

= Georgia Tech Research Institute =

The Georgia Tech Research Institute (GTRI) is the nonprofit applied research arm of the Georgia Institute of Technology in Atlanta , Georgia , United States . GTRI employs around 1 @, @ 765 people , and is involved in approximately \$ 305 million in research annually for more than 200 clients in industry and government .

Initially known as the Engineering Experiment Station , (EES) the organization was proposed in 1929 by W. Harry Vaughan as an analogue to the agricultural experiment stations ; the Georgia General Assembly passed a law that year creating the organization on paper , but did not allocate funds to start it . To boost the state 's struggling economy in the midst of the Great Depression , funds were found , and the station was finally established with US \$ 5 @, @ 000 (equivalent to \$ 530 @, @ 000 in 2015) in April 1934 .

GTRI 's research spans a variety of disciplines , including national defense , homeland security , public health , education , mobile and wireless technologies , and economic development . Major customers for GTRI research include United States Department of Defense agencies , the state of Georgia , non @-@ defense federal agencies , and private industry . Overall , contracts and grants from Department of Defense agencies account for approximately 84 % of GTRI 's total research funding . Since it was established , GTRI has expanded its engineering focus to include science , economics , policy , and other areas that leverage GTRI 's partnership with Georgia Tech . GTRI researchers are named on 76 active patents and 43 pending patents .

= = History = =

= = = Establishment = = =

After being founded in 1885 , Georgia Tech grew from a trade school into a university over the course of several decades . However , there was little state initiative to see the school expand significantly until 1919 . That year , in a move similar to the Hatch Act of 1887 's establishment of agricultural experiment stations , the federal debate over whether to create engineering experiment stations in a similar manner spurred the Georgia General Assembly to pass an act titled " Establishing State Engineering Experiment Station at the Georgia School of Technology . " This station was established with the goal of the " encouragement of industries and commerce " within the state . The federal effort ultimately failed and the state did not finance the organization .

In 1929 , some Georgia Tech faculty members belonging to Sigma Xi started a Research Club at Tech that met once a month . One of the monthly subjects , proposed by W. Harry Vaughan , was a collection of issues related to Georgia Tech , such as library development , and the development of a state engineering station . This group investigated the forty existing engineering experiment stations at universities around the country , and a report was compiled by Harold Bunger , Montgomery Knight , and Vaughan in December 1929 . Their report noted that several similar organizations had been opened across the country at other engineering schools and were successful in local economic development .

In 1933 , S. V. Sanford , president of the University of Georgia , proposed that a " technical research activity " be established at Georgia Tech in order to boost the state 's struggling economy in the midst of the Great Depression . The Georgia Board of Regents provided the new Engineering Experiment Station with \$ 5 @, @ 000 (equivalent to \$ 530 @, @ 000 in 2015) , and Georgia Tech provided infrastructure and personnel . The station started operation in April 1934 .

= = = Early years = = =

Vaughan was selected as the Engineering Experiment Station 's acting director in April 1934 , and hired 13 part @-@ time faculty and a few graduate assistants . The station 's initial areas of focus were textiles , ceramics , and helicopter engineering . The early work of the station was conducted in

the basement of the Old Shop Building next to Tech Tower , and Vaughan 's office was in the Aeronautical Engineering Building . The station 's name was technically the State Engineering Experiment Station , but it was generally referred to as the Engineering Experiment Station (EES) or simply " the research station " .

By 1938 , the Engineering Experiment Station was producing useful technology , and the station needed a method to conduct contract work outside the state budget . Consequently , the Industrial Development Council (IDC) was formed . The IDC was created as a non @-@ profit contract organization for the EES , which allowed the EES to receive federal contracts while still retaining its relationship with Georgia Tech and the State of Georgia . It was created by the Chancellor of the University System and the president of Georgia Power Company , and the Engineering Experiment Station 's director was a member of the council . The IDC later became the Georgia Tech Research Corporation , which currently serves as the sole contract organization for all Georgia Tech faculty and departments . In addition , the contract organization manages the intellectual property that results from research .

Examples of projects undertaken under Vaughan 's directorship include Montgomery Knight 's helicopter research , the Georgia Economic Survey , \$ 6 @,@ 000 (equivalent to \$ 500 @,@ 000 in 2015) in aeronautical research for the Guggenheim Foundation , and textile research that created cotton roving and spinning processes that were three to five times faster than contemporary practices . Vaughan was instrumental in securing a permanent building for the station , initially known as the Research Building ; several years later it was expanded and named the Thomas Hinman Research Building , after Atlanta dentist and university donor Thomas Hinman . After Vaughan left for the Tennessee Valley Authority in 1940 , Harold Bunger (head of the Chemistry Department) took over as acting director . However , Bunger died not long thereafter in August 1941 . Bunger 's successor was Gerald Rosselot , who had been appointed assistant director by Georgia Tech 's president in 1940 .

= = = World War II = = =

The number and value of contracts coming to the station significantly increased during World War II ; the 1943 ? 1944 budget was the first in which industry and government contracts exceeded the station 's other income , most notably , its state appropriation . Director Vaughan had initially prepared the faculty for fewer incoming contracts as the Georgia General Assembly had cut the station 's appropriation by 40 % , but increased support from industry and government eventually compensated for lower state funding . World War II is credited with GTRI 's entry into electronics , especially telecommunications and electronic warfare ; the electronics and communications work that Director Rosselot attracted is still a mainstay of GTRI research . Two of the larger projects were a study on the propagation of electromagnetic waves , and United States Navy ? sponsored radar research .

At the end of World War II , Georgia Tech had about \$ 240 @,@ 000 (equivalent to \$ 8 @,@ 300 @,@ 000 in 2015) annually in sponsored research . Important investments during Rosselot 's administration at the Engineering Experiment Station included the purchase of an electron microscope in 1946 for \$ 13 @,@ 000 (equivalent to \$ 500 @,@ 000 in 2015) , the first such instrument in the Southeastern United States and one of few in the United States at the time . The Research Building was expanded , and a \$ 300 @,@ 000 (equivalent to \$ 9 @,@ 700 @,@ 000 in 2015) Westinghouse A @-@ C network calculator was given to Georgia Tech by Georgia Power in 1947 .

Rosselot 's administration included the 1946 establishment of the Industrial Development Council , renamed to the Georgia Tech Research Institute in 1948 and to its present name , the Georgia Tech Research Corporation , in 1984 . The Georgia Board of Regents had ruled that all money received in a year had to be spent that year , which was problematic because most government contracts the EES had received spanned multiple years . Georgia Tech president Blake Van Leer and vice president Cherry Emerson solution was to create the Industrial Development Council , a non @-@ profit corporation that would manage contracts for research services and subsequently hire the

Engineering Experiment Station to perform the research . It would handle patents garnered through research , and distribute funds garnered from contracts and patents as needed . The new organization was almost immediately used to weather a severe drop in state support (from \$ 89 @, @ 000 to \$ 3 @, @ 000) during the recession of 1949 .

= = = Scientific Atlanta = = =

Glen P. Robinson and six other Georgia Tech researchers (including Robinson 's former professor and future EES director Jim Boyd and EES director Gerald Rosselot) each contributed \$ 100 (equivalent to \$ 3 @, @ 000 in 2015) and founded Scientific Associates (later known as Scientific Atlanta) on October 31 , 1951 with the initial goal of marketing antenna structures being developed by the radar branch of the EES . Robinson worked as the general manager without pay for the first year ; after the fledgling company 's first contract resulted in a \$ 4 @, @ 000 loss , Robinson (upon request) refunded five of the six other initial investors .

From 1950 to 1952 , there were a series of disputes between EES director Rosselot and Georgia Tech vice president Cherry Emerson over the station 's finances and Rosselot 's hand in founding Scientific Associates . When it was founded in October 1951 , Rosselot was president and CEO of Scientific Associates ; at issue was the potential conflict of interest with his role at Georgia Tech , and what , if any , role Georgia Tech should have in technology transfer to the marketplace . Emerson later instituted a policy requiring EES employees wishing to work with Scientific Associates to make a written request to the president of Georgia Tech . However , Rosselot 's participation in Scientific Associates ' founding and early operations ensured the eventual success of Scientific Atlanta and facilitated subsequent technology transfer by Georgia Tech 's VentureLab and the Advanced Technology Development Center .

In September 1952 , the Board of Regents requested an audit of EES 's financial operation . Of primary concern was the reporting of overhead income , which the Board suspected was inadequate . The audit found discrepancies in the accounts receivable that were attributed to EES 's practice of delaying reporting information on receivables by a month , a tactic that had become common to ensure working capital due the regents ' failure to adequately fund the station . Though Rosselot denied malfeasance , the practice nonetheless did not conform to the University System of Georgia 's established procedures for budget reporting . As a result , Rosselot went on leave from his post at Georgia Tech in November 1952 , pending the acceptance of his resignation by the chancellor , which became effective March 1 , 1953 . Following his resignation , Rosselot soon accepted a position with the Bendix Corporation 's aviation division .

= = = Cold War era = = =

In March 1950 , Herschel H. Cudd was appointed head of EES 's Chemical Sciences division . After Gerald Rosselot went on leave pending his resignation , Cudd was named acting director of EES in November 1952 , then named director in July 1953 , and resigned in November 1953 to accept a much higher @-@ paying position at the American Viscoe Corporation . Although he was in the post for only a year , Cudd made far @-@ reaching changes to the station . Under Rosselot , research had been increasingly concentrated on a few researchers ; Cudd reversed this trend to the extent that EES 's 1952 ? 53 Annual Report stated that 66 faculty in 15 schools performed research at the station that year . Cudd created a new promotion system for researchers that is still in use to this day . Many EES researchers held the rank of professor despite lacking a doctorate (or a comparable qualification for promotion as determined by the Georgia Board of Regents) , something that irritated members of the teaching faculty . The new system , approved in the spring of 1953 , used the Board of Regents ' qualifications for promotion and mirrored the academic tenure track .

Cudd spent a significant amount of the EES operating budget on improving laboratory facilities . Cudd 's successor Paul K. Calaway , previously director of the School of Chemistry , made a last @-@ minute request to the contract organization in May 1954 to cover the resulting \$ 20 @, @ 000 (

equivalent to \$ 470 @, @ 000 in 2015) deficit . In 1954 , a faculty committee appointed to do a comprehensive study of Georgia Tech , " The Aims and Objectives of the Georgia Institute of Technology " , noted that of EES 's budget of \$ 2 million for 1953 ? 1954 (equivalent to \$ 46 million in 2015) , about 83 % was sponsored by governmental agencies , and about two thirds of that was classified . In 1955 , the Rich Electronic Computer Center , a new wing on the Hinman Research Building , was dedicated ; the project was paid for by \$ 85 @, @ 000 (equivalent to \$ 1 @, @ 840 @, @ 000 in 2015) from the Rich Foundation and a matching grant from the EES 's contract organization .

This period saw a significant expansion in Georgia Tech 's postgraduate education programs , which received substantial support from the EES . Despite its slow start , with the first Master of Science programs in the 1920s and the first Doctorate in 1946 , the program became firmly established . In 1952 alone , around 80 students earned graduate degrees while working at EES .

James E. Boyd was promoted to Assistant Director of Research at the station in 1954 , and succeeded Calaway as director on July 1 , 1957 . While at Georgia Tech , Boyd wrote an influential article about the role of research centers at institutes of technology , which argued that research should be integrated with education , and Boyd correspondingly involved undergraduates in his research . Boyd was known for recruiting faculty capable of both teaching and performing notable research ; one such example is his recruitment of noted physicist and nuclear scientist Earl W. McDaniel .

Under Boyd 's purview , the Engineering Experiment Station gained many electronics @-@ related contracts , to the extent that an Electronics Division was created in 1959 ; it would focus on radar and communications . Boyd championed the establishment of research facilities . In 1955 , Georgia Tech president Blake Van Leer appointed Boyd to Georgia Tech 's Nuclear Science Committee . The committee recommended the creation of a Radioisotopes Laboratory Facility and a large research reactor on campus . The former was built and dedicated on January 7 , 1959 , and could receive , store , and process radioactive materials . The Frank H. Neely Research Reactor was completed in 1963 and was operational until 1996 , when it was defueled due to safety concerns related to the nearby 1996 Summer Olympics events . The reactor was permanently decommissioned in 1999 .

Throughout the Cold War era , radar and antenna related applications remained a prominent research activity in EES ' contracts with the Defense Department . Millimeter wave radar research , in particular , was prominent in EES ' defense activities from the late 1950s , when the first military @-@ designation millimeter wave radar was built at Georgia Tech , to the 1980s , when GTRI developed what was then the world 's highest frequency microwave radar . EES ' high @-@ frequency radar research found applications in radio astronomy , meteorology and climate studies , which improved weather forecasting and climate models and assisted in NASA 's planning of the Cassini and Galileo missions . Expansion of EES ' antenna research in the 1970s , in particular , the development of an air defense antenna for the U.S. Army Missile Command , resulted in the establishment of the Huntsville Research Laboratory , GTRI 's oldest off @-@ campus research center .

In 1980 , EES developed a TEMPEST @-@ approved version of the Apple II Plus for U.S. Army FORSCOM , and used it as a component in the earliest versions of the Microfix system . Fielded in 1982 , the Microfix system was the first tactical system using video disk (Laserdisk) map technology providing zoom and scroll over map imagery coupled with a point database of intelligence data such as order of battle , airfields , roadways , and bridges . President Ronald Reagan 's Strategic Defense Initiative resulted in the largest research contract in Georgia Tech 's history in 1985 . The \$ 21 @. @ 3 million contract (equivalent to \$ 46 @. @ 9 million in 2015) was divided between GTRI and the School of Electrical Engineering . GTRI landed its own largest @-@ ever contract in 1986 ? \$ 14 @. @ 7 million (equivalent to \$ 31 @. @ 7 million in 2015) to create a Soviet surface @-@ to @-@ air missile system simulator . In 1989 , as part of a project with the U.S. Army , and using technology it had been developing since the late 1960s , GTRI completed the largest outdoor compact antenna range at Fort Huachuca , Arizona .

On April 10 , 1989 , GTRI announced that one of its research groups , led by James Mahaffey , had

duplicated the results of a controversial University of Utah experiment that had allegedly achieved cold fusion in a jar of water . Four days following the announcement , the researchers discovered that the instrument used to measure neutrons was damaged by the heat of the liquid and gave false , elevated readings . GTRI immediately retracted its support of the Utah researchers ' findings , citing the flawed measurement . Director Donald J. Grace referred to the mistake as " embarrassing " , recalling that he and Mahaffey " blushed the whole time " .

= = = Expansion and reorganization = = =

The Georgia General Assembly amended EES ' charter in the early 1960s , authorizing an " industrial extension service to meet the technical , informational and other needs of industry and local development groups " . This led to an expansion of some of EES ' activities that it had been involved in since the 1940s . In particular , EES began providing additional services as a technological incubator during this time frame , and began an international development initiative that improved infrastructure and facilitated technology transfer in over 40 developing nations . The station 's expanded mission bolstered its traditional research strengths , resulting in work on projects that improved radar operation on the Saturn rocket and in the invention of the compact antenna range by Richard C. Johnson . Throughout the 1960s , these changes brought about an increased focus on research that sought to solve societal problems rather than research for the sake of pure scientific knowledge . This came at a time when director Maurice W. Long began placing an emphasis on graduate education and multidisciplinary research .

The late 1960s saw a period of student unrest , and university research centers that worked on contracts for the Department of Defense were often the site of student protests . Neither Georgia Tech nor EES became the focus of protests , and Long attributed this to the school 's " conservative student body " . For other reasons , however , EES became embattled financially and politically as a result of cuts in federal and state spending as well as cuts to the space program . Georgia Tech 's academic units were similarly affected by these cuts , which helped rekindle the debate over EES ' relationship with the school .

Georgia Tech president Arthur G. Hansen 's " bold and controversial " solution to both entities ' problems was to completely absorb the station into Georgia Tech 's academic units . On paper , this would dramatically increase Georgia Tech 's stated research funding (as all of it would be performed through the academic units) , and it would increase options and financial aid for graduate students . Another , less publicized , reason was that Georgia Tech would gain access to the contract organization 's reserve fund , which was said to be over \$ 1 million (equivalent to \$ 6 @. @ 1 million in 2015) . Thomas E. Stelson , Dean of the College of Engineering at Georgia Tech , was named to " reorganize " the station . Publicly , Stelson 's task was simply to recommend a plan for reorganization , but the administration clearly intended for Georgia Tech and the Engineering Experiment Station to be closely integrated . Maurice W. Long , who was director of the station at the time , viewed the move as a violation of the EES 's charter as legislatively established by the Georgia General Assembly in 1919 , and asserted that Georgia Tech did not have the authority to merge the two institutions . EES employees and business executives involved with the station appealed to the Georgia Board of Regents and to Governor of Georgia (and future United States President) Jimmy Carter (himself a Georgia Tech alumnus) ; the controversy received coverage in both The Technique and the Atlanta Constitution .

When former EES director James E. Boyd was appointed as interim president of Georgia Tech following the departure of Hansen , he stopped the plan for complete absorption of the station , but did allow plans for closer control and more aggressive contract solicitation to proceed . Among these measures were increased resource @-@ sharing , including increased sharing of physical assets and research staff . The latter was evidenced by the increase in joint faculty appointments between the EES and Georgia Tech . The move paid off , and the fiscal year 1970 ? 1971 saw EES win new contracts and grants , totaling a record \$ 5 @. @ 2 million (equivalent to \$ 30 @. @ 4 million in 2015) . Stelson was left in charge of the station 's reorganization and was named interim director upon Long 's departure in 1975 . During his tenure , Stelson reorganized the station into eight semi @-@

autonomous laboratories in order to allow each to develop a specialization and clientele , a model it retains (with slight modifications) to this day .

The Engineering Experiment Station was renamed the Georgia Tech Research Institute in 1984 . A separate organization , originally called the Industrial Development Council , changed its name to the Georgia Tech Research Institute in February 1946 , and finally to the Georgia Tech Research Corporation in 1984 . There are legal difficulties when an American university wishes to accept contracts from some entities , especially the federal government , so the second organization is a contracting organization . Most importantly , it allows the university to perform multi @-@ year contracts that are not possible under state law , which requires that money received must be spent in the same fiscal year . The name change coincided with a shift in focus toward obtaining industrial research contracts in addition to its contracts with the federal government . GTRI expanded its footprint in the mid to late 1980s : the Centennial Research Building opened on the north end of the Georgia Tech campus in 1985 , providing expanded lab and office space , and the electromagnetic radiation measurement range was established at GTRI 's Cobb County research facility .

= = = Recent history = = =

From 1992 to 1997 , retired Vice Admiral Richard H. Truly was GTRI 's director . Truly helped GTRI survive a recession and the end of the Cold War despite its dependence on United States Department of Defense (DOD) contracts . During his tenure the percentage of GTRI 's budget from the DOD did experience a small decrease (from 76 percent to 70 percent) , but this was balanced by increased research in other fields . In 1997 , GTRI passed \$ 100 million in research contracts , with 546 awards for \$ 103 @, @ 061 @, @ 780 (equivalent to \$ 182 @, @ 300 @, @ 000 in 2015) . One of GTRI 's more widely used (and ongoing) products , FalconView , was initially developed in the early 1990s ; it is a geographic information system that allows pilots to plot flight paths while integrating real @-@ time military intelligence .

Truly was replaced by Edward K. Reedy , who served from 1998 to 2003 . Reedy encouraged funding researchers who had ideas that needed support , and introduced a new cost accounting standard for recovering indirect expenditures . Reedy was particularly influential in securing the \$ 7 @. @ 3 million in funding required to build the Food Processing Technology Building . Under his leadership , GTRI 's first endowed chair was established in March 1998 in honor of Glen P. Robinson , the \$ 1 @. @ 5 million Glen P. Robinson Chair in Electro @-@ Optics . GTRI and Georgia Tech played host to sitting president George W. Bush in March 2002 ; a mock disaster was staged during the visit , demonstrating new technologies . At the end of Reedy 's tenure , GTRI had \$ 115 million in research contracts (equivalent to \$ 162 @, @ 000 @, @ 000 in 2015) , a new high . Much new funding came as an indirect result of the September 11 attacks and the resulting War on Terrorism as the DOD increased related research .

Stephen E. Cross was selected as director in late 2003 . In March 2010 , Cross was named Executive Vice President for Research , a newly created position within Georgia Tech with oversight over all research at the university , including GTRI , the Georgia Tech Research Corporation , the school 's interdisciplinary research centers , and the Enterprise Innovation Institute ; and will " work closely with " academic researchers . He began his new role on May 1 , 2010 , and was replaced as director by Robert McGrath .

Some recent notable projects have included the Deployable Joint Command and Control System and ULTRA AP , a concept combat vehicle . In 2010 , researchers developed microfabricated planar ion traps using VLSI techniques for use in a trapped ion quantum computer . Also in 2010 , researchers developed a method of using GPGPU to crack passwords , coming up with a minimum secure password length of 12 characters . Researchers are investigating the use of radar as a possible concussion detection tool .

GTRI is the primary contractor of the Homeland Open Security Technology program , which aims to promote the creation and use of open security and open @-@ source software in the United States government and military , especially in areas pertaining to computer security . GTRI personnel are involved in DARPA 's Anomaly Detection at Multiple Scales project through the Proactive Discovery

of Insider Threats Using Graph Analysis and Learning system .

= = Description = =

= = = Employees and financials = = =

As of June 2013 , GTRI employed 1 @, @ 765 people , 637 of which were support staff , and 314 of which were students . Out of the approximately 900 research scientists and engineers working for GTRI in June 2013 , 18 % had attained a doctorate , 56 % had a master 's degree , and 26 % had a bachelor 's degree . In 2011 , GTRI employees ' generational breakdown included approximately 5 % from the " Silent Generation " (born in 1922 ? 1945) ; 30 % from the " baby boomers " (born in 1946 ? 1964) ; 27 % from " Generation X " (born in 1965 ? 1980) ; and 38 % from " Generation Y " (born since 1981) .

In 2014 , GTRI had \$ 305 million in revenue , and \$ 363 million in contract awards . In 2014 , the United States Department of Defense consisted of 84 % of GTRI 's awards by value ; the remainder was composed of federal (7 %) ; non @-@ DOD (3 %) state and local (3 %) ; and university , business , or nonprofit (2 %) . GTRI researchers are named on 76 active patents and 43 pending patents .

= = = Facilities = = =

In total , the organization has at least 892 @, @ 000 square feet (82 @, @ 900 m2) of laboratory and facility space . GTRI is headquartered on the Georgia Tech campus in Midtown Atlanta , Georgia , where five of its seven research laboratories are located . Some major buildings are the Centennial Research Building , the Baker Building , and the GTRI Headquarters . The GTRI Headquarters contains the GTRI Conference Center , which has 10 @, @ 000 sq ft (930 m2) of space and hosts over 300 events a year .

Other notable Atlanta buildings include the Food Processing Technology Building and the GTRI Machine Services Building . Two GTRI laboratories operate at an off @-@ campus research facility , the Cobb County Research Facility , approximately fifteen miles north of Atlanta in Cobb County adjacent to the Dobbins Air Reserve Base . Additionally , GTRI operates the Applied Systems Laboratory in Huntsville , Alabama .

GTRI opened an international office in Athlone , Ireland in June 2006 . This effort was expanded when Georgia Tech , the National University of Ireland , Galway and the University of Limerick partnered in June 2010 to create a joint translational research institute . GTRI has several field offices that help with nearby on @-@ site research and needs . These are in Dallas , Texas , Dayton , Ohio , Shalimar , Florida (near Eglin Air Force Base) , Huntsville , Alabama , Jacksonville , Florida , Orlando , Florida , Panama City , Florida , Quantico , Virginia , San Diego , California , Tucson , Arizona , Warner Robins , Georgia (near Robins Air Force Base) , and Arlington , Virginia / Washington , DC .

= = Organization = =

= = = Structure = = =

GTRI is composed of eight laboratories organized by technical focus into three research and development directorates . Each lab is further subdivided into divisions . Labs frequently collaborate with one another and outside groups (both academic units and external companies) based on the requirements of each project . GTRI performs research for clients at the local , regional , national , and international level , and employees are encouraged to publish their work and present it at conferences and consortia .

GTRI is an operating unit of Georgia Tech although it performs research under commercial cost principles for non @-@ profit organizations . For that reason , it uses a separate contracting entity , the Georgia Tech Applied Research Corporation (GTARC) . Although GTARC is the contracting entity , the Georgia Tech Research Corporation (GTRC) owns the intellectual property created by all Georgia Tech researchers and manages technology protection and licensing . GTRI reports to the Georgia Tech Executive Vice President of Research (as of 2013 , Stephen E. Cross) who currently serves as the President of GTARC .

GTRI 's project directors are responsible for direction of all aspects of projects , including marketing , contract development , research , and fulfillment . Most projects are conducted on a cost @-@ reimbursable basis and are negotiated by Georgia Tech 's Office of Sponsored Programs with terms and conditions appropriate for contracts specific to the operation of a university research organization .

The organization is led by the Director , who is also considered a vice president of Georgia Tech . Five people report to the director : the Deputy Director and Associate Vice Provost for Research ; the Deputy Director for Support Operations ; and the three deputy directors in charge of each research and development directorate . The eight lab directors report to their respective deputy director of research and development . The business strategist , financial operations director , and chief scientist all report to the Deputy Director / Vice Provost . Business services , human resources , information systems , machine services , and other support services report to the Deputy Director for Support Operations .

GTRI , like many traditional boards of directors , has an External Advisory Council , which consists of individuals who are notable in related fields of industry , government or academia and who provide advice about research direction , strategy , and markets , although they do not govern the organization . Members of the Board of Trustees of the contracting agency , GTARC , are not necessarily members of the External Advisory Council , although there is sometimes overlap between them .

= = = University affiliation = = =

GTRI contributes to the Georgia Tech research environment for faculty and students by conducting externally sponsored , applications @-@ oriented research programs that benefit the state , region , and nation . These programs , led by GTRI research faculty , contribute to national security , civilian needs , and industrial competitiveness , and provide students with career experience through graduate research assistantships , cooperative education programs , and undergraduate assistantships . Since 1995 , GTRI (and in particular , its Huntsville Laboratory) has been a University Affiliated Research Center , a designation by the United States Department of Defense intended to maintain what it calls " essential engineering and technology capabilities " .

GTRI is the largest single employer of Georgia Tech graduate and undergraduate students ; as of 2013 , GTRI employed 186 graduate co @-@ ops and research assistants and 128 undergraduate co @-@ ops . GTRI 's contributions to the Georgia Tech community include collaborative research with academic faculty , courses originated by GTRI faculty , and joint service efforts . Collaboration is strong between the faculties of GTRI and the academic schools and departments . Many GTRI researchers hold appointments as adjunct faculty members in Georgia Tech academic departments , serve on thesis advisory committees , and teach both academic and continuing education courses .

GTRI reaches out to Georgia Tech 's academic and research departments for collaboration on many research activities , building interdisciplinary teams that take advantage of the broad expertise within Georgia Tech 's highly ranked programs . One such collaboration is with the Georgia Tech Information Security Center to create GTRI 's newest laboratory , the Cyber Technology and Information Security Laboratory (CTISL) .

= = = Laboratories = = =

GTRI conducts its research programs through eight laboratories organized into three research and development directorates that focus on specific subjects :

= = = Interdisciplinary research centers = = =

Like many research universities , Georgia Tech has many smaller organizational units dedicated to interdisciplinary research , which combines two or more academic fields into one single discipline . The following centers are based out of the Georgia Tech Research Institute :