DEAN'S ANNUAL REPORT

FACULTY OF DENTISTRY
2018-19

UNIVERSITY OF TORONTO


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CONTENTS

A MESSAGE FROM
DEAN DANIEL HAAS

Advancing Our Priorities

Simply meeting our mission has never been enough

I am very pleased to present the second Dean's Annual Report from the University of Toronto's Faculty of Dentistry. This report presents a concise snapshot of some of our milestones in meeting our academic, research and patient-care missions over the 2018-19 academic year. Our vision is to improve health by advancing dentistry through inspired leadership, innovation and excellence in education, research and clinical practice. And while we continue to advance our goals each year, simply meeting our mission has never been enough. Our aim is to constantly improve our practices and to exceed our own high expectations.

Consistent with the priorities of the University articulated by president Meric Gertler, we are striving to re-envision our undergraduate programming. Over the past few years, we have instituted a number of additional global service-learning programs that give our students unique opportunities to provide care in local, national and international contexts. We are also supporting learning priorities in mental health: our students participate in service-learning rotations at the Centre for Addiction and Mental Health (CAMH). In the coming year, we will be offering a new module on psychiatry in dentistry, which will better equip our students with identifying and treating patients with mental health challenges.

Research is another consistent strength of the Faculty, and one for which our school has become well known. This year, for instance, faculty members have published a number of important discoveries in high-impact journals, including *Nature Communications*, *Acta Biomaterialia*, *Blood Advances*, and the *Journal of the American Dental Association*, among others. Many have been recognized with prestigious honours for their work. At the recent International Association for Dental Research meeting this past spring, for example, professor Chris McCulloch received the inaugural Canadian Association of Dental Research/ Association of Canadian Faculties of Dentistry National Dental Research Award. The French Society of Endodontics honoured Endodontics graduate specialty program director, Bettina Basrani, with the Louis I. Grossman International Award.

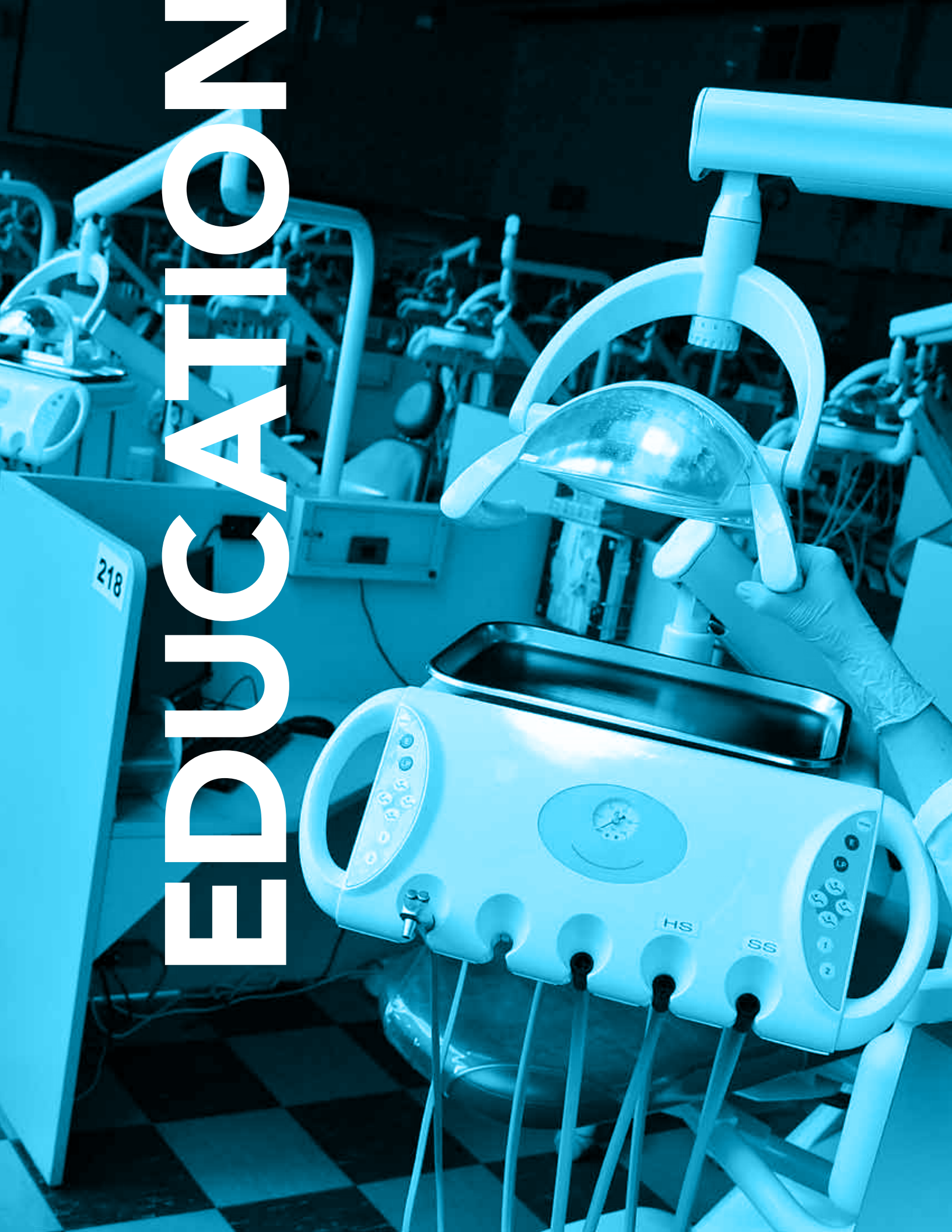
We are investing in collaborations. This summer, the Faculty opened a new state-of-the-art imaging facility where researchers — not only from our own Faculty but across the University, in our communities and around the globe — can pursue their own discoveries. Aptly named CAMiLoD (Centre for Advanced Microscopy Laboratories of Dentistry), the Centre envisions a whole new level of multidisciplinary and international research collaborations, as detailed later in this report.

We continually strive to provide the very highest standard of education. We are developing a master clinic plan as part of our Strategic Plan. As we invest in revitalizing our clinical infrastructure, we are looking for new ways to improve patient care and the health of our communities.

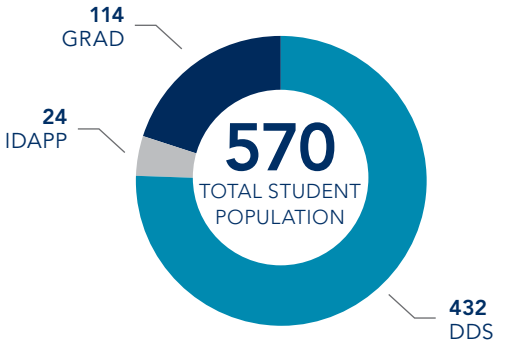
I am incredibly proud of the passion, energy and commitment that our faculty, staff and students invest each year in our school. I am excited to share with you the fruits of our collective labour.

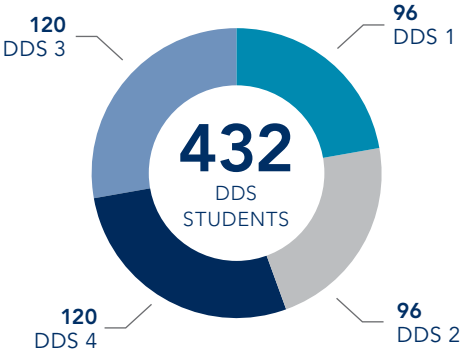
Daniel Haas, DDS, PhD, FRCD(C)
Professor and Dean
Arthur Zwingenberger Decanal Chair

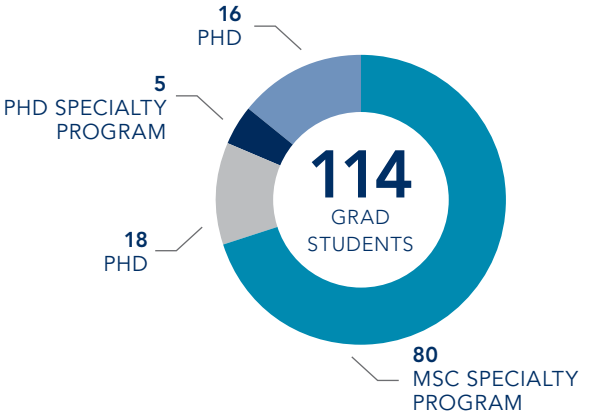
EDUCATION



HIGHLIGHTS







With its diverse student population, within one of the top universities in North America, and set within a vibrant, world-class, multicultural city, the University of Toronto's Faculty of Dentistry continues to attract top candidates from around the globe.

17% — Of students entering the DDS in 2019 hold a master's degree

The majority of the 96 students admitted into the DDS program in 2018 studied at an Ontario university prior to being accepted.

18% — University of Toronto

22% — Western University

17% — McMaster University

8% — York University

International Dentist Advanced Placement Program

The International Dentist Advanced Placement Program (IDAPP) admitted 24 students during the 2018-19 admissions cycle. Students entering this program attend a rigorous six-month training program. Once completed, students join year 3 of the DDS program.

24 Students admitted into IDAPP in 2018-19.

54% Of students accepted into IDAPP in 2018 stated India as their country of origin.

Graduate Programs

Graduate specialty programs received a staggering number of applications during the 2019 admissions cycle. Top rated programs of interest to perspective candidates included orthodontics, oral and maxillofacial surgery and endodontics.

295 Graduate specialty applications in 2019.

20% Rate of increase in specialty program applications from the previous year.

39% Increase in endodontics graduate specialty program applications in 2019.

FUNDING

Undergraduate Funding

$107,080
DISTRIBUTED AS BURSARIES

$60,979
DISTRIBUTED AS AWARDS

$594,000
DISPERSED AS UNDERGRAD FINANCIAL AID

Graduate Funding

$39,000
AWARDED IN BURSARIES

$110,273
IN AWARDS

$299,574
DISTRIBUTED AS GUARANTEED ANNUAL FUNDING

TRAINING THE NEXT GENERATION

It's not your ordinary summer job. With yet another strong cohort, the **Summer Student Research Program** has continued to bolster the education of undergraduate students interested in broadening their foundation in research. The 2018 program ended with a one-day symposium of oral and poster presentations on August 24.

Highlights

25 STUDENTS PARTICIPANTS

1 FUNDED THROUGH NSERC FELLOWSHIP

6 FUNDED THROUGH CIHR UNDERGRADUATE FELLOWSHIPS

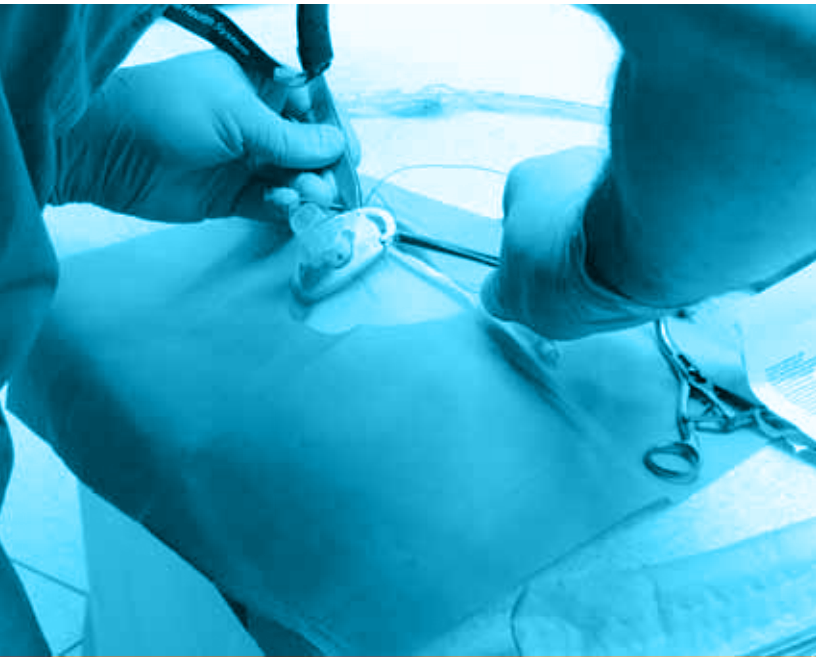
14 STUDENTS WERE FUNDED THROUGH THE PROGRAM

4 FUNDED BY SUPERVISORS

INSPIRED EDUCATION

In June, the Faculty held its second annual **Education Day**, featuring a keynote address by Dr. Rick Penciner. Organized by associate professor Laura Dempster, chair of the professional development committee, and vice dean, education, Jim Lai, the half-day symposium was attended by 40 faculty members and instructors. The event is intended to better prepare and support teachers.

ATTENDED BY **40** FACULTY AND INSTRUCTORS



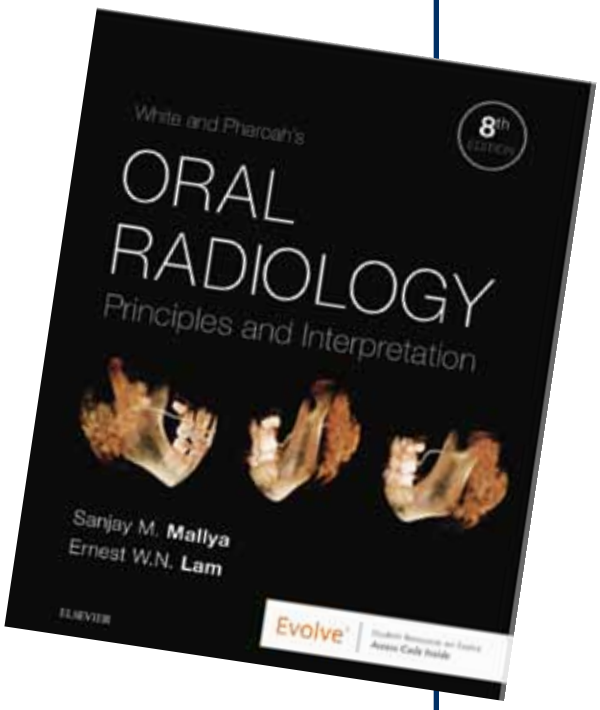
CREATION OF FIRST-EVER TECHNICAL SKILLS EXAM FOR ORAL AND MAXILLOFACIAL SURGERY

The first-ever technical skills competency exam for the specialty of oral and maxillofacial surgery was piloted this year, thanks to specialty program director, assistant professor Marco Caminiti and a collaborative team of experts at UofT Dentistry, Mount Sinai Hospital, Sunnybrook Hospital and Humber River Hospital. The results of the inaugural exam were presented at the Canadian Academy of Oral and Maxillofacial Surgeons in the spring of 2019. The team hopes to have the test adopted as an annual assessment tool for OMFS residents across Canada, and it could even be used to screen candidates applying to the specialty field.

RADIOLOGY LEGACY CONTINUES

Last fall, the flagship textbook *Oral Radiology* entered its 8th edition – but with its second UofT author. Ernest Lam, associate dean, graduate education and director of the graduate specialty program in oral and maxillofacial radiology, took over from previous UofT author, professor emeritus Michael Pharaoh, who had edited the previous four editions.

As well as being a focal point of undergraduate dental education, the textbook has also become a staple for graduate radiology programs. Lam authored the principles section of the textbook, which was published by Elsevier in December 2018.




GROWTH

REIMAGINING LIFE AFTER SCHOOL

UofT Dentistry puts a premium on lifelong learning. With its Continuing Dental Education program, UofT is reimagining the classroom for practising dentists. New CDE director Chris Swayze is passionate about taking a fresh look at classic course offerings and trying to meet the needs of busy dentists with a thirst to better their patients' lives and successfully grow their practices.


Chris Swayze

(Sept. 1 2018 – June 30, 2019)

1,566

REGISTRANTS IN CONTINUING DENTAL EDUCATION CLASSROOM COURSES IN 2018-19

37

CLASSROOM COURSES OFFERED IN 2018-19

29

UTOOTH ONLINE LEARNING COURSE OFFERINGS IN 2018-19

3,927

NUMBER OF CONTINUING DENTAL EDUCATION ONLINE (UTOOTH) COURSES PURCHASED

WHAT'S IN A NAME?

CDE has changed the name of its popular Biomaterials course to: Surgical & Prosthetic Implant Treatment Program for Internationally-Trained Dentists. The new name is more representative of the course offering and its audience.

SEAL OF APPROVAL

UofT Dentistry's CDE program has won approval from the Quality Assurance Committee of the Royal College of Dental Surgeons to offer a new course, Advanced Training Program in Orofacial Pain Management. This course is also geared towards internationally trained dentists.

Great Alumni Event

LIVING PROOF

UofT Dentistry would be merely bricks and mortar without its vibrant, engaged community of students, faculty, staff and alumni. Our community is passionately driven by a desire to serve our patient population. But, through its immense generosity, our community also warmly embraces the future generation of dentists and researchers.

To all of our donors and sponsors, we offer our heartfelt thanks.

NO. OF LIVING ALUMNI

8,232

TOTAL DONATIONS: 2018-19

$2.26M

MAJOR GIFTS IN 2018-19

$1.66M

5 DONORS

LEADERSHIP ANNUAL GIVING

$307K

337 DONORS

SPONSORSHIPS

$178K

18 SPONSORS

GIFTS IN KIND

$130K

3 DONORS

$119,405	SCHOLARSHIPS AND STUDENT SUPPORT
$58,372	ACCESS TO CARE
$287,296	CAPITAL PROJECTS (INCL. GIFTS IN KIND)
$102,582	STUDENT OUTREACH
$1,517,306	RESEARCH AND OTHER PROGRAMS
$178,266	SPONSORSHIPS

Jointly responsible for alumni relations and fundraising, the Advancement Office has been working hard to create engaging opportunities for alumni, friends, and donors. This is an ongoing activity of the office, the importance of which is underscored by the hiring of a new alumni and donor relations officer, Rachel Castellano.

Some of this year's activities included:

Mentorship Lectures. Taking place in the fall and spring. Last September, alumnus Shervin Rowshani lectured on the pleasures and pitfalls of practice outside a major city centre.

Alumni Reception, CE Lecture and Alumni Board AGM — October 16, 2018. Keynote speaker Chris Swayze gave a talk on the new sterilization laws.

Dean's Night of Appreciation — November 22, 2018. An evening to celebrate and recognize those special people who have given back to the school, enabling the Faculty to fulfil its mission.

Alumni Reception at the Pacific Dental Conference — March 7, 2019. The dean and the Advancement Office hosted an alumni and friends reception at the Pan Pacific Hotel in Vancouver.

The Great Alumni Event — May 10, 2019. UofT Dentistry and the Alumni Association hosted its 2nd annual soiree at Steam Whistle Brewing, welcoming more than 350 alumni, students and friends.

Reunions and class fundraising — May, 2019. These events take place annually around the Ontario Dental Association Annual Spring Meeting. Last year, in honour of its 40th reunion, the class of 7T9 raised over $70,000 to support our students.

Kids' Passport to UofT — June 1, 2019. The Faculty participated in Kids' Passport, the family-friendly activity for alumni with children ages 3-12 years old during UofT's Alumni Reunion weekend. Kids came by to "fill a cavity" in one of our casts, dress like a dentist and got lessons on how to practise good oral hygiene.

Grad Reception — June 5, 2019. An event hosted by the dean, Advancement and the Alumni Association to welcome and congratulate our new graduates.

A COMMITMENT TO OVERALL HEALTH

With its remarkable grant success over the years, UofT Dentistry demonstrates that its research program continues to be competitive internationally. A giant in biomaterials, connective tissue and regenerative disease, as well as a world leader in neuroscience and pain studies, UofT Dentistry has also been making huge strides in its collaborations on fibrosis and microbiology.

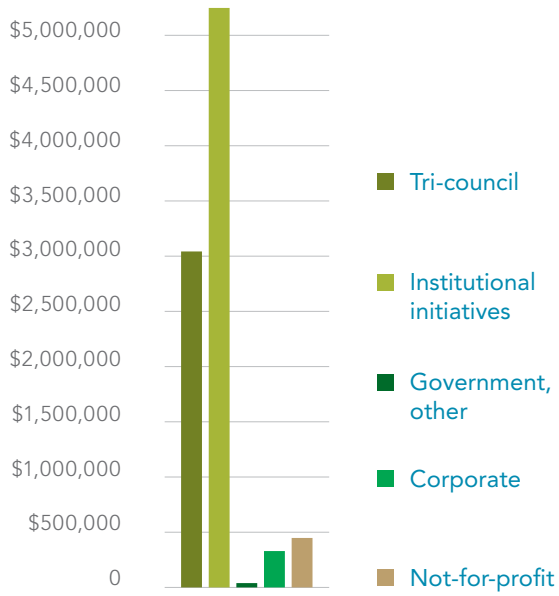
Number Of New Grants 2018-19

35

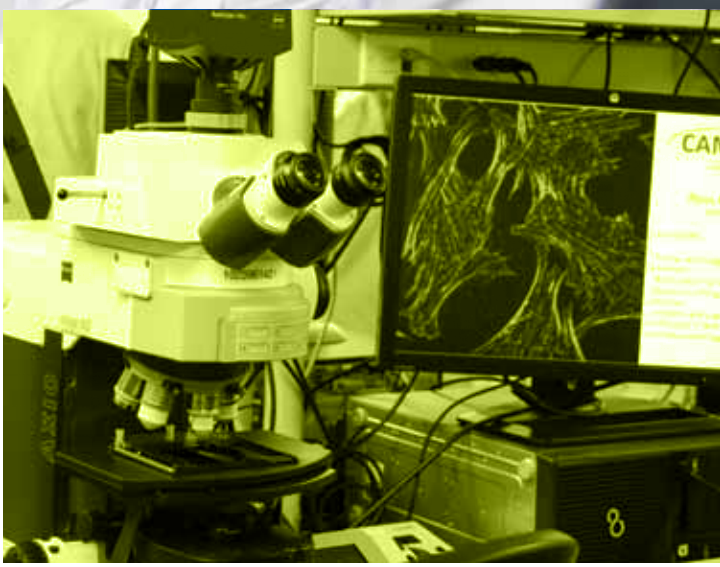
Total Awards 2018-19

$10,166,777

The Faculty of Dentistry's research program received over **$10M** in grant funding during the 2018-19 fiscal year, an increase from the previous year.



DOORS OPEN TO THE RESEARCH COMMUNITY WITH NEW, STATE-OF-THE-ART IMAGING FACILITIES



This is **CAMiLoD**: the Collaborative Advanced Microscopy Labs of Dentistry. And while it doesn't have horses, knights or kings, this new state-of-the-art imaging facility could give rise to new legends of the research world. This year, the Faculty of Dentistry officially opened the doors of CAMiLoD to members of the research community.

"We wanted to collectively pool our equipment and make it useable for the entire community," says university professor Boris Hinz, who spearheaded the project. Housed in Dentistry's newly renovated research laboratories, CAMiLoD is where investigators of all stripes can rent time on some of the world's best microscopy equipment to further their research.

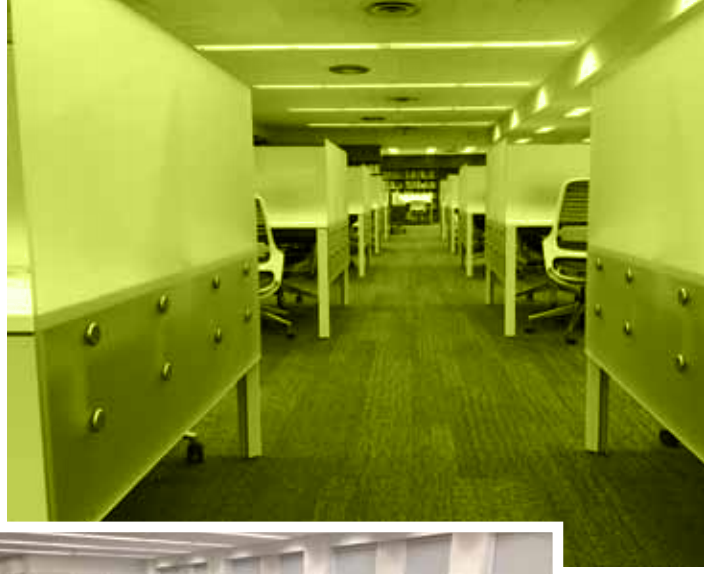
Some of CAMiLoD's equipment includes

- Specialized upright confocal microscopes with water-dipping lenses
- Epiflourescence (with fully automated Motorized Stage and on-stage incubation) microscopes to view living cells in multiple positions over time
- 3D imaging with living or fixed specifens via the Leica SP8 and Zeiss LSM 800
- Small surface structures via the Hitachi Scanning FlexSem
- Nanowizard 4 Atomic Force Microscope combined with correlative optical imaging
- Zeiss LSM 880 Airyscan, allowing users to see their samples in 4D at high speed and sub-diffraction resolution

Hinz hopes the labs will offer users more than imaging. Embedded within its existing services — light, force, and electron microscopy, as well as histology and image data analysis — CAMiLoD hopes to offer those working with hard-to-transport samples the option of using the shared cell culture and flow cytometry labs. To accommodate this service, CAMiLoD has hired imaging analyst Joao Firmino, who will assist users with image post-processing and quantitative analysis.

"Pretty pictures are great but not enough," says Firmino. "You need objective, quantitative data to get into the high-impact journals. We are here to help with this."

"We hope this fully integrated approach — offering both cell culture and imaging — will be an asset to our research partners and students everywhere," says Hinz.



STUDENT SPACES

JOINT PROJECT WITH THE UNIVERSITY OF TORONTO LIBRARIES SYSTEM AND THE FACULTY OF DENTISTRY ENABLED A FRESH PAGE FOR THE DENTISTRY LIBRARY

The Dentistry Library closed its doors in August to allow a refresh of the overall space — its first major overhaul since the building opened in 1959. The project called for the renovation and addition of more individual study spaces with sound barriers, collaborative study spaces, group study rooms fitted with smart technology, and a multi-faith room. Throughout, the design worked to incorporate the shifting technological needs of our students, better lighting, and more ergonomic furniture.

The Library opened its doors again on November 27, 2018

CLINICAL MASS

In 2018-19, there were approximately 90,000 patient visits to the Faculty of Dentistry's clinics, including 4,296 emergency clinic visits.

471
ANAESTHESIA TREATMENTS

4,296
EMERGENCY CLINIC

527
PAEDIATRIC SURGICENTRE VISITS

4,029
ORAL SURGERY VISITS

BLUEPRINTS FOR CHANGE

As a vital priority of the Faculty's strategic plan, the Faculty of Dentistry has retained Montgomery Sisam Architects who, together with Kahler Slater, are working on developing a master clinic renewal plan. The focal point of the plan, and the first stage of its rollout, will be the installation of a centralized medical device reprocessing unit. A draft of the clinic renewal master plan and schematics should be ready by early 2020.

Director of clinics James Posluns says that the new medical device reprocessing facility will easily exceed 2020 sterilization standards, and will be in line with hospital grade sterilization.

Other initiatives of the clinics include the purchase of a CERAC digital dentistry intraoral scanner for crown and bridge at the undergraduate level. While the Faculty already has one of these machines, a second will allow undergraduates more access to technologies that are becoming standard to practice from the beginning of their education.

DENTAL OUTREACH COMMUNITY PARTNERS

George Brown College WAVE Clinic
The Centre for Addiction and Mental Health (CAMH)
The Hospital for Sick Children
Princess Margaret Cancer Centre
Sinai Health System (Mt. Sinai Hospital)
St. Michael's Hospital
Sunnybrook Health Sciences Centre
Toronto Public Health
University Health Network
Weeneebayko Area Health Authority, Moose Factory
Haliburton County

DENTAL OUTREACH – GLOBAL SERVICE LEARNING PARTNERS

Addis Ababa University School of Dentistry (Toronto Addis Ababa Academic Collaboration)
Bright Island Outreach: Dominican Republic Program
Dentistry in Uganda Program
Health Outreach: Dentistry for Honduras Program
Health Outreach: Guatemala Program

The patient numbers reported above do not include patient care rendered at partner hospitals or during service learning rotations.

COMMUNITY


Yoav Finer

TENURE, PROMOTION

Yoav Finer, George Zarb/Nobel Biocare chair in prosthodontics, promoted to full professor

Jim Yuan Lai, vice dean, education, promoted to associate professor, teaching stream, and granted continuous status

NEW IN THE COMMUNITY

Laurent Bozec hails from the Eastman Institute, University College London. A biophysicist, Bozec joined the University of Toronto's research community at the rank of associate professor, where he is continuing his research into connective and mineralized tissue disorders, aging and bacteriology.

Karen Campbell is former director of the graduate program in paediatric dentistry at the University of British Columbia, as well as chief of dentistry at B.C. Children's Hospital. Campbell joined the faculty as an associate professor and director of the graduate specialty program in Paediatric Dentistry last October.

Chris Swayze was named director of the Continuing Dental Education program. Swayze joined the Faculty in February from the Royal College of Dental Surgeons of Ontario, where he spent 16 years in various positions, including manager of the investigative arm of the RCDSO.

RETIREMENTS

Thank you to this year's faculty retirees for their years of dedicated service to the Faculty: to research, to our students and to our patients.

SHIMON FRIEDMAN

SHAHEEN HUSAIN

ZE'EV SELTZER

FACULTY HONOURS AND RECOGNITIONS

Our community has some of the strongest research and teaching records in the world — and the merits to prove it.

FACULTY OF DENTISTRY AWARDS

Marco Caminiti
Peter Brymer
Bruce A. Hord Master Teacher Awards

Aviv Ouanounou
W.W. Wood Award

Rhea Gold
Staff Excellence Award

George Christodoulou
Faculty of Dentistry Award of Distinction

UNIVERSITY OF TORONTO AWARDS

Aaron Fenton
University of Toronto Arbor Award

TORONTO/PROVINCIAL AWARDS

Aviv Ouanounou
Toronto Alumni Chapter Academic Teaching Award, Alpha Omega Society

NATIONAL AWARDS AND RECOGNITIONS

Chris McCulloch
National Dental Research Award, Association of Dental Research (CADR) /Association of Canadian Faculties of Dentistry (ACFD) (inaugural)

Michael Glogauer
Fellow, Canadian Academy of Health Sciences (CAHS)
Named head of dental oncology, Princess Margaret Cancer Centre and chief of dentistry, University Health Network (UHN)

Carlos Quiñonez
Award of Merit, Canadian Dental Association

HEAD OF THE CLASS
UofT Dentistry alumnus Peter M. Loomer was named dean of the School of Dentistry at the University of Texas Health, San Antonio.

INTERNATIONAL AWARDS & RECOGNITIONS

Bettina Basrani
Louis I. Grossman International Award, French Society of Endodontics

Susanne Perschbacher
BMA Medical Book Award

Anne Dale
Hayden-Harris Award, American Academy of the History of Dentistry (AAHD)

Annie Shrestha
Endodontic Educator Fellowship Award, American Association of Endodontics Foundation (AAEF), 5 years, $250,000

Laura Dempster
2019 ADEAGies Foundation Education Fellowship

Peter Cooney
Honorary Member, 2019 International Association for Dental Research (IADR)

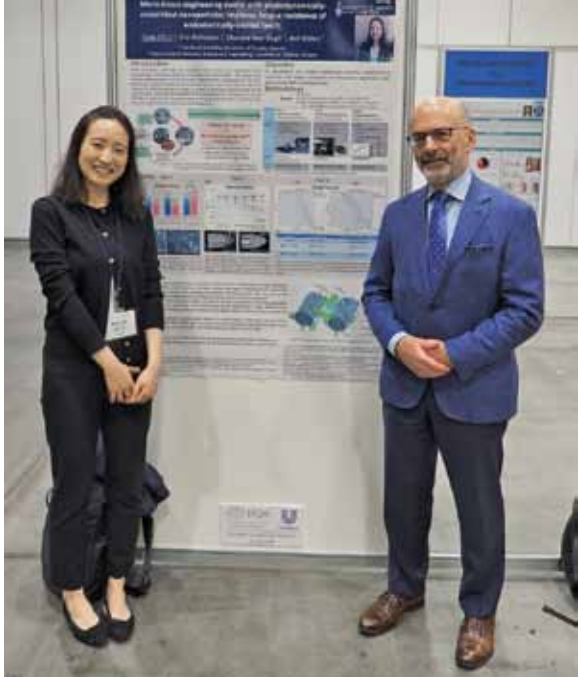
Daniel Haas
2018 Horace Wells Award, International Federation of Dental Anaesthesiology Societies (IFDAS)

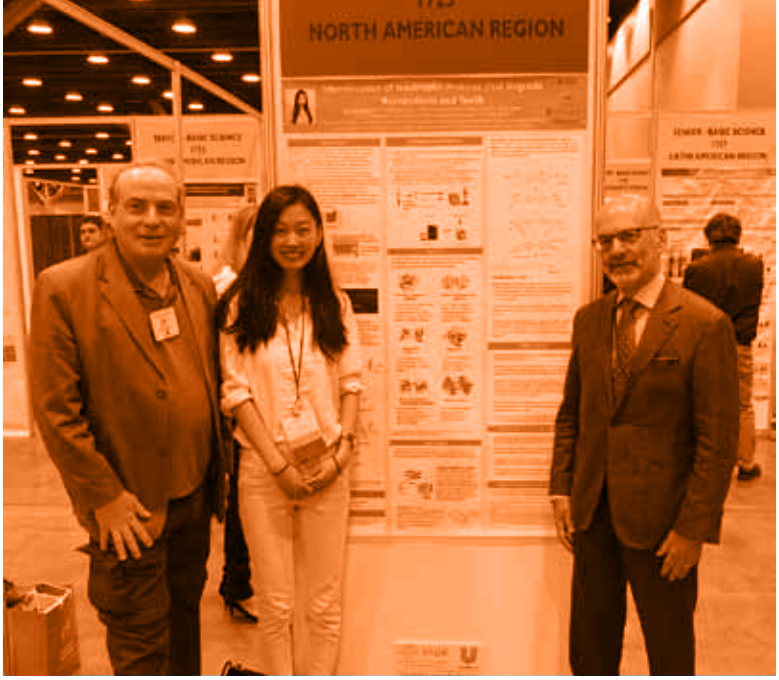
Daniel Haas
2019 Chair of the American Dental Education Association (ADEA) Board of Directors Citation

MAJOR RESEARCH

In 2018-19, UofT Dentistry's faculty members won a number of national and international recognitions for their research.

Marco Caminiti	Canadian Association of Oral and Maxillofacial Surgery (CAOMS)	$10,000
	Zimmer Biomet Industry Grant	$4,500
Iacopo Cioffi	European Orthodontic Society Research Grant	$10,000
Yoav Finer	Connaught Innovation Award	$50,000
Bernhard Ganss	National Science and Engineering Research Council (NSERC)	$180,000 5 YEARS
Anil Kishen	MITACS Accelerator Grant	$135,000 3 YEARS
Celine Levesque	National Science and Engineering Research Council (NSERC)	$180,000 5 YEARS
Chris McCulloch	Canadian Institutes of Health Research (CIHR)	$670,000 5 YEARS
	Canada Foundation for Innovation (CFI) John R. Evans Leaders Fund	$195,000
Barry Sessle	Fortaleza University (UNIFOR), Brazil	$24,000
Annie Shrestha	Colgate CARE grant	$30,000





STUDENT ACCOLADES

Mohamed-Nur Abdallah, MSc candidate, graduate specialty program in orthodontics
RESEARCH AWARD, AMERICAN ASSOCIATION OF ORTHODONTICS FOUNDATION (AAOF)

Russel Gitalis, MSc candidate
CADR-NCOHR TRAVEL AWARD
NSERC - CANADA GRADUATE SCHOLARSHIP

Anam Hashmi, Postdoctoral fellow
CADR-NCOHR TRAVEL AWARD

Gaurav Krishnamoorthy, MSc candidate, graduate specialty program in oral and maxillofacial radiology
DENTSPLY SIRONA RESEARCH AWARD, 2018 AMERICAN ACADEMY OF ORAL AND MAXILLOFACIAL RADIOLOGY ANNUAL SESSION

Gillian Landzberg, MSc candidate, graduate specialty program in endodontics
RESEARCH AWARD, AMERICAN ASSOCIATION OF ENDODONTICS FOUNDATION

Alice Fang-Chi Li, MSc candidate, graduate specialty program in endodontics
AAE/DENTSPLY SIRONA RESIDENT AWARD
SENIOR–BASIC SCIENCE, CADR-NCOHR STUDENT COMPETITION
SENIOR–BASIC SCIENCE, IADR UNILEVER HATTON STUDENT COMPETITION (NORTH AMERICA)

Sally Ziqi Liu, DDS candidate
JUNIOR–BASIC SCIENCE, CADR-NCOHR STUDENT COMPETITION
JUNIOR–BASIC SCIENCE, IADR UNILEVER HATTON STUDENT COMPETITION (NORTH AMERICA)

Pardis Pakshir, PhD candidate
MITACS ACCELERATE FELLOWSHIP

Ronen Schuster, PhD candidate
MITACS ACCELERATE FELLOWSHIP

Trevor Thang, MSc candidate, graduate specialty program in oral and maxillofacial radiology
ALBERT RICHARDS ORAL AND MAXILLOFACIAL RADIOLOGY AWARD, 2018 AMERICAN ACADEMY OF ORAL AND MAXILLOFACIAL RADIOLOGY ANNUAL SESSION

Elizabeth Worndl, DDS candidate
CADR-NCOHR TRAVEL AWARD

Book Chapters

Anil Kishen contributed the chapter "Reinforcing Endodontically Treated Teeth" to the *Textbook and Color Atlas of Traumatic Injuries to the Teeth*, 5th Edition.

IMPACT

INSPIRED INNOVATION

The impact of UofT Dentistry's vision to improve health through inspired leadership, innovation and excellence is evident through its research enterprise. From its inception, UofT Dentistry has equally valued teaching, patient care and research. Now, 144 years since its doors first opened, the school has emerged as a powerhouse of health research. Underpinned by a multidisciplinary and collaborative approach, our researchers demonstrate again and again that oral health is an important component and marker of overall health.

Canadian Benchmarking: Citations For Publications In Dentistry 2018-19

With 138 citations for publications in the field of Dentistry in 2018-19, UofT Dentistry once again ranked first in this metric when compared to other Canadian dentistry schools. This has been a consistent trend over the past five years.

INSTITUTION	CITATIONS
UNIVERSITY OF TORONTO	**138**
UNIVERSITY OF ALBERTA	84
UNIVERSITY OF BRITISH COLUMBIA	71
MCGILL UNIVERSITY	67
UNIVERSITY OF MONTREAL	54
DALHOUSIE UNIVERSITY	37
WESTERN UNIVERSITY	17
UNIVERSITÉ LAVAL	16
UNIVERSITY OF MANITOBA	11
UNIVERSITY OF SASKATCHEWAN	9

Data exported from Scopus July 2, 2019, indexed to June 7, 2019.

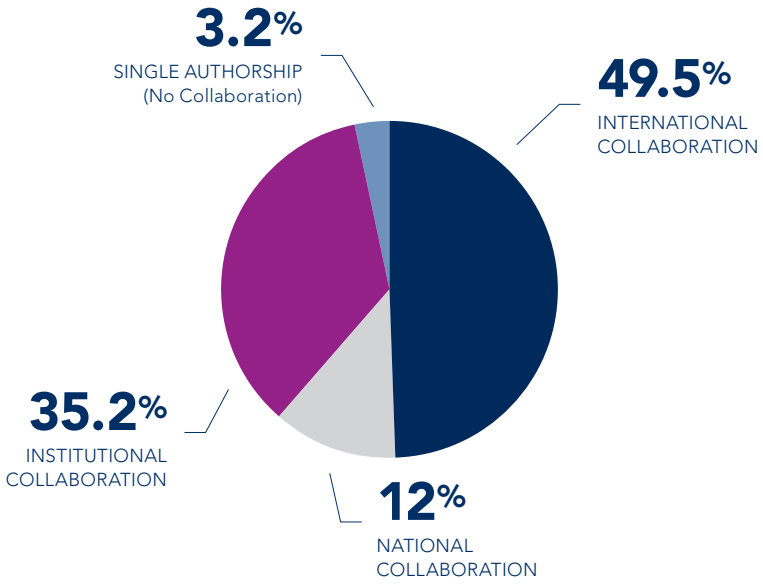
GLOBAL BODY, GLOBAL MISSION

The breadth of our research — encompassing the spectrum of human health — is matched by the strength of our research partnerships. Over the past year, just under half of all of UofT Dentistry's research was performed through international collaborations.

Collaborations: 2018-19

	PUBLICATIONS	CITATIONS	CITATIONS PER PUBLICATION	FIELD-WEIGHTED CITATION IMPACT
INTERNATIONAL COLLABORATION	107	115	1.1	1.26
NATIONAL COLLABORATION	26	35	1.3	1.10
INSTITUTIONAL COLLABORATION	76	148	1.9	1.29
SINGLE AUTHORSHIP (NO COLLABORATION)	7	1	0.1	0.05

Data Source: Scopus, up to June 7, 2019



International Collaboration Summary

Anil Kishen

THE SCIENTIST

UofT Dentistry's top knowledge producers are publishing on diverse subjects such as biomaterials, endodontics and stem cells.

Top 10 Published Authors: 2018-19

FACULTY MEMBERS	NO. OF PUBLICATIONS, 2018-19	MOST RECENT PUBLICATION	CITATIONS, 2018-2019	H-INDEX
ANIL KISHEN	18	2019	12	32
CRAIG SIMMONS	14	2019	33	42
YOAV FINER	13	2019	41	17
IACOPO CIOFFI	12	2019	11	10
CHRIS MCCULLOCH	12	2019	10	70
LAURENT BOZEC	11	2019	11	20
BORIS HINZ	11	2019	64	50
CARLOS QUIÑONEZ	11	2019	4	14
PAUL SANTERRE	10	2019	17	48
BERNHARD GANSS	9	2019	9	21

Data derived from Scopus and includes multidisciplinary publications.

Top Five Most-Cited Publications: 2018-2019

PUBLICATION	CITATIONS
The big five in fibrosis: Macrophages, myofibroblasts, matrix, mechanics, and miscommunication. **Pakshir, P. HInz, B.** (2018) Matrix Biology, 68-69, pp. 81-93.	24
Therapeutic approaches to control tissue repair and fibrosis: Extracellular matrix as a game changer. **Walraven, M., Hinz, B.** (2018) Matrix Biology, 71-71, pp. 205-224.	20
Mesenchymal Stromal/Stem Cells in Regenerative Medicine and Tissue Engineering. Fitzsimmons, R.E.B., Mazurek, M.S., Soos, A. **Simmons, C.A.** (2018) Stem Cells Int.	13
Periodontal health and gingival diseases and conditions on an intact and a reduced periodontium: Consensus report of work-group 1 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. Chapple ILC, Mealey BL, Van Dyke TE, Bartold PM, Dommisch H, Eickholz P, Geisinger ML, Genco RJ, **Glogauer M**, Goldstein M, Griffin TJ, Holmstrup P, Johnson GK, Kapila Y, Lang NP, Meyle J, Murakami S, Plemons J, Romito GA, Shapira L, Tatakis DN, Teughels W, Trombelli L, Walter C, Wimmer G, Xenoudi P, Yoshie H. (2018) Journal of Clinical Periodontology, 45, pp. 568-577.	12
Esterase from a cariogenic bacterium hydrolyzes dental resins. **Huang B**, Siqueira WL, **Cvitkovitch DG, Finer Y.** (2018) Acta Biomaterialia, 71, pp. 330-338.	11

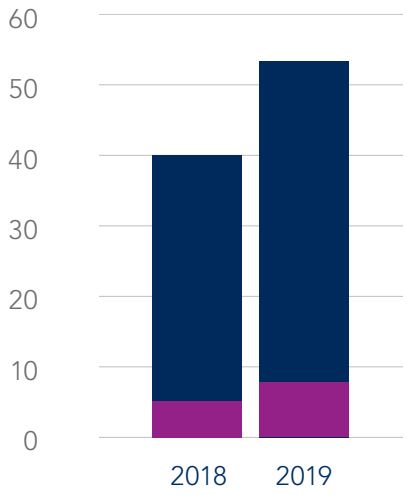
Top Five Most-Cited Publications: 2014-2019

PUBLICATION	CITATIONS
Pharmacological management of chronic neuropathic pain: Revised consensus statement from the Canadian Pain Society. Moulin D, Boulanger A, Clark AJ, Clarke H, Dao T, Finley GA, Furlan A, Gilron I, Gordon A, Morley-Forster PK, **Sessle BJ**, Squire P, Stinson J, Taenzer P, Velly A, Ware MA, Weinberg EL, Williamson OD; Canadian Pain Society. (2014) Pain Research and Management, 19 (6), pp. 328-335.	172
The extracellular matrix and transforming growth factor-1: Tale of a strained relationship. **Hinz, B.** (2015) Matrix Biology, 47, pp. 54-65.	141
Enhanced medial prefrontal-default mode network functional connectivity in chronic pain and its association with pain rumination. Kucyi A1, **Moayedi M**, Weissman-Fogel I, **Goldberg MB**, Freeman BV, **Tenenbaum HC**, Davis KD. (2014) Journal of Neuroscience, 34 (11), pp. 3969-3975.	136
Biodegradable materials for bone repair and tissue engineering applications. **Sheikh Z**, Najeeb S, Khurshid Z, Verma V, Rashid H, **Glogauer M.** (2015) Materials, 8 (9), pp. 5744-5794.	127
Evaluation of the antibacterial efficacy of silver nanoparticles against 94 Enterococcus faecalis biofilm. Wu D, Fan W, **Kishen A**, Gutmann JL, Fan B. (2014) Journal of Endodontics, 40 (2), pp. 285-290.	94

Publications in Top Journal Percentiles by CiteScore Percentile

A remarkable 43.1 per cent of the Faculty's knowledge production in 2018-19 appeared in the top 10 per cent of journals.

ARTICLES IN TOP JOURNALS, 2018-19



- No. of publications in top 10 per cent journals
- No. of publications in top one per cent journals (incomplete year)

93

Number of 2018-19 UofT Dentistry publications in the top ten per cent journals by CiteScore

What is CiteScore?
CiteScore metrics calculate the average number of citations for all documents published in the prior three years in a journal. CiteScore is calculated on an annual basis, showing the average citations for a full calendar year.

A MEASURE OF INDIVIDUAL IMPACT

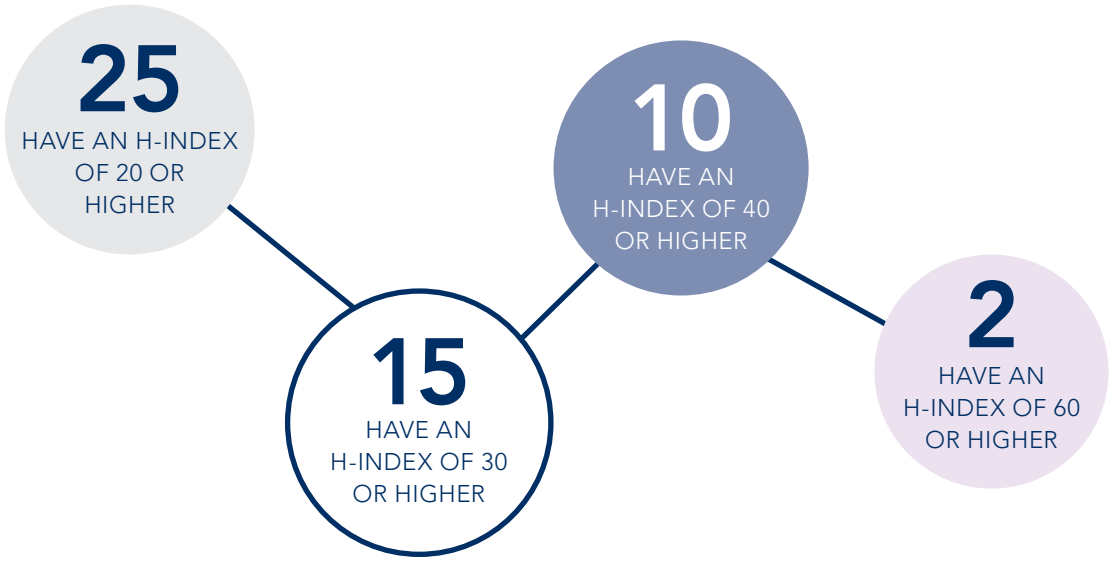
The H-index is a metric that scores both the quantity and quality of a scientist's research output, based on a list of publications and the number of citations these publications received. After 20 years of research, for instance, an H-index of 20 is considered good; over 40 is outstanding, and 60 and above is considered truly exceptional.

PROFESSOR JOHN E. DAVIES SETS MILESTONES

In a February 2019 list of its most cited articles of all time, the *Journal of Dental Education* listed as their number one most-cited article, professor John E. Davies' "Understanding Peri-Implant Endosseous Healing." The article was originally published in August, 2003 – making it a 16-year must-read.

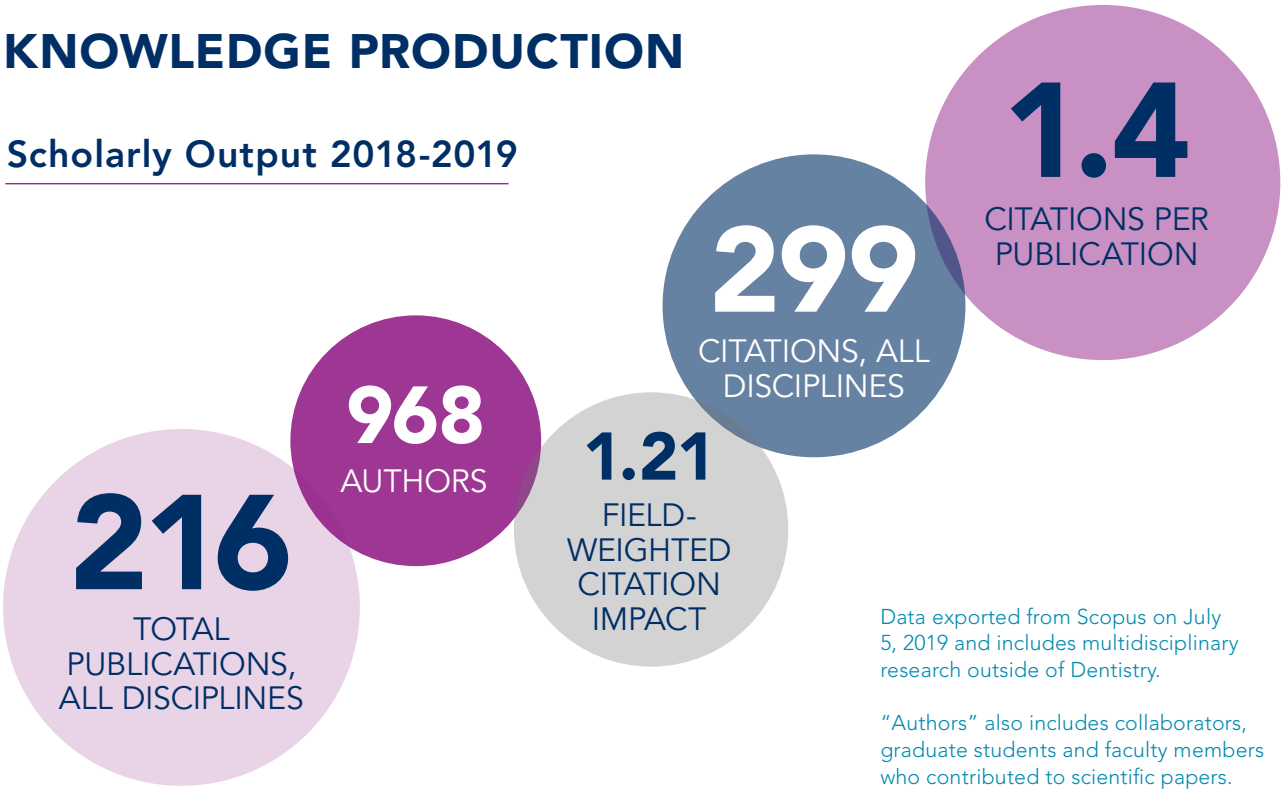
What is the most read article in the scientific journal, *Stem Cell Translational Medicine*? That would be professor John E. Davies' 2017 article, "Concise Review: Wharton's Jelly: The Rich, but Enigmatic, Source of Mesenchymal Stromal Cells."

Out of 62 faculty members who produce research at the UofT Faculty of Dentistry:



KNOWLEDGE PRODUCTION

Scholarly Output 2018-2019



Data exported from Scopus on July 5, 2019 and includes multidisciplinary research outside of Dentistry.

"Authors" also includes collaborators, graduate students and faculty members who contributed to scientific papers.

PUBLICATIONS IN THE FIELD OF DENTISTRY, 2018-19

INSTITUTION	2018	2019	OVERALL
UNIVERSITY OF TORONTO	**101**	**52**	**153**
UNIVERSITY OF ALBERTA	81	50	131
UNIVERSITY OF BRITISH COLUMBIA	63	29	92
MCGILL UNIVERSITY	55	21	76
DALHOUSIE UNIVERSITY	27	10	37
UNIVERSITY OF MONTREAL	21	12	33
WESTERN UNIVERSITY	20	7	27
UNIVERSITY OF MANITOBA	11	6	17
UNIVERSITÉ LAVAL	5	7	12
UNIVERSITY OF SASKATCHEWAN	3	3	6

Over the past year, the University of Toronto's Faculty of Dentistry continued to dominate with its research output. From January to June alone, Dentistry's researchers published over 50 journal papers, marking it as a national leader in knowledge production.

Data exported from SciVal, Scopus-sourced, excluding multidisciplinary research.

Exported July 2, 2019, indexed toJune 7, 2019.

11-YEAR STUDY SHOWS VITAL ROLE DENTAL PROFESSIONALS PLAY IN EARLY DETECTION OF ORAL CANCER


Marco Magalhaes

After examining data gathered over an 11-year period in a first-of-its-kind provincial study, clinician-scientist Marco Magalhaes says dentists in Ontario are detecting more cases of oral cancer and pre-cancer than ever before.

Magalhaes, lead author of the study that appears in the *Journal of the American Dental Association*, is an assistant professor at the Faculty of Dentistry, and one of the oral pathologists at the Toronto Oral Pathology Service (TOPS). Operated by the Faculty, TOPS is one of the largest oral pathology services in Canada, which provides comprehensive evaluation of biopsy specimens.

For the longitudinal study, Magalhaes looked at 63,483 biopsies submitted to the service between 2005 and 2015, which were overwhelmingly submitted by dentists. The data showed a steep rise in the overall numbers of carcinomas and dysplasia detected by dentists.

Overall, 828 cases of oral cancer were diagnosed by the UofT oral pathology service between 2005 to 2015, along with 2,679 premalignant lesions. But over time, the percentage of oral cancer detection by oral health professionals rose significantly. In 2005, only 56 cases of oral cancer and 99 cases of oral epithelial dysplasia were detected through biopsy.

By 2015, though, the number of cancers detected through the biopsy service had nearly doubled, rising to 103 cases of oral cancer. Dysplasia cases more than tripled from 2005, rising to 374 cases.

"These numbers are important, because the number of diagnosed cases outpaced both the rise in population in Ontario and the increased number of dentists licensed in Ontario," says Magalhaes.

63,483

BIOPSIES SUBMITTED TO TOPS BETWEEEN 2005 AND 2015

In fact, the number of cases detected at TOPS was significantly higher than the overall increase of oral cancers recorded in the province over that same period — just 30 per cent — compared to the 80 per cent rise at TOPS. Cancer Care Ontario, which tracks all reported cancers in the province, identified a total of 9,045 cases of oral cancer between 2005 and 2015.

An added dimension of the data collected in this study is that researchers may learn to pinpoint which — and how many — precancerous lesions will, over time, turn cancerous. While the data of the study provide evidence that TOPS was involved in the diagnosis of approximately 10 per cent of all oral cancers in the province, it also demonstrates a dramatic increase in the number of precancerous lesions identified by these health care providers.

"This is the first time that we have assessed dysplasia detected by dentists over such a long period of time," says Magalhaes.

ALL EYES ON UOFT

Canadian Benchmarking: Views Count 2018-19

UofT Dentistry's published research is being accessed by more viewers than many peer schools.

How many views have this school or individual's publications received? That's what's known as views count. In SciVal, views counts are generated from usage data in Scopus, and derived from the sum of abstract views and clicks to view the full-text article on the publisher's website.

VIEWS COUNT			
INSTITUTION	**OVERALL**	**2018**	**2019**
UNIVERSITY OF TORONTO	**1,173**	**947**	**226**
UNIVERSITY OF ALBERTA	889	680	209
UNIVERSITY OF BRITISH COLUMBIA	581	466	115
MCGILL UNIVERSITY	484	384	100
DALHOUSIE UNIVERSITY	265	237	28
UNIVERSITY OF MONTREAL	239	202	37
WESTERN UNIVERSITY	226	189	37
UNIVERSITY OF MANITOBA	102	75	27
UNIVERSITÉ LAVAL	85	64	21
UNIVERSITY OF SASKATCHEWAN	46	27	19

U.S. Benchmarking, Views Count 2018-19

The impact of our research makes us competitive with the top-rated dental education institutions across North America and around the globe. In the past year, UofT's research ranked fourth against a selection of U.S. peer schools in the number of views its research received.

VIEWS COUNT			
INSTITUTION	**OVERALL**	**2018**	**2019**
UNIVERSITY OF MICHIGAN	2,198	1,750	448
HARVARD UNIVERSITY	1,788	1,512	276
NEW YORK UNIVERSITY	1,440	1,196	244
UNIVERSITY OF TORONTO	**1,173**	**947**	**226**
UNIVERSITY OF WASHINGTON	1,161	875	286
UNIVERSITY OF PENNSYLVANIA	1,135	929	206
UNIVERSITY OF NORTH CAROLINA	1,133	917	216
UNIVERSITY OF CALIFORNIA AT SAN FRANCISCO	1,106	967	139
UNIVERSITY OF CALIFORNIA AT LOS ANGELES	1,034	920	114
UNIVERSITY OF IOWA	986	755	231
UNIVERSITY OF FLORIDA	856	665	191
COLUMBIA UNIVERSITY	693	633	60
UNIVERSITY OF MINNESOTA	553	432	121

VIEWS COUNT			
INSTITUTION	**OVERALL**	**2018**	**2019**
VRIJE UNIVERSITEIT AMSTERDAM	12	11.1	13.8
UNIVERSITY OF AMSTERDAM	9.9	9.3	11.1
UNIVERSITY OF HONG KONG	9.2	13.5	2.2
UNIVERSITY OF TORONTO	**8.5**	**7.9**	**9.6**
KAROLINSKA INSTITUT	7.5	9.1	4.6
UNIVERSITY OF BERN	7	8.9	3.3
TOKYO MEDICAL AND DENTAL UNIVERSITY	6.3	5.8	7.3
UNIVERSIDADE DE SAO PAULO	5.2	4.7	6.4
KING'S COLLEGE LONDON	5	5.7	3.7
UNIVERSITY COLLEGE LONDON	3.6	3.7	3.3

International Benchmarking, Outputs In Top 10 Percentile Most Viewed: 2018-19

UofT Dentistry also ranked well against a selection of top-rated international institutions in this metric, beating out leading schools such as the Karolinska Insitut, the Universidad de Sao Paulo and University College London.

VIEWS COUNT			
INSTITUTION	**OVERALL**	**2018**	**2019**
UNIVERSITY OF CALIFORNIA AT SAN FRANCISCO	17	20.3	9.7
COLUMBIA UNIVERSITY	14.1	15.4	10
UNIVERSITY OF MICHIGAN	9	9.3	8.3
UNIVERSITY OF IOWA	8.7	8.4	9.3
UNIVERSITY OF TORONTO	**8.5**	**7.9**	**9.6**
UNIVERSITY OF PENNSYLVANIA	8.3	8.1	8.7
UNIVERSITY OF MINNESOTA	5.7	7	3.3
NEW YORK UNIVERSITY	5.6	5.8	5.2
UNIVERSITY OF NORTH CAROLINA	5.6	7.2	3
UNIVERSITY OF CALIFORNIA AT LOS ANGELES	5.3	7.4	0
UNIVERSITY OF FLORIDA	4.9	3.9	6.4
HARVARD UNIVERSITY	4.6	5.4	3.1
UNIVERSITY OF WASHINGTON	4	3.5	4.9

U.S. Benchmarking, Outputs In Top 10 Percentile Most Viewed: 2018-19

In 2018-19, UofT Dentistry's research ranked fifth against a selection of U.S. peers in this metric.

OUTPUTS IN TOP 10 VIEWS PERCENTILES
This metric indicates the extent to which an entity's publications are present in the most-viewed percentiles of the Scopus database: what percentage of the institution's publications are in the top 10 per cent of Scopus's most-viewed publications?

Data include all publication types, exported from Scopus July 2, 2019, indexed to June 7, 2019.

Michael Floros

DENTISTRY BIOMEDICAL STARTUP TAKES PRESTIGIOUS VENTURE CUP

> **“There is no other tape for bones or anything similar out there**

It’s known as the **Venture Cup**: the holy grail for student entrepreneurs with a gleam in their eye, those searching not just for funds to help their budding business bloom, but for networks, advice, and a venue to test their world-class ideas against world-class competition.

And this past April, at the annual event at the Lundquist College of Business at the University of Oregon, the first place **USD $20,000** Cup was handed to the University of Toronto based-start up, Cohesys.

A biomedical device business spun out from the labs of professor Paul Santerre, Cohesys wants to bring to market a biodegradable bone tape to heal facial fractures. A next-generation marvel of biomedical engineering, bone tape is non-toxic and breaks down gradually in the body. The hope is that it will one day replace the current tools of facial surgeons: metal plates and screws.

And with its non-invasive, revolutionary technology, the tape could also vastly improve surgery times and outcomes for facial surgery patients.

“This is the only adhesive that sticks to wet bone,” says Michael Floros, Cohesys CEO and recent postdoctoral fellow, who represented the company at the event.

“There is no other tape for bones or anything similar out there.”

The team also recently took first place at the RBC Prize for innovation and entrepreneurship, a competition held at UofT this past spring, beating out a host of other startups for the $10,000 prize.

The one-year old company is closing on over **USD $1 million** of investment capital, which will enable them to progress on developments needed to obtain FDA approval for its product. It hopes to hit the U.S. biomedical market no more than a year and a half later.

A 'COLLABORATION OF DESTRUCTION': STUDY PROVIDES FIRST EVIDENCE THAT BACTERIA ARE NOT SOLELY RESPONSIBLE FOR TOOTH DECAY

A study by researchers at the University of Toronto's Faculty of Dentistry has found evidence that the body's own defence system could be a major contributor to tooth decay and filling failure.

Published in biomedical journal *Acta Biomaterialia*, the study shows that the decay of dentin and tooth-coloured restorations is caused not just by bacteria alone — as has been the model understood by science for decades — but through the unique activity of oral immune cells known as neutrophils, which potentially enhance the effects of bacteria.

It's not just the force of the neutrophil invasion, however, but the byproducts of the attacks that cause the damage.

On their own, neutrophils are incapable of causing damage to the teeth, explains lead author of the study, Yoav Finer, who holds the George Zarb/Nobel Biocare chair in prosthodontics at the Faculty of Dentistry. "They don't have acid, so they can't do much to mineralized tooth structures."

But when neutrophils engage in attack, the acids produced by the oral bacteria demineralize the tooth. That's when enzymes from both the immune cells as well as their targets rapaciously eat through teeth, and can also cause collateral damage to tooth-coloured fillings.

And it's a speedy process: "Within hours," the researchers found, dentin and tooth-coloured restorations sustain damage.

"It's a collaboration of destruction — with different motives," says study author Michael Glogauer, professor at the Faculty of Dentistry and chief dentist at the University Health Network.

"No one would believe that our immune system would play a part in creating cavities," says Finer. "Now we have evidence."

While the study provides the first direct evidence that an immune response may contribute to tooth decay, it also opens up new avenues for research.

"We can develop new methods to prevent immune-mediated destruction of teeth," says Glogauer.

The findings may also one day lead to new standards for testing filling materials, says Finer, who argues that materials need to be tested in environments mimicking the destructive forces at work in the oral cavity.

> **We can develop new methods to prevent immune-mediated destruction of teeth**

Yoav Finer

Writer: Erin Vollick
Photographer: Jeff Comber
Design: Fresh Art & Design Inc.

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