development is important because it is a means by which employees maintain and enhance their knowledge and skills related to increasing their
EVENTS
WORKSHOPS AND TRAINING

Jan. 9
Research Issues Workshop for Campus Communicators will discuss research compliance and related topics specifically as they relate to the role of campus communications. The session takes place from 9 a.m. to 11 a.m. in the Seminar Room, Research Administration Building. Register to attend at c.gatech.edu/researchcomm

Jan. 11
Institute Communications, the Center for Teaching and Learning, the Executive Vice President of Research’s office, and Human Resources share best practices and tips on how to create a compelling nomination package for faculty and staff awards, as well as a new academic resource website. Light refreshments will be provided; feel free to bring your own lunch. The session will take place from noon to 1 p.m. in the Peachtree Room, Student Center.

Jan. 19
Graduate students and postdoctoral scholars going on the job market for faculty positions within the next year should prepare and submit their application packets in the full semester. At the Academic Job Search 102 workshop, you will investigate the academic job interview process, from the phone interview through the job talk. The workshop takes place from 9 a.m. to noon in the Peachtree Room, Student Center. Register at cit.gatech.edu

MISCELLANEOUS

Jan. 8
Classes begin for spring semester. Phase II registration also begins.

Jan. 9
Teaching assistant orientation will take place from 4:30 to 7:30 p.m. in the Peachtree Room, Student Center. c.gatech.edu

Saltafamaggio Fights Crime with Cyberforensics

GEORGIA FARMELEE
COLLEGE OF ENGINEERING

Sherlock Holmes, Hercule Poirot, Miss Marple, and Dick Tracy — all famous detectives dedicated to gathering evidence to put criminals behind bars. Add to that list an unlikely engineering professor – Brendan Saltafamaggio from the School of Electrical and Computer Engineering.

Saltafamaggio helps solve real human crimes through cyberforensics, the application of investigation and analysis techniques to gather and preserve evidence from a computing device that can be presented in a court of law.

“My research has large-scale crime-solving implications,” said Saltafamaggio. “My goal is to figure out how we can collect as much evidence as possible from any device involved in the crime to help put away the criminal.”

Solving Crimes through Cyberforensics

Saltafamaggio’s research occurs in his Cyber Forensics Innovation Lab, where the mission is to further the investigation of advanced cyber crimes and the analysis and prevention of next-generation malware attacks, particularly in mobile and Internet of Things environments.

“While my lab focuses on malware and cyber attacks, we also assist with human crimes,” said Saltafamaggio. “If someone robs a bank and dials their phone at the scene of the crime, we can mine that digital device for evidence that will help prosecute the case.”

Saltafamaggio doesn’t work directly with law enforcement, but he does facilitate tech transfer of information, meaning that once a cyber forensic technique is published by his lab, an agency can leverage it to help solve a case. Saltafamaggio and his team then provide the code, test cases, and infrastructure for law enforcement to use for criminal investigations.

Saltafamaggio recently developed a cyber forensic technique called RetroScope to access encrypted information on a device, even if the user has locked their accounts. The technique leverages memory forensics, the process of recovering evidence from the RAM of a device. RetroScope makes a copy of the RAM from the device and recreates information such as texts or emails from the device. An investigator can see all app screens that were previously accessed by the user. Terrorists are known to use an application called Telegram that is extremely secure and encrypts everything on the phone. With RetroScope, the data on the phone is recreated and made available to law enforcement. An investigator can see exactly what the suspect was communicating before or during the crime. Any data left on the memory of the device can be extracted and used as evidence.

In a recent case, cyberforensics was used at a restaurant where patrons’ credit card information was being stolen. A forensic investigator was called in, but he couldn’t crack the case. With more customers being hacked, the restaurant was finally sued, and they called in a more advanced forensic analyst to look over their system. The forensic analyst realized there was malware on the restaurant’s point of sale system, exporting credit card information with each swipe. The hacker was leveraging the volatile RAM to hide the malware, and the first investigator had missed it.

Saltafamaggio is among a small group of researchers pioneering the investigation of volatile RAM and the power of memory forensics in cases such as this.

“The first investigator was only considering the static files stored on the disk of the computer,” said Saltafamaggio. “At the time, the forensic investigator wasn’t considering volatile RAM as a hiding place for malware. From research like mine, investigators now know that a device’s RAM is a viable place to harbor malware. You have to look everywhere in these investigations, leaving no stone unturned.

A deep dive into digital devices through Saltafamaggio’s forensic techniques will redefine the world of cybersecurity. According to Saltafamaggio, at present, investigating crimes that involve digital devices as evidence is done in a very ad hoc manner, with much digital evidence being left behind.

Saltafamaggio’s ongoing research is paving the way to incorporate a full assessment of digital devices into criminal investigations. And if he is successful, investigators will stop leaving so much digital evidence behind and potentially increase their solve rate.

Eradicating Malware: Beating Cyber Criminals at Their Own Game

Today, cyber crime is everywhere and affects nearly everyone – the recent Equifax breach left millions of people exposed to identity theft. Ever the engineer, Saltafamaggio got into cyberforensics because he recognized a problem that needed a solution, specifically the problem of malware.

Malware is software that is intended to damage or disable computers and computer systems. It can be extremely destructive, one type of malware recently targeted an Iranian nuclear facility and very slowly degraded the physical hardware, causing it to break well ahead of schedule. Malware tends to be very complex pieces of code with many layers of behavior.

What most people don’t know is that malware is a commercially viable industry. People go to work specifically to create malware, and there are annual conferences that even award coders for the malware that has infected the most devices. Malware companies create the malicious code that is then sold to people who want to steal information.

“In my lab, we are working on malware attacks against critical infrastructure,” said Saltafamaggio. “Malware is extremely sophisticated and targeted, and it’s become increasingly harder to eradicate. My research hopes to prevent malware attacks and make people safer through cybersecurity.”

Smartphone users are already reaping the benefits of Saltafamaggio’s research. He recently developed a tool to identify malicious apps in the iOS app store. Cyber criminals have been hiding malware in apps that slip through the cracks at Apple. Saltafamaggio’s tool automates a search to detect apps with malware, and recently found that 7 percent of apps in the app store that they tested had malware in them. Apple has improved its vetting process based on the findings from Saltafamaggio’s team.

Saltafamaggio measures his work by asking: Are we safer today than we were before we started this project? Between helping put away criminals and rooting out malware on consumer devices, Saltafamaggio has every intention of making the virtual world a safer place.

This story is part of a series on faculty who are pursuing The Next Frontier in their fields. Read more at gatech.edu/news.
Implementing Teams Share Updates on Gender Equity, Black Student Experience

ANNETTE FILLIAT
INSTITUTE COMMUNICATIONS

Two campus initiatives that are tackling multi-year recommendations recently shared end-of-year updates for 2017.

The Black Student Experience Task Force and Gender Equity implementation committee are each shepherding 11 recommendations to fruition. The Gender Equity Group, which began its implementation in Fall 2016, is entering its last six months of implementation.

“As we enter the last six months of implementation, it is imperative that we continue to support gender equity programs and initiatives moving forward,” said Archie Ervin, vice president for Institute Diversity.

“We are committed to transforming the culture as we collectively work toward modeling inclusive excellence at Georgia Tech.”

The gender equity committee’s recent successes include the completion of a first cohort of the Inclusive Leaders Academy, two cohorts of the Leading Women@Tech program, and the administration of the 2017 Climate Assessment Survey.

The Black Student Experience task force will continue its work through the end of the 2018-19 academic year.

As part of a three-year implementation process, the recommendations have been grouped into four impact areas: programs, training, physical spaces, and planning and assessments.

The Climate Assessment Survey went to faculty and staff in the fall, and will be administered to students this semester. It will also serve as a tool for the Black Student Center implementation committee.

“The implementation committee has made significant strides to transform the culture as we collectively work toward modeling inclusive excellence, but there is still work to do as culture change takes time,” said Ervin. “This year’s Climate Assessment Surveys are pivotal to gauge the Institute’s progress on building an inclusive and supportive environment as we analyze the longitudinal data from the surveys four years ago.”

For more updates on these initiatives, visit diversity.gatech.edu/blackstudentservice/genderequityinitiatives.
Fellows. The ACM annually computing machinery (ACM) distinction of association for computing, have earned the Lee Regents professor mentor. This community as a prestigious honor and is recognized by the technical community since 1904.

Jaydev Desai, professor in the Wallace H. Coulter Department of Biomedical Engineering, Saahil Mukhopadhyay, professor in the School of Electrical and Computer Engineering, Justin Romberg, Schlumberger Professor in the School of Electrical and Computer Engineering, and Kevin James (Jim) Sangston, senior research engineer in the Georgia Tech Research Institute, were named fellows of the Institute of Electrical and Electronics Engineers (IEEE). IEEE fellow is the highest grade of membership and is recognized by the technical community as a prestigious honor and an important career achievement. Regents professor Richard Fujimoto and Professor Wennke Lee, both in the College of Computing, have earned the distinction of Association for Computing Machinery (ACM) Fellows. The ACM annually recognizes the top 1 percent of members for achievements in computing and service to the ACM and computing community.

Gabriel Alfonso Rincón-Mora, professor in the School of Electrical and Computer Engineering, has been named a fellow of the National Academy of Inventors (NAI). He is part of the Class of 2017 NAI Fellows, consisting of 155 renowned academic inventors who will be inducted during the Seventh Annual Conference of the National Academy of Inventors. The conference will take place April 4-6 in Washington, D.C.

Francisco Robles, assistant professor in the Wallace H. Coulter Department of Biomedical Engineering, has won a Faculty Early Career Development (CAREER) Award from the National Science Foundation. Robles was also recently appointed as a Goizueta Foundation Junior Faculty Rotating Professor, a three-year position.

Dene Sheehane, vice president of Government and Community Relations, was awarded the Marvin D. “Swee” Johnson Achievement Award for his extraordinary contributions to the advancement, quality, and effectiveness of state relations during the 2017 Higher Education Government Relations Conference on Dec. 7, 2017.

A team of researchers led by Marilyn Smith, professor in the Daniel Guggenheim School of Aerospace Engineering, earned the NASA Group Achievement Award for rotorcraft contributions towards the development of FUN3D, a suite of computational fluid dynamics tools that is actively maintained by NASA to benefit the fields of aerodynamics, space technology, and exploration in research involving modeling fluid flow.

From managing common conditions such as asthma and diabetes, to handling the day-to-day pressures of the workplace, healthy living can be a challenge. The Be Well series equips employees with the tools they need to make smart wellness choices for themselves and their families. Plan for events for the first half of the year below.

**JANUARY**

**Smoking Cessation**

Thursday, Jan. 11

Noon to 1 p.m.

Room 229, Human Resources

**Federal Student Loan Forgiveness Program**

Wednesday, Jan. 17

Noon to 1 p.m.

Room 321, Student Center

**Time-First Homebuyers**

Wednesday, Jan. 24

11 a.m. to 12:30 p.m.

Room 320, Student Center

**Life, Estate, and Inheritance Planning**

Tuesday, Jan. 30

11 a.m. to noon

Room 320, Student Center

**FEBRUARY**

**Caring for Aging Parents**

Wednesday, Feb. 7

Noon to 1 p.m.

Peachtree Room, Student Center

**Summer Camp Expo**

Thursday, Feb. 15

11 a.m. to 2 p.m.

Student Center Ballroom

* No registration necessary

**LGBTQIA Financial Planning**

Tuesday, Feb. 27

Noon to 1 p.m.

Piedmont Room, Student Center

**MARCH**

**Understanding Mental Health Triggers**

Tuesday, March 6

Noon to 1 p.m.

Room 309, Student Center

**Work-Life Balance**

Monday, March 13

Noon to 1:30 p.m.

Room 309, Student Center

**FEBRUARY**

**Smoking Cessation**

Wednesday, May 9

Noon to 1 p.m.

Room 229, Human Resources

**Deskercise: Exercises You Can do at Work**

Wednesday, May 23

Noon to 1 p.m.

Peachtree Room, Student Center

**JUNE**

**Education Assistance Programs Info Session**

Wednesday, June 28

Noon to 1 p.m.

Student Center Theater

**Healthy Cooking Demo**

Tuesday, June 12

Noon to 1 p.m.

Room 343, Student Center

**Leaves of Absence (non-maternity)**

Tuesday, June 19

Noon to 1 p.m.

Location TBD

See full event descriptions and register to attend a session at ohr.gatech.edu/bewell.