

## DenTeC and Your Support

Your support will help DenTeC expand its research and educational opportunities, and give you access to DenTeC's developments.

In addition to capital support for DenTeC's future home — the Applied Biomedicine Building — your support will fund equipment, student research fellowships, seminars and technical workshops, faculty chairs, and visiting scientists.

We invite you to become a member of DenTeC.

By joining, you will have a significant role in helping DenTeC reach its research and educational objectives.

# DenTeC

**DENTAL TECHNOLOGY CENTER**  
A Georgia Tech Center for Interdisciplinary  
Research in Advanced Dental Technologies

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## Membership Opportunities

All membership donations are tax-deductible.

**Platinum Level** — \$5,000 per year

Benefits include:

- Invitation to Special Events, including:
  - DenTeC Hinman Open House
  - Annual Industry Planning Dinner
- 50% discount to Georgia Tech Dental Research Symposium
- Discounts to DenTeC CE Programs
- DenTeC Newsletter & Members-Only Web Access
- Acknowledgement at DenTeC CE Programs and on Website

**Gold Level** — \$2,500 per year

Benefits include:

- Discounts to DenTeC CE Programs
- DenTeC Newsletter & Members-Only Web Access
- Acknowledgement at DenTeC CE Programs and on Website

**Silver Level** — \$1,000 per year

Benefits include:

- Acknowledgement at DenTeC CE Programs and on Website

**Lifetime membership** is also available to reward the exceptional generosity of those donors who wish to give a one-time gift of \$25,000 or more.



Thomas P. Hinman donated \$100,000 to Georgia Tech in the 1920's.

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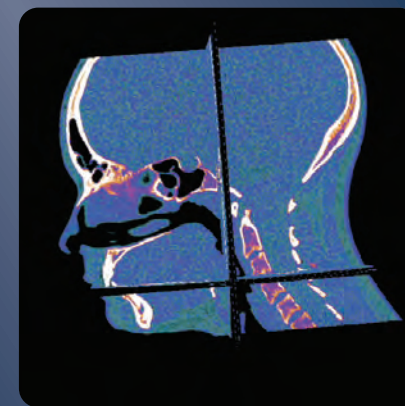
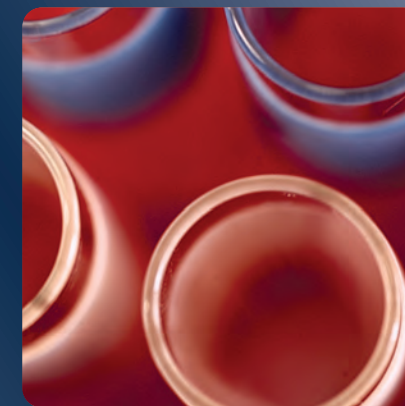
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Bringing Engineering & Advanced Technology Solutions to Dentistry & Craniofacial Medicine



[www.dentec.gatech.edu](http://www.dentec.gatech.edu)



**Georgia Institute  
of Technology**

Dental Technology Center

The Dental Technology Center @ Georgia Tech: [www.dentec.gatech.edu](http://www.dentec.gatech.edu)



# Bringing Engineering & Advanced Technology Solutions to Dental Research & Craniofacial Medicine

## Why DenTeC is Unique

The Georgia Institute of Technology's Dental Technology Center—DenTeC@Georgia Tech— is a nonprofit, multidisciplinary research center focused on advancing dental science and technology.

DenTeC is a unique commitment to dentistry by a world-renowned engineering university. By integrating engineering knowledge and dental science, DenTeC



is introducing new products and technologies for dentistry and craniofacial medicine via multi-disciplinary research, testing, and education. Through collaborative partnerships with dental professionals, other research institutions, and industry, DenTeC is rapidly building an international reputation as a leading source of research and information in the field of dental technology.

DenTeC was launched by the Georgia Institute of Technology in July 2001 following the excitement generated by the "virtual mouth" project. Georgia Tech offers a fresh perspective on dental technologies that encourages the integration of discoveries from other disciplines. DenTeC was founded on the solid foundation of Georgia Tech's leading science, engineering, and continuing education programs, world-renowned faculty, and applied research institute. Under the collaborative leadership of dentists and applied researchers, DenTeC is focused on developing engineering and technical innovations that will allow dental professionals to serve more patients and improve quality of care.

## Serving the Dental Professional

DenTeC faculty and staff work closely with dental professionals to better understand the needs of the clinician and the patient. Education and open panel discussions between research scientists and the dental professional foster innovative concepts that could lead to new technologies designed to improve patient care. During local study club meetings and think tank sessions, DenTeC faculty present scientific information in focused areas of research and then open the floor to round table discussions regarding the possible applications. Local study clubs are welcome to present potential topics for discussion.

**Education** — Professional education courses, involving Georgia Tech research faculty, focus on the application of science-based research developed at Georgia Tech in dental and craniofacial health; courses are designed to meet the professional education needs of clinicians, surgeons, dental lab technicians, and industry researchers.

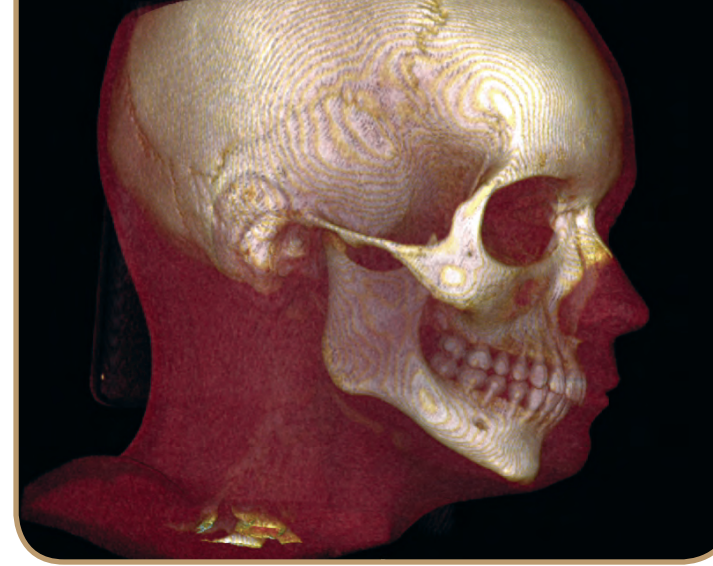
To schedule a study club meeting or to discuss ideas on professional education, contact Jennifer McDonald.

**Research** — DenTeC addresses issues related to the application of new technologies to dental and craniofacial treatments and supports the growth and development of new and existing companies in the dental industry.

## Pre-Dental Society

Georgia Tech has initiated a Pre-Dental Society to support the education and preparation of engineering students to attend dental school. The society provides faculty advisors to assist students in their preparations, study aides for preparing for the dental admissions test, group trips to visit dental schools, local dentists to supply clinical shadowing opportunities for the students, research and internship opportunities, and guest speakers from the dental community.

Support for this society is required to offset the expense for study aids, travel, and program coordination.



## DenTeC & the Future of Dentistry

DenTeC works with dental professionals, the dental industry, research and educational centers, and government agencies to improve dental healthcare worldwide through new product conceptualization, research, design, testing, and realization. This combined efforts of dentists and physicians, engineers, and the dental trade will lead to significant growth and development within the dental field. More importantly, technologies resulting from DenTeC research will be efficient, easy to use, and affordable for dental professionals and patients.

Technology	What it is	Application	Benefits
<b>Biotechnology</b>	Surface modification to improve implant osseointegration	Shortens time of osseointegration, immediate loading	Quicker tooth replacement
	Bone and connective tissue grafts	Repair of bony defects and augmentation	Restores form and function
	Tissue engineered constructs (bone, TMJ, neuro-tissue, meniscus)	Repair or build bone, TMJ, neuro-tissue, meniscus	Improved biocompatibility
	Integration of biological tissue with nano-engineered materials	Grafts in craniofacial and dental surgery	Improved long term viability of implants
<b>Nanotechnology &amp; Materials</b>	Functional materials		
	Characterization	Evaluation and analysis of material properties	Improve performance & long term function
	Mechanical properties	Polishability of restorative material	Improved strength and esthetics Better wear properties
	Optical properties	Reflective characteristics of the tooth	Improved esthetics
	Coated nanoparticles	Time release properties	Longer effects of desired properties
	Nanostructured films	Enhance cellular response (surface of implants)	Provides a more natural environment for growth
<b>Diagnostics &amp; Imaging</b>	Biophotonics	Surface topology and sub-surface diagnostics	Enhanced early detection of disease
	Multi-spectral imaging	Fuses multiple image sources (pan, ceph, digital photograph, bite analysis)	Enhanced early detection of disease
	Tissue remodeling	Targeted growth, integration, or removal of tissue	Minimally evasive treatment
	Spectroscopy	Disease detection and cellular tissue analysis	Advanced diagnostic data
	Biomechanical simulation	Image enhancement and decision aides	Comprehensive diagnostic data
	Dental and Craniofacial Cone Beam Computed Tomography	Volumetric data for dental and craniofacial imaging	Advanced diagnostics, treatment planning and surgical assistance
	Nanoparticles	Disease detection (cancer and caries)	Early detection of disease
<b>Instrumentation</b>	3D scaffolds for bio-/nano- engineered constructs	Biologically engineered prosthesis	Better integration
	CAD/CAM		
	In-office systems for rapid prototyping	Automated fabrication of restorations and prosthetics	Reduce time (increase efficiency)
	In-office sterilytic models	Medical models	Treatment planning and surgical guides
	Materials delivery systems	Flow control systems	Significantly reduces shrinkage
	Multi-modal therapeutic instrumentation	All-in-One lasers, abrasion	Integrated systems
	Wireless communications and software	Imaging and data transport	Portability
	Ergonomics and environmental safety	Noise control and chair/delivery design	OSHA and comfort

DenTeC is translating advanced technologies from high-tech industries and the military to rapidly evolve the future of dentistry with clinically relevant systems that enhance treatment outcomes and dentist efficiencies.