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2013 Winner's Circle







Dbadah N. Austah

Dan Andrei B.Sc., D.



VOLUME XVIII Spring 2014

# Strengthening the Specialty's Educational Roots

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2013 A YEAR IN REVIEW



## President's Message



Keith V. Krell, D.D.S., M.S., M.A. President



#### Dear Colleague:

The AAE Foundation has good news to share. I thought you would enjoy seeing the highlights from our 2013 grants.

- A total of \$1.5 million was allocated in the 2013 budget for grants. In 2014, \$1.7 million is slated for investment.
- A \$250,000 Fellowship was awarded to Nikita Ruparel, D.D.S., M.S., Ph.D., Assistant Professor, Loma Linda University. Dr. Ruparel holds a Ph.D. in cellular and structural biology and has received numerous awards for her scholarship and research. She is excited to join the faculty at Loma Linda and looks forward to a life-long career in education.
- Continued Fellowship support was provided to Drs. Johnah Galicia, University of North Carolina at Chapel Hill and Tory Silvestrin, Loma Linda University. Dr. Galicia completes his endodontic residency in 2014 and Dr. Silvestrin in 2015. Both promise to be assets to our academic community.
- Two \$100,000 Endowed Faculty Matching Grants were awarded to University of Texas Health and Science Center at San Antonio and University of Detroit Mercy. These grants help to ensure that endodontists teach endodontics.
- The first-ever multi-center, multi-year research grants in regenerative endodontics were awarded. This is an unprecedented level of funding from an organization of our size.

These initiatives are an example of the impact your generosity and vision make. Our progress represents a collaboration among volunteers, donors and grantees. We can all be proud of the strides we take together. You are invited to participate in this important partnership. As our grants become more significant, the rewards of pledging grow. An entry level pledge is still only \$2,000 paid over five years. For just \$400 a year, you can ensure that your specialty will achieve the highest level of clinical excellence. Do yourself, your colleagues and your patients a favor by seizing this incredible bargain!

Sincerely,

-Keith N. Kel

Keith V. Krell, D.D.S., M.S., M.A. President

## **EXECUTIVE COMMITTEE**

Keith V. Krell President ouis E. Rossmar President-Elect Anne E. Williamson Secretary Jack Burlison Treasurer Gary R. Hartwell AAE President

# focus

## AAE Foundation Invests \$2.5 Million in Regenerative Endodontics

Stem cell regeneration represents an enormous area of growth for health care. The AAE Foundation's recent research investment will help endodontics to ride the tide that promises sweeping changes in clinical practice for both dentistry and medicine.

At the 2013 Interim Board Meeting, the Trustees approved grants to three research teams who are investigating different aspects of this topic. The grants total \$2.5 million over a six year period. "It's wonderful to have the resources to move our specialty forward," said Foundation President Dr. Keith V. Krell. "I can remember a time when we would not have been able to give this critical support to our researchers. It is our hope that these grants will provide the evidence to move ahead with larger studies. A special thanks to every donor who made this funding possible. We look forward to receiving annual progress reports which we will share with all our constituents."

Congratulations to the investigators and institutions listed below:

Institutions	Investigators	Project	Year One Funding	Total Funding
University of California at Los Angeles University of Southern California Yonsei University Dental College Kyung Hee University College of Dentistry	Mo K. Kang, D.D.S., Ph.D, M.S. Songtao Shi, D.D.S., M.S., Ph.D. Euiseong Kim, D.D.S., M.S.D., Ph.D. Sang Hyuk Park, D.M.D., M.S.D., Ph.D.	Cell Based Approaches in Endodontic Regeneration	\$100,000	\$600,000
University of North Carolina at Chapel Hill University of Washington New York University	Asma A. Khan, B.D.S., Ph.D. Natasha M. Flake, D.D.S, Ph.D. Jennifer L. Gibbs, D.D.S., Ph.D.	Prospective and Retrospective Treatment Analysis of Regenerative Outcomes in Immature Teeth	\$100,000	\$200,000
University of Texas Health Science Center at San Antonio University of Maryland Loma Linda University	Kenneth M. Hargreaves, D.D.S., Ph.D. Ashraf F. Fouad, B.D.S., D.D.S., M.S. Mahmoud Torabinejad, D.M.D., M.S.D., Ph.D.	Regeneration of Pulp Dentin Development in Teeth with Necrotic Pulps and Immature Roots	\$283,333	\$1.7 Million

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## Strengthening the Specialty's Educational Roots



Nikita B. Ruparel, D.D.S, M.S., Ph.D. received the first Endonontic Educator Fellowship under the new guidelines. She graduated with a D.D.S., Ph.D. and endodontic certificate from the University of Texas Health Science Center at San Antonio in June 2013. She accepted a position as assistant professor at Loma Linda University School of Dentistry, Department of Endodontics. Her personal interest in a long career in education paired with a strong research background helped Dr. Ruparel stand out among a robust list of candidates.

Two representatives from the AAE Foundation Board of Trustees and two representatives from the AAE Board of Directors as well as a past fellowship recipient reviewed applications from many deserving endodontists. With the change in guidelines, fellowship eligibility included residents nearing graduation, individuals leaving private practice



for education and those who have been educators for three years or less. Applicants must have secured a contract to teach full-time (as defined by the employer's institution) in an endodontic department at an institution that is accredited by or has a reciprocal agreement with the Commission on Dental Accreditation. The Endodontic Educator Fellowship Award is given in recognition of the critical role that educators play in strengthening the specialty.

Dr. Ruparel received a bachelor's degree in microbiology and a master's degree in life sciences from Mumbai University, India. She then relocated to San Antonio, Texas to further her dental education. It was at UTHSCSA that she was able to hone and enhance her research interests, which include pain biology and regenerative endodontics. The educational environment she experienced there helped instill the true values of a career as an academician.

"My program not only promoted collaborative support for research, but it allowed me to mentor junior students in the lab," said Dr. Ruparel. "That is when I learned the impact of education and the advantage of creating a place where teaching is at the forefront of its mission."

Dr. Ruparel will receive \$50,000 a year for each of the first five years that she has a teaching position. She will be encouraged to take advantage of other opportunities for educators offered by the AAE Foundation. As she paves her way as a new educator, Dr. Ruparel recognizes the opportunity she has been given to pursue her passion is infinite.

"I am immensely grateful for the AAE Foundation donors. I hope their contributions continue to affect future educators as it is them [educators] who will directly participate in producing astute clinicians and strengthen the endodontic community," said Dr. Ruparel.

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# focus

# In Appreciation



The AAE Foundation gratefully acknowledges these partners from industry for leadership support to endodontic research and education:

\$1,260,000 DENTSPLY Tulsa Dental Specialties

**\$1,000,000** DENTSPLY International

**\$310,000** Axis/SybronEndo

**\$200,000** Sirona Dental, Inc.

\$175,000 Carestream Dental PBS Endo **\$140,000** Treloar & Heisel, Inc.

**\$85,000** J. Morita USA

### \$75,000

Carl Zeiss Meditec, Inc. Global Surgical Corporation Obtura Spartan Quintessence Publishing

**\$60,000** Henry Schein Dental

### \$50,000

ASI Medical, Inc. Acteon North America Aseptico Brasseler USA EndoVision EndoTechnologies, LLC Sonendo **\$35,000** Charles B. Schwed Co. Inc.

**\$30,000** ColteneEndo

## \$25,000

Acadental American Dental Partners Aspen Dental Biomet 3i Edge Endo Elsevier Hu-Friedy Mfg. Co., LLC Patterson Dental Phase II Associates, LLC SS White Burs Suni Medical Imaging Ultimate Dental – A Division of Endoco Wells Fargo XDR Radiology Zimmer

## Foundation Research Grant *Makes a Big Impact* in the News!



Dr. Andrea Leigh H.C. Shah is a graduate of Harvard School of Dental Medicine and completed her endodontic residency at Tufts University School of Dental Medicine. During her time at Harvard in 2010, Dr. Shah received the Student Achievement Award in Endodontics from the AAE. She also received funding for a research grant proposal in Spring 2011 for a project that has received national attention. Dr. Shah is an associate at Brookline Endodontics in the Boston area. Outside of the office, she enjoys spending time with her husband, Sunjeev, and their two year old son, Carter.

- Q Recently, the Journal of Endodontics published the article "Outcomes of Hospitalizations Attributed to Periapical Abscess from 2000 to 2008: A Longitudinal Trend Analysis." Could you discuss how a grant from the Foundation supported your work?
- A This research is a follow-up to a 2007 project
   I participated in as a dental student at Harvard,
   where we studied the hospitalizations from
   periapical abscess. During residency,
   I decided to continue the research project by
   expanding the data set and looking at the same
   outcomes but over a longer period of time, from
   2000 to 2008. The grant from the AAE Foundation
   helped to purchase the data sets and the computer
   supplies needed to run the analysis for this research.
- **Q** The article was discussed in *The New York Times* and *Readers Digest*. Did you have any idea the article would receive so much attention.
- ▲ I was thrilled after acceptance for publication in the JOE. I had no idea this article would grab the attention of larger media outlets and educate the general public about hospitalizations due to dental abscesses.

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## The Foundation Welcomes *Sonendo* to the Honor Roll of Donors



If you haven't heard of Sonendo, you will probably notice their presence at the 2014 Annual Session when the company will debut a new device that uses sonic energy to clean canals. The device is undergoing clinical trials and many people in the profession are eagerly awaiting the results that will be released in the coming months. Last June, Sonendo surprised Dr. A. Eddy Skidmore with a \$50,000 pledge when he visited their offices in Laguna Hills, California to learn more about the company and their commitment to the future of endodontics. Sonendo's employees have been attending AAE meetings and events over the past year to visit with members and have collaborative discussions about the challenges endodontists encounter while performing root canal therapy. The Foundation recently asked Sonendo's CEO and President, Bjarne Bergheim, to elaborate on the company's contribution.

### Why does Sonendo support the Foundation?

We are committed to contributing towards the advancement of endodontic education and research in the oral health care community. It's fulfilling to be able to support the educational grants for future endodontists, as well as research projects that advance the quality of endodontics.

## Looking ahead, how will Sonendo's commitment to scientific research impact the practice of endodontics?

Very soon, endodontists performing root canal therapy will have the ability to provide ultraclean root canal therapy environment for their patients in a more comprehensive, efficient, and predictable way. Funding research that supports our commitment to Sound Science<sup>™</sup> is fundamental to the core values at Sonendo.

## Spring and Fall Research Grants 2013

Support for endodontic research lies at the heart of the AAE Foundation's mission. During the 2013 fall and spring research grant periods, a total of \$204,789 was funded in competitive research grant awards. Funding was awarded to both residents and faculty members. The AAE Foundation continues to support the specialty's research initiatives as one of its main priorities.

#### SPRING RESEARCH GRANTS

NAME	INSTITUTION	PROJECT	FUNDING
Obadah Austah*	University of Texas Health Science Center at San Antonio	Effect of Neonatal Capsaicin Treatment on the Development of Periapical Lesion in Rats	\$23,107
Vanessa Chrepa	University of Texas Health Science Center at San Antonio	Use of Two Different FDA-approved Products as Scaffolds in the Regeneration of the Pulp-dentin Complex	\$10,000
Jonathan Fu	University of Texas Health Science Center at San Antonio	Characterization of Innervation of Periradicular Cysts and Granulomas	\$11,822
Xianli Tang	University of Michigan	A Randomized Controlled Clinical Trial of Regenerative Protocols to Treat Immature Necrotic Permanent Teeth	\$11,063
			\$55,992

#### FALL RESEARCH GRANTS

NAME	INSTITUTION	PROJECT	FUNDING
Satish Alapati	University of Illinois, Chicago	Hypoxia-mediated Discordant Stimulation of Endothelium Perturbs Dental Pulp Stem Cell Differentiation, via Notch signaling	\$21,000
Karine Charara	University of Toronto	Comparison of Adjunct Irrigation Devices in Frequency and Extent of Apical Extrusion and Correlation with the Apical Pressure Applied	\$5,000
Alan Commet	University of California, Los Angeles	New Regulatory Mechanism for Pulpal and Periradicular Inflammation: Opportunity for New Therapeutics	\$15,960
Michelle Dang	University of California, Los Angeles	The Role of Periapical Endodontic Lesions in Osteonecrosis of the Jaw in Mice	\$14,000
Natasha Flake*	University of Washington	Investigation of the Relationship Between Anxiety and Endodontic Pain in Mouse Models	\$12,530
Dan Andrei Ionescu*	University of Toronto	Addressing Extraradicular Biofilm by Targeted Delivery of Antibacterial Nanoparticles Through Root Canal Portals of Exit	\$5,500
Ariadne Letra	University of Texas Health Science Center at Houston	Genetic Predisposition to Non-healing Response in Persistent Apical Periodontitis: The Role of Matrix Metalloproteinases and Cytokine Gene Polymorphisms	\$15,305
Chalres Sfeir	University of Pittsburgh	Platelet Concentrates and Experimental Calcium Phosphate Cement for Pulp Regeneration	\$20,310
Suja Shrestha	University of Toronto	Enhancing Dentin-stem Cells Interaction by the Application of Temporal Growth Factor Releasing Nanoparticles for Dentin Tissue Engineering	\$28,622
Ryan Shurtz	The Ohio State University	A Prospective Randomized, Double-blind Study of the Anesthetic Efficacy of Buffered Articaine as a Primary Buccal Infiltration of the Mandibular First Molar	\$10,570
			¢4.40.707

\$148,797

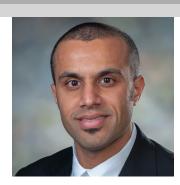
\*Indicates researchers who received \$500 award for highest scoring proposal

## Winner's Circle

During the fall and spring research grant cycles, the highest-scoring resident and faculty research grant proposals receive a \$500 cash award. The goal is to pay tribute to those applicants whose efforts reflect the highest quality science.

#### **SPRING**

#### FALL



Resident University of Texas Health Science Center at San Antonio Obadah N. Austah, B.D.S

As an endodontist in training, **Dr. Obadah Austah** knows that the ultimate goal is not only preventing and treating apical periodontitis, but understanding the disease process. This information is the key to delivering appropriate treatment and patient care. "Although there has been significant progress in the understanding of the pathogensis of apical periodontitis, there is a gap in knowledge regarding the role of 'neurogenic inflammation' in the development and progression of the disease," said Dr. Austah.

Dr. Austah hopes the findings of his study, "Effect of Neonatal Capsaicin Treatment on the Development of Periapical Lesion in Rats," will equip clinicians to better understand the disease while promoting early interventions as well as a more comprehensive intra- and post-operative pain management regime. In the project, he used the pharmacological ablation of a sub-class of nociceptors. Using this technique he was able to "dissect" the role of these peptidergic neurons in the pathogenesis of apical periodontitis.

Dr. Austah is fascinated by the way endodontics combines immunology, microbiology, neuroscience and pharmacology. "Although I value the technical skill set that I have developed in treating complicated root canal systems," said Dr. Austah, "I am also highly interested in further understanding the biology behind our specialty and applying this knowledge for the best interest of my patients."

In his spare time, Dr. Austah enjoys being with family, fishing, running, traveling and exploring other parts of the world.



Faculty Program Director University of Washington Natasha M. Flake, D.D.S., Ph.D.

With an ongoing interest in pain and endodontic outcomes, **Dr. Natasha Flake** is pursuing significant results in a research project to investigate the relationship between endodontic pain and anxiety. The relationship is widely appreciated by endodontists, but little is known about this process on a mechanistic level.

As the highest-scoring faculty proposal during the fall 2013 grant cycle, Dr. Flake hopes to utilize mouse models to investigate the genetic and neurophysiological mechanisms underlying the interaction between pain and anxiety. Dr. Flake's interests lie in nociception, pain and analgesia and endodontic education.

"The clinical significance of this research is to elucidate factors that contribute to the susceptibility of patients to pain, and guide future clinical decision-making in the management of pain," said Dr. Flake. "The interaction between pain and anxiety is nowhere more evident than in pain of endodontic origin, where anxiety can increase pain, pain can increase anxiety, and anxiety over the potential for pain associated with treatment can prevent patients from seeking a timely resolution of a problem."

In her spare time, Dr. Flake enjoys spending time with her husband and two children.

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Understanding the biology of dental pulp and its interaction with other tissues during health and disease will allow me to make accurate diagnoses and provide comprehensive, biologically based clinical decisions in my future practice,"

– Dr. Dan Andrei Ionescu

#### FALL



### Resident University of Toronto Dan Andrei Ionescu, B.Sc., D.M.D.

During his second year as an endodontic resident, **Dr. Dan Andrei Ionescu** was fortunate enough to bring his first year research ideas to life. With assistance from a strong research supervisor and faculty at his institution and the Department of Mechanical Engineering at McMaster University, he pursued and developed his multidisciplinary idea. His project combines concepts from engineering, physics, chemistry and nanotechnology and uses modern microfluidic principles and computer modeling to supplement *in vitro* assays.

"The new and exciting line of research has the potential to make an impact on endodontic treatment outcomes by improving the clinician's ability to target extraradicular biofilms non-surgically," said Dr. Ionescu.

By proposing a novel technique for non-surgical targeting of bacterial biofilms located on the external root surface, this project aims to develop a protocol for the delivery of antimicrobial nanoparticles in suspension, through the portals of exit of a root canal system, and into the periapical tissues. "It will combine the advantages of bioactive polycationic nanoparticles with microfluidic principles to achieve predictable particle transport through the root canal system and subsequent deposition at the periapex," said Dr. Ionescu.

First drawn to endodontics by the high-tech aspect of the field, Dr. Ionescu has enjoyed uncovering some of the mysteries surrounding the procedures that he was taught in dental school. "Understanding the biology of dental pulp and its interaction with other tissues during health and disease will allow me to make accurate diagnoses and provide comprehensive, biologically based clinical decisions in my future practice," he said.

Dr. Ionescu enjoys spending time with his wife, a recent graduate from the University of Toronto orthodontic program and his two young sons who, no doubt, will grow up to know more about teeth than many other kids in their class.



## Longtime Foundation Supporter and Grant Recipient Receives Distinguished Investigator Award

During graduation ceremony on May 26, 2013 the past president of the American Association of Endodontics (AAE) and the Foundation, Mahmoud Torabinejad, D.M.D., M.S.D., Ph.D. received the Loma Linda University Distinguished Investigator Award for his pioneering scientific investigations and outstanding research contributions. This award is in recognition of his commitment to research endeavors, external research funding, publications and citations that has had significant impact on the programs at Loma Linda University as well as for the larger national/international community. Dr. Torabinejad is currently Professor of Endodontics and Director of the Advanced Specialty Education Program in Endodontics.

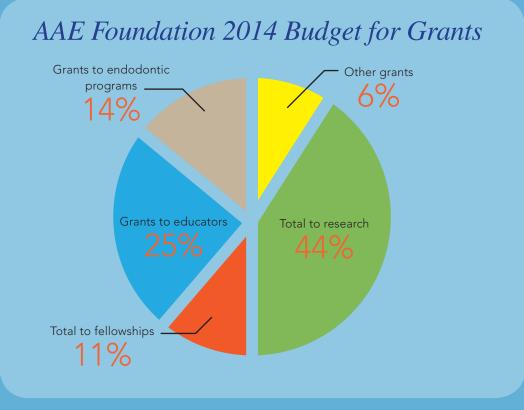
## 2014 Budget Sets High Standards for Giving

With the AAE Foundation 2014 budget completed and approved by the Board of Trustees, the Foundation is moving forward to allocate \$1,713,484 for grants supporting endodontic research and education initiatives. Approximately 44 percent of funding is for endodontic research, and 56 percent is for education. There are grant opportunities available to educators, residents and endodontic programs. The Board of Trustees encourages all eligible parties to take advantage of the Foundation's programs during their endodontic career.

One example of the funding available is a one-time \$500 grant for each resident. The money can be used for a variety of activities including, but not limited to, a research project, travel to a meeting to present research or to a Board Review Course. The Foundation/DENTSPLY Excellence in Research Award is a new grant opportunity available in 2014. This grant provides \$25,000 to two universities each year (through 2018) based on their achievements in research or their future goals for developing a research initiative. The intent is to highlight and promote excellence at multiple institutions and to support both established and start-up research efforts.

Supporting educators remains a vital component of the Foundation's mission, through grants to attend continuing education programs like the Annual Session and Fall Conference as well as scholarships in partnership with the American Dental Education Association.

As the AAE Foundation gears up for the final push of the 2013-2014 fundraising campaign, fundraising volunteers hope to meet the \$1.25 million goal. These funds are critical to help the Foundation maintain an aggressive level of support to research and education.



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# focus

## The New Face of Fundraising

During summer 2013, as the AAE Foundation's Special Committee on Fundraising began formulating their vision for the next fundraising campaign, several new ideas for creative fundraising were born. Coming off of a 2012-2013 campaign which raised \$1 million, the committee was interested in enhancing the tools that yielded successful results but also brainstorming new giving components.

Pledge increases remain popular among the Foundation's generous donors. However, committee members realized that donors are interested in climbing the ladder at different speeds. To satisfy the needs of a diverse group, the Foundation created three new levels of giving. The Foundation hopes to provide the ability for donors to steadily increase their generosity with comfort and ease. The AAE Foundation giving levels are highlighted below:

Patron	\$2,000
Benefactor	\$5,000
Founder	\$10,000
Topaz \star	\$15,000
Emerald <b>*</b>	\$20,000
Diamond	\$25,000
Silver \star	\$35,000
Gold	\$50,000
Titanium	\$100,000
Platinum	\$250,000
Named Award	\$500,000

New Pledge Level

The Foundation also created a new program for individuals who have reached their maximum pledge level. The iWill Match Program offers donors at the Founder level and higher the opportunity to make a bequest matching their pledge. All that is required is language inserted in the donor's will that states their intention.

#### Sample:

"I, (Name), of (city, state, zip), give, devise and bequeath to the AAE Foundation (written amount or percentage of the estate) for its unrestricted use and purpose."

The Foundation will recognize bequests in a special section of the Donor Honor Roll online and quarterly in the *Journal of Endodontics*, as well as in newsletters and other promotions.

If you are interested in adding a bequest to your will, please contact Debby Rice at drice@aae.org.

Special thanks to these remarkable leaders who have matched their pledge with a bequest:

- D. Scott Fehrs, ChFCKen Thomalla,
- C.P.A., C.L.U., C.E.P.
- David C. Funderburk, D.D.S., M.S.

 Keith V. Krell, DD.S., M.S., M.A.



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## Engaging Endodontics Newest Generation

Engaging endodontics newest generation of clinicians is at the top of the Foundation's priority list. During a time when student debt has increased exponentially and a recovering economy still feels unstable, this task can be challenging. However, through the effort of the Foundation's Student Ambassadors, the newest AAE member are learning about the mission, vision and funding initiatives of the Foundation, and residents have generously agreed to get on board.

"I always want to share with residents what the Foundation is and what it can do for them now and after they complete their program," said Student Ambassador Dr. A. Eddy Skidmore. "What I have discovered is that the students often don't know about all the 'goodies' they are entitled to."

The Student Ambassador program consists of volunteers and trustees who visit endodontic departments to inform residents about the Foundation's goodwill. The messages repeatedly focus on what the Foundation does for its constituents and the specialty as a whole. Residents learn that a pledge to the Foundation is not a charitable contribution but an investment in the specialty of endodontics. In short, funding from donors provides grants for research and education which help maintain the worth and stature specialty.

"Residents need to know about the financial aspects of their Foundation," said Dr. Skidmore. "They need to know how we obtain our contributions, how we invest our funds and how we distribute grants."

Recently, Drs. Peter Morgan, Margot Kusienski and Louis Rossman visited each of the institutions in Boston and New York City as Student Ambassadors. Drs. Morgan and Rossman have visited the area for two years in a row and valued the opportunity to bring Dr. Kusienski into the fold. Enthusiastic residents encourage the Foundation's Student Ambassadors to continue spreading the Foundation's message.

"These school visits represent a coming together of youth and experience to seek a common goal, the improvement of endodontic care for our patients," said Dr. Morgan. "Most residents understand this message, even though they may be at an economically challenging time in their career. The result is that many residents make a pledge to the Foundation and many programs have 100% participation in pledging by their residents."

Visiting residents in their element is extremely rewarding to each of the Foundation's Student Ambassadors. "Residents are at the heart of our specialty," said Dr. Morgan, "and the Foundation is really an expression of the passion felt by endodontists for their chosen career."



Ambassadors, visit with residents and faculty at Tufts University to educate them about the Foundation's opportunities.



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