MESSAGE from the SENIOR EXECUTIVE ASSOCIATE DEAN for RESEARCH

It is spring in Memphis and the temperature is warming up quickly, as are the research activities in the College of Dentistry!

In just the few short months since the beginning of the year, we started five new clinical research studies, three of which are industry sponsored trials. In addition, the UT Dental Alumni awarded seven new Alumni Endowment for Research grants, all of which started this month. And, our faculty members continue to progress as principal investigators and co-investigators on four separate federal grants (one R44, one R13, and an R56 from the NIH, and one from the Department of Defense). Even in this tough economic climate, I must commend our research faculty for continuing to be aggressive and find funding for their projects. I also must encourage other faculty to use this as motivation in their fund-seeking efforts.

Interest in our Student Summer Research Fellowship has also warmed up, with nearly 30 students applying for the program, and 21 awarded fellowships to conduct research with a faculty mentor(s) this summer. This is the largest number of applicants the program has ever had and the largest number of awards, with many thanks to our program sponsors: the UT Dental Alumni and the Tennessee Dental Association Foundation. It will be an exciting, busy campus from May through July as these students work diligently on their projects.

I am also pleased to announce that UTHSC dental faculty continue to publish and present their research projects in record numbers. In 2012, our faculty members have already published 20 new articles in journals such as Electrophoresis and the Journal of Prosthetic Dentistry, to name a few. UT faculty and students also had 27 poster presentations at the American Association for Dental Research (AADR) Annual Meeting in Tampa this March.

And, how would this research be getting done without access to our two new research facilities located in the dental building? Our Bioscience Research Center is now in use, with three faculty members conducting research in the new lab. And, we have four studies set to begin in the Clinical Research Center this spring. (You can see photos of the two spaces on the following page of this issue of Dental Research).

I am happy to watch as the research program continues to expand and look forward to seeing where the rest of this year will take us!

Franklin Garcia-Godoy, D.D.S., M.S., Ph.D.
Research is already being conducted in the new Bioscience Research Center, located in N102 of the Dental Building.

The first study begins in the new Clinical Research Center in mid-April. This center is reserved strictly for clinical research projects.
**Senior Executive Associate Dean for Research**

Franklin Garcia-Godoy, D.D.S., M.S., Ph.D.

Chair, Department of Bioscience Research  
Director, Bioscience Research Center

Professor, Department of Physiology, University of Tennessee Health Science Center  
Adjunct Professor, Department of Biomedical Engineering, University of Memphis  
Adjunct Professor, Department of Biomedical Engineering, Florida International University  
Senior Clinical Investigator, The Forsyth Institute, Boston, Massachusetts  
Adjunct Professor, Department of Conservative Dentistry and Periodontology, University of Munich

**Faculty**

Jegdish Babu, B.S., M.S., Ph.D.  
Associate Professor

Melody Barron, D.D.S.  
Assistant Professor  
Director, TMD/Sleep Disorder Clinic

Mustafa Dabbous, M.S., Ph.D.  
Professor

Chris Ivanoff, D.D.S.  
Assistant Professor

Christopher Nosrat, D.D.S., Ph.D.  
Professor

Mark Scarbecz, Ph.D.  
Professor  
Director of Planning and Assessment

Edwin Thomas, M.S., Ph.D.  
Professor

David Tipton, D.D.S., Ph.D.  
Professor

Antheunis Versluis, Ph.D.  
Professor  
Director of Biomaterials

Yanhui Zhang, B.S., M.S., Ph.D.  
Assistant Professor

**Staff**

Brandy Clark, CDA, R.D.A  
Clinical Dental Assistant

Kimberly DeMonaco, R.D.H.  
Clinical Research Associate

Margaret Jefferson  
Sr. Research Assistant

Laurel Johnson, M.A.  
Research Manager – Grants & Contracts

Geraldine Moore  
Lab Assistant

Brian Morrow, M.S.  
Research Coordinator

Iva Pendleton  
Admin Service Assistant

Nancy Turner  
Administrative Aide

Linda Vincent  
TMD/Sleep Disorder Clinic Coordinator
FAMILIAR FACES – NEW RESEARCH POSITIONS

Dr. Chris Ivanoff Transfers to Department of Bioscience Research

Whereas Dr. Chris Ivanoff isn't new to the College of Dentistry at the University of Tennessee, joining the Department of Prosthodontics in summer 2010, he recently joined the Department of Bioscience Research.

Dr. Ivanoff is an experienced clinician, practicing in restorative and general dentistry for over 24 years. He also has extensive experience working in dental research, with his specialty in AC electrokinetics and dielectrophoretic drug transport in dentistry. Since transferring to the Department of Bioscience Research and designating more time to conducting research, Dr. Ivanoff has published three articles in national journals such as the American Journal of Dentistry and Food and Chemical Toxicology, and he recently had a fourth article accepted for publication in Electrophoresis. Dr. Ivanoff also just completed work as the Principal Investigator on a Category 1 Research Grant from the Alumni Endowment, and was awarded a second grant from the Alumni to continue his research.

Dr. Yanhui Zhang Promoted to Assistant Professor in the Department of Bioscience Research

Dr. Yanhui Zhang has worked as a Research Associate in the Department of Bioscience Research since fall of 2010. Recently, she was promoted to Assistant Professor and has begun to expand her research and assist with microbiology courses for dental students.

Dr. Zhang has worked for the University of Tennessee Health Science Center for many years, coming to the College of Dentistry from the College of Medicine, where she was working in cancer research. Her most recent publication, titled “Differential functions of phospholipid binding and palmitoylation of tumor suppressor EWI-2, was published in May 2011 in Biochemistry Journal. Dr. Zhang also presented at the AADR Annual Meeting in Tampa this past March. She presented a poster on the sponsored plaque glycolysis and metabolism study, which she conducted in the summer of 2011.

PLEASE WELCOME DR. GEORGE HUANG to UTHSC

Dr. George Huang, D.D.S, M.S.D., D.Sc. has accepted the position of Director of Stem Cells and Regenerative Therapies in the Department of Bioscience Research in the College of Dentistry. He will assume this position in May 2012.

Dr. Huang comes to UTHSC from Boston University’s Henry M. Goldman School of Dental Medicine, where he has been an Associate Professor and Chair of the Department of Endodontics since 2009. Prior to his position with Boston University, Dr. Huang was a researcher at the National Institute of Arthritis and Musculoskeletal and Skin Diseases.

Dr. Huang is a boarded Endodontist and brings with him to UTHSC two NIH grants:

- Stem Cell Based Therapy for Regenerative Endodontics
  - PHS/NIDCR – R01
  - Role: PI
- Regeneration of Pulp-Dentin Development in Immature Permanent Teeth with Pulp Necrosis
  - PHS/NIDCR – R34
  - Role: Consultant

Please welcome Dr. Huang to campus and take a moment to meet with him to learn more about his research.
UTHSC RECEIVES CONTRACT with AAOMP

The University of Tennessee was recently awarded a contract from the American Academy of Oral and Maxillofacial Pathology (AAOMP) to provide them with a slide digitizing service through the UT Tissue Core Facility on campus. This contract was awarded to UTHSC due largely to Dr. Yeshwant Rawal, Associate Professor in the Department of Diagnostic Sciences and Oral Medicine and in the Department of Pathology. Dr. Rawal will be collaborating with Dr. Anand Kulkarni, Director of the Tissue Core Services, in the College of Medicine.

As a result of this contract, the American Board of Oral and Maxillofacial Pathology (ABOMP) has expressed their desire to pursue UTHSC for their continuing education courses and continued competency assessment. This collaboration between UTHSC and AAOMP and ABOMP will help place UTHSC and its Division of Oral and Maxillofacial Pathology in the national and international spotlight.

DEPARTMENT NAME CHANGE

The Department of Biologic and Diagnostic Sciences has been renamed to better reflect the function of the department. As of the beginning of the year, the department is now called Diagnostic Sciences and Oral Medicine. This department is chaired by Dr. Cesar Migliorati, D.D.S., M.S., Ph.D., and includes oral and maxillofacial pathology, imaging services and oral diagnosis.

DEPARTMENT of BIOSCIENCE RESEARCH SEeks NEW RESEARCH MANAGER – GRANTS & CONTRACTS

The Department of Bioscience Research and the College of Dentistry is saying good-bye to its current Research Manager – Grants & Contracts, Laurie Johnson, as she relocates to Kansas City. In the wake of her departure, the Department is now actively seeking candidates to fill this position.

In a short summary, the Research Manager – Grants & Contracts is responsible for logistical oversight of dental research, which includes managing research grants and contracts; supervising clinical research studies; serving as a technical editor; developing communication materials for the research program; and working with sponsors, institutional committees, and faculty to successful execute research projects. This position reports to the Senior Executive Associate Dean for Research and manages the Clinical Research Associate and other members of the clinical research team (i.e., volunteers, coordinators).

A full job description can be found through the UTHSC Employment Website using position number 120000000LY.

Please direct any inquiries to Brenda Scott, Director of Dental Administration, at bscott@uthsc.edu.
The 2012 American Association for Dental Research (AADR) Annual Meeting was held last month in Tampa (March 21–March 24), and UT had a strong presence, with 27 poster presentations given by faculty and students. Seventeen of the posters were student projects, completed during the Student Summer Research Fellowship (funded by the UT Dental Alumni Endowment for Research and the Tennessee Dental Association Foundation), one poster was a postdoctoral student, and nine were faculty projects. Having such a large contingency of UT researchers at the AADR Annual Meeting has helped to increase awareness of the dental research program at UT.

Below is a list of the 27 posters that were presented at the meeting. They are listed alphabetically by last name of the first author. They are also categorized according to whether they were faculty, student, or postdoc projects.

Faculty Presentations:

- Babu JP, Garcia-Godoy F. Cytotoxicity of MTA and Portland Cement on Human Epithelial Cells
- Wu J, Hicks J, Flaitz C, Garcia-Godoy F. Role of Fluoridated Dentifrices in In Vitro Root Caries Formation.
- Hong L, Hottel TL, Habib M. Parental-Perceived Oral Health Associated with Children's Oral Health Behaviors
- Tantbirojn D, Versluis A, Garcia-Godoy F, Delong R. Can Initial Low-Intensity Curing Reduce Cuspal Flexure from Composite Shrinkage?
- Augustson D, Tantbirojn D, Hildebrandt G. Does Drinking Caffeinated Soft-Drink Cause Short-Term Oral Dryness?
- Versluis A. Stiffness and Stress with Nickel-Titanium Rotary File Pitch and Cross-Section

Student Summer Research Presentations:

- Bowman RB, Costa A, Garcia-Godoy F, Babu JP. Cytotoxic Effects of HEMA on Gingival Epithelial Cells
- Cho SY, Tipton D. Cranberry Component Inhibition of IL-17-stimulated Cytokine Production by Gingival Cells
- Clark S, Simon JF, Darnell LA. Effects of Polishing on Zirconia Crowns
- Evensky J, Simon JF, Darnell LA. Use of CEREC Composite Restorations in Primary Dentition
- Garrett L, Braxton AD, Tantbirojn D, Versluis A. Does Fluoride Gel/Foam Application Time Affect Enamel Demineralization?
- Habib M, Hottel TL, Hong L. Prevalence and Risk Factors of Dental Erosion in Children
UT DENTAL ALUMNI ENDOWMENT for RESEARCH
SPRING GRANT DEADLINE

As a reminder to faculty and postdoctoral students – the UT Dental Alumni Endowment for Research will be accepting research grant proposals for the Spring 2012 Cycle. The deadline for grant submissions is Friday, April 27th at 5:00 pm CST. All grants should be submitted electronically to Dr. Franklin Garcia-Godoy, Chairman of the Ad Hoc Research Review Committee (godoy@uthsc.edu). This request for proposals is a semi-annual competitive request with deadlines on the last Friday of April and October. Proposals for research funding must follow the guidelines established by the UT Dental Alumni Board. These guidelines are available for download on the Dental Research Website (http://www.uthsc.edu/dentistry/Research/news.php).

Please take special notice of the following sections and additional instructions:

- **Clinical Significance**: All proposals must include a discussion of the clinical relevance of the proposed research project. Whereas it is good to explain the project’s wider impact on the health sciences, please provide information regarding the dental clinical significance of the project.

- **Budgets**: Please make certain that your budget is an accurate portrayal of the costs of conducting the project as discussed in the proposal. Provide line item costs. You are strongly encouraged to consult with the Operations Manager in the Business Office (Brian Bowling) when developing your budget. Remember to only request what you will need for this project. Do not forget to include shipping costs. Also, remember that only $1000 can be requested for travel and only $300 for publication/presentation costs (and these costs are not included in the $15,000 limit).

- **Outcome Measures**: All proposals must include a plan for publication and presentation of the project AND a plan for future funding. The Endowment for Research is designed as seed money to collect pilot data or for postdoctoral research support. Faculty projects should be the start of ongoing research, therefore, must include a plan for seeking extramural funding.

- **Cover Letter**: Please do not forget to include a cover letter for the proposal. The cover letter should be printed on department letterhead and signed by all investigators. NOTE: if your proposal is a resubmission, you must include in your cover letter a bulleted list of the changes that you made to your original submission to address the comments from the Ad Hoc Research Review Committee. It is also good practice to highlight or bold the changes that you made throughout the proposal.
The following is a list of current clinical research studies being conducted by UT College of Dentistry faculty. The title, investigators, and study objective are listed for each project.

### A clinical evaluation of NobelProcera™ implant bar overdenture in the mandible or maxilla on 4 NobelProcera™ CC implants

**Study Objective:** To determine the bone behavior and survival rates of the NobelProcera™ implants, the bar, and the overdenture evaluating its clinical behavior.

**Principal Investigator:** Dr. Gregory Paprocki

**Co-Investigators:** Dr. David Cagna, Dr. Pradeep Adatrow

### Effects of Non-Thermal Plasma Treatment on Composite Restoration and Caries Prevention

**Study Objective:** To test the ability of a new miniature plasma brush to be used in dental clinical applications to prevent tooth decay and improve the quality of dental restorations.

**Co-PI:** Dr. Liang Hong

**Co-Investigator:** Dr. Zhousheng Xiao (Department of Nephrology)

### Fluoride varnish application for treatment of white spot lesion after fixed orthodontic treatment. A pilot study.

**Study Objective:** To determine the effectiveness of fluoride varnish in treating white spot lesions as compared to fluoride gel.

**Principal Investigators:** Dr. Franklin Garcia-Godoy  
Dr. Terry Trojan

**Research Staff:** Floyd Trammell (D-4 Student), Kimberly DeMonaco (Coordinator/Research Associate)

### Influence of Maternal Factors on Caries Development during Early Childhood. A Pilot Study (Ancillary to the CANDLE Study)

**Study Objective:** The purpose of this study is to investigate the impact of maternal factors on the development of dental cavities among 3-year-old children.

**Principal Investigators:** Dr. Liang Hong and Dr. Franklin Garcia-Godoy

**Co-Investigators:** Dr. Frances Tylavsky (Department of Preventive Medicine – CANDLE Study), Dr. Martha Wells, Dr. Daranee Versluis-Tantibirojn

**Research Staff:** Kimberly DeMonaco (Coordinator/Research Associate)
The following is a list of publications by College of Dentistry faculty from mid-January 2012 to present, and recent as well as upcoming presentations.

**PUBLICATIONS**


**Nosrat IV, Margolskee R, Nosrat CA.** Targeted taste cell specific over-expression of BDNF in adult taste buds elevates pTrkB levels in taste cells, increases taste bud size and promotes gustatory innervations. *J Biol Chem.* 2012 March 22 [Epub ahead of print].


**PRESENTATIONS**

Please refer to the Research Spotlight section of this newsletter for a full list of the faculty and student presentations at the American Association for Dental Research (AADR) Annual Meeting in Tampa on March 21st through the 24th.

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**Awards**

In November 2011, the International College of Dentists presented a Golden Pen Journalism Award to the Editor of the *Journal of the Tennessee Dental Association*. Dr. H. Clifton Simmons, Editor of *JADA*, was awarded the *Golden Pen Division 2 Award for Outstanding Article*. This award is presented to the editor of a publication that contains an article or series of articles that is of current importance to the dental profession.

The article for which Dr. Clifton received the award was a recent article submitted by authors **Dr. Franklin Garcia-Godoy**, Senior Executive Associate Dean for Research and Director of the Bioscience Research Center at UTHSC, and Dr. Peter E. Murray, Professor of Endodontics at Nova Southeastern University in Fort Lauderdale, FL. The article is titled, “Regenerative Dentistry: Translating Advancements in Basic Science Research to the Dental Practice, and was featured in the Fall 2010 issue of the *Journal of the Tennessee Dental Association*.

In January 2012, two Bioscience Research Department faculty members received awards from the Dean of the College of Dentistry. **Dr. Mustafa Dabbous**, Professor, and **Dr. Chris Ivanoff**, Assistant Professor, both received Dean’s Appreciation Awards for their work in the College of Dentistry.
The following is a list of current grants/sponsorships held by UT College of Dentistry faculty.

FEDERAL/FOUNDATION GRANTS

- **Influence of cranberry juice components on denture related stomatitis and inflammatory reactions of gingival fibroblasts**
  - PI: Jegdish Babu, B.S., M.S., Ph.D. (Bioscience Research)
  - Co-PI: David Tipton, D.D.S., Ph.D. (Bioscience Research)
  - Cranberry Institute of Wisconsin (Private Grant)
  - Amount: $40,200

- **Biocompatibility screening of restorative treatments**
  - PI: Franklin Garcia-Godoy, D.D.S., M.S. (Bioscience Research)
  - NIH High Priority, Short-Term Project Award (R56)
  - Amount: $135,000

- **Hinman Student Research Symposium**
  - PI: Franklin Garcia-Godoy, D.D.S., M.S. (Bioscience Research)
  - NIH/NIDCR (R13)
  - Amount: $20,000

- **Development of miniature plasma brush for dental clinical applications**
  - Co-I: Liang Hong, D.D.S., M.S., Ph.D. (PDCH/Director of Community Oral Health)
  - NIH/NIDCR (R44 SBIR Phase II)
  - Amount: $364,019

- **Novel Methods in Brain Tumor Research**
  - Co-I: Chris Nosrat, D.D.S., Ph.D. (Bioscience Research)
  - Department of Defense
  - Amount: $300,000

SPONSORSHIPS

- **A clinical evaluation of NobelProcera™ implant bar overdenture in the mandible or maxilla on 4 NobelProcera™ CC implants**
  - PI: Gregory Paprocki, D.D.S. (Prosthodontics)
  - Nobel Biocare

- **Fluoride varnish application for treatment of white spot lesion after fixed orthodontic treatment. A pilot study**
  - 3M ESPE
The UTHSC College of Dentistry was founded in 1878 making it the oldest dental college in the South, and the third oldest public college of dentistry in the United States.

The College contains a 4-year dental program, totaling approximately 320 students. In addition, students in the Postgraduate dental programs and Dental Hygiene are included.

The College is dedicated to providing professional, graduate, and postgraduate education; conducting dental research; and, delivering state-of-the-art patient care and public service.