

THE FACULTY OF DENTISTRY

ANNUAL REPORT

for the period ending December 31 2007



MESSAGE FROM THE DEAN

Dr. David S. Precious



It is my pleasure to introduce you to the 2007 issue of the Annual Report of the Faculty of Dentistry, Dalhousie University. The Annual Report informs and updates faculty, staff, students, friends of the Faculty of Dentistry and the Dalhousie Community at large.

The fact that the practice of dentistry is increasingly complex and challenging, requires, more than ever before, that our profession not only be market savvy but also, more importantly in my view, remain mission sensitive. Each and every one of us must strive to prevent market driven forces from erecting barriers to access for those who need, but cannot pay for oral health care.

Dentistry at Dalhousie reflects this spirit. We are the first Faculty of Dentistry in Canada to move to electronic curriculum through a process called Vital Source. Increasingly students are stating that Dalhousie Dentistry provides the premier undergraduate clinical experience in Canada. The graduate programme in maxillofacial surgery is recognized as among the best in North America. The graduate programme in prosthodontics is destined soon to take its place among the leaders in the field. Never have we had better or more qualified students entering the profession of dentistry. In the face of declining enrollments in other professions applications to Dentistry at Dalhousie are up over 30% since 2003.

Never have we had a more qualified and enthusiastic faculty. Our team of deans, Dr. Boran, Academic, Dr. Murphy, Students and Dr. Filiaggi, Research have tirelessly devoted their efforts to fostering and enhancing the educational experience at Dalhousie. They join Dr. Blaine Cleghorn, Director of Clinics, Professor Nancy Neish, Director of the School of Dental Hygiene, Dr. Reg Goodday, Chair, Oral and Maxillofacial Sciences and Dr. Jack Gerrow, Chair of Dental Clinical Sciences to provide outstanding leadership for patients, students and colleagues alike.

Most important of all, never have we had more dental alumni donors. In spite of increasing tuition costs, never has dental education been a better or more prudent investment. That said, we must never lose sight of the fact that Nova Scotia tax dollars, combined with generous donations from alumni and industry, continue to subsidize a substantial percentage of the cost of dental education.

Among our accomplishments over the past few years, several stand out as milestones:

- Dr. W.M. (Bill) Murphy awarded Honorary Doctor of Laws fro Dalhousie University
- conversion of the QP programme to lead to DDS on successful completion
- establishment of the Bachelor of Dental Hygiene as a degree completion programme
- founding of the Dean's Circle for alumni donors who have contributed more than \$30,000 in lifetime giving
- revitalization of the "special lecture" as the McLean Lecture in memory of Dean J.D.McLean,
- completion of a detailed policy for students and faculty with infectious diseases
- establishment of a student sponsored "Student Code of Ethics"
- leadership role assumed by the Faculty of Dentistry in interprofessional learning at Dalhousie
- continued pre-eminent role of Dalhousie OMF surgeons in international charity surgery for patients with cleft lip and palat

We know that by sharing news and information about the components of our mission –to promote health in a caring and compassionate way through oral and maxillofacial health-based education, research and service - that we can foster relationships with our constituents and thereby continue to make a difference in the lives of the patients and students we serve while at the same time promoting the advancement of oral health.

A handwritten signature in black ink that reads "D. Precious".

ACKNOWLEDGEMENTS

I extend a sincere thank you to all members of the Dalhousie Community who have been so supportive of our collective efforts.

The Faculty is indebted to all members of the Dean's Office Staff, the Managers, the Assistant and Associate Dean, as listed below for their invaluable contribution!

Tammy Broussard
Deborah David
Rita Davis
Lorna Fraser
Marilyn Klein
Pat MacDonald
Jo-Anne Roski
Karen Sherwood

Mike Conrad, Manager, Finance & Personnel
Kelly Maher, Manager, Continuing Ed., Alumni Affairs & Development & Public Relations
Bruce Moxley, Manager, Clinic & Support Services
Nancy Webb, Manager, Academic Affairs

Tom Boran Assistant Dean, Academic Affairs
Mark Filiaggi, Assistant Dean, Research
Joe Murphy, Assistant Dean, Student Affairs

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DEPARTMENT OF APPLIED ORAL SCIENCES



Chair, Dr. Mark J. Filiaggi

Report from the Chair

I take great pride again this year in reporting on the ongoing contributions and accomplishments of our small but vital department. As the core basic science unit within the Faculty of Dentistry, Applied Oral Sciences remains primarily responsible for teaching and maintaining active research programs in the areas of biomaterials, biocompatibility, microbiology and immunology, with a focus as well in curriculum development. In addition, several members of this department are engaged in research and teaching activities

outside of the Faculty in academic units aligned with their areas of expertise; two of the four biomaterials members hold appointments within the School of Biomedical Engineering, while both microbiologists are members in the Department of Microbiology and Immunology within the Faculty of Medicine. Such interactions continue to enrich the environment within the building, both pedagogically and with respect to research. Without hesitation, though, it is the latter that remains core to our mission, even as we continue to make valuable and substantial contributions to teaching in the DDS, Qualifying and Dental Hygiene programs while taking lead administrative and service roles both within the Faculty and at the university level.

As in any research enterprise, securing new as well as renewable research funding is paramount to the further development and growth of faculty research programs. To this end, AOS members continue to compete successfully at the national level for research dollars that are becoming increasingly more difficult to secure. Of particular note this year was the granting of a CIHR "New Investigator" Award through the Regional Partnership program to Dr. Yung-Hua Li that will provide additional research personnel support for his work on biofilms. With our launch this past winter of a search for a new biomaterials scientist to join the fold, we can anticipate that research efforts within AOS will continue to grow in both quantity and scope in the coming years. Unprecedented cooperation among the three health faculties and the teaching hospitals to develop a unified health research strategy, including a formalized and integrated research training program, also bodes well for enhanced interdisciplinary and interprofessional research opportunities and collaborations. Such efforts will no doubt complement the already existing interprofessional health care training opportunities available within the Faculty, and together will provide an unparalleled educational, professional and research experience for our dentistry and dental hygiene students.

Patient Care

The members of the Department are essentially basic scientists (though one member holds a dental degree as well), and as such have relatively little interaction with patients at the clinic level. Still, the activities within this unit have had a direct impact on patient care, with significant laboratory-based research holding implications as well for future treatment planning. Dr. M. Filiaggi's primary research on bone-interfacing biomaterials, local drug delivery matrices and implant performance – together with Dr. E. Sutow's studies on the corrosion phenomena of dental implants – is focused especially on the continued success of these treatment modalities and their potential use in medically compromised patients. Dr. M. Filiaggi is also involved in a province wide community-based seniors oral health initiative designed to gather critical oral health status data for this vulnerable population in order to determine treatment needs. Dr. Song Lee's work continues to examine the development of an oral delivery system using oral commensal bacterium *Streptococcus gordonii* as a vector, with pertussis serving as the disease model.

This research, if successful, will create a live vaccine that can be delivered without needles. Dr. Y.H. Li's research in biofilms has broad implications not only in biomaterials use in the oral cavity, but also with respect to reducing infections related to hospital and clinic-based procedures.

Dr. M. Lee's research program is focused on structure/function relationships in connective tissues and other biomedical polymers. He has special interests in inflammatory degradation of tissues damaged through overload or overuse, tissue-derived implants for surgery, and age-related changes in soft tissues. He also applies image analysis and biomechanics to collaborative projects related to orthodontic surgery and device-based therapies. From both the patient and clinician perspective, Dr. E. Sutow and Dr. D. Jones (Professor Emeritus) continue to serve as valuable resources regarding the use and handling of amalgam, including health issues related to mercury exposure.

Teaching

The Department of Applied Oral Sciences traditionally provides courses and supplementary guest lectures in the areas of biomaterials and microbiology, with additional teaching at the graduate level in Biomedical Engineering that supports the Graduate Prosthodontics program. The Department also continues to contribute substantially to the evidence-based dentistry curriculum (Scholarship Across the Curriculum) while maintaining its involvement in oral exams for the 3rd and 4th year DDS students. All members of the Department also take part in didactic instruction for the summer qualifying program.

Dr. E. Sutow maintains a substantial teaching commitment within the Faculty, serving as course director and lecturer in the Dental Biomaterials Science courses given to DDS, dental hygiene and qualifying students, with contributions from Drs. M. Filiaggi, J. M. Lee and D. Jones as well as Maxine Langman and Gordon Hall. He also serves as the Unit Director for the Scholarship Across the Curriculum program that includes Student Table Clinics, and is a case study contributor and plenary leader in Foundation Sciences for Clinical Practice. Dr. E. Sutow further provides lectures in both Prosthodontics III and IV, targeting materials that students will be using

when making cast crowns and bridges, while also considering clinical and laboratory literature for the evidence-based selection and use of resin-based dental composites and dental amalgam.

Dr. Y-H Li directs courses in microbiology and infectious diseases for both the Dental and Dental Hygiene programs, with substantial contributions from Dr. Song Lee. Outside the Faculty, both members are further involved with directing and/or teaching in the undergraduate microbiology program. Along with his contributions to the DDS / DH / QP biomaterials curriculum and to Growth and Development, Dr. J. M. Lee leads three graduate level courses for the School of Biomedical Engineering in the areas of biomaterials and biocompatibility, biomechanics and biomedical imaging. Dr. M. Filiaggi also provides a course on bone-interfacing (hard tissue) implants for the BME program in addition to his role as course director and content expert for the Foundations Sciences in Clinical Practice course given to DDS3/QP1 students.

Along with classroom instruction, this department also maintains vital and substantial commitments to teaching as it pertains to student research training and supervision at the undergraduate, professional, and graduate levels.

As outlined below, these contributions extend beyond the Faculty, including as well training in related graduate programs (Biomedical Engineering; Microbiology & Immunology):

DR. MARK FILIAGGI

Supervised Graduate Students

Nancy Djogbenou, MSc Candidate, Biomedical Engineering
Jennifer Krausher, MSc Candidate, Biomedical Engineering
Vlad-Andrei Ionescu, PhD Candidate, Biomedical Engineering

Graduate Student Advisory Committees

Josh Bray, PhD Candidate, Physics
Greg Rockwell, PhD Candidate, Chemistry
J. Daniel Padmos, MSc. Candidate, Biomedical Engineering
Matthew Alain, MSc. Candidate, Biomedical Engineering

Postdoctoral Fellow / Research Associate Supervision

Zhijun Bai (co-supervised), Biomedical Engineering and Physics

Undergraduate / Professional Summer Student Supervision

Ashley MacDonald (DDS2)
Yewon Kim (DDS1)

DR. J. MICHAEL LEE

Supervised Graduate Students

Marianne Ariganello, PhD candidate, Biomedical Engineering
Ian Aldous, PhD candidate, Biomedical Engineering
Tom Willett, PhD candidate, Biomedical Engineering (completed 2007)
Peter Massaro, MSc candidate, Biomedical Engineering (completed 2007)
Caitlin Pierlot, MSc candidate, Biomedical Engineering (co-supervised)

Graduate Student Advisory Committees

Chris Dyck, PhD candidate, Biomedical Engineering
Sarah Connolly, PhD candidate, Biomedical Engineering
Vlad-Andrei Ionescu, PhD candidate, Biomedical Engineering
Daniel Padmos, MASc candidate, Biomedical Engineering
Antony Francis, MASc candidate, Biomedical Engineering
Matthew Allain, MASc candidate, Biomedical Engineering
Drew DeBay, MASc candidate, Biomedical Engineering (completed 2007)
Aaron Maazko, MASc candidate, Biomedical Engineering (completed 2007)
Andrew Moeller, MASc candidate, Biomedical Engineering (completed 2007)
James MacDougall, MASc candidate, Biomedical Engineering (completed 2007)
Michael Lovas, MASc candidate, Biomedical Engineering (completed 2007)

Undergraduate / Professional Summer Student Supervision

Joanah Lee, Dentistry Summer Student
Jiani Chen, Biomedical Engineering (Columbia U.) Summer Student

DR. SONG LEE

Supervised Graduate Students

Yannick Tremblay, PhD candidate, Microbiology & Immunology
Elisabeth Davis, MSc candidate, Microbiology & Immunology (Completed 2007)
Matthew Mayer, MSc candidate, Microbiology & Immunology (Completed 2007)

Graduate Student Advisory Committees

Hany Abdelhady, MSc candidate, Microbiology & Immunology
Craig Steeves, M.Sc. Biochemistry and Molecular Biology

Postdoctoral Fellow / Research Associate Supervision

Dr. Gaofu Qi, Microbiology & Immunology

Undergraduate Honours Thesis Supervision

Rebecca Townsend, Microbiology and Immunology
Travis Carpenter, Microbiology and Immunology

Summer Student Supervision

Guillaume Rey, Catholic University of Lyon, France

DR. YUNG-HUA LI

Supervised Graduate Students

Hany Abdelhady, M.Sc candidate, Microbiology and Immunology
Kai Zhang, Ph.D candidate, Dalhousie University – Sun Yat-Sen University

Graduate Student Advisory Committees

Yannik Tremblay, Ph.D candidate, Microbiology and Immunology
Anna Greenshields, M.Sc, Microbiology and Immunology (as external reviewer)

Postdoctoral Fellow / Research Associate Supervision

Yongxing Gong, postdoctoral fellow, 2007-2008, Faculty of Dentistry and Microbiology
Tianlei Liu, postdoctoral fellow, 2006-2007, Faculty of Dentistry and Microbiology
Xiao-Lin Tian, technician, 2006-2009, Applied Oral Sciences, Faculty of Dentistry

Undergraduate / Professional Summer Student Supervision

Tara Sutherland (DDS2), summer student, CIHR-NORTH program studentship
Jennifer Veysey (DH1), summer student, Faculty of Dentistry
Geoffrey Tziolas, honor project student, Microbiology and Immunology
Daniel Campbell, directed research project student, Microbiology and Immunology

Research and Scholarly Activity

Teaching commitments notwithstanding, research remains a principal focus of the Department. In this regard, 2007 was again a successful year for securing new funding for research programs as well as obtaining renewal support for existing programs through CIHR and NSERC. These achievements are listed in greater detail in a separate section below. Strong collaborative research efforts both within and outside the Faculty (as well as the university) also remain a hallmark of this department. A collaboration between Dr. M. Filiaggi and Dr. J. Dahn in Physics has led, for example, to a novel industry-sponsored research project – now in its third year – that marries a combinatorial materials approach with high-throughput cell culture and protein attachment assessment methods to facilitate the rapid discovery and selection of materials most appropriate for a specific implant application. Importantly, AOS members have also been successful in disseminating their research findings through conference or invited presentations as well as through publications in peer-reviewed journals, both benchmarks of active and productive research programs; these efforts are summarized as well in separate sections below.

In addition, several members of the Department act as expert reviewers for manuscripts and grant applications, including CIHR and NSERC, with some notable high-profile roles within the research community. Both Dr. S. Lee and Dr. Y-H Li serve on grant review committees for CIHR (Dental Sciences) and NSERC (GSC32 Bell Biology), respectively, while Dr. J. Michael Lee continues his appointment as Chair of GSC04 (Chemical and Metallurgical Engineering), an NSERC engineering grant review panel that oversees a large number of operating and equipment grants, and as Chair of CIHR's grant selection panel on New and Emerging Teams and High Risk Grants in Regenerative Medicine and

Nanomedicine. He is also panel member for the National Centres of Excellence program in Commercialization of Research (NCECR) and, along with Dr. M. Filiaggi, serves as a member of the College of Reviewers for the Canada Research Chairs program. He is a member of the Board of Directors of the Canadian Biomaterials Society and Canadian Liaison to the International Union of Societies for Biomaterials Science and Engineering. In 2007, he was the external reviewer for the McGill University review of the Department of Biomedical Engineering.

D.W. Jones, Professor Emeritus of Applied Oral Sciences, continues to serve as Chair of the International Standards Committee ISO/TC 106 Dentistry (2006-2010), Chairing most recently the meeting held in Berlin (October 2007). The ISO Technical Committee (106 Dentistry) has 7 Sub Committees and 40 Working Groups with participation and observer membership from 46 different countries. The committees are concerned with the development and updating of international standards based upon the physical and chemical requirements and performance properties of dental materials, and the design performance and physical arrangement of dental instruments and equipment. Dr. Jones also participated as a member of the Dental Science Committee of the World Dental Federation (FDI) that met in Dubai, UAE following the ISO meeting. The FDI Science Committee provides scientific advice and guidance to dentistry worldwide. Technical support is paramount to maintaining active research programs. In this regard, the Department gratefully acknowledges the commitment and efforts of Maxine Langman and Gordon Hall. Their ongoing laboratory and technical support, including their involvement in student lab training, are incredibly vital to maintaining the research productivity of the Department.

Administration

Aside from numerous course directorships, members of the Department remain actively engaged in the administrative life of the Faculty and the university as a whole. Dr. M. Filiaggi continued his role as Assistant Dean (Research), and in this capacity has contributed to the Dalhousie Research Advisory Committee (DRAC) while serving on the newly formed Integrated Health Research Training Program (IH RTP) Management Committee. An unprecedented collaboration involving the three health faculties (Dentistry, Medicine, and Health Professions), Capital Health and the IWK Health Sciences Centre, the IH RTP is a strategic initiative to build and enhance interprofessional health research by focusing on the skill development of those interested in health research pursuits, including undergraduate / professional and graduate students, post-doctoral

fellows, new faculty and faculty new to research. Dr. Filiaggi also remains actively involved with the Faculty Development and Research Development Committees, represents AOS on the Curriculum Sub-Committee and serves as well on the Institute for Research in Materials (IRM) Advisory Committee. Dr. Sutow continued his appointment on the Senate Steering Committee – effectively the administrative arm of Senate, in addition to his work on the Faculty's main Curriculum committee, while Dr. S. Lee served as Chair of the Faculty's Tenure & Promotion Committee.

As always, the department remains indebted to Denise Lynds-Brown for the invaluable administrative support she provides on an ongoing basis.

Local, National and International Presentations & Refereed Abstracts

(* = supervised trainee)

Bray JM*, Filiaggi M, Beyea SD. MR microscopy can resolve differences in the behaviour of implantable drug delivery biomaterials, 15th Annual Meeting of the International Society for Magnetic Resonance in Medicine, Berlin. May 2007.

McNally ME, Crowell S, Matthews D, Clovis J, Filiaggi M. From research to policy: Experiences of the Nova Scotia Seniors' Oral Health Collaboration, 19th Annual Meeting on Special Care Dentistry, Denver. May 2007.

Clovis J, Matthews D, Filiaggi M, McNally M. Improving seniors' oral health through community collaboration and research partnerships, National Oral Health Conference 2007, Denver. April 30 – May 2, 2007.

Filiaggi M. Physiology of Osseointegration: A Dental Implant Perspective, 1st International Symposium on Bone Conduction Hearing and Osseointegration, Halifax, Nova Scotia, July 2007. [Invited Talk]

Bai Z*, Filiaggi M, Sanderson R, Chevrier V, Dahn JR. Combinatorial and high-throughput studies of protein adsorption on chromium-titanium-copper ternary libraries, 1st International Symposium on Surface and Interface of Biomaterials (SIB 2007), Chengdu, China, October 2007.

Ariganello M*, Labow RS, Lee JM "Creating an accurate in vitro model of monocyte differentiation on natural scaffolds", Society for Biomaterials, Chicago, April 18–22, 2007.

Massaro PA*, Lee JM "Tearing Mechanics in Soft Connective Tissues: Implications for Cardiac Patching and Heart Valve Replacements" 25th Annual Meeting of the Canadian Biomaterials Society, London, Ontario, May 25–26, 2007

Willett TL*, Labow RS, Lee JM "Pathomechanics of Sprains and Strains: Changes in molecular state due to collagenous fibre overextension" Canadian Orthopaedic Research Society, Halifax, Nova Scotia, June 2, 2007
Local, National and International Presentations & Refereed Abstracts (continued)

Ariganello MS*, Labow RS, Lee JM "Benign response of macrophages to decellularized tissue in the absence of an immunological stimulus", Basic Science Symposium, Canadian Society for Transplantation, Halifax, Nova Scotia, September 5-8. Transplant Atlantic Talk

Lee JM "New Directions in Tissue Engineering" Transplant Atlantic Symposium, Halifax, Nova Scotia, October 11, 2007

Mayer, M*, Halperin SA, Stadnyk AW, and Lee SF. 2007. Murine dendritic cell maturation and cytokine production induced by a vaccine *Streptococcus gordonii* strain is enhanced by priming with exogenous tumor necrosis factor-alpha. The 107th Annual Meeting of the American Society for Microbiology. May 21-25, Toronto, ON, Canada.

Davis, EM*, Chan KG*, Halperin SA, and Lee SF. 2007. Modification of the cell wall microenvironment of *Streptococcus gordonii* in increased expression of the heterologous SpaP/S1 fusion protein. The 107th Annual Meeting of the American Society for Microbiology. May 21-25, Toronto, ON, Canada.

Tian, XL*, Campbell D, Li, YH, Microarray-based transposon tracking to identify genes involved in bacitracin resistance and envelope stress response in *Streptococcus mutans*. The 107th General Meeting, American Society for Microbiology, Toronto, May 21-25, 2007.

Liu T*, Li YH, Identification of DNA binding sites for BlpR, a key regulator of the quorum sensing pathway essential for bacteriocin production and genetic competence in *Streptococcus mutans*. The 107th General Meeting, American Society for Microbiology, Toronto, May 21-25, 2007.

Sutow EJ, Taylor JC, Maillet WA, Hall GC, Millar M (2007). Existence of an electrically insulating layer in amalgam-containing galvanic couples, *Journal of Dental Research*, Vol. 86, Special Issue A, Abstract 1295, 85th General Session & Exhibition of the IADR and 31st Meeting of the CADR, March 21-24, 2007.

Jones, DW. "Amalgam or composite: What's Your Choice?" Invited participation, FDI Scientific Committee Forum, World Dental Federation meeting in Dubai, UAE, Thursday 25th October 2007.

Jones, DW. "Dental Biomaterials"- All day presentation to Bytown Dental Study Club, Ottawa. November 30th 2007.

Publications in Peer Reviewed Journals

(* = supervised trainee)

Petrone C*, Hall G, Langman M, Filiaggi M. Compaction strategies for modifying the drug delivery capabilities of gelled calcium polyphosphate matrices. *Acta Biomater*, 2008 Mar; 4(2):403-413. Epub 2007 Sep 29.

Cheung S*, Gauthier M, Lefebvre L-P, Dunbar M, Filiaggi M. Fibroblastic interactions with high-porosity Ti-6Al-4V metal foam. *J Biomed Mater Res, Part B: Appl Biomaterials*, 82B(Issue 2), 440-449 (2007).

Bray J*, Petrone C*, Filiaggi MJ, Beyea S. Measurement of fluid ingress into calcium polyphosphate bioceramics using nuclear magnetic resonance microscopy. *Solid State Nucl Magn Reson*, 2007 Dec; 32(4):118-128. Epub 2007 Oct 12.

Bai Z*, Byrne T, Filiaggi MJ, Sanderson R, Chevrier V, Stoffyn-Elgi P, Dahn JR. A high throughput method using electron microprobe analysis for quantification of protein adsorption on surfaces. *Surface Science*, 2008 Feb; 602(Issue 3):795-804.

Willett TL*, Labow RS, Avery NC, Lee JM (2007) "Increased proteolysis of collagen in an in vitro tensile overload tendon model" *Ann Biomed Eng*, 35: 1961-72 (Epub Sept 1, 2007)

Hussein A*, Davis EM*, Halperin SA, and Lee SF (2007). Construction and characterization of single chain variable fragment antibodies directed against *Bordetella pertussis* surface adhesions filamentous hemagglutinin and pertactin. *Infect. Immun.* 75: 5476-5482.

Chan K*, Mayer M, Davis EM*, Halperin SA, Lin TJ, and Lee SF (2007). The roles of D-alanylation of *Streptococcus gordonii* lipoteichoic acid in innate and adaptive immunity. *Infect. Immun.* 75:3033-3042.

Zhang Y*, But PPH, Ooi VEC, Xu HX*, Delaney GD*, Lee SHS, and Lee SF (2007). Chemical properties, mode of action, and in vivo anti-herpes activities of a lignin-carbohydrate complex from *Prunella vulgaris*. *Antiviral Res.* 75:242-249.

Syvitski RT, Tian XL, Sampara K, Salman A*, Lee SF, Jakeman DL, and Li YH (2007). Structure-activity analysis of quorum-sensing signaling peptides from *Streptococcus mutans*. *J. Bacteriol.* 189:1441-1450.

Syvitski RT, Tian, XL, Sampara K, Salman A*, Lee SF, Jakeman DL, Li YH (2007). Structure-activity analysis of quorum-sensing signaling peptides from *Streptococcus mutans*. *J. Bacteriol.* 189 (4): 1441-1450.

Levesque CM, Mair RW, Perry JA, Lau PCY, Li YH, Cvitkovitch DG (2007). Systemic inactivation and phenotypic characterization of two-component systems in expression of *Streptococcus mutans* virulence properties. *Lett. Appl. Microbiol.* 45: 398-344.

Sutow EJ, Taylor JC, Maillet WA, Hall GC, Millar M (2007). Existence of an electrically insulating layer in amalgam-containing galvanic couples, *Dent Mater* [Epub ahead of print], December 17.

Jones DW (2007). ISO's Role in International Dental Standards. *ISO Forum* 4, (2) 8-11.

Jones DW (2007). International Dental Standards. *Brit. Dent. J.* 203 (6) 361-369.

Jones DW (2008). Has Dental Amalgam Been Torpedoed and Sunk? (Invited Guest Editorial). *J. Dent. Res.* 87 (2) 101-102.

Jones DW (2008). Mercury Banned in Norway (Letter). *J. Can Dent Assoc.* March 2008, 74, 2, 105.

Jones DW (2008). A Scandinavian Tragedy. *Brit. Dent. J.* 2008; 204 (5): 233-234.

Jones DW (2007). International Dental Standards. *JCDA* December 2007/January 2008. Vol. 73. No10, 882-883.

Research Grants

DR. MARK FILIAGGI

“Degradable Calcium Phosphate Processing Strategies for Delivery of Therapeutic Agent”; NSERC / Discovery Grant; \$27,000 p.a. [\$135,000 total], 2005 – 2010 (Principal Investigator)

“Combinatorial Characterization of Cell / Protein Interactions with Metal / Metal Oxide Surfaces”; Research Contract (Medtronic); \$227,500; 2007 (Co-Principal Investigator with J. Dahn)

“A Calcium Phosphate Coating Delivery System for Enhanced Dental Implant Fixation”; Nova Scotia Health Research Foundation / Research Project Grant; \$141,390; 2003 – 2008 (Principal Investigator)

“A Multichannel Potentiostat/Galvanostat for Calcium Phosphate Deposition and Protein Studies”; NSERC Research Tools and Instruments Grant; \$37,274; 2007 (Principal Investigator)

“Spectroscopic Ellipsometer for Combinatorial Studies of Protein Adsorption on Biomaterial Libraries”; NSERC Research Tools and Instruments Grant; \$125,356; 2007 (Co-Applicant with J. Dahn[PI])

“Atlantic Regional Facilities for Materials Characterization”; NSERC Major Resources Support Grant; \$86,450 p.a. [\$432,250 total]; 2007-2011 (Co-Applicant with M.A. White[PI] and 10 others)

“Bioceramics Processing and Characterization Facility”; Canadian Foundation for Innovation / Institutional Operating Grant; \$29,025; 2004 – 2008 (Principal Investigator)

DR. J. MICHAEL LEE

“Fatigue, Denaturation, and Proteolysis in Tissue-Derived Biomaterials”; NSERC Discovery Grant, 2001-2008, \$44,000 p.a. (Principal Investigator)

“Network for Oral Research Training and Health”; CIHR Training Program, 2002-2007, \$296,444 p.a. (co-investigator with Graeme Hunter and Paul Santerre)

“Cell Signalling in Mucosal Inflammation and Pain”; CIHR Training Program, 2002-2007, \$297,376 p.a. (co-investigator with Richard Ellen)

DR. SONG LEE

“Cell surface modulation in *Streptococcus mutan.*”; NSERC Discovery Grant, \$29,600/yr [Total \$148,000]; 2005 – 2010 (Principal Investigator)

“Linking innate and specific immunity to develop single dose vaccines for neonates”; Grand Challenges in Global Health Grant, The Gates Foundation, \$7,000,000; 2005 – 2010 (Co-investigator; Principal Investigator: Lorne Babiuk, University of Saskatchewan)

“Use of commensal *Streptococcus gordonii* as a live vector against infections diseases”; CIHR. Regional Partnership Operating Grant, \$84,223/yr [Total \$252,670]; 2006 – 2009 (Principal Investigator)

“Innovative vaccine development and delivery to induce mucosal immunity”; CIHR Health Research Programs of Excellence Grant, 2002-2007. \$367,200/yr [Total \$1,886,000] (Co-investigator; Principal Investigator Lorne Babiuk – University of Saskatchewan)

“Establishment of the Canadian Centre of Vaccinology (Halifax) with laboratories for basic, translational, and multidisciplinary research and facilities for human challenge studies”; CFI Innovation Fund, 2004 – 2008; Total \$2,251,893 (Co-investigator, Principal Investigator: Scott Halperin, Department of Pediatrics)

“Establishment of the Canadian Centre of Vaccinology (Halifax) with laboratories for basic, translational, and multidisciplinary research and facilities for human challenge studies”; CFI Research Hospital Fund, 2004 – 2008; Total \$2,176,726 (Co-investigator; Principal Investigator: Scott Halperin, Department of Pediatrics)

DR. YUNG-HUA LI

NSERC discovery grant: Molecular analysis of a peptide-mediated two-component signal transduction system. \$30,000/yr, 2007-2012 (Principal Investigator)

CIHR-Nova Scotia Regional Partnership Program New Investigator Award: Functional genomic approaches to identifying virulence-associated gene in *Streptococcus mutans*. \$30,000/yr, 2007-2012 (Principal Investigator)
"Research Laboratory for Biofilm Control". Canadian Foundation for Innovation / Institutional Operating Grant; \$41,034 total, 2006-2011 (Principal Investigator)

CIHR operating grant: Identification of virulence-associated genes in *Streptococcus mutans* by a genome-scale functional analysis. \$91,468/yr, 2005-2009 (Principal Investigator)

DEPARTMENT OF DENTAL CLINICAL SCIENCES



Chair, Dr. Jack Gerrow

Report from Chair

The internal divisional structure of the Department of Dental Clinical Sciences was substantially modified effective July 1, 2007 in order to improve faculty recruitment and development, scheduling and curriculum content. The Division of Endodontics, Orthodontics, Pediatric Dentistry and Periodontics remained unchanged. The former very large Divisions of Patient and Community Care and Prosthodontics were reorganized into five smaller more focused and manageable Divisions of Comprehensive Care, Fixed Prosthodontics, Implant Dentistry, Preventative Dentistry and Oral Health Promotion, and Removable Prosthodontics.

With the changes, Dr. George Zwicker was able to step down as division head after many years of dedicated service. His former Division of Prosthodontics was responsible for approximately over 50% of the clinical teaching in DDSIII and DDSIV. Dr. Zwicker somehow always managed to cope with this massive scheduling challenge and ensured that students and patients came first.

Dr. Mark Knechtel became head of the Division of Patient Care which is now the largest division in the Department. His division is responsible for didactic and clinical Patient Care courses in all four years as well as Treatment Planning and comprehensive care clinics. He also co-ordinates dentistry supervision for clinical dental hygiene components. Although he has very limited time and responsibility assignment for scholarly activity, Dr. Knechtel managed to publish several articles in the JCDA this year.

In addition to his duties as Director of Clinics, Dr. Blaine Cleghorn continues to do substantial teaching in Comprehensive Care and to co-ordinate the very successful introduction of the VitalSource text book library into our curriculum. He is course director of 3 courses including Occlusion and Neuromuscular Function I and Clinical Comprehension Care III and IV. His expertise in dental anatomy and digital teaching aids has resulted in significant publications, a book chapter and as a major contributor to the innovative Dental Anatomy and 3D Tooth Atlas. He is also active as Assistant Chief Examiner for the National Dental Examining Board Written Examination. As the course director for two DDSI courses, Dr. Sachin Seth continues to provide innovative introductions to Preventative and Restorative Dentistry as well as Dentistry as a whole for DDS I students. He also teaches clinically in both Treatment Planning and Comprehensive Care Clinics.

Dr. George Zwicker continues as a valuable clinical instructor and as course director of Prosthodontics IV. He also provides guidance and insight to the new division heads as a result of his years of experience serving as head of the former Division of Prosthodontics.

Dr. Richard Price is Division Head of Fixed Prosthodontics and director of the very successful Advanced Restorative Teaching (ART) Elective. He is also responsible for significant curriculum content in teaching didactic Fixed Prosthodontics III. Dr. Price continues to be extremely productive and is internationally recognized for his research in curing of composite resins. As Director of Graduate Prosthodontics Dr. Price is working with the other Prosthodontic faculty members to redesign and re-establish the graduate prosthodontics program. Dr. Price continues to be a prosthodontic examiner for the Royal College of Dentists of Canada.

Dr. Carl McDermott continues to assist Dr. Price in the ART Elective and did a tremendous job of filling in for Dr. Price and holding the electives together during times when Dr. Price was unavoidably away.

The new Division of Implant Dentistry is responsible for the Implant Dentistry III course and the undergraduate implant elective program. Drs. Ron Bannerman and Gorman Doyle share the division head duties and work together managing the clinical patient care in the elective. Dr. Bannerman also directs the Clinical Prosthodontics III course. Dr. Doyle was awarded the DDSS full-time clinical teacher of the year award for his skill and dedication to the students and patients in our programs.

As the division head of the new Division of Preventative Dentistry and Oral Health Promotion, Dr. Mary McNally has started to develop a higher profile for this important area. She has also been a valuable member of several successful research groups and is frequently called on for her expertise in ethics and oral health care for the geriatric patients. Dr. McNally continues to serve as an associate editor of the JCDA.

In addition to his major secondment as Registrar of the Provincial Dental Board, Dr. Bill MacInnis continues to act as director of the Quality Program and to be active in clinical and didactic teaching.

Dr. Robert Loney was on sabbatical from January to June 2007 and was appointed Head of the new Division of Removable Prosthodontics in July 2007. Within the Faculty, he chairs the Academic Resources Committee and is

the faculty representative on the Senate Computing and Information Technology Planning Committee His external commitments include being a member of the Editorial Board of the Journal of Prosthetic Dentistry, the Assistant Chief Examiner (OSCE Exams), National Dental Board of Canada and as a consultant with the Dalhousie University Center for Learning and Teaching, Peer Consultation Program. Full-time faculty members Drs. Gerrow, Knechtel and Boran also assist with teaching in Removable Prosthodontics.

Dr. Wayne Garland continues as head of the Division of Endodontics. With the assistance of Dr. Luis Quitero, the division has made major curricular changes explained in detail in a following section. Dr. Garland's dedication to students and teaching skills were recognized with the receipt of the prestigious Dalhousie Student Union Award for Teaching Excellence. Dr. Quitero has quickly become a valuable addition to our full-time faculty and has updated all the didactic teaching in the division.

The Division of Orthodontics continues to be lead by Dr. Kathy Russell. During Dr. Russell's very productive sabbatical, Dr. Cynthia Andrews did a remarkable job covering the teaching and course administration responsibilities of the division. The Department owes Dr. Andrews a great deal of thanks for her incredible efforts and dedication. During her sabbatical, Dr. Russell completed multiple research projects which have resulted in publications and invited lectures. She has also started to revise the undergraduate curriculum with information gained during her sabbatical. Dr. Andrews continues to assist both the division of Orthodontics and Periodontics as a course director, a didactic and clinical teacher and preclinical co-ordinator. She also is very active in the Interprofessional Learning process.

Dr. Debora Matthews continues as head, Division of Periodontics. In addition, she continues to be extremely productive in research and is internationally recognized as an expert in Evidence Based Dentistry. She currently sits on the editorial boards of three reviewewd journals, including the highly cited Journal of Dental Research. Dr. Christian Marquez provides excellent classroom and clinical teaching and acts as course director for multiple Periodontal courses. In spite of this extremely heavy teaching load, Dr. Marquez published two well received articles in the JCDA and is recognized by colleagues and students for his dedication to excellence.

As Chief of Dentistry at the IWK Hospital, Dr. Ross Anderson also acts as head of the Division of Pediatric Dentistry. IWK staff dentists provide all of the clinical and didactic teaching in Pediatric Dentistry including supervision in our Outreach clinics in North Preston and Harbourview schools. Dr. Heather Dymant was recognized as Part-time Clinical Instructor of the Year by the DDSIV students.

While continuing as Department Chair and Registrar of the National Dental Examining Board of Canada, I have also assumed course directorship for the didactic Prosthodontics III course. I am also a member of the editorial review board for the Journal of Prosthetic Dentistry and as a consultant to the Dental Council of Hong Kong.

Overall the Department of Dental Clinical Sciences has benefited from the reorganization and continues to provide the majority of the teaching in the undergraduate program. Department members are consistently to be commended for their dedication to the students and the teaching program while also becoming recognized as leaders in their respective fields.

Division of Comprehensive Care

Dr. George Zwicker stepped down as Head of the Division of Prosthodontics, and we would like to extend our gratitude to him for his years of hard work in this

position. He will continue to supervise in the clinic, and remains as Course Director for Prosthodontics IV.

Division of Endodontics

During 2007, the Division of Endodontics maintained eight clinical blocks and one elective block weekly with the support of four part-time endodontists and two general dentists. Dr. Quiterio presented all didactic Endodontic lectures to DDS II, DDS III, DDS IV, QP 1 summer module and DHY II specialty course. Dr. Ian McDougall coordinated the DDS IV seminars from January-February 2007 and Dr. Quiterio coordinated the DDS IV seminars from October-December 2007.

Rotary endodontics was introduced preclinically to DDS 2 students starting in January 2007. Twenty rotary handpieces and motors were purchased from Dentsply Tulsa Dental.

In September 2007, the first DDS 3 class was eligible to use rotary in the clinic on patients after sufficient practice on a dentoform.

Dr. Wayne Maillet directed the nine DDS IV candidates who were accepted into the Endodontics elective. All DDS IV students were given the opportunity in May to participate in a hands-on workshop using rotary instrumentation and compaction of thermal softened gutta percha for obturation, sponsored by Tulsa Dental, a division of Dentsply.

Dr. Quiterio who arrived at Dalhousie in March 2005 was granted the privilege of treating patients under

the direct supervision of either Dr. Wayne Garland or Dr. Tom Boran at the Faculty of Dentistry, Dalhousie University in order to start qualifications to be granted an academic specialty license. In December, Dr. Quiterio

successfully presented and defended his clinical and surgical endodontic cases and has been recommended by the Provincial Dental Board of Nova Scotia to write the National Dental Specialty Examination.

Division of Fixed Periodontics

The newly formed Division of Fixed Prosthodontics has continued to meet its teaching requirements despite the inability to fill the vacant prosthodontics position. Our part time faculty of Dr. M. Clerk and Dr. K. Townshend have provided invaluable clinical teaching. Dr. K. Townshend represented the Faculty of Dentistry at the American Academy of Cosmetic Dentistry meeting.

The teaching and clinical use of LAVA all ceramic restorations for both individual crowns and three unit bridges has been successfully integrated into the DDS

III and DDS IV curriculum. The acquisition of a LAVA scanner by the Dalhousie Production Laboratory has been a useful addition to the prosthodontic capabilities of the school. The Advanced Restorative (ART) Elective program provided three blocks of clinical teaching each week in addition to didactic seminars. This year ART students were able to offer cosmetic imaging, minimal preparation and conventional porcelain veneers, and both at home and in-office tooth whitening for their patients.

Division of Implant Dentistry

The Division of Implant Dentistry is pleased to report a successful year. The implant elective program had a very positive year. There were 10 DDS IV students that participated in the elective from June 2007 to May 2008. Clinical sessions were held two half days per week. Restorative treatment consisted of single unit crowns, multiple unit short span fixed prostheses and removable overdenture treatment supported by implants for both maxillary and mandibular overdentures. The students gained tremendous experience in implant treatment. The number of fixed units restored per student ranged from 5 to 13. All students restored at least one overdenture supported by implants.

Students acted as surgical assistants for their respective implant surgeries. Surgeries and surgical consults were performed once a week. Many thanks to our cooperative

and competent surgeons: Dr. Ben Davis, Dr. Chad Robertson, Dr. Curtis Gregoire and Dr. Deb Matthews

We would also like to express our sincere thanks to our wonderful faculty: Drs. Colette Valee, George Zwicker, Scott MacLean, Ken Rhodenizer and Bob Brygider. All are a tremendous asset to our program.

We would also like to thank Ms. Angela Pitman, Ms. Audra Hayden, Ms A. Faulkner and Ms. Michelle Fiske for their tremendous support with the Implant program.

Drs. Doyle and Bannerman continue to conduct a continuing education program. This restorative Mentorship Program for General Dentists has been well received. This is a "hands on" clinical program and will be presented for the "scope" of the CE program in the future.

Division of Orthodontics

In addition to the Implant Elective program nine more DDS IV students will participate in an implant experience program once per week during the 2008-2009 year.

Drs. Doyle and Bannerman recently participated in an implant symposia sponsored by the CDA in Ottawa. All Canadian Universities were invited to present their involvement in Implant Dentistry Education at the undergraduate level. Both Drs. Doyle and Bannerman believe that Dalhousie University may very well have the leading undergraduate program in Implant Dentistry in Canada. We hope to continue to expand the program in the future.

The Division of Orthodontics continues to be lead by Dr. Kathy Russell. Dr. Russell planned the orthodontic responsibilities of the Division in great detail for her sabbatical year that allowed Dr. Andrews to implement the plan and maintain the activities of the Division during Dr. Russell's absence. With the efforts and dedication of Dr. Andrews and the additional help of

the part-time instructors, especially Dr. Roth, the year proceeded very well. During her sabbatical, Dr. Russell completed multiple research projects that have resulted in publications and invited lectures. She has also started to revise the undergraduate curriculum with information gained during her sabbatical. In addition to course directorships and didactic and clinical teaching, she continues to chair and dedicate significant time to the organization of the IWK Cleft Palate Team and providing optimal high-standards of care for this population of patients. As a result of efforts during the past few years, Dr. Russell contributed substantially to the initiation of two Canadian Cleft centres (The IWK and Sick Kids in Toronto) that is part of the first North American multi-centre collaborative cleft lip and palate research initiative. Dr. Andrews continues to assist both the Division of Orthodontics and Periodontics as a course director, a didactic and clinical teacher and preclinical co-ordinator. She also is very active in the Interprofessional Learning Program across faculties at Dalhousie.

Paediatric Dentistry

Core courses in Paediatric Dentistry are provided through the Division of Paediatric Dentistry, Department of Dental Clinical Sciences and are taught in second, third and fourth year and to the Qualifying Program students. IWK Paediatric Dentistry (Dr Ross Anderson, Dr. Heather Dymont and Dr. Jennifer MacLellan) have taken responsibility for the undergraduate and post graduate curriculum in Paediatric Dentistry. They act in the capacity of Course Directors for each of the years and as active teachers for the undergraduate clinic and for two Dalhousie primary care clinics, one in North Preston at the Nelson Whynder School and one at Harbourview Public School in Dartmouth. Third Year Dental clerks and Qualifying Program students continue to do a one-week rotation through Paediatric Dentistry at the IWK. In addition to the community patient services provided through supervising Dalhousie undergraduate students, the IWK Paediatric dentists provided 2498 clinic visits and 557 OR visits over the past year.

Faculty supervises table clinics for students as well. In addition we provide seminars to the Paediatric Medical Residents and Family Practice Residents on a formal basis and through teaching interactions on an informal basis. Paediatric Dentists on staff are actively involved

in Continuing Education both locally and on a National basis.

Our Faculty complement was reduced at the end of March 2007 with the departure of Dr. Janice Humphrey. We have, however, been able to sustain the full academic workload and indeed we increased our DDS IV elective to 2 students this year. The IWK Dalhousie Paediatric General Practice Residency program accepted Dr. Terry Farquhar as our Resident this year. With credit to this Paediatric GPR, Dr. Farquhar has been accepted into a graduate training program in Paediatric Dentistry at the Eastman Dental Centre in Rochester, New York starting in July 2008. Dr April Nason, a General Practice dentist who recently completed a General Practice Residency in Edmonton joined us to assist with teaching the DDS III undergraduate clinic on Monday mornings. Dr. Don Cunningham has continued to help us with the DDS I preclinical in Cariology I.

We continue to work on the development of a much needed Graduate Training program in Paediatric Dentistry be realized. We will begin an active search to replace Dr. Humphrey in 2008.

Achievements

Dr. Heather Dymont acts as an Examiner in Paediatric Dentistry with the Royal College of Dentists of Canada

Dr. Anderson was nominated as Co-President of the IWK Medical, Dental, Scientific Staff

Research Activity

Anderson, RDA. Dymont H, MacLellan, J - Development and preliminary validation of a tool for assessment of pain due to Severe Early Childhood Caries (S-ECC) with Dr. Robert John Scroth (Nominated Principal Applicant)

of the Faculty of Dentistry, University of Manitoba and Dr. Lynn Breau (Principal Applicant) of the Faculty of Health Professions, Dalhousie University. Research Grant proposal submitted to CIHR

Division of Periodontics

Members of this Division are responsible for the clinical and didactic components of Periodontics for DDS 1 – 4, the Summer QP Module, QP 1 and 2, and DH1 and 2 students. As well, the primary teaching of Evidence-Based Dentistry is the responsibility of the Division Head. Drs. Marquez, Andrews and Matthews are the full time faculty in this division, and do the majority of the didactic teaching and evaluation. All are working towards developing an evidence-based curriculum in Periodontics. Dr. Andrews has additional responsibilities in the Division of Orthodontics. Our part-time faculty, as always, have been invaluable in clinical teaching.

Periodontal surgeries required for restorative and orthodontic treatment were provided through three venues. Part-time clinical instructors Dr. T. Logue, S. Mirbod, Picard and S. Matheson demonstrated surgeries for students in their clinic cluster. Drs. MacDonald and Rinehart completed a number of procedures in the periodontal service clinic, while the students in the Periodontal Surgery Elective, under the direction of Dr. S. Mirbod, learned techniques for grafting and crown lengthening.

The Division of Preventive Dentistry and Oral Health Promotion

The Division of Preventive Dentistry and Oral Health Promotion is a new evolving concept within the Department of Dental Clinical Sciences. Among the early initiatives is the development of pre-clinical/ didactic curriculum content in the area of Caries Risk Assessment. To begin the process of determining best practices for caries risk assessment in a clinical setting, a summer research project was developed for 2007. Nancy Kennedy (DDS3 student) carried out a literature and web-based scan of best practices for caries risk assessment (CRA) and prevention interventions. She also conducted a random chart audit of patients who have been treatment planned in the Dalhousie Dental Clinic over a 12 month period years to estimate caries rates requiring treatment. The results of her study demonstrate two promising risk assessment tools (one web-based) for consideration

in the Dalhousie Clinic. The chart audit demonstrated a clear need for caries risk management (the average new patient requires 1 extraction due to caries and 4 restorations). Next steps will be to determine: data to be collected: modification to the chart to accommodate risk assessment as part of treatment: estimated economic implications, and professional development required for clinicians to appropriately oversee caries risk assessment in the clinic.

Dr. Sachin Seth has also been actively developing a proposal for the implementation of caries risk into the clinic. He has modified the preclinical teaching in Cariology and Patient care I (nutrition) for the prospective introduction of a caries risk assessment protocol in the. Future development in the pre-clinical setting will be case-centered pre-clinical exercises.

Division of Removable Prosthodontics

In the first year of the newly formed Division of Removable Prosthodontics, numerous changes were introduced into the curriculum. Removable Prosthodontics clinics were instituted to provide students with better support with their complex cases. Immediate denture clinics were implemented with both surgical and prosthodontic instructors in attendance, a joint venture of the Department of Oral and Maxillofacial Sciences and the Department of Dental Clinical Sciences. The Division adopted a new occlusal scheme (lingualized occlusion), in addition to monoplane occlusion for use with complete dentures, and held a calibration session related to it. A new polishing protocol for acrylic resins was instituted in attempt to improve our clinical infection

control procedures. A new photograph database of over 5000 dental images was collated with keywords and circulated to those teaching prosthodontics in the Department of Dental Clinical Sciences. A monthly newsletter, 'The Removable Times' was introduced to provide students and faculty members timely updates on curriculum changes and problems in clinic. A removable prosthodontics website was introduced to permit all student and faculty members to access to curriculum manuals, newsletters, presentations, movies and other resources (<http://myweb.dal.ca/rloney/ProthoSite/Welcome.html>). The Prosthodontic Olympics was once again successful in aiding student learning in removable prosthodontics.

Local, National and International Presentations and Refereed Abstracts

Ross Anderson

Anderson, Ross D. Early Childhood Caries – Partnering to Reverse the Trend – A Paediatric Dentists Viewpoint, National Early Childhood Caries Conference, Calgary, Alberta, September 28 – 30, 2007

Anderson, Ross D., Early Childhood Caries – Partnering to Reverse the Trend, Annapolis Valley Dental Society, October, 2007

Cynthia Andrews

Andrews, Cynthia L. Dentistry and Dental Hygiene: Partners in Interprofessional Education to Promote Collaborative Patient-Centred Care (Poster Presentation), Practice Makes Perfect International Conference, Vancouver, BC. November 4-6, 2007.

Andrews, Cynthia L. From Clinician to Researcher – A First Hand Account, Faculty of Dentistry, April 10, 2007

Blaine Cleghorn

Ko, A C-T, Hewko M, Dong C, Cleghorn B, Sowa MG, Choo-Smith L-P. Detection of early stage dental caries by Raman spectroscopy with near-IR laser excitation. Biophotonic workshop, "Canada-Taiwan Innovation Week" organized by NRC (Canada) and NSC (National Science Council Taiwan), Taiwan, 2007.

Choo-Smith, L-P, Gibrayel, K, Dong, CCS, Popescu, D, Sowa, MG and Cleghorn, B. Monitoring Remineralization in an Artificial Caries Model Using Raman Spectroscopy and OCT: A Pilot Study. *Caries Res.* 41(4):167, 2007. ORCA meeting, Helsingor, Denmark, 2007.

Sowa, M, Popescu, D, Werner, J, Dong, CSS, Cleghorn B, Ko, A, Hewko, M and Choo-Smith L-P. OCT and PRS methods to statistically detect incipient caries lesions. IADR Abstract #1703, New Orleans, Louisiana, 2007.

Cleghorn, B. Provincial Dental Board of Nova Scotia, Infected Health Care Worker, Halifax, Nova Scotia, September 2007.

Cleghorn, B. Annual Meeting of the Academy of RV Tucker Study Clubs, The Laptop Program and Electronic Curriculum at Dalhousie University, Faculty of Dentistry, September 2007.

Cleghorn, B. Laptops in the Clinic and in the Classroom (with Peter Gnemmi, Bruce Moxley and Kathy McInnis). axiUm Users Meeting, Vancouver January 22-24, 2007.

Cleghorn, B. "The 3D Skull Atlas and the Tooth Atlas", Dalhousie University, November 2007.

Cleghorn, B. "Using EndNote and the Vital Source Search Engine to Enhance Teaching in your Course", Dalhousie University, February 2007.

Jack Gerrow

Preclinical and Clinical "Why lectures don't work for novice learners: an introduction to learning theory. "Dalhousie University Halifax NS January 2007

Gerrow, J. The Dalhousie Experience with a combined Master of Applied Science in Biomedical Engineering (BME) and Prosthodontics American College Prosthodontics Symposium on Prosthodontic Graduate Education, Chapel Hill, NC USA January 2007

Gerrow J. Validity and Reliability: Responsibilities and Requirements in "High Stakes" Examination, CDRAF Summit on Specialty Certification, Toronto ON, February 2007.

Gerrow, J. Competency Based Education: Where Do Clinical Experiences and Comprehensive Care Fit ? ACFD Biennial Conference, Montreal PQ. June 2007

Robert Loney

Loney RW. Occlusion: Principles & Practice. Newfoundland & Labrador Dental Association, Corner Brook, NL, February, 2007

Loney RW. Making Removable Prosthodontics Work. Canadian Dental Association Annual Convention, St. John's NL, August 2007

Jennifer MacLellan

MacLellan, Jennifer, Referrals, Emergencies and Triaging of Patients, Northern Nova Scotia Dental Society, October, 2007

Debora Matthews

Matthews DC. Pandemic Planning for Nova Scotia Dentists. Presented at South Nova Dental Society, October 2007. Annapolis Valley Dental Society, October 2007, Halifax County Dental Society, November 2007.

Matthews DC. Management of oral health in diabetes. Annual Congress of the Federation Dentaire Internationale (FDI), Dubai, October 2007.

Matthews DC, McNally M, Crowell S, Clovis J, Filiaggi M. "Oral Health of Seniors – Identifying Research Gaps and Influencing Exchange in Aging Research". Nova Scotia Centre on Aging, "Dialogue Among Partners' Event". Mount Saint Vincent University, May 2007.

Matthews DC. Root coverage. On-line power point presentation complementary to Point of Care article in March 2007 JCDA <http://www.cda-adc.ca/jcda/vol-73/issue-2/matthews.html>.

Matthews DC. Seniors Oral Health Assessment in Nova Scotia. Board meeting of the Gerontology Association of Nova Scotia. Halifax, January 2007.

Clovis J, Matthews D, Filiaggi M, McNally M. Improving seniors' oral health through community collaboration and research partnerships (abstract). National Oral Health Care Conference 2007. Denver.

McNally ME, Crowell S, Matthews D, Clovis J, Filiaggi M. From research to policy: Experiences of the Nova Scotia Seniors' Oral Health Collaboration. 19th Annual Meeting on Special Care Dentistry. May 2007. Denver (Symposium/ Abstract)

Mary McNally

Crowell S, McNally ME, Lyons R. Open wide: Examining public policy and acting on the silent issue of seniors oral health. 19th International Union of Health Promotion and Education World Conference, Vancouver, BC, June 2007..

Mitchell T, McNally E, Lyons R. Developing an action plan to address the oral health needs of seniors. 17th International Symposium on Dental Hygiene. Toronto (Poster/Abstract), July 2007

McNally ME, Simpson C, Kirby J, Burke D, Simpson C. "Ethics on the Move": Reflections on Three years of Capital Health Ethics Support. 18th Canadian Bioethics Society Conference (2007 Joint Ethics Conference with 3rd International Conference on Clinical Ethics and Consultation), Toronto, ON, May 2007

McNally ME. Philosophical perspectives on the meaning of oral health. 3rd International Congress of the International Dental Ethics and Law Society. Toronto, ON, May 2007.

McNally ME, Crowell S, Matthews D, Clovis J, Filiaggi M. From research to policy: Experiences of the Nova Scotia Seniors' Oral Health Collaboration. 19th Annual Meeting on Special Care Dentistry. . Denver, CO (Symposium/ Abstract), May 2007

Richard Price

Price, R. Invited speaker International Scientific Congress, Competence in Composites, Schaan, Lichtenstein September 2007.

Price, R.. Effect of Distance on the Irradiance Delivered by Nine Curing Lights. Dental Materials Annual Meeting, Fort Lauderdale, Florida, October 2007.

Kathy Russell

RE. Long, Jr., R Hathaway, M Cohen, J Daskalogiannakis, E Howard, K Russell, A Mercado, W Shaw, G Semb, B Ruda, M Ahmed. The Americleft Project - a 6-center pilot project using the eurocleft protocol for intercenter collaborative outcome studies: part 1 - organizational considerations and preliminary efforts. 64th Annual American Cleft Palate Meeting. Boulder, Colorado, April 2007

RE Long, Jr., R Hathaway, M Cohen, J Daskalogiannakis, E Howard, K Russell. A two-center comparison of dental arch relationship outcomes resulting from significantly different primary management protocols for complete unilateral cleft lip and palate. 64th Annual American Cleft Palate Meeting. Boulder, Colorado, April 2007

Russell, K.A. Organized and Chaired ACFD//DCF Teaching Conference for Undergraduate Orthodontic Programme Chairs/Directors: Achieving a Unified Curricula that will Maximize Available Resources. St. John's NFLD in Conjunction with the CAO Annual Meeting.

Book Chapters

Blaine Cleghorn

Cleghorn, B: The Integumentary System (contributing author) in Moore KL, Persaud TVN. The Developing Human: Clinically Oriented Embryology, 8th ed. Philadelphia, Saunders, 2007.

Cleghorn, B: (contributing author) in Brown P, Herbranson E. Dental Anatomy & 3D Tooth Atlas Version 5.0. Illinois: Quintessence, 2007.

Publications in Peer Reviewed Journals

Cynthia Andrews

Marquez IC, Andrews C, Matthews DC., Clovis JB. From clinician to researcher – a first hand account. J Can Dent Assoc 2007;73:247-51.

Blaine Cleghorn

Cleghorn BM, Christie WH, Dong CCS. The root and root canal morphology of the human mandibular second premolar: a literature review. J Endod 2007;33(9):1031-1037.

Cleghorn, B, Christie, WH and Dong, CSS. The Root and Root Canal Morphology of the Human Mandibular First Premolar: A Literature Review. J Endod 2007;33(5):509-516.

Jack Gerrow

Gerrow JD Murphy HJ Boyd MA. Review and Revision of the Competencies for a beginning Dental Practitioner in Canada. J Can Dent Assoc 73(2):157, 2007.

Mark Knechtel

Knechtel ME, Loney RW "Improving the Outcome of Denture Relining." J Can Dent Assoc 2007; 73(7):587-591

Knechtel, M. "A Proposal to Alleviate Faculty Shortages in Dental Schools." J Can Dent Assoc 2007;73(9):815-817

Robert Loney

Loney RW. Do missing teeth need to be replaced or is a "shortened dental arch" acceptable? J Can Dent Assoc 2007;73:593-594.

Knechtel ME, Loney RW. Improving the Outcome of Denture Relining. J Can Dent Assoc 2007;73:587-591.

Loney RW. Diagnosing Denture Pain: Principles and Practice. J Can Dent Assoc 2007;72:137-141.

Christian Marquez

Marquez IC, Andrews C, Matthews DC., Clovis JB. From clinician to researcher – a first hand account. J Can Dent Assoc 2007;73:247-51.

Marquez IC. What effect does smoking a water pipe have on the periodontium? J Can Dent Assoc 2007;73:146-47.

Debora Matthews

Matthews D. Synthetic platelet-derived growth factor (rhPDGF) may improve bone fill over β -tricalcium phosphate (β -TCP) alone. Journal of Evidence Based Dental Practice. 2007;7(1):19-20.

McNamara, S. Oral health-systemic health. What is the true connection? JCDA Panel Discussion with H. Tennenbaum. D. Matthews, G. Sandor and C. McCullouch. Journal of the Canadian Dental Association. 2007; 73 (3);211-216

Marquez, C, Andrews C, Matthews DC, Clovis J. From clinician to researcher. Journal of the Canadian Dental Association 2007; 73(3):247-251

Matthews, DC. Point of Care: In a patient with gingival recession, what is the best method to obtain root coverage? Journal of the Canadian Dental Association 2007; 73(2):139-140

H. Joseph Murphy

Gerrow JD Murphy HJ Boyd MA. Review and Revision of the Competencies for a beginning Dental Practitioner in Canada. J Can Dent Assoc 73(2):157, 2007.

Richard Price

Felix CA, Price RBT, Felix CM. Intra-pulpal temperature rise generated from high power curing lights. IADR 2007: Abstract #1942.

Price RBT, Fahey TJ, Felix CM, Andreou P, Felix CA. Effect of seven curing lights on the microhardness of five composites. IADR 2007: Abstract #1612.

Price RB, Felix CM. Effect of Distance on the Irradiance Delivered by Nine Curing Lights. Dental Materials Annual Meeting Proceedings, October 2007:30.

Kathy Russell

Russell, K.A., B.Sc., D.D.S., M.Sc.; Edwards, L.J., B.Sc., D.D.S., M.Sc. A Family Representative as a Cleft Palate Team Member. In Press AboutFace Spring 2008 Magazine.

Russell, K.A., Allen, V.M., MacDonald, M.E., Smith, K., Dodds, L. A Population-based Evaluation of Antenatal Diagnosis of Facial Clefts. In Press March 2008, The Cleft Palate-Craniofacial Journal

Russell, K.A., D.D.S., D. Orthod., M.Sc.; Tompson, B., D.D.S., D. Orthod., D. Paedo.

Correlation between Facial Morphology and Esthetics in Patients with Repaired Complete Unilateral Cleft Lip and Palate. In Press: 2008 The Cleft Palate-Craniofacial Journal

Kathleen A. Russell, D.D.S., M.Sc., Catherine E. McLeod, B.Sc. Canine Eruption in Patients with Complete Cleft Lip and Palate . In Press: 2008 The Cleft Palate-Craniofacial Journal

Research Grants

Richard Price

2007- a research grant of \$22,900 from 3M ESPE to study self etching bonding systems.

2007- a research grant of \$19,400 from Ivoclar-Vivadent to study a prototype curing light

2007- a research grant of \$9,230 from Parkell to study a prototype curing light

Robert Loney

Wear Testing and the in vitro Wear of Denture Teeth. Dalhousie University Faculty of Dentistry Research Development Fund. \$8650

Debora Matthews

Seniors' Oral Health: Are Treatment Recommendations Followed Up?, Network for Oral Research Training and Health (NORTH), CIHR, (\$4000), 2007

Mary McNally

Canadian Preventive Guidelines for Immigrants and Refugees: Common Oral Conditions. Office of the Chief Dental Officer, Health Canada, \$11,800.

Honours and Awards

Gorman Doyle

DDSS Full-time Teaching Award

Heather Dymont

DDSS Part-time Teaching Award

Richard Price

W.W. Wood Award for Excellence in Dental Education

Blaine Cleghorn

Fellowship in the American College of Dentistry

Wayne Garland

DSU Award for Teaching Excellence

DEPARTMENT OF ORAL AND MAXILLOFACIAL SCIENCES



Chair, Dr. Reginald Goodday

Report from the Chair

The Department of Oral and Maxillofacial Sciences has three divisions: Oral and Maxillofacial Surgery, Oral and Maxillofacial Pathology and Oral and Maxillofacial Radiology. The members of each Division conduct activities in patient care, teaching, research and scholarly activity and administration. The Department of OMFS has a national and international reputation resulting from expertise in all of these areas.

Patient Care

Approximately sixteen thousand patient visits annually fall under the umbrella of the Department at the Faculty of Dentistry, the Queen Elizabeth II Health Sciences Centre (Victoria General Hospital) and the IWK-Grace Health Centre. Primary and secondary patient care takes place in the Oral and Maxillofacial Radiology, TMJ, and Oral Pathology Clinics. Fifty percent of the oral and maxillofacial surgery is quaternary and tertiary care with pediatric and adult patients alike being referred to our centre from across Canada, the Islands of St. Pierre and Miquelon, Bermuda, Maine, and Florida. The Department has significant partnerships within the Capital District Health Authority with representation on the Head and Neck Tumour Board, pain management clinic, and cleft lip and palate team at the IWK Health Sciences Centre. Members of the Department are involved in the oral assessment of cardiac transplant, radiation oncology, and hemeoncology patients. There is a high level of cooperation that takes place with the Department of Infectious Disease, Division of ENT, the Emergency Department and the Sleep Disorders Clinic within the Department of Medicine. Special areas of expertise include Drs. Morrison and Davis providing advanced care for patients who require maxillofacial and craniofacial implants, Dr. D.S. Precious who is the Principal Surgeon for primary and secondary cleft

lip and palate at the IWK Health Sciences Centre, Dr. Chad Robertson who has special skills in treating oral oncology patients, and Dr. Goodday's role in the surgical management of sleep apnea in cooperation with the sleep laboratory in the Department of Medicine.

In 2007 members of the Division of Oral and Maxillofacial Surgery participated in charity missions to provide cleft lip and palate surgery for patients in Vietnam during the months of January and December and in Tunisia during the month of February.

Oral and Maxillofacial Radiology represents a significant clinical patient care activity to the extent that it is integrated both by personnel and patient care with restorative dentistry, pathology and oral diagnosis.

An Oral Pathology Clinic for oral lesions is run by the Division of Oral and Maxillofacial Pathology for Dalhousie Dental Clinic patients. New diagnoses and follow up services are provided. There is an important biopsy service operated by the Division of Oral and Maxillofacial Pathology which issued 946 biopsy reports in 2007. Services are provided not only for Nova Scotia but for New Brunswick, Prince Edward Island and Newfoundland. The Division of Oral and Maxillofacial Pathology also provides a Biologic Sterilizer Monitor Service to practicing dentists in the Atlantic Provinces.

Teaching

The Department has responsibility for teaching at undergraduate, graduate and continuing education levels in Dentistry, Medicine, Nursing and Dental Hygiene. The Graduate Program in Oral and Maxillofacial Surgery enjoys FULL APPROVAL from the Commission on Dental Accreditation of Canada. This six year "dual degree" program, officially based in the Faculty of Graduate Studies, but substantially based in the Faculties of Dentistry and Medicine, is unique in Canada and graduates one candidate a year with both MSc and MD degrees. With respect to undergraduate accreditation, The Department of Oral and Maxillofacial Sciences continues to be one of the strengths of the faculty.

Student ratings are excellent and the most recent survey team complimented the Department on a well organized, clearly stated educational plan.

In addition to the international teaching that takes place when performing surgery in Vietnam and Northeast Africa, several foreign trained surgeons have visited the Department to enhance their education. Japanese OMF surgeon, Dr. Kenji Suga completed a year Fellowship in July of 2007. Upon his departure we were joined by Dr. Deepak Krishnan who completed his OMFS training at Atlanta, Georgia and is spending a year with the Department of OMFS to gain additional training in cleft

lip and palate surgery, orthognathic surgery, and complex TMJ reconstruction techniques. Four surgeons from the resident training program at Yonsei University in Korea each spent one month as guests in the department from June to September, 2007.

Ongoing improvements have been made in the teaching of radiology through the efforts of Dr. Carl Canning and Merv Creighton. The Division of Oral and Maxillofacial Radiology saw the retirement of Dr. Thomas Blackmore following many years of dedicated teaching in the Faculty of Dentistry. He was an excellent teacher who took advantage of his many years of clinical activity to provide anecdotes to help make his point. The Division is fortunate to have Dr. Carol Simpson assuming some

of his teaching responsibilities in September 2007. Dr. Carl Canning attended the 16th International Congress of Dentomaxillofacial Radiology in Beijing, China, from which he has taken current material to enhance his teaching.

The Division of Oral and Maxillofacial Pathology provides major academic courses in general pathology, systemic pathology and oral and maxillofacial pathology during the first, second and third years of the undergraduate dental curriculum and during the second year of the dental hygiene curriculum. A graduate oral and maxillofacial pathology course is provided every year by Dr. John Lovas. Dr. Bruce Wright conducts bi-weekly graduate pathology rounds and seminars.

Research and Scholarly Activity

The Department of Oral and Maxillofacial Sciences is very prolific in the production of clinical research and scholarly activity within the Faculty. This has resulted in the publication of several chapters, articles, and abstracts during 2007. As a result of this activity, several members of the Department were invited to present their research at national and international meetings.

The Division of Oral and Maxillofacial Surgery maintains research and scholarly activity affiliations with the University of Maryland, University of Munster, University of Nantes, University of Goteborg, University of Toronto, Université de Laval, University of Melbourne, Australia, University of Nagoya, Tokyo Dental School, Yonsei University and the National Dental Institute of Singapore.

The Division of Oral & Maxillofacial Pathology maintains research affiliations with the University of Minnesota Department of Oral Pathology and Genetics, the University of Pennsylvania Department of Pediatrics,

Johns Hopkins University Department of Pediatrics and the University of Copenhagen Faculty of Dentistry. These collaborative endeavours have resulted in many peer-reviewed research publications. Since 1982, the Division has attracted nearly \$1,000,000 in research grants, the lion's share of which belongs to Dr. Howell with lesser contributions from Doctors Cohen and Lovas.

Dr. Jeffrey Watson successfully defended his thesis entitled "Sensory Disturbances of the Nasopalatine Nerve Following Le Fort I Osteotomy" and graduated in May 2007 from the graduate training program in Oral and Maxillofacial Surgery.

Dr. Goodday as Examiner-in-Chief and Drs. Morrison, Davis and Robertson as Examiners have participated in the examination of candidates during the Spring 2007 and Fall 2007 Royal College of Dentists of Canada Specialty Exams.

Administration

Members of the Department continue to play an important role in the administration of both the university and faculty and also represent the university on various hospital administrative committees.

Dr. Goodday serves on the following: Senate Academic Appeals Committee, Continuing Dental Education Committee (Chair), Main Curriculum Committee, Academic Resources Committee, Infectious Diseases Committee, Tenure and Promotion Committee and Dean's Council. As District Chief of the Department of Oral and Maxillofacial Surgery he represents the Department on the District Medical Advisory Committee, Clinical Affairs Committee, OR Executive, the OR Committee and the Clinical Management Unit.

In addition to his role as Division Head of Oral and Maxillofacial Surgery, Dr. Davis serves on the Academic Awards Committee (Chair), Research and Development Committee and the Admissions Committee.

Dr. Chad Robertson serves on the Interprofessional Learning Committee.

Dr. Archie Morrison, in addition to being Director of the Graduate Training Program, is a member of the Dentistry Curriculum Committee and the Student Table Clinics Committee.

Dr. Carl Canning as a member of the Academic Standards Committee is Chair of the DDS3 ASC Committee and is a member of the Faculty Development Committee and the Academic and Clinic Coordinating Committee.

Dr. John Lovas chairs the Faculty Development Committee and is a member of the Senate Honourary Degrees Committee. He also represented the Faculty of Dentistry on the Dalhousie Health Sciences Human Research Ethics Board from July 2007 to May 2007.

Dr. Robin Howell is Chair of the Main Curriculum Committee and the Main Academic Standards

Committee. He is a member of the Research and Development Committee and the Senate Committee on Teaching and Learning.

Dr. Merv Creighton serves on the Senate Nominating Committee and the DDS Curriculum Committee.

All the members of the Department extend special thanks to Lesley Partanen and Ruth MacLean for their efforts on our behalf.

Local, National And International Presentations

Davis, B.R.: Update and Controversies of Mandibular Angle Fracture Management". AO/ASIF Principles of Operative Treatment of Craniomaxillofacial Trauma and Reconstruction, Jasper, Alberta, May 30, 2007.

Davis, B.R.: Anesthesia Morbidity and Mortality Rounds, Chair, Panel Member and Case Presenter. CAOMS Scientific Meeting. Jasper, Alberta, June 1-3, 2007.

Davis, B.R.: Teeth, Occlusion and MMF for Trauma Management. AO/ASIF Principles of Operative Treatment of Craniomaxillofacial Trauma and Reconstruction. Minneapolis, August 19-20, 2007.

Goodday, R.H.: The Use of MMA as the Primary Surgical Treatment Option for OSAS. Toronto Sleep Institute, February, 9, 2007.

Renault, N.K., Dyack, S., Dobson, M.J., Costa, T., Renault, M.P., Howell, R.E., Mitnitski, A., Greer, W.L. Evidence that X-Chromosome Inactivation Ratios are Genetically Influenced. Pathology Department Research Day, May 15, 2007.

Morrison, A.: Radiographic Imaging for Craniomaxillofacial Trauma. AO Course for Operating Room Personnel. Garden City, New York, January 6, 2007.

Morrison, A.: Dentoalveolar Trauma and Mandibular Fracture. Panel Discussion. AO Principles Course. Walnut Creek, California, January 27-28, 2007.

Morrison, A.: Charity Surgery in Vietnam, 2005. A Lecture to the Halifax County Dental Society, March 21, 2007.

Doucet, J.C., Morrison A. Prospective Evaluation of the Effect of the Presence of Third Molars During Sagittal Split Osteotomies. 2007 CAOMS Annual Conference, Jasper, Alberta, Canada. May 29-June 3, 2007.

Khan, A.A., Sandor, G.K.B., Dore, E., Morrison, A.D., Alshahi, M., Amin, F. Peters, E., Dempster, D., Hanley, D.A., Glorieux, F.H., Neville, A., Talwar, R.M., Al Mardina, M., Paul, T., Khosla, S., Jossse, R.G., Sutherland, S., Lam, D.K., Carmichael, R.P., Blanas, N., Kendler, D., Petak, S., St. Marie, L.G., Compston, J.E., National Clinical Practice Guidelines for Osteonecrosis of the Jaw (ONJ). Endorsed by: Canadian Association of Oral and Maxillofacial Surgeons (CAOMS), Canadian Society of Endocrinology and Metabolism (CSEM), Ontario Society of Oral and Maxillofacial Surgeons (OSOMS), Canadian Academy of Oral & Maxillofacial Pathology and Oral Medicine (CAOMPOM), International Bone & Mineral Society (IBMS).

Precious, D.S.: Orthognathic Surgery: The Trilogy of Patient, Orthodontist and Surgeon. Keynote Lecture. XXXII Congress of the French Association of Maxillofacial Surgery. Nantes, France, March 15-18, 2007.

Precious, D.S.: Physiologic Surgery for Cleft Lip and Palate Keynote Address. University of Turbingen Cleft Workshop. Turbingen, Germany, March 21, 2007.

Precious, D.S.: Alveolar Bone Grafting. University of Turbingen Cleft Workshop. Turbingen, Germany, March 22, 2007.

Precious, D.S.: Japanese Cleft Palate Foundation in Vietnam, Brazil and Tunisia. 7th Annual International Health Conference: "How to be a Health Advocate". Halifax, NS, March 31, 2007.

Precious, D.S.: Alveolar Bone Grafting: The Childhood Years. American Cleft Palate-Craniofacial Association. Broomfield, Colorado, April 23-28, 2007.

Precious, D.S.: Physiology of Cleft Lip and Palate: Surgical Management. 6th Asia Pacific Cleft Lip and Palate Congress. Invited Plenary Lecture. Goa, India, September 2-5, 2007.

Precious, D.S.: Early Secondary Alveolar Bone Grafting. 6th Asia Pacific Cleft Lip and Palate Congress. Invited Plenary Lecture. Goa, India, September 2-5, 2007.

Precious, D.S.: Cleft Lip and Palate Surgery: Experience in Viet Nam. Tucker World Dental Conference. The George Ellsperman Lecture, Halifax, NS, September 22, 2007.

Precious, D.S.: Demonstration Surgery for Unilateral Cleft Lip. Hyderabad, India, September 9-11, 2007.

Precious, D.S.: Orthognathic Surgery: A Paradigm Shift. University of Texas Southwest Medical Branch. Dallas, Texas, November 9-10, 2007.

Precious, D.S.: The Role of Undergraduate Dental Education Program for Rural Practitioners. Access to Care: The Rural Dentist. Canadian Dental Regulatory Authorities Federation, St. John's, Newfoundland, October 13, 2007.

Robertson, C.G.: Oral Oncology Update, Halifax District Dental Society, Halifax, Nova Scotia, January, 2007.

Robertson, C.G.: Prospective Evaluation of the Effect of the Presence of Third Molars During Sagittal Split Osteotomies. American Association of Oral and Maxillofacial Surgeons, Annual Meeting, Honolulu, Hawaii, 2007.

Book Chapters

Goodday, R.H. Sleep Apnea - Treatment by Immediate Surgical Lengthening of Maxilla Mandible. In Bell, W.H. (ed.) Distraction Osteogenesis of the Facial Skeleton, B.C. Decker, Hamilton, 2007.

Goodday, R.H. The Use of Orthognathic Surgery as the Primary Surgical Treatment for Obstructive Sleep Apnea Syndrome. In Turvey, T. (ed). Oral and Maxillofacial Surgery, 2nd Edition, Elsevier Publishing (in press).

Lovas, J.G.L., Lovas, D.A. Rapid Relaxation - Practical Management of Pre-op Anxiety, in Brown D.C. ed. Advances of Hypnosis Use in Medicine, Dentistry, Pain Prevention and Pain Management. Crown House Publishing, Bethel, CT. (in press).

Precious, D.S.: Genioplasty in Oral and Maxillofacial Surgery. Vol 2. ed RJ Fonseca. Elsevier, New York, 2007 (in press).

Precious, D.S.: Foreword. A Concise Color Atlas of Oral and Maxillofacial Surgery ed. T. Uchiyama. Gakken Shoin Ltd. Tokyo, 2007.

Precious, D.S.: Maxillary Lengthening. In Distraction Osteogenesis of the Facial Skeleton, ed. WH Bell. BC Decker, Hamilton, 2007.

Precious, D.S.: Effective Surgery for Cleft Lip in Current Experimental Study for Treatment of Cleft Lip and Palate, Editors: Dr. Nagato Natsume, Dr. Tsuyoshi Kawai, Dr. David S. Precious, Quintessence. Chicago, Berlin, Tokyo, London. 2007.

Publications In Peer Reviewed Journals

Lovas, J.G.L.: Rapid Relaxation - Practical Management of Pre-Operative Anxiety. Journal of the Canadian Dental Association, 73(5): 437-40, 2007.

Precious, D.S.: Treatment of Retruded Maxilla in Cleft Lip and Palate - Orthognathic Surgery Versus Distraction Osteogenesis: The Case for Orthognathic Surgery. Journal of Oral and Maxillofacial Surgery, 65: 758-761. 2007.

Doucet, J.C., Robertson, C.G., Morrison, A.D. Prospective Evaluation of the Effect of the Presence of Third Molars During Sagittal Split Osteotomies. Journal of Oral & Maxillofacial Surgery, 2007; 65(9) Suppl. 2: 42

CE Courses Presented

Lovas, J.G.L.: Diagnosis & Management of Pathologic Soft Tissue Lesions Affecting the Ginvivae. Half-day continuing education course. Canadian Academy of Periodontology Annual Meeting, Marriott Harbour Front Hotel, Halifax, N.S. June 22, 2007.

Batchildre, R., Brown D., Cadegan, K., DeGrenier, A., Gorman, M., Lovas, J., Simpson, I. Introductory Hypnosis Seminar. Abbie J. Lane Hospital, Halifax, N.S. November 30-December 2, 2007.

Morrison, A., Davis, B., and Robertson, C., Dental Implant Placement for the General Dentist - a Hands-on Course. Halifax, N.S., February 8-10, 2007.

Morrison, A., Davis, B., and Robertson, C., Dental Implant Placement for the General Dentist - a Hands-on Course. Halifax, N.S., November 8-10, 2007.

Articles Reviewed

Canning, C. Detection of In Vitro Proximal Caries in Storage Phosphor Plate Radiographs Scanned with Different Resolutions, Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, Endodontology, January 2007.

Canning, C. Knowledge of and Attitudes to Dental Radiological Protection: Assessment of a One-Day Pilot Course for Dental Hygienists. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, Endodontology, March 2007.

Canning, C. Hereditary Gingival Fibromatosis with Systemic Alterations: Importance of Radiographic Images in Diagnosis of a Syndrome. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, Endodontology, August 2007.

Honours And Awards

Morrison, A.D., AO Table Instructor of the Year Award, Salt Lake City, Utah.

Precious, D.S.: Board Member, International Advisory Committee, Hyderabad India Cleft Society

Precious, D.S.: Order of Canada, Inducted in 2007.

External Juror, Ph.D. Thesis of Dr. Raphael Olszewski "Three-dimensional CT based Craniofacial Cephalometric Analysis: Concept, Software and Experimental Validations. October, 2007.

SCHOOL OF DENTAL HYGIENE



Director, Professor Nancy Neish

Report from the Director

For the first six months of 2007, (and for the last twelve years) Professor Glenda Butt was the Director of the School of Dental Hygiene. Prof. Butt is currently taking an administrative leave. My five-year term as Director of the School began in July 2007.

Last year, Prof. Glenda Butt wrote an excellent, detailed annual report thoroughly describing the dental hygiene program including patient care, teaching, scholarly activity and administration. The majority of that information remains accurate, so rather than repeating it, for the purpose of this report I will focus more on information pertaining to 2007.

Patient Care

In May 2007, forty-one students successfully graduated from the dental hygiene program and are now employed in practices in several Canadian provinces. Each year forty-two students are admitted into the program, and in 2007 there was a total of 82 students enrolled, 41 in each of the two years. There were five full time and twenty-one part time dental hygiene faculty members, as well as faculty from Dentistry, Medicine, and Health Professions who provided didactic and clinical teaching. Dental Hygiene students have completed a total of 27 courses by the time they graduate with a Diploma in Dental Hygiene.

Second year students provided dental hygiene care to 1,657 patients of record in the Dental Clinic including patients treated in Eldercare, in addition to children attending the satellite dental clinic in Harbour View Elementary School and military personnel at CFB Halifax. The second year students also provided mouth care for residents in the Veteran's Memorial Building. Six students participated in a two-week externship to Newfoundland and Labrador where they treated patients in St. Anthony, Forteau, Flower's Cove and Roddickton.

First year dental hygiene students began to treat patients in March and provided dental hygiene care for a range of 2-5 patients per student.

Teaching

The teaching and the courses offered in the program were consistently rated highly by first and second dental hygiene students. Each year Faculty modify, develop and improve courses in an effort to provide up to date, evidence based, quality education. By July 2007 we had one less full time faculty member when Prof. Glenda Butt took her long overdue administration leave. This made it necessary for the four remaining full time faculty members, the two 70% faculty members (Profs. Patricia Grant and Chris Robb), and one 50% faculty member (Prof. Cara Tax) to take on additional work related responsibilities. I would like to sincerely thank Prof. Chris Robb for helping me with second year clinic coordination, and Profs. Patricia Grant and Cara Tax for teaching components of the Behavioural Foundations course, Prof. Butt taught the first component of "Behavioural Foundations – Communication and Motivation". Thank you also to the full and part time faculty for the many times you pitched in and helped when needed.

The part time dental hygiene faculty who contributed their valued expertise to the clinical program in 2007 included Profs. Burglind Blei, Jocelyn Burke, Gina Bouchard-Salyzyn, Heather Doucette, Karen Flinn, Kim Fougere, Tena Harris, Kim Haslam, Paulette

Hawksworth, Janet Khattar, Susan Keating-Bekkers, Marcia Kohler, Sheila MacDonald, Brenda MacIsaac, Maggie MacPherson Angela Parker, Donna Pascher, David Purdy, Karen Reid, Karen Sutherland and Colette Thistle.

Prof. Burglind Blei also taught the Health Law component of the Professional Issues course.

The first year Nutrition and Preventive Dentistry course had a new course director, Prof. Rebecca Green, who taught the course with Profs. Ruth Plant and Cathy Yeadon.

In addition to having a dedicated faculty we are blessed having Ms. Joyce MacDonald as our Administrative Assistant who is not only good natured but efficient and skilled in managing the many administrative aspects of her position. We are truly grateful for all the support she provides.

The Degree Completion year (Bachelor's of Dental Hygiene - BDH) will be implemented in September 2008. In preparation for this event Dental Hygiene faculty have been working closely with Dr. T. Boran, Ms. Nancy Webb and Mr. Bruce Moxley to work out the logistics, affiliation agreements and financing needed for the BDH. Prof.

Peggy Maillet is the Program Coordinator as well as course director for Independent Study. The other dental hygiene faculty who will be teaching in the BDH are Dr. Joanne Clovis (Applied Oral Health Research and Health Policy), Prof. Patricia Grant (Case Studies), Prof. Terry Mitchell (Alternate Practice Settings), and Prof. C. Tax (Teaching Methodologies). I will be assisting Dr. Rob Gilbert with the course 'Introduction to Health Research' that is currently taught to Health Sciences students and will now include BDH students.

Interestingly, the planning and implementation of the BDH and changes in the legislation governing dental hygienists were taking place more or less concurrently. In December 2007 new legislation regarding dental hygiene was passed in the Nova Scotia Legislature. Two faculty members in the School of Dental hygiene, Professors Terry Mitchell and Patricia Grant, were members of the NSDHA Legislative Committee and were able to provide expertise in the areas of dental hygiene education, practise standards, accreditation and national certification. This committee has been working over many years to bring the legislation regarding dental hygienists in Nova Scotia in line with the majority of provinces in Canada where dental hygienists are self-regulated. Professor Grant coordinated the Legislative Committee activities, participated in the negotiations

with government and other stakeholders and spoke before the Law Amendments Committee of the House of Assembly prior to third reading and passage of the Dental Hygiene Act. Professor Mitchell was a resource and advisory person to the Legislative Committee. She kept students informed of events pertaining to the legislation and following the passage of the Act gave a presentation on the impact the new legislation would have on the profession of dental hygiene.

Students taking the Degree Completion year will be licensed dental hygienists. The changes in the legislation governing the practice of dental hygiene that Profs. Grant and Mitchell worked on for many years have opened the doors to many non-traditional settings. Prof. Terry Mitchell has been contacted by several agencies from Capital Health including Cancer Care, North End Community Health Clinic and several long-term care facilities that are interested in having dental hygienists work with them.

The degree completion year promises to be an exciting one. The program is dynamic with an emphasis on research, teaching and preparing dental hygienists for alternate practice settings. The new legislation opens up more opportunities for dental hygienists in the areas of continuing education and research and will have an impact on changes to the School's curriculum.

Research and Scholarly Activity

There has been an emphasis on course development for the BDH as a focus for scholarly activity. Dental hygiene faculty continue to work on collaborative research projects as well.

In March 2007, Prof. Patricia Grant participated in an accreditation site visit at Algonquin College in Ontario for the Commission on Dental Accreditation.

In June 2007, Professor Paik hosted Dr. Clovis for a ten-day tour of S. Korea. She gave an invited lecture titled "Oral health promotion in Canada: Evidence and guidelines" to the annual conference of the Korean Academy of Clinical Preventive Dentistry on June 10. Following that meeting, Dr. Clovis gave a series of lectures to dental hygiene faculty and students at Kyungbok College in Pocheon, Gachon University of Medicine and Science in Incheon City, and Hyejeon College in Hongsun.

In addition, Dr. Clovis's contribution to the Research Advisory Committee of the CDHA is ongoing.

Prof. Cara Tax successfully completed her Masters in Education from Mount St. Vincent University in August 2007. Prof. Tax's final MEd. Project involved

the organization and facilitation of an Interfaith Symposium on Climate Change utilizing the principles of transformative learning theory. The main objective of the project was to educate and inspire participants to act on behalf of environmental sustainability.

I was an invited guest of Dentsply to attend their "Distinguished Dental Professional" meeting in York, PA in August, 2007.

Profs. Burglind Blei, Kim Haslam and Cara Tax completed certificates for completion of the Stanford University Clinical Teaching Course from the Division of Medical Education, Dalhousie University in the Fall of 2007.

Prof. Peggy Maillet was an item reviewer for the National Dental Hygiene Certification Board (NDHCB) examination. Prof. Cara Tax is a member of the NDHCB Exam Committee and participated in meetings in January, June and October of 2007. During the June meetings, the committee developed the first practice exam for students studying for the National Boards. Prof. Chris Robb participated as an item writer for the NDHCB exam in April 07.

Administration

My foray into administration has been brief to date. However, I have been impressed with the faculty and staff who contribute to the administration of the Faculty of Dentistry, all of whom have been helpful and kind.

The biggest challenge will be running two programs and maintaining a decent work-life balance for everyone involved. I am certain my colleagues in the School can meet the challenge – they are the best!

Local, National and International Presentations

Clovis JB, Andrews C, Ryding H, McFetridge-Durdle J, Mann K. Dentistry and dental hygiene: Partners in interprofessional education to promote collaborative patient-centred care. Practice Makes Perfect – Education of Health Professionals in Community, Clinical and Simulated Settings. Conference, Vancouver, November 4–7, 2007.

McFetridge-Durdle J, Mann K, Clovis J, Blye F, Mansour S, Martin Misener R, Rsmussen G, Ryding H, Versnel J, Wittstock L, Beanlands H, Sarria M, Matheson T. Seamless Care: An experiential model of interprofessional education to promote collaborative patient-centred care. Practice Makes Perfect – Education of Health Professionals in Community, Clinical and Simulated Settings. Conference, Vancouver, November 4–7, 2007.

Clovis JB. Interprofessional Education, Practice, and Research: Making the Connection with Dental Hygiene. Invited keynote for International Symposium on Dental Hygiene, Toronto, July 21, 2007.

Clovis JB. Dental Hygiene and oral health promotion in Canada. Invited lecture for Dental Hygiene Faculty and Students, Hyejeon College, Hongsun, Korea, June 13, 2007.

Clovis JB. Dental Hygiene and oral health promotion in Canada. Invited lecture for Dental Hygiene Faculty and Students, Gachon University of Medicine and Science, Incheon City, Korea, June 12, 2007.

Clovis JB. Dental Hygiene and oral health promotion in Canada. Invited lecture for Dental Hygiene Faculty and Students, Kyungbok College, Pocheon, Korea, June 11, 2007.

Clovis JB. Oral health promotion in Canada: Evidence and guidelines. Invited lecture for Korean Academy of Clinical Preventive Dentistry. Seoul, Korea, June 10, 2007.

Clovis JB. Oral health promotion in Canada: Evidence and guidelines. Korean Academy of Clinical Preventive Dentistry. Annual Meeting. July 10, 2007.

Matthews DC, McNally M, Crowell S, Clovis J, Filiaggi M. “Oral Health of Seniors – Identifying Research Gaps and Influencing Exchange in Aging Research”. Nova Scotia Centre on Aging, “Dialogue Among Partners’ Event”. Mount Saint Vincent University. May 2007.

Sarria M, Mann K, McFetridge-Durdle J, Clovis J, Martin Misener R, Wittstock L, Ryding H. Seamless Care: Interprofessional Education and the Development, Content Validation and Reliability Study of New Evaluation Instruments for Preceptors in Interprofessional Education. 8th Annual Symposium on Medical/Health Professions Education and Interprofessional Learning, Halifax, May 11, 2007.

Clovis JB, Matthews D, Filiaggi M, McNally M. Improving seniors’ oral health through community collaboration and research partnerships (abstract, poster). National Oral Health Care Conference 2007. Denver.

McNally ME, Crowell S, Matthews D, Clovis J, Filiaggi M. From research to policy: Experiences of the Nova Scotia Seniors’ Oral Health Collaboration. 19th Annual Meeting on Special Care.

Grant, PD. Ongoing presentations to government, Health Organizations, dental and dental hygiene groups on the legislative process for dental hygienists in NS. January, March, May, June, September and December 2007.

Grant, PD. Faculty of Dental Hygiene Clinic Retreat presentation on Clinical evaluation and Grading. June 2007

Grant, PD. Presented to Law Amendments Committee of the Nova Scotia Legislature regarding the Dental Hygiene Act, December 2007.

Maillet JP. “The Effect of Magnification Loupes on Dental Hygiene Student Posture” ADEA, New Orleans, March, 2007

Maillet, JP. Annual Dental Hygiene Faculty Workshop, presented on Faculty Calibration, September 2007.

Mitchell, TL. Dental Hygiene Faculty Clinical Evaluation – Grading, June 2007

Mitchell, TL. "More Than Just a Pretty Smile" at the request of College of Registered Nurses of Nova Scotia as a Telehealth course offered as Continuing Nursing Education. CRNNs requested permission to continue to use this course on their website. June, 2007

Mitchell, TL. International Symposium on Dental Hygiene – poster presentation entitled Developing an Action Plan to Improve the Oral Health of Seniors. July 2007

Mitchell, TL. & Grant, PD. Annual Dental Hygiene Faculty workshop on Teaching and Evaluation in Clinical Dental Hygiene, September 2007

Neish, NR. "Everything you wanted to know about fear but were afraid to ask." Faculty Development Seminar, Dalhousie University, May 10, 2007

Neish, NR "Auricular Acupuncture for the Dental Team" presented at the Nova Scotia Oral Health Care Conference, Halifax, NS June 2007

Abstracts

Clovis JB. Oral health promotion in Canada: Evidence and guidelines (abstract). Korean Academy of Clinical Preventive Dentistry. Annual Meeting. July 10, 2007.

Maillet, JP et al, "The Effect of Magnification Loupes on Dental Hygiene Student Posture", JDE, January, 2007

Publications In Peer Reviewed Journals

Elliott J. , Sutow, J. Peggy Maillet, Wayne A Maillet, Gordon C Hall, and Michele Millar Corrosion Potential Recovery of Dental Amalgam Restorations Following Prophylaxis., Dent Mater. 2007 Jul; (7):840-3 Epub 2006 Aug 24

Neish, NR, Reflections on Conducting Structured Interviews with a Senior Population and Participating on a Research Team. CJDH Vol.41, No. 1, Jan-Feb 2007

Other Publications

Grant, PD. Prepared a Legislative Fact Sheet distributed to all Members of the Legislative Assembly, NSDHA Newsletter and Web Site. December, 2007

Research Grants

Dr. Joanne Clovis & Dr. Debora Matthews, co-Principal Applicants were awarded a Canadian Institutes of Health Research (CIHR) / Nova Scotia Health Research Foundation (NSHRF) Regional Partnership Grant for the project "Changing Demographics: The Oral Health of Our Aging Population". The \$280,701 grant, over a three year period includes matching partnership funding from the Office of the Chief Dental Officer, Health Canada. This project will seek to measure clinical and self-reported oral health status of older adults together with seniors to determine utilization of oral health services, the impact of oral health on quality of life, and report on treatment needs in this population.

Gilbert, R, Black, S. Principal Investigators, Co-Applicants - Neish, N, Carey, E, Himmelman, D, Helwig, P. Determining the Efficacy of Auricular Acupuncture on Reducing Anxiety in an Addiction Recovery Setting, \$6027.00, NSHRF, 11/07-11/08

Honours And Awards

Prof. Cara Tax was the recipient of the Alumni of Distinction Award from the School of Dental Hygiene, University of Manitoba.

Prof. Terry Mitchell was the recipient of the Dental Hygiene Educators of Canada (DHEC) Teaching Award for excellence in dental hygiene education.

DALHOUSIE DENTAL CLINIC



Overview

Mr. Bruce Moxley Manager

Following is the Annual Report for the year 2007 for the Dental Clinic.

The Faculty of Dentistry dental clinics continue to provide a full range of clinic academic experiences while also offering an extensive range of oral health care for thousands of Atlantic Canadians of all age groups. On an annual basis the dental and dental hygiene students are actively caring for over 8000 patients annually. The care of these patients involves in excess of 25,000 appointments of about 2 hours each in length. About 1,400 new patients were treatment planned and accepted into the Clinic this past year.

1. To develop a patient-centred Dalhousie dental clinic model and associated community clinics to promote and provide oral health to Atlantic Canadians.

Develop a patient-centered clinical facility. (Patients expect to receive prompt and high quality professional dental care. Patients expect to be treated with courtesy and respect. The Dalhousie Dental Clinic should follow strict ethical standards in patient management. Patients expect to receive our utmost care.)

The Clinic continues to implement measures to help make our clinic facility and services more patient-centered.

a. Continued Development of Patient Services

- Advertising and patient supply: Over the last couple of years Clinical Affairs have worked hard to communicate better with current patients. During 2007 continuing improvements were made in the Faculty of Dentistry web site (www.dentistry.dal.ca/) to provide more search access for the public about clinic services. Some patient treatment and appointment requests are now being managed via the general web e-mail address. During 2007 we did an extensive review of all Clinic information brochures and web site information. Plans to print updated brochures and website enhancements will be in 2008.

Newspaper ads are now being used more frequently for both general dentistry services and specialty services at the request of the teaching divisions. Through advertisements and the recommendations from our many satisfied patients, there is now a 3-month wait for a new patient appointments in the Treatment Planning Clinic. The Implant Clinic currently has over a one-year waiting list. As a result, the number of students involved in the Implant Clinic is being increased. The Emergency/Recall Clinic was not in operation as of October 2007. The Faculty continues the search process to fill this important position.

Some special modifications to the white and yellow pages phone listings for 2007 were made to help the general public find the Faculty of Dentistry Clinic phone number easier. Feedback from these changes has been positive.

- Chart audit system: Staff and faculty continue to work on improving this process as it benefits both patients and students. This is now a well-established monthly process, which includes faculty representatives from all of the clinical departments and the School of Dental Hygiene. Students are informed of the results and timely corrections are monitored. Due to the workload and need for increased chart auditing and patient care follow up, plans are being formulated to provide more staff support for this work.
- Purging old patient charts: During 2007, the Patient Services staff did the annual review of all the charts in the storage room and arranged for the shredding of all charts for patients who have not received treatment in the last 10 years.
- Patient feedback questionnaires: Patient Services makes a feedback questionnaire available to all patients to complete on a voluntary basis. We receive about 50 of these a year. The majority by far are very positive about their treatment and their experiences at the Faculty of Dentistry Clinics. In the last year there were four concerns identified about care or the cost of treatment. The questionnaires with negative comments or concerns were not signed nor their student identified so it is impossible to follow-up on specific concerns. The general concerns have been reviewed and addressed where appropriate.

b. Emergency/Recall clinic:

The Emergency/Recall clinic was not in operation after September 2007. Dr. MacArthur resigned and Dr. Carl McDermott was hired to replace him. Dr. McDermott resigned in late September and a new replacement was not found. A faculty position has been advertised and it is hoped an appointment will be made in 2008.

c. New Services:

1. New rotary endodontics hand pieces and file systems were purchased in 2007. This new technique is now taught preclinically and provided to our patients for endo care.
2. The clinics now offer our patients in-office tooth whitening services.
3. It continues to be a challenge to arrange for transportation services for children at feeder schools in the Preston area to our clinic at Nelson Whynder School. Efforts to arrange this will continue.
4. All patients' photographs and digital radiographs (as used) are now attached to the patient's electronic record as digital files. This facilitates the development of case and teaching presentations and ensures availability.

d. Assisting NSCC Dental Assisting program:

The 2007 clinic rotations of Dental Assistant students from the Leeds Street Campus of NSCC proved to be an asset to our clinic because the students were more organized and better prepared than last year. Also the DDS students were informed about what the dental assistant students were capable of doing. Extra orientations for these students were organized each week by Dental Clinic staff in panoramic equipment and techniques. The students also had a rotation through the Central Sterilization Unit. It is planned that A. Hayden will go the NSCC campus to give the students a lecture on Implants and will schedule other times to review implant components with them. This coming year, Winter 2008, the dental assisting students received their daily assignments from our full time dental assistant staff instead of students. We hope this will result in more comprehensive experience during their rotations. We look forward to their rotations in 2008.

e. Radiology Services:

For the second year Radiology Services was covered by one full time sessional DA staff member who is providing improved organization and radiology services. The feedback on this change has been very positive. The quality and efficiency of radiology services has improved significantly. Considerable research, planning and testing continues on digital radiology systems towards a planned electronic record for 09/10. DDS1 and DDS2 students are receiving preclinical training now.

f. The Graduate Prosthodontics program:

No new residents were accepted into this program for September 2007. A new Director has been appointed. It is hoped that the program changes will be completed and new residents will be accepted for the 2009/10 academic year.

3. Develop contracts to provide dental care to a wider range of Atlantic Canadians and the wider community (outside Atlantic Canada)

a. Community Clinics:

The Faculty continues to operate community clinics at Nelson Whynder School (North Preston) and Harbour View School (Dartmouth).

The Office of Clinical Affairs and the North Preston Oral health Community Committee continue discussions about contracting the services of a general dentist for the community clinic. The Faculty continues to have trouble hiring a dentist to provide adult care at this clinic. After ten or more years of frustration, we have finally had success finding a central Services coordinator with the Halifax School Board who is able to help us get approval for school board or Dalhousie trades to carry out service and maintenance work in our two school clinics. Plans are in process for improvements at both clinics.

Dental hygiene students continue to have practicums at St. Anthony, Roddickton Clinics (Grenfell Mission, Newfoundland/Labrador), Stadacona base (Halifax) and the Camp Hill Veterans building (Halifax).

While there are potentially many opportunities for the Faculty to develop more community clinics, such clinics take away resources and students from core activities in the main Faculty clinics. While the Clinic administration is always open to considering requests for these, the resources required and the impact on student time always have to be considered along with the needs for the community clinic.

b. Elder care/Special care Clinic:

The student rotations to this clinic continued in 2007 with three dental and five dental hygiene students due to interest and patient demands. This clinic is now very busy with quite a waiting list. It continues to serve the Sisters from the old Mother Berchman Centre who are now living in a Shannex facility and our geriatric medically compromised patients. The Faculty sees a need for an increased emphasis in this demographic and Departmental planning to support this is in the planning stages.

a. After Hour Emergency System:

The Office of Clinical Affairs organizes an extensive after-hours dental emergency service for patients of record at the Clinics. These same groups of dentists also offer daytime emergency services when our students are not in clinics such as exam weeks and vacation periods. A number of local dentists offer their time and offices to support this service. Plans are underway to develop this service into a Student Emergency Rotation in 2008.

4. Interaction with the Dental Profession

- Professional Study Clubs: The Faculty continues to sponsor the development of professional study clubs using the Dr. J.D. McLean Continuing Education Centre facility. The Tucker Study Club is in its fifth year of operation and the East Coast Endo Study Club is in its fourth year.
- The Clinical Affairs office was the clinical site for the September 2007, Tucker Club International Conference. Attendees from all over the world attended this event.
- Hands-on Continuing education courses: The Clinical Affairs Office and the Continuing Education Office organized two hands-on Implant Surgery continuing education courses in 2007.
- On May 3, 2007 the Canadian Armed Forces came to the faculty to use the facilities in the Dr. J.D. McLean Continuing Education Center for their training course in Perio Surgery.

5. Support of Professional Organizations

The Faculty of Dentistry continues to be official examination sites for:

- North East Regional Board (NERB): The Faculty of Dentistry at Dalhousie University is an official test site for the North East Regional Board exams. As the first and only test site in Canada, Dalhousie dental students have the unique opportunity to take this board examination in the comfortable surroundings of their own dental clinic. Our students took advantage of this and completed the exams on Saturday, March 10, 2007 and September 22, 2007.
- National Dental Assisting Examining Board (NDAEB): The Dalhousie University Faculty of Dentistry is available for the NDAEB to schedule as a test site. This test allows dental assistants from non-accredited institutions, dental assistants who have allowed their licence to lapse more than 5 years and first time licensure in the province of Nova Scotia to be able to take a clinical examination allowing them to become registered as Phase II dental assistants in Nova Scotia. We had exams on June 1 and 2, 2007 and August 25, 2007.
- National Dental Examining Board: The Clinical Affairs Office and the Dental Laboratory work together to develop examination materials for the board.
- The Faculty provided facilities and support for Henry Schien Ash Arcona to hold a dental trade show on Level 1 at the Faculty in September. It was quite successful and it is planned to repeat it in 2008.

6. Activities of the Director:

Major projects and activities that have been initiated or completed during the past academic year include:

Activity	Status of Project
Development of a Emergency/Recall Clinic	A search is underway to find a new Director of the Emergency/ Recall Clinic.
Committee on Infectious Diseases	This is now a Standing Committee of Faculty. The Policy on Students & Student Applicants with Infectious Disease has been implemented and is reviewed on an ongoing basis. The Committee is currently developing a policy for clinical support staff and faculty.

Proposals to improve patient supply	Ongoing
axiUm (Clinic Information System)	Weekly meetings of the sub-committee continue to develop a plan for the implementation of an electronic patient record.
Clinic Attire	Development of a policy and the process to ensure that all students, staff and faculty follow the clinic attire policy. In 2008 the Faculty will be providing a laundry service for clinic jackets. A major change to the Faculty dress code is planned.
Vital Book Library and laptop program	This project is ongoing; the program has been successfully introduced to the DDS1 students; orientations and training sessions continue to be scheduled; expansion of electronic resources include the development of the Dentistry Courses folder to house teaching material accessible to both students and faculty.
North East Regional Board Exam	The Director has been responsible for the local organization and management of NERB exams at Dalhousie.
North East Regional Board Examination Committee	The Director has been an active member on this committee.
National Dental Examining Board	Currently serves as Assistant Chief Written Examiner, a member of the Examinations Committee and participates in various written and OSCE workshops. He has been appointed as Chief Written Examiner beginning in the year 2010.
Chair of ACFD Working Group on Immunization and Infectious Diseases	A national policy has been developed and endorsed by ACFD. This policy is consistent with the Dalhousie Infectious Disease document currently in place.
ACFD teaching conference on Implementation of and Integration of Digital Imaging with an Electronic Patient Record	The Teaching Conference occurred early in 2008 and was well attended; Committee is chaired by Dr. Jeff Myers.
Commission on Dental Accreditation	Participated in a site visit to McGill University, Faculty of Dentistry
Research	Caries Research Project with NRC and the University of Manitoba; acquired a major research grant to continue research on improved methods for diagnosing caries.
Scholarly activity	<ul style="list-style-type: none"> a. Submitted a chapter on Morphology of Teeth and Their Root Canal Systems for the 6th edition of Ingle's Endodontics by Ingle and Baklund; the text is scheduled for publication in April 2008. b. Continued as a contributing author for the Tooth Atlas by Brown & Herbranson. c. Contributed to The Integumentary System in the Developing Human in The Developing Human: Clinically Oriented q Embryology, 8th edition by Moore and Persaud. d. Two articles were published in the Journal of Endodontics in 2007. e. Collaborated on a number of abstracts and posters in a joint research project with NRC and the University of Manitoba
Presentations	ADEA Technofair- Web-based OSCE Board Exam Preparation Tucker Study Club
American College of Dentists	Inducted as Fellow in 2007
ACFD	Appointed Vice-Chair – Clinical Affairs Committee

7. Other Improvements to Clinic systems and services:

a. Income

Due to a change in the time frame that this report covers, the following figures for income for January to December for the last four years are provided.

<u>Dental Clinic</u>	2004	\$1,120,196
	2005	\$1,376,727
	2006	\$1,371,181
	2007	\$1,444,670

<u>Dental Lab</u>	2004	\$ 115,601
	2005	\$ 68,364
	2006	\$ 80,658
	2007	\$ 111,102

b. New Clinic Computer Information System:

- We continue to develop and expand our clinic information system to the benefit of students, patients and administration. We have finally implemented the newest version of Axiom that will permit us to begin developing our standards for an electronic, chair side patient chart. The newest version of Emago, the imaging module for Axiom, was implemented early in 2007.
- We have made arrangements to share a staff member from the Academic Computing Services unit of University Computing Services for three days per week for six months to help develop training and clinical modules of Axiom. We hope this project will help us develop a framework for the implementation of the electronic patient chart for the academic year 2009/2010.
- Dental Laboratory Axiom module was purchased in 2007 for implementation in 2008.
- Digital Radiology - All DDS1, DDS2, DDS3, QP1, QP2, and DH1 students will receive preclinical instruction in digital technique in 2007 and 2008 towards a full clinic implementation.
- Clinic Information System Task Force meets every Tuesday morning to continue planning for 2009-10.

c. Vital Source and the Student laptop computer program:

In 2007 the second class of DDS students received their new Macintosh, MacBook Pro computers and their Vital Source bookshelf of electronic textbooks during a four-hour introduction and orientation session. Additional orientation sessions were provided later in the fall to introduce the class to the use of EndNote bibliographic software and Microsoft Word features.

Dr. Cleghorn continued to offer weekly lunches to faculty or students interested in learning more about the Vital Source system and the Endnote system.

Student feedback continues to be very positive. The hardware and software has proven to be very stable, efficient and user-friendly.

The Faculty looks forward to the introduction of the third year class in 2008 to the use of their laptops in the clinic cubicles for access to the patient, electronic record system and first and second year preclinical use of the laptops for simulated patient care records.

d. Safety, infection control and recycling:

- CPR and immunization status for faculty: All clinical faculty are now urged to have up to date CPR certification and immunization. The various Departments are responsible to keep records of the status of the faculty members CPR and immunization. All faculty members will be asked for an update on this on a yearly basis in the orientation packages for new academic years teachers and instructors.

The Clinical Affairs office will plan and organize CPR certification training for faculty in cooperation with

the Department secretaries. The secretaries will determine which faculty members requires either the complete course or the recertification course.

- Flu immunization: C. MacLean (Clinic Nurse) in cooperation with the Department of Health again organized flu immunization for all faculty, clinic staff and students directly involved in patient care activities.
- The Clinical Affairs office continues to wait for University and Provincial feedback and direction for pandemic response protocols.

e. Refurbishing the Clinic Facilities:

- Clinic Cubicle Internet Wiring - This extensive project was carried out by Facilities Management under the A&R budget in 2007. An excellent job was done in a complicated scheduling situation. A big thank you to Facilities Management staff for this project completed in December 2007.
- Negotiations continue with Nobel Biocare to improve and develop Level 1 clinic facilities in support of the expanding implant program.
- A new, clean Dispensary was constructed in the summer of 2007 and put into operation for September 2007 classes. This facility separates clean equipment and supplies from contaminated items and is a significant sterile process improvement. Staffing levels are short for supporting this new area, but a staff support review is in process.
- 3M ESPE Corporation agreed to supply the Dental Laboratory of the Faculty with a Lava system digital scanner, design unit and training for 2 staff. This new service including zirconia materials is an exciting new addition to our Laboratory services. We want to acknowledge 3M/ESPE's assistance for this.
- The seven Oral Surgery cubicles on Level 1 of the Faculty were completely refurbished over the Christmas break with new Adec dental chairs and lights, updated oxygen supply system and a complete paint refresh. Funds were provided from the Department of Maxillofacial Surgery and the Dean's office for these very much-needed improvements.
- Henry Schein Ash Arcona, a local dental supplier and major supporter of the Dr. J.D. McLean Centre updated two cubicles in the Centre with equipment and cabinetry from MidMark Corporation.
- Pelton and Crane became a sponsor of the Dr. J.D. McLean Continuing Education Centre by outfitting a cubicle.
- Adec dental manufacturer and major supporter of the Dr. J.D. McLean Centre sent their senior Educational systems staff to visit the Faculty in December. Plans were made to outfit the Centre with their high and low speed hand piece system including lubrication systems. They are also upgrading the upholstery on their chair units.
- Clinic Renewal: Discussions continue with Facilities Management and the University plans for the upcoming Capital Campaign to renew all Level 2 dental cubicle cabinets and equipment.

f. Capital inventory Replacement

- After a year of negotiations, University Financial Services and the Clinical Affairs office came to an agreement on updating the Clinic's capital inventory system for the dental tray system. This system was updated in our budget process for the 06/07 fiscal year. This system will permit the Clinic to maintain and develop its inventory of trays and hand instruments on a five to seven year replacement cycle versus the current fifteen-year, ad hoc system. This is a significant improvement to Clinic budgeting for equipment and systems and we are very thankful for the support and assistance of Darryl Cochrane in the Financial Services office for this updated system. It will help provide faculty and students with much more up-to-date equipment for their dental care activities.

g. Staff Changes

- A senior technical position in the Dental Lab is still to be filled.
- The second technician position in the Technical Services unit has been filled.
- Ermina Johnson still works on a casual basis in the CSU.
- The Clinics employ at least five Dalhousie students in 10 hour a week, part-time positions.
- H. Haskins retired after 30 years of service.

- A. Hayden hired as Coordinator of Clinic Services
- Sandi Musolino was hired by Academic Computing Services to replace Ed Redman (on his retirement) as our contract employee for the Clinic Information System.
- Kim Berkers worked in the Dispensary September to Christmas 2007 to replace Al Pottie who was on paternity leave.

h. Staff Training

Staff continues to be encouraged to take various courses in order to improve or maintain their skills for their jobs. Some of these courses are WHMIS, in-house training on various aspects of patient care, CPR, Dental Lab technical courses (with various external companies) and courses (through the Faculty of Dentistry Continuing Education office).

Kathy McInnis, Supervisor Patient Services and Radiology, along with Drs. Cleghorn and Canning, attended an ACFD sponsored workshop on the future of Digital Radiography in the teaching and service programs at Canadian dental schools.

A number of staff are pursuing degrees and special course certificates through Dalhousie University while they work. We commend them for their efforts.

i. Special events:

A number of events helped highlight activities at the Clinics this past year. These included:

- Dalhousie University Open House: We again participated with the University. The clinic provided and organized greeters at the front door and guides for tours of the Clinics on Level 1 and 2. Dr. Cleghorn introduced visitors to his interactive dental anatomy computer program. Dr. Knechtel and volunteer students provided a hands-on experience for the visitors to learn to prepare a tooth for a filling using high-speed dental hand pieces and phantom heads. Professor Terry Mitchell for the School of Dental Hygiene showed how to model the anatomy of teeth. Nancy Webb, in the Dean's Office attended the Open House event in the SUB MacInnis Room with a poster and information table describing all the programs of the Faculty. The high school students who participated were able to take their projects home with them. Everyone seemed to have a really great time and were very appreciative of the opportunity. The feedback forms were all very positive about the hands-on activities so we plan to try and develop more of these for future Open House days.
- Tours: The Clinic sponsored a number of extensive facility tours for dental class reunions, the Dalhousie Predental Society, the CompuCollege program for Dental Office administrators, and special guest thank you events for the Dean for alumni and friends supporting the Faculty with donations.

j. Dental Health Month:

The dental assistant staff at the Faculty who coordinate clinic operations at Nelson Whynder School in North Preston and Harbour View School in North Dartmouth, planned excellent programs for school participation of the children for Dental Health Month in April. Juliette Thomas with the assistance of Dr. MacClelland, helped organize a children's play called "I love my teeth - I know them and I look after them". At Harbour View, Janice Ruppert coordinated a classroom door poster contest throughout the school. Staff and faculty from the Faculty attended both events and sponsored prizes and awards.

k. New Programs:

1. Planning began in the fall of 2007 for the extension of the Dental Hygiene 1 clinical program into May of 2008 to provide increased clinical experience and a newly structured preclinical Dental Hygiene restorative program.
2. Planning with Dental Hygiene instructors also began for the new Dental Hygiene Degree Completion Program Clinic Rotation course for January 2009.

I. Accreditation:

Faculty accreditation happens in 2008-09. Plans are underway for this review process.

m. NSCC Oral health Education programs:

Correspondence continued in the fall of '07 about how to update the government on plans for the three programs. Currently NSCC is recommending that the Nova Scotia government purchase seats for the Dental Technology and Denturism programs at George Brown College in Toronto.

Clinic staff and NSCC dental assistant program staff met in the fall about dental assistant program initiatives.

n. New Clinic Dress Code:

A Faculty decision was made in 2007 to move to a mandatory clinic dress code for August 2008. Standardized jackets will be embroidered with University logo and student and faculty names. They will be laundered daily by the Faculty. Scrub tops and pants must be worn under the clinic jackets. These will be laundered by the owner.

A new clean jacket facility is to be built near the main Clinic to facilitate the pick up of clean jackets as required.

Supporting Clinical Research:

The Clinic management continues to recognize the importance of supporting research for training students and providing improved dental care information to practitioners in the Dental Faculty and throughout Atlantic Canada.

FINANCIAL CHALLENGES:

2007-08 was a challenging fiscal year for the Clinics.

The lack of a Graduate Prosthodontic program and the temporary closure of the Emergency/Recall Clinic has considerably reduced patient revenue.

Some trial changes in clinic timetabling and cubicle assignments and DDS4 class productivity levels also reduced revenue.

As a result, Clinic revenue losses were in an excess of a quarter of a million dollars. This forced the loss of over \$100,000 in new/replacement equipment funding dollars.

It is hoped that the Clinics we operate and the base budget can be improved in 2008/09.

OTHER ITEMS

- Instructional Resources continues to do research on new digital cameras to try and find suitable models for clinic intra oral photography procedures.

Summary:

We want to again extend a special thank you for the efforts of all the clinic and support staff that continue to make the Dental Clinics and Lab excellent places to work, to receive oral health care as a patient and to be educated as a dentist or dental hygienist.

Respectfully submitted:

Dr. Blaine Cleghorn
Clinic Director

Mr. Bruce Moxley
Manager, Clinical Affairs & Support Services

