1. **What is the achievement during the last year about which you are most proud?**

The college made significant progress in the planning of the Dental Science Building expansion and renovation with the successful completion of the master planning and visioning exercise and a fund raising feasibility study. In November, the dean and the lead architect from Kahler-Slater gave a detailed presentation to President Machen and Dr. Guzick about building plans, fundraising feasibility, the need for a new facility and specifics about how the facility would enable the college to maintain the excellence built over the past 40 years. Machen and Guzick approved of the direction in which we are headed and shared a verbal commitment to continue to work with us to fund Phase 1 of the three-phase building plan. This plan is critical to the future success of this college.

2. **Identify 2-3 other important advances/achievements made by your college this year.**

   - The college enrolled its first joint D.M.D./Ph.D. degree candidate. The program offers a combined D.M.D. and Ph.D. that integrates the D.M.D. education with a comprehensive Ph.D. in the College of Medicine’s Interdisciplinary Program in Biomedical Sciences. This dual degree program allows participants to establish both
clinical and research identities, ultimately allowing pursuit of an academic career that applies modern research methods to clinical problems.

- The DMD Class of 2014 achieved a 100% first-time pass rate on their National Board Dental Exam Part I. This marks the fourth consecutive year that the college’s students have achieved a 100% first-time pass rate, with UF College of Dentistry students’ performance better than the national average.

- In April 2013 we opened the Center for Advanced Periodontics and Prosthodontics that combines patient care for those with prosthodontic and periodontal treatment needs, and graduate education for the residents in each program. The center provides more convenient and patient-centered care for patients with complex dental needs, while at the same time elevating the quality of resident education. In addition, all of our advanced and graduate clinical education programs are now co-located on the first floor of the dental science building, adjacent to our newly renovated main lobby.

- The Office of Continuing Dental Education has been transformed from an administratively-subsidized auxiliary unit to a self-funded asset to the college. The office offers two nationally recognized flagship programs: 1) the 24-month Comprehensive Dentistry Program that qualifies graduates for the recognition of Mastership in the Academy of General Dentistry; and 2) the13-month Executive Practice Management Program for Dentists. The latter program is jointly marketed by UF and the American Dental Association and has received national recognition, partly related to the concern about high levels of dental student debt and the need for dentists to enhance their practice management and business skills.

- The college’s financial position for the second half of the fiscal year is much improved in comparison to the first half of the year, and by the end of the fiscal year we expect to be on our way to rebuilding the college’s AEF cash reserves. Since the College Budget Workshop held in January 2013, we have systematically implemented a 17-point action plan that includes strategies to enhance revenue, decrease expenses in order to rebuild our cash reserve and to generate funds to enhance the college by funding strategic initiatives.

- The college was a leader in the shift toward consolidating Information Technology services within the Health Science Center. The college began integration in 2012 with a goal of expanded IT services and expertise available through consolidation, and to potentially realize cost savings through economies of scale.

3. **What is the one thing that you would have done differently in retrospect?**

   In hindsight, the college would have initiated a self-funded expansion of the DMD program earlier. We postponed the implementation of the self-funded expansion with the hope that the state would allocate additional support for DMD class size
expansion. Realizing that this support would not be forthcoming, the college implemented a 24-student self-funded AEGD program for internationally educated dentists two years ago. Beginning in Fall 2013, the college will implement a 10-student per year increase in the DMD class size, for a total of 40 self-funded students in four years. We also requested approval for the option of offering unsubsidized or self-funded enrollment of residents in our various dental specialty programs, and have expanded self-funded internships and fellowships in our various specialty programs. Each of these activities will result in increased tuition revenue to the college that is needed to offset the significant reduction in state appropriations.

4. If your college is involved in patient care, what are the quality metrics that you will use to assess patient care quality under the UF&Shands Strategic Plan? Where does the college stand on this metric and where do you plan to be in 1 year and 5 years?

Dental schools/practices do not use national benchmarks or score cards to assess patient quality and safety. The college tracks outcome measures including clinical productivity (patient visits and procedures by clinic and program), patient satisfaction, clinical occurrences (unexpected or poor patient outcomes), and patient complaints (formal and informal).

- In the 2012 Patient Satisfaction Survey, three-quarters (76%) of the patients who responded rated the overall quality of the dental care they received at the UF College of Dentistry as “Excellent” and more than one-fifth (22.9%) rated it as “Very Good.” About one percent of the 2012 respondents rated the overall quality of care as “Fair” (0.9%) or almost none rated it as “Poor” (0.2%), as indicated in the following figure.

![Overall Quality of Care Chart]

- [0.0%] 2008
- [20.0%] 2009
- [40.0%] 2010
- [60.0%] 2011
- [80.0%] 2012
- [100.0%] Poor

Excellent

Very Good

Good

Fair

Poor

Overall Quality of Care*
• Our college has pursued a number of patient service/quality initiatives during the past year that will have a positive impact on patient care as well as streamlining our clinical operational procedures. In January 2013 the college deployed an upgrade to our clinical management software, AxiUm, which provides better tracking of patient quality metrics. Clinical staff and program directors receive weekly reports on a set of clinical indicators that are designed to ensure the timeliness of care and the appropriate supervision of care by faculty.

• We launched a revenue cycle workgroup that is streamlining and standardizing the process used in all dental centers for patient registration and collections.

• We also coordinated with engineering graduate students on two projects. The outcomes resulted in expanded clinical hours to better accommodate patients’ schedules and highlighted the need for a centralized call center to handle patient appointments.

5. What initiatives are on the back burner that need to be on the front burner?

• Dental education and patient care delivery has changed since 1975 when the Dental Science Building was completed; the facility has not kept pace with these changes. The challenges include the building size, teaching space limitations, aging infrastructure, research space limitation, and an increase in the number of dental schools in Florida and the U.S. Without significant investment our facilities, it is unlikely that the college can maintain its current high ranking, provide the level of contemporary dental education and care that is expected, expand its research programs, and continue to successfully compete for the best and the brightest students pursuing dental education.

• The college has a critical need for a centralized patient access center for patient appointments in Gainesville. An access center should improve clinical productivity and patient access to appointments, and provide for better timeliness of service.

• The college would like to participate in the UF Health hospitality initiative to improve the overall patient experience. This is a critical element to building the college’s clinical practice as a means to financial stability and growth.

• The college needs to recruit more research-intensive faculty with a strong record of scholarship and research funding, and high potential to enhance/align with Health Science Center strategic research initiatives.
6. Are there plans to make significant changes in your educational curricula for undergraduate professional training? If so, list the three most important changes.

• The college launched a comprehensive D.M.D. curriculum revision steering committee in 2012. This project has multiple drivers including a need to change our teaching methodologies to better teach today’s students, to adapt to the rapid changes in the dental profession, to better integrate new technologies and therapeutic options into patient care, and to better prepare our students for dental practice. A detailed report from the Curriculum Revision Steering Committee can be found in Appendix A.

• We are also beginning an Accreditation Self-Study in August 2013 to prepare our college for the Commission on Dental Accreditation site visit scheduled for February 2015.

7. What is the total amount of research funding (grants and contracts) at your college projected for FY12-13? What is the amount of NIH research funding? What are your goals for total and NIH research funding in 1 year and 5 years.

The total research funding, NIH funding, and Blue Ridge Institute Medical Research data for last year and projected funding for this year, with NIH funding broken out, is shown in the following table. The college ranks 10th of 61 U.S. dental schools in the nation in NIH/NIDCR funding. The college also ranks 10th among dental schools in the nation using the Blue Ridge data, which doesn’t include grants conducted in collaboration with other institutions.

<table>
<thead>
<tr>
<th>Sponsored funding</th>
<th>FY11-12 Actual</th>
<th>FY12-13 Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sponsored funding (contracts and grants)</td>
<td>$14,531,577</td>
<td>$14,624,986</td>
</tr>
<tr>
<td>Total NIH sponsored funding</td>
<td>$12,275,908</td>
<td>$10,360,641</td>
</tr>
<tr>
<td>Blue Ridge Institute data</td>
<td>$7,621,368</td>
<td>n/a</td>
</tr>
</tbody>
</table>

The college has experienced an 18% decline in all faculty FTE over the prior five years (162 FTE in 2007/08 to 133 FTE in 2011/12). Similarly, the number of tenure-accruing FTE assigned to research declined. Our goals are to continue to provide support for existing faculty (e.g. seed grants) to restore NIH funding and to utilize targeted recruitments of faculty who have high potential to secure NIH funding (or current awards in place) to strengthen existing programs while expanding our collaborative
research with other units on campus. A full report from the College of Dentistry’s Office of Research can be found in Appendix B.

| Percent of fully-funded research effort by tenured/tenure accruing faculty |
|---------------------------------|-----|-----|-----|-----|-----|
| Fiscal Year | 11-12 | 10-11 | 09-10 | 08-09 | 07-08 |
| All Faculty FTE | 132.78 | 140.16 | 142.77 | 142.12 | 162.09 |
| All Research FTE | 47.47 35.75% | 44.14 31.50% | 45.27 31.71% | 48.62 34.20% | 59.38 36.64% |
| Tenure/Tenure Accruing FTE | 70.00 52.71% | 70.57 50.35% | 81.84 57.32% | 79.90 56.23% | 85.50 52.74% |
| T/TA Research FTE | 29.40 42.00% | 28.39 40.23% | 32.08 39.21% | 32.50 40.60% | 34.59 40.46% |
| T/TA Funded Research FTE | 17.51 59.56% | 16.66 58.68% | 18.67 58.18% | 19.46 59.77% | 20.25 58.54% |
| T/TA Non-Funded Research FTE | 11.89 40.44% | 11.73 41.31% | 13.42 41.82% | 13.06 40.23% | 14.34 41.16% |

8. List new hires who will begin employment in FY 2013-14, restricting the list to those who will use start-up funds for research. Please append for review the CVs of all hires made under the “Jump Start” hiring program.

- Dr. Mary Ellen Davey began employment as a tenure-accruing associate professor in the Department of Oral Biology on January 2, 2013. She received a start-up package of $300,000 over three years ($150,000 the first year and $75,000 for the second and third years). Davey’s current NIH-funded research focuses on regulatory mechanisms controlling expression of P. gingivalis surface structures.

- The college was awarded two “Jump Start” positions; one was filled last year by Dr. Kevin McHugh in the Department of Periodontology and the second position was filled this year by Dr. Mary Ellen Davey in the Department of Oral Biology. (Please see Appendix C for a copy of Dr. Davey’s curriculum vitae.)

- The college extended an offer to Gill Diamond, Ph.D., to replace a faculty member in the Department of Oral Biology in the 2013-14 fiscal year. Diamond starts as a tenure-accruing professor on August 1, 2013. His research focuses on host pathogen interactions in mammalian mucosal epithelia concentrating on the steps involved in the innate immune response of the airway and the gingival epithelium to pathogenic bacteria. (Please see Appendix D for a copy of Dr. Diamond’s curriculum vitae.)
9. Identify the major ranking system for your college (e.g., US News & World Report) and indicate your current rank. What is the ranking that you plan to achieve in 1 year and 5 years? What are the main strategies for getting there?

- Dentistry does not participate in the U.S. News & World Report ranking system. However, in FY ‘11, the college ranked 10th among 61 U.S. dental schools (49 of which participate in funded research) with DDS/DMD programs in terms of NIH/NIDCR grant funding.

- This year several rankings came to our attention including Education-Portal.com which ranked UF the number two dental school in the U.S. behind Harvard School of Dental Medicine. The “Find The Best” website ranked UF 6th in the nation in terms of mean GPA, DAT academic average, tuition costs and location. The “U.S. Dental Schools” ranked Florida 4th, behind the University of Pennsylvania, UC San Francisco and Michigan. Another site, “Good University Ranking Guide” ranked UF College of Dentistry as number one.

10. Identify those programs within your college that are “top ten.” What investments are you making to maintain or enhance the ranking?

Top Ten

- Although a relatively small college, we have two longstanding, successful training grants: 1) the Comprehensive Training Program in Oral Biology which is one of the largest training programs at UF, with 14 pre-and post-doctoral trainees; 2) the Comprehensive Center for Pain Research’s NIH sponsored T-32 training grant “Integrative and Translational Training in Pain Research,” is an interdisciplinary program funded through 2015.

- School of Advanced Dental Sciences is unique in dental education and includes the integration of multiple graduate programs to enhance the quality of patient care, resident education and programmatic/operational efficiencies.

- The DMD program continues to be in high demand as evidenced by the number of applicants to the program. In the 2013 application cycle, 1,431 applications were received for 93 available positions.

- Oral Biology remains one of the best in the nation and has the strongest record of research accomplishments and extramural funding within the college. However, retirements have and will continue to diminish critical mass in key areas of strength requiring space and resources to replace these faculty members. We are currently recruiting for two positions and will consider a third recruitment depending on the availability of funds.
The Department of Community Dentistry and Behavioral Sciences is a recognized national leader in dental public health issues and strategies to improve access to care. The department initiated a local coalition to improve the health of children in the county in response to repeated extremely low rankings for the state in the Pew Report on children’s dental health. The Alachua County Coalition for Oral Health, in partnership with WIC and the United Way of Alachua County, made such significant inroads locally that the group’s efforts will be replicated in Collier County as part of a second phase of funding from the Naples Children and Education Foundation for the college’s NCEF Pediatric Dental Center.

Investments needed to enhance the college’s status include:

- Funding for a new facility. Planning a major renovation of the Dental Sciences Building to update, modernize and expand research space along with the addition of a new facility supporting the college’s teaching, research and service missions.

- Ongoing recruitments and successful hiring. The recruitment of experienced faculty with well-funded research programs, the assignment of additional space (8,000 to 10,000 sq. ft.), and start-up funds ($1 million) are required to enhance the college’s research ranking. Continued diversification of our basic and clinical research portfolio, development of new clinical/translational research initiatives and establishment of strong interdisciplinary collaborations are also needed to increase research productivity and further enhance our reputation as a top tier dental school.

11. **Identify two or three of your college’s programs that are important to the college, but are not yet top ten, and describe your plans to foster their success.**

- The college has recently invested in faculty recruitments and physical plant renovations for our Department of Restorative Dental Sciences. In addition to providing the major teaching support for the DMD program, the department needs to expand its research in biomaterials and restorative dentistry. We are currently investigating collaborative opportunities with the College of Engineering in the arena of biomaterial science, nanoscience and bioengineering.

- Continuing Dental Education will continue to grow and expand its offerings, including increasing distance learning opportunities with an emphasis on financial self-sufficiency and delivery of educational experiences that are most appropriately located within a comprehensive academic health center including hands-on training using dental simulation labs. Cosmetic renovations are being planned for the CDE space to improve the environment for visitors including vendors, course participants and instructors.

- Oral and Maxillofacial Diagnostic Sciences is expanding with the addition of an oral pathologist and a planned residency program in oral radiology. A self-funded
program is being developed and is in the approval stage, to allow flexibility as needed for residents who are not eligible for GME funding.

- The search for a new chairperson in the Department of Oral and Maxillofacial Surgery is critically important to the college.

- Oral cancer research and its associated programs continue to be important, high-profile activities for the college. Critically important programs include the NIDCR-funded Southeast Center for Research to Reduce Disparities in Oral Health (SCRRDOH) led by Dr. Henrietta Logan; and Dr. Ed Chan's basic research and his collaborations with our clinical departments, UFSCC and the Moffitt Cancer Center. We continue to have excellent clinical services provided through our Oral Medicine Center, and active participation on the Head and Neck Tumor Board and related activities. We have an outstanding clinical oral and maxillofacial pathology service, excellent oral and maxillofacial surgeons and a world-class maxillofacial prostodontist group. We would like to build on the excellence in this area with appropriate investment, recruitment and collaboration with the UF Cancer Center.

12. *Indicate advances in achieving diversity among faculty, staff, and students within your college.*

The college recognizes the importance of achieving a diverse faculty, staff and student body, and the effectiveness of strategies in diversity for each constituent group is shown below.

- The college received a four-year, $2.5 million grant from the Health Resources and Services Administration that will help provide financial assistance to the college’s disadvantaged students. We received $645,000 for the current academic year, with recommended future support of $645,000 per year for the next three years — totaling more than $2.5 million over four years. The funding will provide individual $15,000 scholarships to 43 students who have faced financial and geographic obstacles to gaining the skills and abilities necessary to enrolling in and graduating from health professions schools. The award will help the college recruit and retain qualified students from disadvantaged backgrounds, which will improve access to health professions education, and also help foster a diversified health workforce.

- Faculty and Staff Diversity. Promoting a diverse faculty and staff is a key college initiative. Since July 1, 2012, 70% of new faculty hires and 38.5% of new staff hires were non-white. Since July 1, 2012, 60% of faculty hires and 77% of staff hires were women. The following table summarizes faculty and staff diversity for FY 2012-13, as well as an analysis of faculty and staff hires since July 1, 2012.
The demographic composition of dentists in the United States is primarily Caucasian and male. Challenges are associated with recruitment of African-American faculty and students, and the college lags in this area. In regard to faculty, there is a lack of African-Americans in the pipeline, and dental education in general, and the college is committed to improving in this regard.

Strategies implemented to increase the diversity of faculty and staff includes utilizing underserved groups/societies to assist with identifying potential candidates and/or inviting underrepresented minority prospects to guest lecture/visit the college. The college continues to strive to reach a diverse minority group by advertising in journals targeting minorities such as Hispanic Dental Association and Diverse Issues, and through the National Dental Association. These efforts have proven effective, particularly in the student arena. (See chart below.)
Data for 2015 and 2016 reflect guidance issued by the Department of Education to cover two separate areas: 1) the collection of race/ethnicity data by institutions and 2) the reporting of aggregate data to the Department. For collecting race/ethnicity data, institutions must use a two-question format. The first question is whether the respondent is Hispanic/Latino. The second question is whether the respondent is from one or more races from the following list: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White. The 2015 and 2016 data reflect these changes.

The director of student and multicultural affairs in the Office of Education, Patricia Xirau-Probert, received the UF Health Science Center Diversity and Inclusion Award for her efforts to encourage diversity and inclusion among all students, staff and faculty at the College of Dentistry. One of her responsibilities is to coordinate the college's Summer Learning Program, which is an immersive, three-week program for Florida residents from educationally or economically disadvantaged backgrounds or ethnic minority. Probert’s efforts at creating and contributing to an institutional climate of acceptance have helped the college become one of the national leaders among dental schools in the diversity of its student body. In addition, the program is effective at preparing attendees to become successful dental school applicants. Between 2005 and 2011, 79 students have participated in the program. Of those, 45.6% (36) and have enrolled in dental school; 23 at our college. (Participants from the 2012 program have not yet applied to dental school.)
13. **Indicate notable successes in interdisciplinary collaboration in the past year.**

- **Shands Head and Neck Tumor Conference:** Two faculty and six senior dental students participate in a weekly conference reviewing new cases of patients with head and neck cancer. Dental students have the opportunity to review the medical history, diagnostic imaging such as CT and PET scans, and tumor histopathology of each case. This is a multidisciplinary conference that includes surgeons, oncologists, pathologists, dentists and radiologists who, together, develop a comprehensive and coordinated treatment cancer treatment plan for each case presented at the conference.

- **Each April, Dr. Pam Sandow from the college’s Oral Medicine Clinic and Dr. John Werning, UF/Shands Department of Otolaryngology, perform free head and neck cancer examinations for the general public as part of Oral, Head & Neck Cancer Awareness week. The examinations are performed in the Oral Medicine Clinic.**

- **Early Childhood Caries – In January 2013 as part of infectious disease instruction,** faculty from dentistry and medicine taught a three-hour interdisciplinary small group experience involving first year medical and dental students. An interdisciplinary team of faculty developed the instructional materials for the small groups and also co-facilitated the groups. Student and faculty evaluations were very positive for this initial offering.

- **AHEC Tobacco Training and Cessation - Initial Training.** An interdisciplinary tobacco-focused education and service-learning event conducted in the health center since 1998 with students from the colleges of dentistry, PHHP, medicine, nursing and pharmacy. Learning materials are developed annually by an interdisciplinary team of faculty and co-taught by faculty from AHEC and participating colleges. Professional students visit regional middle school classrooms to deliver a curriculum developed by the UF interdisciplinary faculty team in the service learning portion of this interdisciplinary event.

- **The Department of Oral and Maxillofacial Surgery has initiated discussions to establish a medical school rotation in dentistry (oral surgery) and a dental student rotation in family medicine. The department also collaborates on a dental student rotation in hospital dentistry where students, along with residents and attending faculty, participate in the care of patients in the Shands operating room, Emergency Department and in the hospital.**

- **The Department of Oral and Maxillofacial Surgery’s resident program is integrated with the hospital and medical school. OMS dental residents attend the medical school as part of their program and participate in extensive rotations on various medical services. They work with an array of attending physicians from the medical school, including a year of general surgery working closely with the surgical services in the hospital. OMS residents also participate in facial trauma coverage and function alongside the other surgical services in Shands as the OMS service, admitting patients and regularly**
performing surgery in the hospital. The department works closely with Plastics and ENT, sometimes sharing cases, and residents work closely with attending physicians from each service and participate in tumor board and craniofacial clinic.

- The recently established Dental Clinical Research Unit (DCRU) has a focus of continuing efforts to enhance clinical and translational research within the college as well as develop collaborative research with additional partners. The DCRU will build on the success of the Periodontal Disease Research Center and expand services to meet the clinical/translational research needs of the college and collaborative investigators.

- The School of Advanced Dental Sciences collaborated with the College of Medicine’s pediatrics and genetics areas to coordinate a multidisciplinary seminar on management of genetic conditions.

- UF’s newly-formed Pain Research and Intervention Center of Excellence (PRICE) is a multi-college center of excellence that serves as the professional home for UF scientists, clinicians and trainees dedicated to improved understanding and treatment of pain. Directed by Roger Fillingim, Ph.D., PRICE is affiliated with and supported by the UF Clinical and Translational Science Institute and receives strong support from the UF Institute on Aging and the UF Cancer Center.

- Jeannine Brady, Ph.D., a professor in oral biology is working with biochemistry/molecular biology on a joint grant. Amyloid was previously believed to represent misfolded proteins and has been linked to neurological diseases such as Alzheimer’s and Parkinson’s disease. Bacteria, including Streptococcus mutans which causes dental caries, have recently been discovered to produce functional amyloid that helps them to form or stabilize biofilms, that is, to grow and form communities on surfaces. In collaboration with Dr. Joanna Long from the Department of Biochemistry, Brady will utilize biophysical methods, such as nuclear magnetic resonance (NMR), to characterize the ultrastructure of S. mutans amyloid-forming proteins as they transition into fibrillar amyloid aggregates.

- Brady is also collaborating with Food Science and Human Nutrition on a new amyloid project. The oral microbe Streptococcus mutans, implicated in dental decay, produces proteins that are capable of polymerizing into insoluble amyloid fibrils that aid in the bacteria’s ability to grow on surfaces and to form biofilms. In collaboration with Dr. Susan Percival, from Food Science and Human Nutrition, Brady has found that components present in cranberry inhibit both S. mutans biofilm development and amyloid formation. They are continuing to define which cranberry fractions inhibit amyloid formation by which S. mutans proteins. The college will also work with Dr. Thomas Angelini from Mechanical and Aerospace Engineering, who is an expert in a technique known as small angle X-ray scatter, to understand how cranberry perturbs the amyloid aggregation process.
• The college has multiple, ongoing collaborations with Physics, Micro Cell Science, and the Emerging Pathogens Institute; some collaborations are official and some are grassroots. The research collaboration between Robert Burne, Ph.D., and Steve Hagen, Ph.D., in Physics was highlighted on the front page of the NIDCR news web site this year: http://www.nidcr.nih.gov/Research/ResearchResults/ScienceBriefs/Archive/SNIB2012/December/Smutans.htm

• Burne is working with Cornell University and Stanford University on a project relating to the evolutionary genomics of Streptococcus mutans that has garnered two publications this year: Scientific American and Science News.

14. What are your college’s top three goals in the next one to three years? Aside from budget, are there major impediments to reaching those goals?

• In Fall 2013 we will launch a nationwide search for a new college dean. Additional important searches include two chairs (Department of Restorative Dental Sciences and Department of Oral and Maxillofacial Surgery). We are currently completing an internal search for a new director of the School for Advanced Dental Sciences.

• A primary goal for the college is to increase research funding, particularly from NIH as well as foundations, from industry and other sources. The metrics for assessing our success include percent increase in current funding, percent increase in NIH funding and national ranking by NIDCR-funded dental institutions and Blue Ridge Institute. The major impediment to achieving these goals is diminishing support for biomedical research by Congress.

• In August 2013 we launch our Accreditation Self-Assessment process to prepare for our site visit scheduled for Feb 2015. There are multiple major changes to the new accreditation standards which will require considerable focus during the self-study process.

• We will continue to focus on patient service, access to our clinics and increasing our patient volume to maximize efficiencies and ensure financial solvency.

15. List any major threats to your research programs, or to your graduate or undergraduate educational programs.

• Threats to the research program include recruitment of our successful (well-funded) faculty by other institutions, loss of critical mass in certain research areas, the escalating costs of training PhD students, reductions in NIH funding, and a decaying
physical plant. In addition to a substandard physical plant, funds to renovate outdated labs and to replace old equipment with state-of-art instrumentation are lacking.

- There is national concern about the increase in educational debt among all health professional students including dental graduates. Recent economic analyses conducted by the American Dental Association suggest that dentists' average income is flattening, and the cost of dental education has increased significantly during the prior decade. Dental educational programs tend to have the highest cost among all health professional programs, but also have a strong return on investment defined as the average salary of a new dental graduate. Therefore dental education demand remains strong nationally, and the number and quality of UF’s DMD applicants remains strong. However, the DMD degree program is the most expensive on-book program on the UF campus. Because the college manages its own “teaching hospital” and does not receive significant subsidy for uncompensated or undercompensated care, financing dental educational programs remains a challenge. The reduction of state appropriations has resulted in a significant financial stress on the college.

16. The graduate school recently compiled statistics about PhD program performance. Do you have any plans to address programs that may have landed in the lower quartile of the assessment?

Nearly all of our PhD students train in the IDP, which is one of the stronger programs on campus. The number of students admitted each year has been declining as the numbers of funded investigators taking students has decreased in response to a contraction of NIH funding. The IDP has been responsive to this by utilizing resources to offset the cost of students, but the quality of the program is likely to decline if continued investments are not made to sustain a critical mass of students across the major disciplines. While not a UFCD-specific problem, a weakening of the IDP would be detrimental to UF Health and some major initiatives (CTSI, EPI, Cancer Center).

17. What adjustments have you made to policies and procedures to prepare for the implementation of RCM?

- The DMD degree program has the most expensive tuition and fees of all on-book program on the UF campus. Because the college manages its own “teaching hospital” and does not receive significant subsidy for uncompensated or undercompensated care, financing dental educational programs remains a challenge. And the reduction of state appropriations has resulted in a significant financial stress on the college.

- The DMD tuition was increased by 15% each year over the prior 5 years, yet it is not clear how the differential tuition is returned to the college since the implementation
of RCM. While the differential return to the college for last year was identifiable on the spreadsheet, it is not clear how the differential tuition from prior years was returned to the college cumulatively, or how this cumulative effect will be returned to the college moving forward.

- We have in place and/or are planning three self-funded programs during the next fiscal year including one each for the Hialeah IEDP program, the expansion of the DMD program, and for several residency programs. However we are concerned about the significant RCM assessments on self-funded programs.

- The college continues to advocate for return of professional tuition and fees to the units that generate them, and reductions to the RCM overhead assessment.

- While the RCM allocation methodology is intended to increase transparency, the complex formulas and weighting have impeded the accomplishment of this goal.

18. **List current and planned projects to develop alternative revenue streams. Discuss any plans to initiate distance or off-book education programs.**

- We received approval from the university to implement a self-funded DMD enrollment expansion to enhance tuition revenues to the college beginning August 2013. We will add 10 students to the DMD class each year over the next four years. Tuition from the expansion will help support the educational costs of the DMD degree program to compensate for significant reductions in state funding over the past five years.

- The School of Advanced Dental Sciences offers a one-year fellowship/internship program in all our specialty programs. This program is a combined effort of the Department of Advanced Graduate Education and Continuing Dental Education.

- The college is currently pursuing off-book residency programs as part of the School of Advanced Dental Sciences.

- The Department of Oral Biology is currently exploring the development of a post-baccalaureate program in Oral Biology targeted to individuals seeking careers in dentistry. The college is also exploring international partnerships with schools in the Middle East and China, which would provide students, fellows and monetary support for education and research.
19. **List future commitments.** Commitments include buildings, renovations, infrastructure, major equipment and upgrades, start-up packages, and any other significant items.

- **Building funds**
  
  Funding for a new building needs to be committed as soon as possible to build on momentum achieved through the visioning and feasibility projects completed this year.

- **Start-up packages**
  
  The college will need to allocate a start-up package for a new dean.
  
  We estimate that the Office of Research will need to allocate $900,000 for start-up packages for three new research faculty to be hired during the next three years, and will need start-up funding for any faculty to be hired for the next round of Jump Start recruitments, if made available to the college.

- **Research renovations and equipment**
  
  The Office of Research needs to allocate $500,000 for laboratory renovations and $200,000 for equipment purchases.

20. **List key financial opportunities and challenges for the coming year.**

**Opportunities:**

- Focus on increasing patient services and care through marketing, improving the patient experience and improving business practices to maximize clinical revenue and to rebuild cash reserves; opening a centralized patient access center.
- The implementation of dental components in the benefit packages of GatorCare and GatorGradCare.
- Fundraising to support the facility expansion and renovation.

**Challenges**

- Decline in tenure track FTE assigned to research
- Reduced funding from the NIH.
- New dental schools in Florida.
- Continued expenses associated with the RCM model and a la carte charges have resulted in increased UF overhead expenses, limiting the ability of the college to prosper under RCM due to the nature of our educational model and the fact that SCH generation drives state allocations. Increasing costs of doing business continue to impede the college’s ability to build its clinical cash reserves.
• Aging and unattractive facility that is not designed to support contemporary teaching (lack of small group teaching space, for instance), research and clinical care.
• Financial impact of move to managed care in Florida’s dental Medicaid program.
• Unfunded state-mandated raises, merit increases and fringe benefit increases.
A. Drivers of Curricular Change

A.1. Drivers associated with limitations of the current curriculum

There are multiple factors driving curricular change. Key factors associated with the current curriculum include:

- Overscheduling of total in-class contact time predominantly passive learning (e.g., lectures) that are not the most efficient use of student and faculty time.
- The front-loading of basic biomedical sciences resulting in poor retention and integration of biomedical sciences into clinical training.
- Requirements for completion of a specific number of competencies, units and RVU’s within a given period, resulting in motivation of students towards completion of procedures rather than focusing on comprehensive care of the patient. An unintended consequence is the switching of patients between students in order for each to complete required procedures, resulting in patients being treated by multiple students and usually over an excessive amount of time. This is unfair to patients and is grossly inconsistent with students fully comprehending and respecting comprehensive patient care.
- Insufficient time during the day for students to be involved in research or to take electives, such as to gain experience in clinical specialties.

A.2. Drivers associated with a rapidly changing profession

Other key factors driving curricular change are related to on-going and future changes in the profession that will require dentists to engage successfully in analytic inquiry and to integrate, adapt and apply their learning as required in order to take appropriate actions on complex and often unanticipated challenges throughout their professional career. As new advances in the biomedical sciences continue to develop at a rapid pace, dental clinicians will increasingly have to critically evaluate new therapeutic options within the context of the oral and systemic health of the patient. In recognition of these changes the Commission on Dental Accreditation (CODA) is requiring more critical thinking and acquisition of evidence-based information in clinical reasoning and problem solving in the curriculum, as well as demonstration of research. More specifically, new CODA standards require students to:

- Integrate medical treatment into dental treatment plans
- Identify the need to consult with other health care providers
- Critically appraise, apply and communicate scientific literature

CODA defines competencies as written statements describing the levels of knowledge, skills and values expected of graduates to begin independent, unsupervised dental practice. CODA further indicates that “assessment of competencies must extend beyond completing a specific number of projects and procedures”.

A.3. Drivers associated with changes in the national board dental examination

The National Board Dental Examination is transitioning to a single integrated exam, currently earmarked for 2017. The exam is going primarily to a case-based format of questioning. Students will be required to integrate factors related to the biomedical, dental, cultural, socioeconomic and governmental regulatory aspects of a case. These changes coincide with the new CODA requirements described above and support the integration of biomedical sciences into a case-based curriculum that emphasizes patient comprehensive care.

B. Goals of the Curriculum Revision Steering Committee

The goals guiding the curriculum revision process are related directly to the drivers for curriculum change described above; limitations of the current curriculum, preparing students for a rapidly changing profession, and changes in CODA standards and assessments. The Committee’s goals are to recommend a curriculum that addresses each of the following items:
1. Exposure of students to earlier clinical experiences in a manner that is continuously integrated with biomedical, behavioral and oral clinical sciences. Furthermore, incorporate emerging technologies and resources into learning experiences.
2. Decrease student passive learning by incorporating principles of adult learning so that students play a more responsible and active role in their learning, recognizing students need to develop these skills to incorporate throughout their careers. Also promote group collaborative interactions between students in the active learning process, recognizing that group practices and interprofessional collaborations will likely increase in the future. By incorporating more active learning provide time in the day for students to explore additional areas of inquiry through research, clinical electives and tracks in advanced education.
3. Incorporate more evidence-based and case-based learning methods in the curriculum, as well as more student presentations and reflection. As part of this goal consider providing student interactions with residents in the School of Advanced Dental Sciences and college-wide grand rounds.
4. Evaluate our current methods of assessment including units, competencies and RVU’$ in the clinic with the goal to place more emphasis on comprehensive patient care. Furthermore, consider components of the APGD clinic that contribute to higher student productivity for implementation into all student clinics.
5. Look into ways to enhance clinical rotations for a more direct student involvement in diagnosis, treatment planning, delivery and evaluation of patient care.
6. Incorporate interprofessional education into the curriculum.
7. Make recommendations for associated faculty development to acquire skills to better utilize existing and new technologies and alternative teaching methods to enhance active learning.

C. Restructuring of Courses and Contents

A primary aim in restructuring didactic and preclinical courses and their contents is to provide a curriculum that best develops a student’s ability to think critically and to treat a patient comprehensively, taking into account all aspects of a patient’s medical, psychosocial, economic and cultural conditions, and with an understanding of the basic biomedical aspects of the presenting pathologies. We pose a curriculum that includes earlier student clinical experiences starting in semester 1 and with the integration and progressive presentation of biomedical sciences via an organ systems approach throughout semesters 1-9. Curricular content is to be framed within the context of a patient’s presenting pathology and the associated biomedical mechanisms, the development of a treatment plan and in the implementation of that plan. Contents from current courses are integrated into larger courses that combine basic and clinical faculty members. This integration allows for presentation of material that blends biomedical, behavioral and oral clinical sciences. Large integrated courses also allow for interactions of faculty members from a broader mix of departments and divisions. A secondary consequence of broader faculty interactions is to reduce and more consistently self-check for redundancies in the curriculum that are the result of individual units not being aware of what is presented in the variety of other small courses. Management of the sequencing of curricular contents will also be more consistent with integrated courses.

C. 1. Excel file of courses and their contents.
Attached to this document is an excel file with a tab for each semester of the revised curriculum. Courses within each semester are listed and include course content materials to be covered. Also included is a list of faculty members that have presented similar course contents previously. It is expected that a course director, and possibly a co-director for larger courses, would be named for each course. Course directors would then assemble a team of faculty to present the course contents. The Dental Medicine course contents are to be presented in a manner that integrates the biology, biochemistry, physiology, pathology and histology of the relevant organ systems. Hence, both clinical and basic science faculty are to work together to develop course materials. It is anticipated that faculty in the Dental Medicine courses and other didactic clinical courses will incorporate case-based learning into their courses, presented either in small groups or in of many other active
learning formats discussed below. Moreover, faculty of Dental Medicine and pre-clinical/clinical courses are encouraged to work together to use a single case to present and highlight different aspects of a case relevant to their course (including SIM labs). Potential case-based topics are provided in the excel file, but are only suggestions. Cases are to be progressively more complex as students advance through the curriculum.

**C. 2. In-class hours and active learning instructional formats.**

Listed for each course are the maximal total in-class hours for each course. This includes times for labs, exams and reviews. The reasoning for allocating a maximal number of in-class hours is to decrease student time in the classroom to no more than 5-6 hours per day to allow time for research, electives or for individual/group studying. To decrease student in-class time and to promote active student learning, faculty are to reduce lecture hours by incorporating small-group case-based learning, team-based learning, assigned reading, or assigned group projects/problems, to name a few alternative instructional methods. The times given are considered conservative with the anticipation that faculty will reduce student in-class times as they become more acquainted with and incorporate other instructional methodologies in place of some, but not necessarily all lectures. Incorporation of various instructional methods, including lectures, are therefore to be used to present course contents, and will help to accommodate the different learning styles of students within a class. By incorporating different active learning methods students will be more accountable for their own learning, including fact-finding, evaluation of the evidence and synthesizing the relevant information into appropriate evidence-based plans of action; attributes they will need to acquire in a rapidly changing dental profession. As important, many instructional methods require less classroom time than lecture-based formats and therefore enhance faculty efficiencies in instruction. There will be multiple opportunities in the form of workshops and mediatisel demonstrations in the near future for faculty to become acquainted with various active learning instructional methods, including methods used currently by COD faculty.

**C. 3. Early student clinical experiences.**

In semesters 1-5 are listed student clinical experiences. These experiences are designed to give students early contact with patients in the clinic, mostly in the role of assisting upper level students. The progression of early student experiences coincide with that of the didactic and pre-clinical courses, helping students to better appreciate and understand the clinical relevance of curricular contents related to the biomedical sciences. Early contact with patients will further benefit students to develop communication skills and to understand they are professionals, and as such will be held to professional standards. Students will also be better prepared to hit the ground running when entering the clinic in semester 6.

Because of earlier clinical experiences, it is anticipated that juniors during semesters 6-8 will progress more rapidly in their clinical training. At the end of semester 8 there will be a comprehensive exam to determine whether a student is prepared to progress to the last three semesters of the curriculum (see Student Assessments below). During these last three semesters students will have less intense oversight by faculty who know their strengths and weaknesses. As a result, faculty coverage can be reduced in the senior clinics to provide more coverage in the junior clinics. Furthermore, DN2 students during semesters 4 and 5 will have had significant previous clinical experiences and will be able to provide substantial assistance to DN3 students during semesters 7 and 8 in the TEAM clinic. The combination of greater faculty coverage and technical assistance are attributes of the APGD clinic considered important factors contributing to the higher productivity of students. Students during semesters 1-3, when assisting upper level students in the clinic, will be paired with DN4 students who will play more of a mentoring role.

**C. 4. College-wide case presentations.**

A new component to the curriculum are college-wide case presentations in which faculty residents and/or senior students present completed cases for discussion. It is important for faculty to play a role in presentations, either as the sole presenter or in conjunction with a resident or senior student. Case presentations by experienced faculty or residents are a valuable teaching tool to emphasize to all students (D1-D4) critical thinking, evidence-based reasoning and the integration of systemic health concerns in patient-based comprehensive care. Students
in the earlier stages of the curriculum will experience examples of what they should aspire to for their own presentations and to the thinking processes inherent in treatment planning. A college-wide template for case presentations with clear standards should be implemented for faculty, residents and students to follow. Included in the template are the basic biomedical science aspects of the pathologies presented in a case, thus representing a learning tool for faculty as well as students. Questions regarding when in the day (e.g., morning, lunch time, late afternoon), time allotment (e.g., 60, 90, 120 min), how often (e.g., weekly, monthly, quarterly), the selection process of presenters and the presentation template remain to be determined. It is recommended that a workgroup be developed to address these matters.

C. 4. TEAM clinic.

Because much of the didactic and pre-clinical curricular contents are presented during semesters 1-5, students will have less formal coursework in semesters 6-9. This provides the opportunity to incorporate a 30-60 min session before the start of each TEAM morning clinic session for lessons on treatment planning and for student case presentations. Lessons on treatment planning will be especially constructive for students entering the TEAM clinic with their own patient pool in semester 6.

All student treatment plans are to be presented to the Team leader or other designated faculty member for formal approval before presenting the plan to the patient. In treatment planning, students must consider the patient’s systemic health, current therapeutic and non-therapeutic drugs and all other aspects of risk assessment.

In case presentations students must address the patient's culture and show how this affects treatment, describe motivational drivers used for the patient, and defend their treatment plan decisions. Students are to analyze how the treatment diverged from the original treatment plan, and if so, identify the associated problem (e.g., psychosocial, missed a problem, incorrect Dx, poor communication with patient). The cases must have complete analysis of systemic medical conditions and pharmacology pertaining to possible oral implications. The literature review must justify treatment decisions, including materials used. These case presentations are to be in addition to those required for a student’s portfolio (described below). It is anticipated that each student will present at least one case each semester. Attendance to presentations is mandatory.

Principles regarding production, collections, patient scheduling, and efficiency strategies should be topics of morning huddles. Tabulation and reviews of production, expenditures, collections and overall income for each team and clinic should also be discussed at regular intervals to help students to understand principles of practice management.

Other enhancements for the TEAM clinic that are highly recommended include: 1) All faculty in the TEAM clinic (i.e., endo, perio, prosth, operative and TEAM Leaders) should be calibrated to mentor students in all aspects of general dentistry in order to increase the efficiency of faculty coverage and mentoring of students in the clinic; 2) Team Leaders or another designated faculty member conduct a comprehensive review of every case completion before entering it into Axium; 3) IT develop tools for faculty to easily view a student’s total clinical experiences; and 4) Move to a single assessment system in Axium so that every department has the same assessment tools.

D. Student Assessments

There are four key segments of student assessments as follows:

1. Student performance in didactic and pre-clinical DEN courses.
2. Development of a portfolio by each student throughout the curriculum. Contributions to the portfolio include reflections papers of ethical dilemmas, documentation of clinical productivity (completion rate among assigned patients, their monetary dollar production and treatment outcomes)
and case write-ups that become more complex and complete with respect to patient-based comprehensive care as the student advances through the curriculum.

3. Assessment of a student’s professionalism throughout the entire curriculum and their performance in the clinic: technical skills, diagnosis and treatment planning, etc.

4. Periodic evaluation of a student’s ability to integrate lessons from completed curricular contents within the context of providing patient-based comprehensive care using critical thinking skills and evidenced-based dentistry. We refer to these as “critical assessments”.

D. 1. Student performance in didactic and pre-clinical DEN courses. Pass/Fail course grades.

It is recommended that course grades throughout the curriculum be assigned pass/fail, but with mechanisms for feedback to students to identify areas of weakness and for students to eventually be ranked upon graduation for applications to residency programs. Currently, there is extremely little distinction between students with respect to grade point averages. Students at the upper levels of the grading scale are separated by as little as 0.001 grade points. Nevertheless, an important component of the learning process is to provide students with feedback of their performances on course examinations, papers or presentations, either as letter grades, percentages or written evaluations. For each course, a student would receive a pass/fail grade and the course director would then submit to the Education office a student’s course rank, either as quartiles or thirds (e.g., top third, middle third and bottom third). Course rankings would be weighted based on course credit and weighted scores accumulated to derive a class ranking at the end of each year (e.g., “top third, middle third and bottom third”). Students may request to have their course or class rank released to them at any time.

D. 2. Student portfolios in assessments.

Students are to develop a portfolio throughout the curriculum to include required reflection papers that focus on ethical issues, either within a student’s own clinical experiences or from cases provided by the American College of Dentists. In addition, a portfolio is to include documentation of a student’s clinical cases. During the initial semesters, such cases will pertain to those in which the student assists an upper level student in the clinic or interactions with patients during service associated with the Interdisciplinary Service Learning course. As a student advances in the curriculum their interactions with patients will increase in frequency and in complexity. As a result, requirements for case write-ups are to become more complex and complete with respect to patient-based comprehensive care. Templates are to be developed to guide students in case documentation, reasoning of decisions along with cited evidence from the literature. Components to consider for templates include documentation of medical history, basic physical exam results, head, neck and oral exam results, diagnosis, risk assessment, treatment plan with appropriate options, plan for prevention and patient management that considers patient preferences. Also included would be illustration of the basic biomedical science aspects of the pathologies presented in the case and a complete analysis of systemic medical conditions and the pharmacology pertaining to possible oral implications. Further items to address include: a) the patient's culture and compliance issues and how these affected treatment; b) motivational drivers used for the patient; and c) divergence from the original treatment plan and the reasons for change (e.g., psychosocial, missed a problem, incorrect diagnosis, poor communication with patient).

The purpose of case write-ups is part of the early and continuing indoctrination of students to examine their interactions with patients in the context of patient-based comprehensive care. Just as important, the National Board exam is going to a case-based format with integration of clinical and basic sciences. Providing students with early clinical experiences and demanding thoughtful and complete case write-ups would be part of their preparation for the Board exam. Evaluations of portfolios would be part of an existing course (e.g., Professionalism In Patient Care and Practice Management) or as a separate course. Evaluation would occur each semester and/or at each of the critical assessments (discussed below). Significant weight would be given to portfolios in grading and in critical assessments.

During semesters 6-8 students are to add to their portfolio completed cases from their patient pool. The case numbers and types are to be determined, although it is recommended that one of the cases include a medically
complex patient. Five case-types are recommended and include: 1) Prevention and treatment of simple dental diseases/direct restorative cases; 2) Indirect restorative cases (less than 3 units); 3) Indirect restorative cases (3 to 7 units); 4) Partially edentulous cases; 5) Complete edentulous cases. Documentation includes risk assessment, diagnosis and prevention. Also to be included in the student's portfolio is a review of their patient charts to calculate and document their completion rate among assigned patients, their total monetary production and treatment outcomes. A reflective paper on one of the cases provided by the American College of Dentists half-day seminar covering several new ethical dilemmas is also to be included. Portfolios are to be evaluated for student progress at the ends of semesters 6 and 7, with full assessment and grading near the end of semester 8.

During semesters 9-11, students are to add additional completed cases to their portfolio, plus completion rate among assigned patients, total monetary production, treatment outcomes and a reflective paper on an ethical dilemma in the clinic. Portfolios are to be evaluated for student progress at the ends of semesters 9 and 10, with full assessment and grading near the end of semester 11. It is anticipated that during semesters 9-11 students will orally present additional cases in the TEAM clinic for discussion, therefore adding to documentation of a student’s patient-based comprehensive care.

D. 3. Assessment of a student’s professionalism throughout the entire curriculum and their performance in the clinic: technical skills, diagnosis and treatment planning.
Currently, to assess students in the clinic we require completion of a specific number of competencies, units and RVU’s within a given period of time. As a result, students are motivated towards completion of procedures rather than focusing on comprehensive care of the patient. Another unintended consequence of our current system is the switching of patients between multiple students in order for each to complete required competencies and procedures. Nevertheless, a subset of students graduate without achieving all of the procedural goals we require. The Committee’s recommendation is to transition from the current procedure-based clinical training to patient-based comprehensive care. Documented evidence to transition to this system comes from experiences at Harvard. The patient-based comprehensive care model at Harvard has reportedly increased their student case completion rate nearly two-fold, decreased incomplete cases by more than half and reduced patient transfers by more than 3.5-fold (S. E. Park et al., J Dent Educ 75(11):1411-1416, 2011). Below are their five classifications of cases and the required numbers of cases needed to pass and to further achieve an honors designation.

<table>
<thead>
<tr>
<th>Harvard Case Classification</th>
<th>Harvard Case Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preventive therapies, simple operative procedures, prophylaxis, and scaling and root planing</td>
</tr>
<tr>
<td>2</td>
<td>Interdisciplinary management (endodontics, periodontal surgery, oral surgery, etc.) and complex restorative procedures, not including prosthodontic treatment</td>
</tr>
<tr>
<td>3</td>
<td>Interdisciplinary management and restorative procedures, including prosthodontic treatment (fewer than three fixed prosthodontic units)</td>
</tr>
<tr>
<td>4</td>
<td>Complex interdisciplinary management (four or more disciplines) and restorative procedures including prosthodontic treatment (three or more fixed prosthodontic units) or difficult patient management</td>
</tr>
<tr>
<td>5</td>
<td>Removable partial dentures (metal and resin) Complete dentures, immediate complete dentures, overdentures, and implant supported overdentures</td>
</tr>
</tbody>
</table>

Composition and numbers of cases for passing and for honors at Harvard
Pass: 15 cases: Maximum of seven cases consisting of Type 1 and 2 cases Minimum of four Type 3 and 4 cases (one of which must be Type 4) Minimum of four Type 5 and 6 cases (must consist of both types)
Honors: 20 cases: Maximum of nine cases consisting of Type 1 and 2 cases Minimum of six Type 3 and 4 cases (two of which must be Type 4) Minimum of five Type 5 and 6 cases (must consist of both types)

A subsequent report indicated that the new model had little impact on the numbers of the different clinical procedures performed in each discipline by students on-site (S. E. Park et al., J Dent Educ 76(5):602-608, 2012). Not considered in the study were procedures conducted during off-site rotations for three or more months in the senior year.

Procedures performed by major disciplines prior to (Class of 2009) and after (Class of 2010) introduction of the Case Completion Curriculum.

![Bar chart showing procedures performed by major disciplines](image)

Single-canal endodontic procedures were equivalent between the two groups, whereas fewer multi-canal procedures were performed. A caveat is that the data for the class of 2009 was incomplete.

A significant feature of providing the “Honors” grade was to motivate students to complete a greater number of cases (i.e., 22.8 versus 12.8 cases on average). By transitioning to a patient-based comprehensive care model and implementation of an “Honors” system at UFCOD, we anticipate increased productivity in the student clinics. Additional motivation to increase student productivity is to offer diploma designations of “Clinical Honors” and “High Clinical Honors”, based on a given set of criteria comprised of grades, performance during case presentations and on recommendations from faculty to a review panel, similar to our current Research and Research High Honors designation and review process.

Another motivational factor to increase student productivity is to have students chart their monetary production and collections and to enter this information into their portfolio. TEAM leaders would also have access to this information. Students at the low-end of production and without any extenuating circumstances (e.g., external rotation or sickness) would be targeted for a personal interview with their TEAM leader. The purpose of the interview is to identify current hindrances to productivity and to consider ways to alleviate these hindrances and to increase a student’s productivity. This process will thus flag students that, among other issues, may be slow in their procedures or have problems with patient communications resulting in no-shows. By openly charting monetary production TEAMs we would stimulate a friendly competition with some sort of recognition to the winning TEAM. Another concept that we considered is to establish individual student monetary productivity goals. A problem with setting such goals is that upon reaching their goal the above-average student will have no motivation to continue. Alternatively, students are naturally competitive and if put in the position to compete will do so very well.
Determination of the number and types of completed cases that will be required of students in years DN3 and DN4 will be addressed in consultation with each clinical department and the curriculum committee. Recommendations for the numbers and types of cases required for critical assessments are described below in section D4 below.

In transitioning to a patient-based comprehensive care clinical curriculum we must re-evaluate our system for patient screening and consider devising more categories to identify the possible treatments each patient may require and to then match the patient with a student in need of the potential treatments. There is no guarantee a patient will require or afford one or more of the treatments. Nevertheless, pre-screening will allow every student to experience the greatest breadth of clinical treatments. Matching patients with students may be driven, in part, by students. Each student would be responsible for tracking their own progress with respect to becoming competent in required procedures and types of cases. It could develop a spreadsheet where students would input the procedures and cases they require with a needs rating on a 4-point scale. As patient screenings are completed and categorized they would be entered into the system and the patient is matched randomly to a student within a group of those with the greatest need for such a patient. Patient-student matching could occur across TEAMs to more evenly distribute patients according to need.

D. 3. a. Units, RVUs and competencies: Going to a patient-based comprehensive care model coincides with elimination of units and RVUs. Evidence indicates that high repetition of clinical procedures does not correlate to clinical competence (M. Spector et al., J Dent Educ 72(12):1465-1471, 2008). Our system of clinical “competencies” will be maintained but are to be renamed to “skills assessments” to be more explicit and to reduce confusion with the core competencies required by CODA. Each skills assessment is to have a specified level of quality commensurate or better than that required for the Board exam, and will take into consideration the professionalism and the speed with which the student performs the procedure, given their stage in the curriculum (e.g., DN2, DN3 and DN4). Quality is to be emphasized during the preclinical and early clinical phases of the curriculum with additional emphasis on speed during the senior year. By removing procedural quantity requirements students may concentrate more on the quality of the treatment/procedure. This is especially true with beginning clinical students who need time to develop quality with the oversight and mentoring of faculty that will hold them to a specific standard. Once students enter their senior year they will require less oversight and can focus even more on comprehensive patient care and productivity.

D. 3. b. Daily grades and professionalism: Currently, students are given daily grades for clinical procedures, infection control, professionalism, etc. This necessitates faculty entering multiple sets of scores into Axium for each student they oversee in the clinic. A common complaint is that the last 30 min of clinic is characterized by students waiting for faculty to grade them and by faculty trying to rapidly enter all the data. The result is that faculty, when under pressure, rarely enter low scores. What is the purpose of this process other than only to provide each student with a grade? Faculty interactions with students should be: 1) to offer students appropriate and timely feedback on their work, with suggestions for improvement; 2) to challenge the critical thinking of students in treatment planning and in carrying out procedures; and 3) to identify inappropriate conduct related to professionalism, patient care and patient management. The first two items do not require a daily assessment, but are instead critical parts of the progressive learning process of students during consistent mentoring by faculty. If we create a system in which student understand that they must obtain clinical procedural skills of high quality to pass required skills assessments, they will strive to look for constructive criticism of their work and be motivated to improve and ask for opinions of their work. Clinical faculty would therefore spend more time as mentors to students, providing encouragement and constructive feedback of their work. Critical thinking is an important component of the learning process and faculty should spend more time challenging students to help them develop their critical think skills. There will be opportunities in the curriculum to provide assessment of a student’s critical thinking, such as during case presentations, reviews of portfolios and during critical assessments (see below).
Item 3 (i.e., Identify inappropriate conduct related to professionalism and patient care) is extremely important in recognizing and adjusting inappropriate student behavior throughout the curriculum. Oversight would be under the Professionalism In Patient Care and Practice Management course series. Because of the early student clinical experiences, this course series would start in semester 1 and would harbor all items related to student professional behavior. The goal is to immediately indoctrinate students that they are professionals and are to conduct themselves accordingly at all times. Inappropriate conduct associated with any course, whether clinical, pre-clinical or didactic, will be reported to the Office of Clinical Affairs. In the clinic, faculty are to enter into Axium items that need immediate attention and correction. Such items include a student’s preparedness, patient and time management, psychomotor ability, infection control, patient communication and whether a student comes to clinic without understanding the appropriate rationale for treatments of scheduled patients. Student absence or tardiness would also be denoted, such as when a student leaves the clinic early when he/she could have assisted another student or seen an emergency patient, or when a student consistently is late for clinic. Items entered into Axium along with comments are to generate a daily report for TEAM leaders for consideration of appropriate corrective action. Each time an item is noted a student would receive one or more demerits based on the seriousness of the infraction. A workgroup will determine the specific items to note, the associated demerits and the total demerits within a semester that would trigger a failing grade in Professionalism In Patient Care and Practice Management.

D. 4. Critical Assessments
As a student progresses through the curriculum he/she is to undergo critical evaluations at three time points (semesters 3, 5 and 8) to check each student’s overall progress, to offer constructive feedback and in the two latter cases, to fail a student with the subsequent consideration of remediation, re-tracking or dismissal. Assessments at semesters 5 and 8 would each encompass their own DEN course. Failing students would be put on probation and interview with the SPEC committee. An action plan would be tailored to the student based on their weaknesses displayed during the assessment. Remediation would involve a re-take of the test at a later date or successful completion of all components stipulated in the action plan. Student’s that fail remediation would be subject to consideration for dismissal by SPEC.

D. 4. a. Semester 3 assessment: At this stage of the curriculum students would be in a position to be tested on taking basic medical, head and neck and intraoral exams. Students will have had experiences in patient interviewing with consideration of cultural, economic and social issues, basic radiology and introduction to image interpretation, alginate impressions, neurophysiology and pain control, perio and caries treatment planning, basic oral surgery and local anesthesia, basic endo, and simple direct restorations. Students will have had clinical experiences assisting DN4 students in the TEAM clinic.

This first critical assessment near the end of semester 3 would serve primarily as a means to identify those students struggling with one or more aspects of the curriculum and to offer them assistance. There are two means to implement this assessment. First, using our current system, students that fail a course will automatically be interviewed by SPEC and an action plan developed, if deemed necessary. Second, student rankings within each course during semesters 1-3 will be surveyed by the Office of Education to identify students that pass their courses but are struggling as determined by consistently being ranked in the bottom tier of many courses. These students will be interviewed by the Office of Education to help identify areas for improvement and to offer assistance, such as assessment of study skills, tutoring, etc.

D. 4. b. Semester 5 assessment: Over semesters 4 and 5, students will have had basic physiology, histology pathology, pharmacology and immunology, all with respect to oral epithelia, bone, pulmonary, cardiovascular, renal, liver, GI, hypersensitivity, salivary glands and autoimmune diseases. Included will be clinical findings, physical evaluations and lab findings, dental complications and risk assessments, and medical emergencies. Other courses and clinical exposures in the TEAM clinic while assisting DN3 students will focus on periodontal treatment planning and surgery, endodontic therapy, clinical diagnosis and treatment planning,
advanced oral surgery, advanced aspects of occlusion, dental materials, indirect restorations and removable partial dentures.

Students must pass the assessment at the end of semester 5 before they acquire their own patient family in semester 6. The assessment is made up of two independent parts. First, is a test of psychomotor skills, similar to our current clinical exam 1. This exam is to be graded separately as pass/fail and as its own separate course. Appropriate constructive feedback is to be given to those students that pass but demonstrate a need for minor improvement.

Second, students are to be tested orally for their ability to integrate the curricular content to-date, with an emphasis on critical thinking in relation to appropriate aspects of patient interactions associated with communication (including psychosocial, economic and cultural considerations), examination, diagnosis, and professionalism. Assessment includes the student’s ability to take into consideration a patient’s medical condition and its influence on treatment planning and treatment outcomes of simple cases, and an understanding of the patient’s medical and oral pathologies at the level of current basic biomedical science knowledge. The oral examination also is to be graded separately as pass/fail and as its own separate course.

The oral examination is to be mostly case-based. Cases within the student’s portfolio may function as the basis for questions during the oral examination. It is also recommended that a database of de-identified and partly fictional cases be developed to use in questioning and assessing a student’s critical thinking in relation to appropriate aspects of patient examination, diagnosis, treatment planning of simple cases, treatment outcomes, management and professionalism. This oral exam will help to prepare students for the next oral evaluation at the end of semester 8.

Assessment of a student’s oral examination is to be conducted by a faculty panel made up of basic science and clinical faculty. It is estimated that five panels, each composed of three faculty members, can conduct five exams of 1 hour each in an afternoon from 1-6 pm. All students in a class could then be examined over a four-day period. Each 1-hour period would include 15-20 min to preview the portfolio, 20-30 min for the oral exam and the remaining time to deliberate and come to agreement on a pass/fail grade. Appropriate constructive feedback is to be given to those students that pass but demonstrate a need for improvement.

D. 4. c. Semester 8 assessment: Students will have completed 3 semesters in the TEAM clinics, plus a limited amount of additional didactic material and some intramural and extramural rotations. This oral examination also is to be graded separately as pass/fail and as its own separate course. Each student presents one or two of the five cases in their portfolio to a faculty panel. The following aspects of each case presentation are evaluated by the faculty panel: Medical history/pharmacology implications, caries and periodontal risk assessments and prevention plan, validity of treatment options, alternative treatments and critical thinking involved, sequencing of treatment plan, determination that the disease entities were actually treated and the risk level for further disease, appropriate maintenance plan for optimal oral health, post-treatment assessment. A case-based database could also be used in the examination in lieu of a case from the portfolio. Questioned that may be posed to a student include: How were the diagnoses reached? What treatment options were considered and why this option? What changed during the treatment and how did you cope/make appropriate alterations in the treatment plan? Can you explain the biological mechanisms associated with the disease process and your treatment strategy? What was the outcome? How did the restorative dentistry turn out? What did you learn? Was the patient happy or what were their concerns? What factors limited your potential treatment strategies? TEAM leaders are to have input in this critical assessment, possibly thorough filling out an assessment rubric for each student with the opportunity for comments. Also to be evaluated are items in the student’s portfolio, including their completion rate among assigned patients, their total monetary production, treatment outcomes and reflective papers on ethical issues. Portfolios are to be evaluated for student progress at the ends of semesters 6 and 7, with full assessment and grading near the end of semester 8.
Students that pass are released to proceed to their final year with less intense oversight by faculty who know their strengths and weaknesses. If the student fails, remediation is required to pass. Remediation may include tutoring, a review of treatment planning, a specific remediation course or additional clinical experience, as determined by recommendations from the faculty panel after consultation with the student’s TEAM leader, the Office of Education and SPEC. It is highly recommended that student dismissal be considered by SPEC for students that are unsuccessful in remediation.

Oral examinations are to be conducted by a faculty panel made up of basic science and clinical faculty in a process similar to that for the semester 5 assessment, except each 1-hour period would include about 45 min for the student presentation and questioning and the remaining 15 min for panel deliberation.

E. Incorporation of Interprofessional Education into the Curriculum

Interprofessional education is already being implemented into the curriculum. This Spring semester we saw a joint program between DN1 students and first year medical students devoted to early childhood caries. Their are also discussions underway to have third year medical students gain experience in the oral surgery clinic and for DN3 students during semesters 7 or 8 to spend a half-day in a Shands-UF family medicine clinic. Students would participate in history taking, physical examination, diagnosis and treatment planning of patients. Students would be given a course assignment related to putative treatment planning of one or more of the observed patients if presented with a specific oral pathology. Incorporation of additional interprofessional experiences by students continues to be an on-going of the Office of Education. Faculty or student suggestions for potential experiences are welcome.

F. Faculty Development to Better Utilize Existing and New Technologies and Alternative Teaching Methods to Enhance Active Learning

Above in section C.2. was discussed the incorporation of various active-learning instructional methods to present selected course contents. With active learning methods students are more accountable for their own learning, thus requiring less classroom time than lecture-based formats. Faculty as well as students will therefore spend less time in the classroom. Plans are underway to provide multiple opportunities in the form of workshops and mediasite demonstrations for faculty to become acquainted with various active learning instructional methods, including methods used currently by COD faculty, in addition to current and emerging computer programs to assist instructors in delivering course contents and in assessments. Faculty within the college and support staff in the Office of Education will be available to assist faculty in transitioning course contents to one or more active learning methods.

G. Internal and External Rotations

One of the goals of the curriculum revision process is to identify ways to enhance clinical rotations for more direct student involvement in diagnosis, treatment planning, delivery and evaluation of patient care. The curriculum committee recently undertook a review of rotations. The revision committee will evaluate the curriculum committee’s recommendations in the context of the revised curriculum and suggest any additional future changes for the transition to the new curriculum.
UFCD Office of Research, FY 11-12 Outcome Measures

I. Trends in number of students graduating with research honors

UFCD awards Research Honors and High Research Honors on the graduation commencement. Generally, students need to have significant contribution to a research project and produce a publishable manuscript on the research findings. In 2012 three students graduated Research Honors; one obtaining high research honors. Source of Data: UFCD Office of Research and Office of Education

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Honors</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>DMD/PHD Program</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Research Track</td>
<td>1</td>
<td>1</td>
<td></td>
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<tr>
<td>Summer Research Program</td>
<td>6</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>25</td>
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<tr>
<td>Funded Research Fellowships</td>
<td>19</td>
<td>18</td>
<td>20</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>University Scholars</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>

II. NIH/NIDCR Rankings

The National Institute of Dental and Craniofacial Research (NIDCR) is a primary source of federal research funding for many academic dental institutions. Since 2008 the UF College of Dentistry has ranked in the top ten dental institutions for receiving NIDCR awards. (Note: NIH no longer compiles rankings.)

Source of Data: NIDCR, Rank Listing of NIDCR Grants to U.S. Dental Intuitions

http://www.nidcr.nih.gov/GrantsAndFunding/NIDCR_Funding_to_US_Schools/DentalSchools

<table>
<thead>
<tr>
<th>2011 UF and Peer Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranking (of 48)</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>19</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>N/A</td>
</tr>
</tbody>
</table>
### 2011 NIDCR Support (funded dental schools/institutions)

<table>
<thead>
<tr>
<th>Ranking (of 49)</th>
<th>Institute</th>
<th>Total Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University of Michigan Ann Arbor</td>
<td>11,270,000</td>
</tr>
<tr>
<td>2</td>
<td>Forsyth Institute</td>
<td>9,552,340</td>
</tr>
<tr>
<td>3</td>
<td>University of California San Francisco</td>
<td>7,724,193</td>
</tr>
<tr>
<td>4</td>
<td>New York University</td>
<td>7,597,608</td>
</tr>
<tr>
<td>5</td>
<td>University of California Los Angeles</td>
<td>6,521,160</td>
</tr>
<tr>
<td>6</td>
<td>University of Pittsburgh at Pittsburgh</td>
<td>6,260,761</td>
</tr>
<tr>
<td>7</td>
<td>University of North Carolina Chapel Hill</td>
<td>6,111,574</td>
</tr>
<tr>
<td>8</td>
<td>University of Washington</td>
<td>6,003,058</td>
</tr>
<tr>
<td>9</td>
<td>University of Rochester</td>
<td>5,661,732</td>
</tr>
<tr>
<td>10</td>
<td>University of Florida</td>
<td>5,548,482</td>
</tr>
</tbody>
</table>

### III. External funds per square foot for research space by investigator, department and center.

These dollars per square foot calculations are based on internal UFCD research space assignments and external research awards received during a fiscal year. Funding for external (non-UFCD) subawards and consortium agreements are subtracted from award totals. Research space includes research labs, non-lab space devoted 100% to funded research, autoclaves and shared equipment rooms.

<table>
<thead>
<tr>
<th>Department</th>
<th>11-12</th>
<th>10-11</th>
<th>09-10</th>
<th>08-09</th>
<th>07-08</th>
<th>06-07</th>
<th>05-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Dentistry/Behavioral Science</td>
<td>$618</td>
<td>$649</td>
<td>$749</td>
<td>$895</td>
<td>$519</td>
<td>$690</td>
<td>$1,642</td>
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<tr>
<td>Endodontics</td>
<td>$</td>
<td>$21</td>
<td>$26</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Restorative/Den Bio</td>
<td>$445</td>
<td>$522</td>
<td>$659</td>
<td>$2,553</td>
<td>$1,859</td>
<td>$1,784</td>
<td>$1,445</td>
</tr>
<tr>
<td>Dental Biomaterials</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$95</td>
<td>$206</td>
<td>$193</td>
<td>$119</td>
</tr>
<tr>
<td>Oral Biology</td>
<td>$177</td>
<td>$284</td>
<td>$313</td>
<td>$295</td>
<td>$266</td>
<td>$306</td>
<td>$286</td>
</tr>
<tr>
<td>Oral Surgery</td>
<td>$254</td>
<td>$339</td>
<td>$112</td>
<td>$261</td>
<td>$251</td>
<td>$131</td>
<td>$183</td>
</tr>
<tr>
<td>Orthodontics</td>
<td>$129</td>
<td>$233</td>
<td>$268</td>
<td>$211</td>
<td>$189</td>
<td>$129</td>
<td>$145</td>
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<tr>
<td>Pediatrics</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Prosthodontics</td>
<td>$</td>
<td>$</td>
<td>$11</td>
<td>$227</td>
<td>$11</td>
<td>$3</td>
<td>$182</td>
</tr>
<tr>
<td>Periodontics</td>
<td>$444</td>
<td>$194</td>
<td>$296</td>
<td>$213</td>
<td>$126</td>
<td>$269</td>
<td>$270</td>
</tr>
<tr>
<td>College</td>
<td>$289</td>
<td>$335</td>
<td>$350</td>
<td>$350</td>
<td>$270</td>
<td>$291</td>
<td>$303</td>
</tr>
</tbody>
</table>

Center space includes areas with specific assigned space and funding. Research awards and SqFt area also included in Department $/SqFt calculations.
Center | 11-12 | 10-11 | 09-10 | 08-09 | 07-08 | 06-07 | 05-06
--- | --- | --- | --- | --- | --- | --- | ---
PDRC/DCRU | $202 | $507 | $325 | $294 | $220 | $286 | $314
Craniofacial | $ | $ | $178 | $208 | $305 | $327 | $375
CCPR | $84 | $262 | $424 | $490 | $210 | $173 | $324
CCPR-BEHAV | $437 | $462 | $626 | $646 | $324 | $375 | $314
Taste and Smell | $22 | $ | $545 | $914 | $220 | $735 | $327
Auto Immune | $323 | $292 | $424 | $149 | $129 | $210 | $324
SECRRDOH | $705 | $893 | $ | $ | $ | $ | $ |

Funding for individual PIs can be found in Appendix 1.

Source of Data: UFCD Office of Research

IV. Percent of fully funded research effort by tenured/tenure accruing faculty

Faculty productivity and research activity may also be measured by dividing the total number of faculty FTE (full time equivalence: 1.00 is equal to 100% effort) by the number of FTE devoted to research. Approximately 2.31 FTE of devoted to non-funded research is considered “professional development” and not effort directly related to research activities. The table reflects the percentage of both funded and non-funded research FTE for T/TA faculty. In the fiscal year 11-12 FTE for T/TA faculty accounted for 52.71% of all faculty effort. For the entire T/TA faculty effort, 42% of the total effort was devoted to research activities; with 40.44% of those research efforts funded from external sources.

Source of Data: UFCD Office of Research

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>11-12</th>
<th>10-11</th>
<th>09-10</th>
<th>08-09</th>
<th>07-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Faculty FTE</td>
<td>132.78</td>
<td>140.16</td>
<td>142.77</td>
<td>142.12</td>
<td>162.09</td>
</tr>
<tr>
<td>All Research FTE</td>
<td>47.47</td>
<td>35.75%</td>
<td>44.14</td>
<td>31.50%</td>
<td>45.27</td>
</tr>
<tr>
<td>Tenure/Tenure Accruing FTE</td>
<td>70.00</td>
<td>52.71%</td>
<td>70.57</td>
<td>50.35%</td>
<td>81.84</td>
</tr>
<tr>
<td>T/TA Research FTE</td>
<td>29.40</td>
<td>42.00%</td>
<td>28.39</td>
<td>40.23%</td>
<td>32.08</td>
</tr>
<tr>
<td>T/TA Funded Research FTE</td>
<td>17.51</td>
<td>59.56%</td>
<td>16.66</td>
<td>58.68%</td>
<td>18.67</td>
</tr>
<tr>
<td>T/TA Non-Funded Research FTE</td>
<td>11.89</td>
<td>40.44%</td>
<td>11.73</td>
<td>41.31%</td>
<td>13.42</td>
</tr>
</tbody>
</table>
V. Research Dollars Per Faculty FTE Assigned to Research

Faculty productivity and research activity may be measured by dividing the amount of external research funding by the number of faculty FTE (full time equivalence: 1.00 is equal to 100% effort). The table below reflects the values associated with total effort for research faculty, research effort for all faculty and research effort for tenure and tenure accruing (T/TA) faculty.

Source of Data: UFCD Office of Research and Office of the Dean

VI. Annual Start Up Funds

Start-up funds for the support of research are usually awarded to incoming tenure/tenure track faculty. Award amounts vary due to the level of research activity and external funding of the faculty member. Source of Data: UFCD Office of Research

VII. Faculty Survey of Clinical Research and IT Needs

Forty-seven of the 73 faculty who were on the author line of at least one manuscript in 2010-11 completed the survey. The most relevant findings are summarized below.

TYPE OF RESEARCH: 46% endorsed conducting only human clinical research, 29% indicated they conduct both human clinical and non-clinical research, and 24% endorsed only conducting non-clinical research.

SOURCE OF FUNDING: 53% of the UFCD research faculty responding to the survey is the PI on at least one NIH grant and an additional 31% hold non-NIH grants but no NIH grants. In total, 85% of the respondents on the survey are the PI on some form of project with outside funding.

OVERALL COLLEGE SUPPORT FO RESEARCH: 61% reported support as the same as 12 months ago,
14% endorsed better, and 25% endorsed worse. There we no significant differences by research category, rank, or research funding categories.

BARRIER OR UNMET NEED and CENTRALIZED ASSISTANCE: Depending on the question, 40-50% of the UFCD research faculty endorsed the need for statistical assistance and centralized administrative staff to provide with assistance with research administration and compliance (IRB, RAC, IACUC paperwork). There were no significant differences by research funding categories, however, clinical research faculty and associate professors were more likely to endorse these items as needs.

IT SUPPORT FOR RESEARCH ACTIVITIES: 63% indicated that IT support for research is the same as 12 months ago, 21% indicated that IT is better, and 16% endorsed worse. There were no significant differences by research category, rank, or research funding categories.

RESEARCH SPACE: 37% of UFCD research faculty indicated they have sufficient space but it needs renovation and is poorly maintained, 15% does not have sufficient space and it needs renovation and is poorly maintained, 34% reported their space is modern and well maintained. Space issues were most often reported by non-clinical research faculty (83%).

VIII. Total publications in peer-reviewed journals annually
Approximately 115 articles were authored by UFCD faculty were submitted to and published by peer reviewed journals as compared with 141 from FY 10-11. Appendix 2

Source of Data: UFCD Faculty Toolkit

<table>
<thead>
<tr>
<th>Publications in Peer Reviewed Journal: No. Faculty / No. Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 11-12</td>
</tr>
<tr>
<td>115 / 63</td>
</tr>
</tbody>
</table>

VI. Number of UFCD faculty participating in funded research projects with PIs from other departments, colleges or universities.
UFCD faculty collaborations are not only cross-departmental; they also involve UF colleges, and national and international institutions. Of the 176 active awards in FY 11-12 over 33% involved collaborations with entities outside of UFCD.

UF collaborations
- College of Medicine: Rheumatology, Cardiology, Molecular Genetics, Aging, Biochemistry, Pediatrics, Infectious Diseases, Pathology
- College of Public Health & Health Professions: Communicative Disorders, Epidemiology
- College of Liberal Arts: Physics, Psychology
- College of Pharmacy: Pharmacy Practice
- College of Engineering: Material Engineering
- College of Journalism: Journalism
- IFAS
- UF/Shands Cancer Center
Other Institutions
- U Alabama, U Chicago, U Miami, New York U, U North Carolina, U Rochester, U Wisconsin, VA Commonwealth, Medical College of Georgia, Forsyth Institute, Seattle Biomedical, McGill University

International
- Canada, Germany, Japan, Sweden, Israel

Source of Data: UFCD Office of Research
<table>
<thead>
<tr>
<th>Year</th>
<th>PI</th>
<th>Dept</th>
<th>Status</th>
<th>Amount</th>
<th>Report Due</th>
<th>External Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Walker, C</td>
<td>OB</td>
<td>Award</td>
<td>$11,800</td>
<td>7/2013</td>
<td>PYROSEQUENCING OF SUBGINGIVAL PLAQUE SAMPLES FROM SUBJECTS WITH RHEUMATOID ARTHRITIS WITH AND WITHOUT PERIODONTITIS</td>
</tr>
<tr>
<td></td>
<td>Holliday</td>
<td>ORTHO</td>
<td>Award</td>
<td>$20,000</td>
<td>10/2012</td>
<td>V-ATPASE SORTING BY THE WASH COMPLEX IN OSTEOCLASTS</td>
</tr>
<tr>
<td>2011</td>
<td>Esquivel J</td>
<td>RES</td>
<td>Award</td>
<td>$10,000</td>
<td>3/2013</td>
<td>SURFACE DEGRADATION AND SURFACE ROUGHNESS OF DENTAL CERAMICS</td>
</tr>
<tr>
<td></td>
<td>Wallet, S</td>
<td>PERIO</td>
<td>Award</td>
<td>$20,000</td>
<td>10/2012</td>
<td>GENERATION OF EPITHELIAL CELL SPECIFIC CONDITIONAL KNOCKOUTS IN MURINE MODELS</td>
</tr>
<tr>
<td></td>
<td>Greishaber, S</td>
<td>OB</td>
<td>Award</td>
<td>$10,000</td>
<td>3/2013</td>
<td>DETERMINATION OF THE ROLE THE CHLAMYDIAL HISTONES PLAY IN REGUALTING DIFFERENTIATION</td>
</tr>
<tr>
<td>2010</td>
<td>Walker, C</td>
<td>OB</td>
<td>Denied</td>
<td>$10,000</td>
<td>N/A</td>
<td>MECHANISM OF ANTIBIOTIC RESISTANCE AN INVITRO BIOFILM</td>
</tr>
<tr>
<td>2009</td>
<td>Progulske-Fox, A</td>
<td>OB</td>
<td>Award</td>
<td>10,000</td>
<td>8/2012</td>
<td>PERIODONTAL BACTERIAL INFECTION INDUCED PERIODONTAL DISEASE AND CARDIOVASCULAR DISEASE</td>
</tr>
<tr>
<td></td>
<td>Riley J</td>
<td>CDBS</td>
<td>Award</td>
<td>10,000</td>
<td>9/2010</td>
<td>$2,765,190 NIH R01 ROLE OF ENDOGENOUS OPIOID SYSTEM UNDERLYING MODULATION OF EXPERIMENTAL PAIN</td>
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<tr>
<td>2008</td>
<td>Morris-Wiman J</td>
<td>ORTHO</td>
<td>Award</td>
<td>5,000</td>
<td>9/10</td>
<td>$401,044 NIH R21 DOES AN ALTERED INFLAMMATORY RESPONSE HAVE A ROLE IN DELAYED MASSETER REPAIR?</td>
</tr>
<tr>
<td></td>
<td>Adewumi, A</td>
<td>PEDS</td>
<td>Denied</td>
<td></td>
<td></td>
<td>AN ASSESSMNET OF DENTAL AND CRANIOFACIAL MANIFESTATIONS OF SOTOS SYNDROME</td>
</tr>
<tr>
<td></td>
<td>Watson, J</td>
<td>CDBS</td>
<td>Award</td>
<td>$10,000</td>
<td>7/09</td>
<td>Left UF EARLY CHILDHOOD CARIES IN LOW AND HIGH-INCOME WOMEN</td>
</tr>
<tr>
<td></td>
<td>Wong, F</td>
<td>PROS</td>
<td>Award</td>
<td>$10,000</td>
<td>7/12</td>
<td>Proposed/Not funded $3,371,711 NIH R01 (Co-PI) SYSTEMIC EFFECTS OF CANCER ON THERMAL PAIN SENSITIVITY IN MICE (B HASTIE, PI; CDBS)</td>
</tr>
<tr>
<td>2007</td>
<td>Lewis, E</td>
<td>OMSD</td>
<td>Denied</td>
<td>$ -</td>
<td>NA</td>
<td>NA PHARMACOGENETICS FOR BISPHOSPHONATE-ASSOCIATED OSTEONECROSIS OF THE JAW (BONJ)</td>
</tr>
<tr>
<td></td>
<td>Attia, R (Student)</td>
<td>OB</td>
<td>Award</td>
<td>$7,600</td>
<td>12/08</td>
<td>N/A QUANTITATIVE COMPARISON OF SIOGREN SYNDROME AND NORMAK SALIVA PROTEOMES</td>
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<tr>
<td></td>
<td>Shaddox, L</td>
<td>PERIO</td>
<td>Award</td>
<td>$10,000</td>
<td>8/08</td>
<td>$283,423 Colgate THE INFLUENCE OF PERIODONTAL THERAPY ON METABOLIC AND IMMUNOLOGICAL CONTROL OF THE TYPE II DIABETIC PATIENT</td>
</tr>
<tr>
<td></td>
<td>Wallet, S</td>
<td>PERIO</td>
<td>Award</td>
<td>$10,000</td>
<td>4/08</td>
<td>Proposed $2,162,984 NIH R01, R21 DIABETES MELLITUS AND EXPRESSION OF IN VIVO INDUCED ANTIGENS BY ORAL PATHOGENS</td>
</tr>
</tbody>
</table>

Source of Data: UFCD Office of Research
Research Committee summary. The UF College of Dentistry Seed Grant Program is overseen by the Research Committee and is funded through the Office for Research. The application form can be accessed under “Programs” via the Office of Research link on the College website. Since the beginning of 2007 there have been sixteen requests for funding. The Department of Research is rigorous in their review of these requests and seriously considers the likelihood that data generated by the Seed Grant will result in successful extramural funding by NIH or a comparably competitive peer review agency. The Research Committee ultimately approved thirteen faculty applications, totaling $184,500. Most of the applications were returned to the faculty applicant for clarification and revision prior to funding as part of the review process. The Office of Research considers the program to be highly successful and having achieved the goal of stimulating external grant support. To date three NIH R01 grants, two NIH R21 grants, and an American Diabetes Association grant were awarded following submissions based on preliminary data acquired as a result of the Seed Grant Program. In addition, at least three R01 applications and one R21 application are pending. As a measure of the productivity of the program, of the $55,000 in Seed Grants awarded between 2007-2009, the College received $3,449,717 in NIH funding. The potential for this level of success continues. From 2009-2012 five Seed Grants, totaling awards of $70,000, remain open. It is required that all faculty who received a Seed Grant submit a final report to the Research Committee, but in the past the format has been left to the discretion of the investigator. To facilitate accurate tracking of the program in the future, a standardized form has been developed to better monitor all grant submissions and awards; research outcomes and significance; publications, abstracts and presentations at national and international meetings; and trainees who were supported by the Seed Grant award. In closing, the Research Committee is appreciative of the College’s support of this program and the opportunity to optimize our faculty’s ability to produce high quality grant applications, especially considering the current highly competitive funding climate.

<table>
<thead>
<tr>
<th>FY 11-12</th>
<th>FY 10-11</th>
<th>FY 09-10</th>
<th>FY 08-09</th>
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<td>12</td>
<td>12</td>
<td>14</td>
<td>21</td>
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Source of Data: UFCD Office of Research; http://dental.ufl.edu/research/programs/deans-research-seminar-series/

UFCD Research Committee space report. In February of 2011 the research committee conducted a walk through inspection of the research space in the College of Dentistry. The committee identified 95 labs in need of various repairs or renovations. A walk through was performed in April of 2012 to reevaluate the current research space. Over the year since this inspection, little has been done to improve these facilities and entropy has continued to take its toll. In addition to the labs, research supporting portions of the building such as restrooms, offices and ventilation are in serious need of renovation and modernization. The continued deterioration of the college’s research infrastructure significantly impacts the competitiveness of the college in recruiting
quality faculty, post-docs and graduate students. It also undermines the morale and productivity of current research staff. Eventually, these factors will have a negative impact on the college’s level of research funding. The Research Committee recommends that laboratory renovation be budgeted into each year’s appropriation to stem the deterioration of the current facilities in the short term. As a long term solution to the research space problem significant efforts must be made to obtain funds for a complete renovation or replacement of all the research space.

Additional Tables

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<th>Proposals Funded</th>
<th>% Funded / Number Submitted</th>
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<tr>
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<tr>
<td>FY 10-11</td>
<td>35% / 125</td>
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<tr>
<td>FY 09-10</td>
<td>31% / 174</td>
</tr>
<tr>
<td>FY 08-09</td>
<td>40% / 140</td>
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<td>FY 07-08</td>
<td>113</td>
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Source: UFCD Office of Research

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<th>College</th>
<th>Amount</th>
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<td>Public Health and Health Professions</td>
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<td>Dentistry</td>
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</table>

Funding to UFCD Peer Colleges in the Health Science Center
UF Division of Sponsored Research Annual Report

Fiscal Year
2012
2011
2010
2009
2008
2007

Millions
0 5 10 15 20
2007-2012

Other
Nursing
Pharmacy
Dentistry
Veterinary Medicine
Public Health

Funding amounts based on awards received within a fiscal year. Thus data may contain multiple years of funding within one fiscal year.
Source: UF Office of Research Annual Reports http://research.ufl.edu/research/about/annual-reports.html

All Funding to UFCD FY 2002 through 2012

Funding amounts based on awards received per budget period within each fiscal year.
Source: UF Office of Research
## Appendix 1

**UFCD Dollars Per Square Foot by PI**

FY 2011-2012

$ per SqFt calculations based on awards for the FY 11 – 12 fiscal year and does not include funding for more than one budget period. Subaward and consortium funding are subtracted from funding totals (-).

<table>
<thead>
<tr>
<th>Name</th>
<th>Assigned SqFt</th>
<th>$Per SqFt by Awards $ Received</th>
<th>$Per SqFt by Generated IDC $</th>
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<tr>
<td>Anusavice*</td>
<td>1046</td>
<td>$102</td>
<td>$29</td>
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<tr>
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<tr>
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<td>729</td>
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University of Florida College of Dentistry
Faculty Refereed Publications
July 1, 2011 through June 30, 2012


Gordan VV, Riley JL 3rd, Worley DC, Gilbert GH; DPBRN Collaborative Group. (2012). Restorative material and other tooth-specific variables associated with the decision to repair or replace defective restorations: findings from The Dental PBRN. J Dent, 40(5), 397-405. PMID: 22342563


Bélanger M, Kozarov E, Song H, Whitlock J, Porgulske-Fox A. (2012). Both the unique and repeat regions of the Porphyromonas gingivalis hemagglutinin A are involved in adhesion and invasion of host cells. *Anaerobe, 18*(1), 128-34. PMID: 22100486


Culp DJ, Robinson B, Parkkila S, Pan PW, Cash MN, Truong HN, Hussey TW, Gullett SL. (2011). Oral colonization by Streptococcus mutans and caries development is reduced upon deletion of carbonic anhydrase VI expression in saliva. *Biochim Biophys Acta, 1812*(12), 1567-76. PMID: 21945428


**115 total publications for reporting period**
MARY ELLEN DAVEY, Ph.D.

May 3, 2012

Address: Department of Molecular Genetics
The Forsyth Institute, 245 First Street, Cambridge MA 02142
Department of Oral Medicine Infection and Immunity
Harvard School of Dental Medicine, Boston MA 02115

Contact: mdavey@forsyth.org  Phone: 617-892-8513  FAX: 617-892-8432

Education:
1999  Ph.D.  Department of Microbiology, Center for Microbial Ecology and the Plant
Research Laboratories, Michigan State University
1982  B.S.  University of Vermont (Clinical Microbiology)

Postdoctoral Training/Fellowships:
2004-2006  Hein Fellowship, Forsyth Institute
1999-2002  Dartmouth Medical School, Department of Microbiology and Immunology
           NIH Molecular Pathogenesis Training Fellowship

Professional Experience:
2010-present  Associate Member of the Staff, Forsyth Institute, Cambridge, MA
2006-2010  Assistant Member of the Staff, Forsyth Institute, Boston, MA
2003-2006  Staff Associate, Forsyth Institute, Boston, MA
2002-2003  Senior Scientist, Genome Therapeutics Corporation, Waltham, MA
1999-2002  Post doc, Microbiology and Immunology Department,
           Dartmouth Medical School
1994-1999  Doctoral program, Microbiology Department, Michigan State University
1987-1994  Senior Research Associate, Department of Microbiology, The projects
           started at the Salk Institute Biotechnology/Industrial Associates, Inc.,
           La Jolla, CA in 1987 and then our group re-located (same building)
           in 1992 to The Agouron Institute, La Jolla, CA
1984-1987  Research Associate, The University of Texas Health Science Center,
           San Antonio, Texas
1982-1984  Research Technician, The University of Massachusetts, Amherst, MA
Synergistic activities:

2011-present  Co-director T32 postdoctoral training grant at Forsyth
2010  Advisor for the “The Bacterial Opera” performed at the Ig Nobel Prize Ceremony
2009-present  Consultant: Semprus Biosciences Cambridge, MA
2008-present  Ad hoc grant reviewer: National Science Foundation (NSF) and National Institute of Dental and Craniofacial Research (NIDCR)
2008-2010  Panelist: NSF: Symbiosis, Defense, and Self-recognition review panel
2007-2011  President of Staff Council; Forsyth Institute
2007-2011  Seminar coordinator; Forsyth Institute
2006-present  Peer review for journals: Journal of Bacteriology, Microbiology, Infection and Immunity, Clinical Microbiology, Anaerobe, Microbiology and Molecular Biology Reviews, and ISME Journal

Professional Societies:

1988-present  American Society for Microbiology
1998-present  International Society for Microbial Ecology

Report of Teaching:

2008-Present  Lecturer: Oral Microbiology, Harvard School of Dental Medicine
2007-2008  Instructor: Medical Microbiology, School of Pharmacy, Northeastern University
1994-1998  Teaching Assistant/Associate, Michigan State University, East Lansing, MI

Recent invited presentations:

2012  “Studies on *P. gingivalis*: a commensal pathogen that lives in the oral biofilm.” State University of New York, Upstate Medical Center, Syracuse
2011  “The Histone-Like Protein HU is a Master Regulator in *P. gingivalis*” Seminar series at Forsyth.
2010  “A Sticky, Slimy, Structured, Medley of Microbes”  24/7 lecture at the 2010 Ig Nobel Award Prize Ceremony
2009  “Regulation of Capsule Expression in Porphyromonas gingivalis” University of Massachusetts, Amherst
2009  "Porphyromonas gingivalis: a nasty anaerobe that lives in the oral cavity"
Rider University, Lawrenceville, NJ

2009  "Regulation of Capsule Expression in Porphyromonas gingivalis"
Dartmouth Medical School, Hanover, NH

2007  "Regulation of Capsule Expression in Porphyromonas gingivalis"
ASM conference on Biofilms 2007, Quebec City, Canada

2007  "Secreted Compounds that Modulate Biofilm Development"
Colgate Palmolive Company, Piscataway, NJ

Research Funding Information:

**Ongoing Research Support**
R01-DE-019117-01A2  Davey (PI)  05/01/09 - 03/31/14
NIH; NIDCR
Regulatory Mechanisms Controlling Expression of P. gingivalis Surface Structures
The Specific Aims being pursued are: 1) Determine the regulatory role of PG0121 (HU protein) in P. gingivalis capsule expression. 2) Identify HU-controlled genes involved in transcriptional regulation or polysaccharide synthesis. 3) Determine the regulation of transcription within the PG0104-PG0121 region.
Role: PI

**Completed Research Support**
5 R21-DE-017168-02  Davey (PI)  07/01/06 - 03/31/09
NIH; NIDCR
Biofilm Formation in P. gingivalis: A Role for Capsule Expression
Role: PI
Corporate  Davey (PI)  05/01/07 - 04/30/08
Colgate-Forsyth Center for Global Oral Health
Identifying Compounds Capable of Modulating Biofilm Development
Role: PI
Corporate Davey (PI)  04/01/06 - 03/31/07
Colgate-Forsyth Center for Global Oral Health
Screening for Compounds Capable of Modulating Biofilm Development
Role: PI
Research Interests:

The discovery of interspecies communication in biofilms and the subsequent discovery that bacteria can signal host cells to change their environment were major breakthroughs in our understanding biofilm biology. While the principle has been established, there remain gaps in knowledge limiting our understanding of the role that indigenous microbial communities play in health and disease. Many chronic inflammatory diseases including periodontal infections are biofilm-induced pathologies mediated by “commensal pathogens” persisting within complex host-associated microbial communities. Understanding the environmental cues and interspecies signaling mechanisms that promote expression of virulence determinants of these organisms is fundamental to development of therapeutic strategies for these common chronic diseases.

The primary model organism that is studied in my lab is Porphyromonas gingivalis (Pg). Pg is an obligate anaerobe that resides in the oral cavity of humans and is one of the major etiological agents of adult periodontal disease, a condition characterized by inflammation and destruction of the tissue supporting the gums; and ultimately, tooth loss. Chronic cases of this disease afflict at least 35% of the adult population in the US, and persistent infections are associated with systemic diseases, such as diabetes, cardiovascular disease, and stroke. The switch from life as a commensal to a proliferating virulent pathogen is central to the pathogenicity of this oral anaerobe. It is clear that changes in expression of surface structures (e.g. capsule, fimbriae, LPS, ceramides, and membrane vesicles) play an important role in this switch. Studies in my lab have shown that capsule production modulates biofilm development. Other researchers have shown that the capsule also modulates the interaction of this pathogen with the immune system; hence, regulation of capsule expression plays a central role in both pathogenesis and biofilm growth. Currently, my lab is funded to determine the molecular mechanisms that control capsule expression. We have discovered that the histone-like DNA-binding protein HU – a global regulator – controls expression of capsule. The long term goal of this project is to provide a better understanding of the signals that either direct this bacterium to persist as a quiescent commensal or to change into a virulent pathogen. Our working hypothesis is that the HU-regulon is central to this switch.

Another key area of interest in my lab is to identify novel mechanisms of extracellular interspecies (or interkingdom) communication. The two most prominent systems being studied today are quorum sensing which uses a cell-to-cell diffusible signal to sense cell density and to subsequently activate expression of specific genes; and the antifungal and
antibacterial agents that are excreted by a variety of bacteria and fungi to deter competitors. We (and many other researchers) hypothesize that there are many undiscovered mechanisms that are the foundation for signal generation and response. For example, it has been established that DNA is an essential part of the extracellular biofilm matrix of many biofilms. This molecule (eDNA) or certain proteins associated with eDNA, such as the histone-like protein HU discussed above, may provide a mechanism that relays growth conditions throughout the microbial community. Another potential communication mechanism is secretion of enzymes that remove key substrates required by other bacterial species or host cells. Identifying such mechanisms will provide prime targets for the development of therapies to disrupt the formation or function of biofilm communities. My group is currently investigating this line of research; specifically the affect of arginine deiminase on Pg biofilm formation and pathogenesis.

Two years ago, my lab identified and characterized a secreted signaling molecule produced by oral streptococci that inhibits Pg biofilm development, but has no effect on growth in liquid culture. Purification and protein sequence analysis, as well as enzyme activity assays identified the protein as an arginine deiminase (ADI). Using qRT-PCR analysis, we then determined that exposure of *P. gingivalis* cells to this protein resulted in down-regulation of fimbria, surface structures required for Pg biofilm formation. Thus, providing a lead as to why biofilm development is blocked. Moreover, and most importantly, we have since discovered that this bacterial ADI has immunomodulatory capabilities. Our studies are showing that ADI dampens the immune response of human monocytes to LPS, likely through removal of arginine. Our over-arching model is that the enzyme activity of extracellular ADIs enables an environment that favors formation of a “healthy” oral biofilm while suppressing colonization of pathogens such as *P. gingivalis*, which thrive on inflamed tissue. It has been shown by other researchers that a fundamental role of ADI is to promote anaerobic growth of commensal streptococci and to maintain pH homeostasis. Based on this data, our working hypothesis is that ADI activity within the oral biofilm community is fundamental to community structure and function. These enzymes can regulate expression of virulence determinants and growth of Pg, and possibly impact gene expression of other oral bacteria. The current goals of this project are to determine the mechanisms of bacterium to bacterium and bacterium to host signaling, and to determine how the health-associated commensals can modulate the host response to negatively modify the growth environment for oral pathogens. The long-term objective is to determine if this mechanism of signaling can be exploited for treatment and prevention of biofilm-based mucosal diseases in humans.
Mary Ellen Davey

Bibliography:

Original Articles:


Reviews, Chapters, and Editorials:


**Dissertation:**


**Patents:**


2. Filed on September 29, 2000 and licensed to Microbia, Cambridge, MA:


**Abstracts** (recent):


5. Cugini C, Christopher A.B., and M.E. Davey. Inhibition of P. gingivalis Biofilm Formation by a Streptococcal Effector Protein. 4th ASM Conference on Cell-Cell Communication in Bacteria (November 2011) Miami, Florida


CURRICULUM VITAE

Name: Gill Diamond

Home Address: 203 White Oak Ridge Rd.  
Short Hills, NJ 07078  
email: gdiamond@umdnj.edu

Office Address: Department of Oral Biology  
UMDNJ-New Jersey Dental School  
185 South Orange Ave.  
Newark, NJ 07101

Work phone: (973) 972-3324

Date of Birth: May 30, 1960, Bristol, Pennsylvania  
U.S. Citizen: yes

Education:  
B.A., 1982 University of Pennsylvania (Biochemistry)  
M.Sc., 1984 Hebrew University, Jerusalem (Genetics)  
Ph.D., 1988 Hebrew University, Jerusalem (Genetics)

Postgraduate Training:  
1988-1991 Postdoctoral Fellow, Division of Human Genetics and  
Molecular Biology, The Children's Hospital of Philadelphia.  
1991-1993 Research Associate, Division of Human Genetics and  
Molecular Biology, The Children's Hospital of Philadelphia.

Faculty Appointments:  
1993 Assistant Professor, Department of Anatomy, Cell Biology and Injury Sciences,  
UMDNJ-New Jersey Medical School  
2000 Associate Professor, Department of Cell Biology and Molecular Medicine, UMDNJ- 
New Jersey Medical School  
2002 Associate Professor, Department of Oral Biology, UMDNJ-New Jersey Dental School

Other Appointments:  
2004-2006 Vice Chair, Department of Oral Biology, UMDNJ-New Jersey Dental School  
2010 Adjunct Faculty, Department of Biology, William Patterson University

Specialty Certification: Board Certified in Clinical Molecular Genetics,  
American Board of Medical Genetics, 1993; recertified, 2003

Major Teaching Responsibilities:  
Course Director:  
1995-2002 Anatomy seminar/journal club, UMDNJ-GSBS  
2000-2006 Ethics in Science, Research and Scholarship, UMDNJ- GSBS  
2000-2003 Cell Biology module, Molecular and Cellular Biology, UMDNJ-GSBS  
2001-2002 MD/Ph.D. journal club  
2008-present Embryology and Genetics module, UMDNJ-NJDS, PGY-1.
Instructor:
1992-93  Human Genetics, University of Pennsylvania School of Medicine
1994-2002  Cell and Tissue Biology, UMDNJ-New Jersey Medical School
1994-present  Host Response to Injury, UMDNJ-GSBS
1999-present  Advanced Cell Biology, UMDNJ-GSBS
1997-2004  Human Genetics, UMDNJ-New Jersey Medical School
1999-2007  Ethics in Science, Research and Scholarship, UMDNJ-GSBS
2001-2003  Cell Cycle module, Molecular and Cellular Biology, UMDNJ-GSBS
2002  Innate Immunity, UMDNJ-GSBS
2002-present  Oral Biology (PGY-2), UMDNJ-New Jersey Dental School
2006-present  Cellular Pathology, UMDNJ-GSBS
2003-present  Fundamentals of Cell Biology, UMDNJ-GSBS
2008-present  Genetics (PGY-1), UMDNJ-New Jersey Dental School
2009-present  Immunology (Dental students), UMDNJ-New Jersey Dental School
2010  Biology 163, 164 (undergraduate), William Patterson University

Awards and honors:
University nominee, Pew Scholars in Biomedical Sciences, 1996.
University nominee, National Science Foundation Presidential Faculty Fellows Award, 1996
University nominee, Sinheimer Scholar Award, 1996
Visiting Scientist, Cystic Fibrosis Center, University of North Carolina School of Medicine, 1998.
Scientific advisor, National Geographic Television Documentary, “Supercroc”, 2001
Session leader, Mark Wilson Conference on Oral Microbiology and Immunology, San Juan, PR, 2004
Session co-chair, Innate Immunity Symposium, IADR meeting, New Orleans, LA, 2007
Session co-chair, Innate Immunity Symposium, IADR meeting, Toronto, ON, Canada, 2008.
Elected Vice Chair, 8th Gordon Conference on Antimicrobial Peptides, to be held in Barga, Italy, 2011.
Nominated to the Electorate Nominating Committee, AAAS Section R (Dentistry and Oral Health Sciences)
Member, Scientific Advisory Board, PolyMedix, Inc.
Publications:

Original papers


Editorials, Chapters and Reviews


Abstracts


11


Ryan, L.K., Simko, K., Barrett, L., Schwartz, K.D., Diamond, G. Dysregulation of the Innate Immune and Inflammatory Responses to Lipopolysaccharide (LPS) and Interleukin-1β (IL-1β) by V2O5 in Mouse Lung Epithelial Cells. Society of Toxicology Annual Meeting, 2011.


**Lectures By Invitation:**

March, 7, 1991  Antimicrobial Host Defense of the Mammalian Airway, Inst. for Environmental Medicine, University of Pennsylvania School of Medicine.

September 13, 1992  Antimicrobial Host Defense of the Mammalian Airway, Tulane University School of Medicine, New Orleans, LA

March 24, 1993  Antimicrobial Host Defense of the Mammalian Airway, Dept. of Anatomy, Cell Biology and Injury Sciences, UMDNJ, Newark, NJ

June 2, 1993  Endotoxin Uregulates Expression of an Antimicrobial Peptide Gene in Mammalian Airway Epithelial Cells. Aspen Lung Conference, Aspen, CO

June 17, 1993  Antimicrobial Host Defense of the Mammalian Airway, Pulmonary Research Institute, Winthrop University Hospital, Mineola, NY

June 21, 1993  Antimicrobial Host Defense of the Mammalian Airway, Division of Reproductive Genetics, University of Tennessee Medical School, Memphis, TN

January 20, 1994  Defensins and Host Defense of the Airway, Department of Allergy/Immunology, UMDNJ, Newark, NJ

March 8, 1994  Antimicrobial Peptides, Department of Microbiology and Molecular Genetics, UMDNJ, Newark, NJ

May 26, 1994  Expression of Antimicrobial Peptide Genes in Epithelial Cells, Department of Hematology, Harvard University Medical School, Boston, MA

September 22, 1994  Antimicrobial Host Defense of the Mammalian Airway, Department of Pathology and Laboratory Medicine, UMDNJ, Newark, NJ

October 5, 1994  Antimicrobial Peptides, Department of Biology, Seton Hall University, South Orange, NJ
February 13, 1995  Defensins and Host Defense of the Airway, Department of Pulmonary Medicine, Massachusetts General Hospital, Boston, MA

September 29, 1995  Defensins and Host Defense of the Airway, Natl. Inst. of Environmental Health Sciences, RTP, NC

January 18, 1996  Control of Antimicrobial Peptide Gene Expression in the Airway, Pulmonary Research Institute, Winthrop University Hospital, Mineola, NY


May 16, 1996  Beta-defensins - an Antimicrobial Peptide Gene Family in Mammals. Dept. of Veterinary Pathology, Texas A&M University, College Station, TX.

May 17, 1996  Antibiotic Peptides in Host Defense. Dept. of Cell Biology, Baylor College of Medicine, Houston, TX.

June 30, 1996  Tracheal Antimicrobial Peptide in Host Defense of the Airway, Cystic Fibrosis Center, Dept. of Medicine, U. of North Carolina, Chapel Hill, NC.

January 29, 1997  The Role of Antimicrobial Peptides in Host Defense of the Airway. Dept. of Cell Biology, Univ. of Pittsburgh School of Medicine, Pittsburgh, PA.

May 8, 1997  The Role of Antimicrobial Peptides in Host Defense of the Airway. Dept. of Medicine, UMDNJ, Newark, NJ.

September 9, 1997  Tracheal antimicrobial peptides in host-defense of the respiratory tract. NIH workshop on Pulmonary Host Defense Against Microorganisms. Bethesda, MD.

October 29, 1998  Regulation of expression of antimicrobial peptide genes in the airway. Dept. of Biochemistry and Mol. Biol., UMDNJ, Newark, NJ.

November, 18, 1998  Respiratory defense mechanisms. Dept. of Anesthesiology, UMDNJ, Newark, NJ.

October 6, 1999  Defensins in host defense of the mammalian respiratory tract. Zymogenetics, Inc., Seattle, WA.

January 24, 2000  Antimicrobial peptides in host defense of the airway. Department of Biochemistry, Stellenbosch University Medical School, Tygerburg, South Africa.

January 26, 2000  Antimicrobial peptides of vertebrates. Department of Biochemistry, Stellenbosch University, Stellenbosch, South Africa.

March 8, 2000  Antimicrobial peptides in host defense of the airway. Dept. of Microbiology, University of Pennsylvania School of Medicine, Philadelphia, PA.


January 16, 2002  Antimicrobial Peptides in Host Defense, Emerging Infectious Diseases Program, USUHS, Bethesda, MD.

March 31, 2003  Beta-defensins and the innate immune response of mucosal epithelia. Louisiana State University Dental School, New Orleans, LA.

April 1, 2003  Antimicrobial peptides and host-pathogen interactions in the mammalian airway. Dept. of Microbiology, LSU Medical School, New Orleans, LA.

September 16, 2003  The Innate immune response of mucosal epithelia. Dept. of Vet. Pathol., Iowa State University School of Veterinary Medicine, Ames, IA.

January 11, 2004  Differential regulation of innate immune genes by A. actinomycetemcomitans. Mark Wilson meeting on Oral Microbiology and Immunology. San Juan, PR.

February 17, 2004  The Innate immune response of mucosal epithelia. Dept. of Molecular Biosciences, North Carolina State College of Veterinary Medicine, Raleigh, NC.
March 18, 2004  The Innate immune response of mucosal epithelia. Dept. of Biological Sciences, Case Western Reserve University School of Dentistry, Cleveland, OH.
July 6, 2004  The Innate immune response of mucosal epithelia. Dept. of Medicine, Infectious Disease Division, UMDNJ-New Jersey Medical School, Newark, NJ.
July 20, 2005  The Innate immune response of mucosal epithelia. SUNY Stony Brook School of Dental Medicine, Stony Brook, NY.
November 16, 2005 Antimicrobial Peptides in Host Defense, Emerging Infectious Diseases Program, USUHS, Bethesda, MD.
January 17, 2006  The Innate immune response of mucosal epithelia. Department of Pathobiology, Lerner Research Institute, Cleveland Clinic, Cleveland, OH.
May 12, 2006  Regulation of Innate Immunity Genes in Mucosal Epithelium. Dept. of Biochemistry, UMDNJ, Newark, NJ.
August 15, 2006  Induction and Inhibition of Innate Immunity Gene Expression in Mucosal Epithelium. Dept. of Oral Biology, Ohio State University Dental School, Columbus, OH.
September 27, 2006 Antimicrobial Peptides in the Airway. Dept. of Chemical Biology, Stevens Institute of Technology, Hoboken, NJ.
November 8, 2006  Induction and Inhibition of Innate Immune Gene Expression in Mucosal Epithelia. Dept. of Basic Sciences, NYU School of Dentistry, New York, NY.
December 11, 2006 Antimicrobial Peptides in the Oral Mucosa: Roles in Host Defense and Therapeutics. SUNY Stony Brook School of Dental Medicine, Stony Brook, NY.
November 14, 2007 Antimicrobial Peptides in the Oral Mucosa: Roles in Host Defense and Therapeutics. Indiana section AADR invited speaker; Indiana University School of Dentistry, Indianapolis, IN
August 21, 2008  The potential of Vitamin D in promoting and enhancing innate immunity in the oral cavity. Johnson & Johnson, Inc., Morris Plains, NJ.
November 19, 2008 The Innate immune response of mucosal epithelia. Department of Biological Sciences, Seton Hall University. South Orange, NJ.
August 18, 2010 Vitamin D-mediated Regulation of Innate Immunity in Mucosal Epithelia. Distinguished speakers series, Humigen, Inc. Hamilton, NJ.
May 23, 2011  Modulating the Innate Immune Response in Mucosal Epithelia to Enhance Antimicrobial Host Defenses. Center for Oral Health Research, University of Kentucky Dental School, Lexington, KY.
Oral presentations at conferences


August 23, 1999  Innate immunity in the human airway. Benzon Symposium, Copenhagen, Denmark.


October 9, 2002  Antimicrobial activity in the blood of the saltwater crocodile, Crocodylus porosus, 16th Crocodile Specialist Group Meeting. Gainesville, FL.

January 11, 2003  Factors affecting β-defensin gene expression in mucosal epithelia. Oral Microbiology and Immunology Research Group, Longboat Key, FL.

February 7, 2005  Actinobacillus actinomycetemcomitans induction of innate immunity in human and rat gingival epithelium. Mark Wilson Conference on Oral Microbiology and Immunology. San Juan, PR.

March 9, 2005  Airway Innate Immune Mechanisms. 5th Gordon Conference on Antimicrobial Peptides. Ventura, CA.

January 30, 2006  Activity of novel antimicrobial peptide-mimetics against oral pathogens. Mark Wilson Conference on Oral Microbiology and Immunology. San Juan, PR.

January 28, 2008  Induction of antimicrobial peptide gene expression and activity in epithelial cells by vitamin D. Mark Wilson meeting on Oral Microbiology and Immunology. Cancun, Mexico.


February 8, 2009  Activity of antimicrobial peptide mimetics against oral pathogens. Mark Wilson Meeting on Oral Microbiology and Immunology. St. Maarten, Netherlands Antilles.

October 17, 2009  Induction of innate immune response genes in airway epithelial cells by 1,25(OH)₂ vitamin D₃. North American Cystic Fibrosis Conference. Minneapolis, MN.

February 7, 2010  Vitamin D-mediated innate immunity in gingival epithelial cells. Mark Wilson meeting on Oral Microbiology and Immunology. Cancun, Mexico.


February 5, 2011  Vitamin D-mediated induction of innate immunity in gingival epithelial cells. Mark Wilson Conference on Oral Microbiology and Immunology. San Juan, PR.

March 16, 2011  Inhibition of beta-defensin induction by herpes simplex virus. International Association for Dental Research Conference. San Diego, CA.
<table>
<thead>
<tr>
<th>Role</th>
<th>Granting Agency</th>
<th>Award (TDC)</th>
<th>Dates</th>
<th>% effort</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Co-PI</td>
<td>NIH 2R44 DE018371</td>
<td>$975,996</td>
<td>9/10-8/12</td>
<td>20%</td>
<td>A novel antimicrobial peptide mimetic for oral candidiasis</td>
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<tr>
<td>P.I.</td>
<td>Foundation of UMDNJ</td>
<td>$13,190</td>
<td>7/1/94-6/30/95</td>
<td>15%</td>
<td>The Role of Antimicrobial Peptides in Host Defense of the Airway</td>
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<td>P.I.</td>
<td>NOAA R/N-95003</td>
<td>$117,000</td>
<td>8/1/95-2/28/98</td>
<td>25%</td>
<td>Antimicrobial Peptides From Fish Skin</td>
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<td>P.I.</td>
<td>USDA 9504034</td>
<td>$150,000</td>
<td>9/15/95-9/1/98</td>
<td>20%</td>
<td>Genetic Analysis of an Antimicrobial Peptide Gene Family in Cattle</td>
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<td>P.I.</td>
<td>NIH R29HL53400</td>
<td>$280,000</td>
<td>7/1/95-6/30/00</td>
<td>50%</td>
<td>Antimicrobial Peptide Gene Expression in Airway Cells</td>
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<td>P.I.</td>
<td>NOAA R/BT-9801</td>
<td>$150,000</td>
<td>3/1/98-9/30/00</td>
<td>5%</td>
<td>Antimicrobial Peptides From Fish Skin</td>
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<td>P.I.</td>
<td>CF Foundation</td>
<td>$60,000</td>
<td>7/1/97-6/30/00</td>
<td>5%</td>
<td>A Mouse Model For Airway Host Defense</td>
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<td>P.I.</td>
<td>Antibody Systems, Inc.</td>
<td>$94,000</td>
<td>2/1/99-6/30/01</td>
<td>5%</td>
<td>Antimicrobial Peptides From The Komodo Dragon Research on Defensins</td>
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<td>P.I.</td>
<td>Zymogenetics, Inc.</td>
<td>$50,000</td>
<td>2/1/00-1/31/01</td>
<td>5%</td>
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<td>P.I.</td>
<td>UMDNJ Dean's Bridging Fund</td>
<td>$15,000</td>
<td>1/1/01-12/31/01</td>
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<td>Co-I.</td>
<td>NOAA Sea Grant College</td>
<td>$113,389</td>
<td>3/01/00-2/28/04</td>
<td>5%</td>
<td>Production of Pleurocidin for Food Applications</td>
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<td>Mentor</td>
<td>USEPA STAR fellowship</td>
<td>$34,000</td>
<td>8/1/03-7/31/04</td>
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<td>Effects of air pollutant particles on airway host defense</td>
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<tr>
<td>Mentor</td>
<td>NIH</td>
<td>$102,200</td>
<td>4/1/04-3/31/06</td>
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<td>Postdoctoral fellowship supplement to R01 DE14897</td>
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<tr>
<td>P.I.</td>
<td>NIH R01 DE14897</td>
<td>$900,000</td>
<td>5/1/02-3/31/06</td>
<td>20%</td>
<td>Bacteria-Host Cell Interactions In Periodontal Disease</td>
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<tr>
<td>P.I.</td>
<td>NIH R01 HL67871</td>
<td>$800,000</td>
<td>7/1/03-6/30/08</td>
<td>10%</td>
<td>Host-Pathogen Interactions In the Mammalian Airway</td>
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<td>Co-I.</td>
<td>NIH R01 GM686636</td>
<td>$1,000,000</td>
<td>5/1/03-4/30/08</td>
<td>10%</td>
<td>Toll-like Receptors, adenosine and angiogenesis</td>
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<tr>
<td>P.I.</td>
<td>Foundation of UMDNJ</td>
<td>$40,000</td>
<td>7/1/07-6/30/08</td>
<td>10%</td>
<td>Bacteria-Host Cell Interactions In Periodontal Disease</td>
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<td>P.I.</td>
<td>Polymedix, Inc.</td>
<td>$78,000</td>
<td>6/1/04-6/30/08</td>
<td>10%</td>
<td>Activity of antimicrobial peptide-mimetics on oral pathogens</td>
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<td>PI</td>
<td>Cystic Fibrosis Foundation</td>
<td>$40,000</td>
<td>4/1/07-3/31/08</td>
<td>10%</td>
<td>Induction of antimicrobial activity in airway surface fluid by Vitamin D</td>
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</tbody>
</table>
Past grants, cont’d

Co-I NIH 1R01 DE16306 $825,000 9/1/05-8/30/09 5% Attachment of Oral Actinobacillus to epithelium
Co-I NIH 1R21 AI072247A1 $275,000 12/1/07-11/30/09 10% Human β-Defensin-1 in HSV-1 Innate Immunity
P.I. NIH (PI of subcontract) 1R43 DE18371A2 $60,000 4/08-3/09 10% A Novel Antimicrobial Peptide-Mimetic for Oral Candidiasis Summer student supplement to R21 DE18781
Mentor 3R21 DE18781S1 $10,640 6/09-5/10 -

P.I. NIH 1R21 DE18781 $275,000 9/08-8/10 20% Vitamin D induction of antibacterial activity in gingival cells
P.I. NIH 1R03ES016851-01 $100,000 7/08-6/10 10% Inhibition of Lung Defenses by Air Pollutant Particulates

Grants, Pending:

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<th>Role</th>
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<tr>
<td>PI</td>
<td>NIH R01DE22723</td>
<td>4/11-3/17</td>
<td>Vitamin D and Periodontal Disease</td>
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<tr>
<td>PI</td>
<td>NIH R21AI100379</td>
<td>4/11-3/17</td>
<td>Vitamin D and Innate Immunity to Respiratory Infections</td>
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Grants, In preparation:

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<th>Role</th>
<th>Granting Agency Type</th>
<th>Title</th>
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<tr>
<td>PI</td>
<td>NIH R21</td>
<td>Antimicrobial Peptide Mimetics Activity in Vaginal Candidiasis</td>
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</table>

Patents:
Novel Tracheal Antimicrobial Peptides, US Patent No. 5,432,270
Methods of Immune Modulation, Application number 61/362,088, Patent Pending

Membership in Professional Societies:

American Association for the Advancement of Science
American Association of Immunologists
American Board of Medical Genetics
American Society of Microbiology
American Society of Cell Biology
International Association of Dental Research
Sigma Xi
Editorial and review responsibilities:
Journal review:

Editorial Boards:
Associate Editor, Journal of Immunology
Editorial Board, Molecular Oral Microbiology

Ad hoc manuscript reviewer for:
African Journal of Biotechnology
American Journal of Respiratory Cell and Molecular Biology
American Journal of Respiratory and Critical Care Medicine
American Journal of Pathology
American Journal of Physiology-Lung Cellular and Molecular Physiology
Antimicrobial Agents and Chemotherapy
Archives of Oral Biology
Biochimica et Biophysica Acta
Biotechniques
Blood
BMC Biology
BMC Microbiology
BMC Immunology
Canadian Journal of Microbiology
Canadian Journal of Physiology and Pharmacology
Cellular Microbiology
Chemotherapy
Combinatorial Chemistry and High-Throughput Screening
Comparative Biology and Physiology
Clinical and Experimental Immunology
Current Microbiology
Current Molecular Medicine
Cytokine
Developmental and Comparative Immunology
European Journal of Clinical Investigation
European Journal of Immunology
European Journal of Pharmacology
Expert Opinion on Investigational Drugs
FEBS Microbiology Letters
Gastroenterology
Gene
Genome Biology
Genes and Immunity
Human Gene Therapy
Immunity
Immunology
Infection and Immunity
Integrative Zoology
International Immunology
International Journal of Dental Hygiene
International Journal of Tuberculosis and Lung Research
International Journal of Peptides
Journal of Biological Chemistry
Ad hoc manuscript reviewer, cont’d

Journal of Biomedicine and Biotechnology
Journal of Cell Science
Journal of Clinical Investigation
Journal of Clinical Periodontology
Journal of Cystic Fibrosis
Journal of Dental Research
Journal of Fish Diseases
Journal of Histochemistry and Cytochemistry
Journal of Immunology
Journal of Leukocyte Biology
Journal of Medical Microbiology
Journal of Neurochemistry
Journal of Neuroimmunology
Journal of Orthopedic Research
Journal of Pediatrics
Journal of Periodontal Research
Journal of Periodontology
Microbial Pathogenesis
Molecular and Cellular Biochemistry
Molecular Biology Reports
Nature
Pediatric Research
Peptides
Physiological Genomics
Proceedings of the National Academy of Sciences, USA
Process Biochemistry
Recent Patents on Cardiovascular Drug Discovery
Regulatory Peptides
Reproduction
Respiratory Research
Saudi Medical Journal
Tubercle and Lung Disease
Grant Review:

Grant Review Study Section Member:

1999 NIH, Bacteriology and Mycology 2 study section, Special emphasis panel
1999, 2000 ad hoc member, NIH, Oral Biology and Medicine 1 study section
2000 NIH/ NIDDK RFA Panel on Foodborne Illnesses
2003, 2004 ad hoc member NIH, Bacteriology and Mycology 2 study section
2003 ad hoc member NIH, Oral, Dental and Craniofacial Sciences study section
2003 NIH/NIDCR Special Emphasis Panel-Dental SBIR/STTP
2003 NIH/NIDCR RFA Panel – Periodontitis Genomics/Proteomics
2004-2008 Member, NIH/NIDCR Special Grant Review Study Section (Co-chair, 2005)
2005 ad hoc member, NIH, Skeletal Biology Developmental Diseases study section
2006 NIH/NIDCR SEP (R13 grant review panel) ZDE MK(18)
2007 NIH/NIDCR SEP ZDE1 PZ(13), P01-Oral Manifestations /HIV-AIDS
2008 NIH/NIAID SEP Regional Centers of Excellence in Biodefense
2008, 2009 NIH/NIAID SEP, ZAI1 P01 Study sections.
2008-present NIH/NIDCR ODCS conflict study section
2010 NIH/NIDCR RFA Study Section
2010 NIH RC4 Grant Review
2010 NIH/NEI SEP Neuronal Injury and Eye Diseases Study Section
2011 NIH/NIDCR T32, T90/R90 Study section
2011 ad hoc member NIH, Oral, Dental and Craniofacial Sciences study section

Ad hoc grant reviewer:

1996-present USDA (Animal Genome and Genetic Mechanisms study section)
1996-present Netherlands Asthma Foundation
1998-present Israel Science Foundation
2000 Cystic Fibrosis Foundation
2000 Program reviewer, Cystic Fibrosis Foundation Review panel for Genome Centers.
2001, 2006 Irish Health Research Board
2002 Science Foundation Ireland
2003, 2005 Kentucky Science and Engineering Foundation
2003-present Wellcome Trust
2004 Campbell Foundation for AIDS Research
2005 Scottish Hospital Endowments Research Trust
2005 Faculty Research Committee, National University of Singapore
2005 Atlantic Innovation Fund
2006, 2008 NJMS-UMDNJ Foundation
2008 Singapore Biomedical Research Council
2011 Netherlands Organisation for Health Research and Development
Supervisory responsibilities:

1. Research Assistants
   Janice Rhodes
   Danielle Laube
   Maribel Vega
   Tianyu Ren
   Helly Shah
2. Graduate Students (thesis advisor)
   Alexander Cole (Ph.D., 1998)
   Alejandro Viera (Ph.D., 2002)
   Diana Legarda (Ph.D., 2003)
   Marcia Klein-Patel (Ph.D., 2004)
   Marwa Salman (M.S., 2006)
   Nicholas Beckloff (Ph.D., 2007)
   Eleith Brown (M.S., 2008)
   Isaura Rigo (M.S., 2010)
   Dianna Zosche (M.S., 2010)
   Andrew Malsbury (M.S., 2011)
3. Graduate Students (laboratory rotations)
   Anamari Cruz
   Patrick Tepper
   Jennifer Lussier
   David Cioccon
   Grace Pinhal-Enfield
   Randy Alcendor
   Jennifer Roszkowski
   Elena Filaretova
   Justyna Korczeniewska
   Piotr Pierog
   Arash Baseri
   Shaina Felsenstein
   Gretter Mugica
   John Zalesky
   Danielle Lombardozzi
   Lily Huang
   Constantine Stavrinoudis
   Priya Patel
   Korsica Lassiter
   William DiMauro
   Joelle Prose
   Monica Patel
   Ricky Parikh
   Keng Lor
4. Postdoctoral Fellows
   Karen Winkowski, Ph.D.
   Vicki Kaiser, Ph.D.
   Amy Kurland, M.D.
   Sungaun Yun, Ph.D.
   Laura McMahon, Ph.D.
5. Summer Medical/Dental Students
   Rupa Patel
   Andre Sotelo
   Eugene Rubachi
   Ben Kaufmann
   Christopher Comors
   Joshua Abrahams
   Radha Yamarthy
   Kathleen Dunn
   Nitish Gangoli
   Naina Kaushal
6. Undergraduate Students
   Tammy Castro
   Michael D’Alessio
   Flavia Lega
   Magdalena Kryzyewska
   Sherif Saad
   Mona Patel
   Nitin Rajput
   Yasmina Abbasi
   Kyell Schwarz
   Kristine MacDonald
   Lurrena Pennant
   Cynthia Irungu
   Urvashi Pandit
   Aviva Azar
   Arielle Hirschfeld
   Amy Pinter
7. Summer High School Students
   Daniel Gonzales
   Brian Hagemiller
   Tamara Beckford
   Benjamin Hobbs
   Kendall Hill
   Brandon Smithson
   Mindy Weinman
8. Medical Fellow
   Ceasar Agagan, M.D.
9. Foreign Graduate Student Intern
   Jorge Masso, CIBNOR, La Paz, Mexico
Membership on University, College or Graduate Academic Committees:

**UMDNJ Committees:**
1996-2001  IAIMS Committee
2000-present  Biocomputing advisory group
2003-present  AAUP Board of Governors
2003  AAUP appeals committee
2006-present  UMDNJ Conflict of Interest committee
2007-present  UMDNJ-Newark Campus committee on research integrity

**NJDS Committees:**
2002-present  Research committee (Chair, 2005-2009)
2004-2005  Accreditation steering committee
2004-2005  Accreditation committee, research working group (Chair)
2004-present  Director, DMD/Ph.D. program
2005  Department of Oral Biology Faculty Search Committee
2009-2010  Student-Faculty Affairs committee
2011  Diagnostic Sciences Department Chair Search Committee

**NJMS Committees:**
1995-96  LCME Self-Study Steering Committee
1995-96  LCME Graduate Education/Basic Science-Research Sub-committee
1995-96  Committee on Salary Sources and External Funding
1996-2002  Institutional Planning and Development Committee
1998-2002  MD/Ph.D. program committee
1998-2000  Biomedical Research Committee
2000  Strategic Planning Committee-research subcommittee

**GSBS Committees:**
1994-2002  Graduate Program Director, Dept. of Anatomy.
1994-present  Department representative, Executive Council, GSBS.
2001  Multidisciplinary Program Committee
2002-present  Director, Ph.D Program in Biomedical Sciences
2004  Umbrella program subcommittee
2009-present  Introduction to Biomedical Sciences curriculum committee
GSBS Thesis advisory committees:
Ming Xiong, Dept. of Anatomy
Alexander Cole, Dept. of Anatomy
Jeffrey Upperman, Dept. of Anatomy
Alejandro Viera, Dept. of Anatomy
Jiang Lan, Dept. of Physiology
L. Page Fredericks, University of Louisiana - Lafayette
Diana Legarda, Dept. of Anatomy
Marcia Klein-Patel MD/Ph.D. program
Nicholas Beckloff, Ph.D. program in Biomedical Sciences
Rabia Khalid, MSBS
Monique Brown, Dept. of Pathology
Grace Pinhal-Enfield, Dept. of Cell Biology
Erika Villanueva, MS
Danielle Laube, MS
Marwa Salman, M.S.
Steve Cagas, Dept. of Microbiology
Eleith Brown, M.S.
Allison Pavlosky, M.S.
Isaura Rigo, M.S.
Dianna Zosche, M.S.
Farina Haleem, M.S.
Maria Romero, M.S.
Bergelink Knipping, M.S.
Ioana Vlad, program in Biomedical Sciences
Leila Mady, MD/Ph.D. program

GSBS Thesis examination committees:
Wen Chen, Dept. of Biochemistry
Kristin Gentile, Dept. of Anatomy
Manbong Wu, University of British Columbia
Jean-Marie Houghton, MD/Ph.D. program
Achal Bhatt, Dept. of Microbiology
Olive Jean Burrows, Dept. of Food Science, Rutgers University
Xiuying Liu, Dept. of Cell Biology and Molecular Medicine
Gunjan Gupta, Dept. of Pathology
Di Feng, Dept. of Pathology
Stan Grinberg, Dept. of Cell Biology and Molecular Medicine
Sivaramanan Prakasan, Dept. of Periodontics, Stony Brook University
Alok Upadhyay, Dept. of Biochemistry
Cristina Rozo, Biomedical Sciences
Bupesh Giri, Bharathidasan University, Tiruchirapalli, India
Dare Ajibade, Departement of Biochemistry
GSBS Qualifying examination committees:
Amauri Cruz, Dept. of Anatomy
Jeffrey Uperman, Dept. of Anatomy
Alejandro Viera, Dept. of Anatomy
Alexander Cole, Dept. of Anatomy
Jennifer Lussier, Dept. of Anatomy
Paul Dunman, Dept. of Microbiology
Achal Trivedi, Dept. of Microbiology
Karla Crenshaw, Dept. of Microbiology
Lisa Macera-Bloch, Dept. of Microbiology
Devi Mukherjee, Dept. of Microbiology
Diana Legarda, Dept. of Anatomy
Jean-Marie Houghton, MD/Ph.D. program
Monique Brown, Dept. of Pathology
Xueying Liu, Dept. of Anatomy
Naomi Bergman, Dept. of Microbiology
Grace Pinhal-Enfield, Dept. of Anatomy
Elisa Borruso, Dept. of Microbiology
Jeanette Wilmanski, Dept. of Cell Biology
Di Peng, Dept. of Pathology
Joseph Quispe, Ph.D. program in Biomedical Sciences
Eduardo Areche, Dept. of Biochemistry
Steve Cagas, Dept. of Microbiology
Richard Wnek, Dept. of Pathology
Alok Upadhyay, program in Biomedical Sciences
Faith Jamshidi, program in Biomedical Sciences
Marukh Banday, Dept. of Microbiology
Zhaoyou Sun, program in Biomedical Sciences
David Mwangi, program in Biomedical Sciences
Ioana Vlad, program in Biomedical Sciences
Jyoti Joshi, program in Biomedical Sciences
Fuhua Xu, program in Biomedical Sciences
Leila Mady, MD/Ph.D. program
References:

Dr. Robert E.W. Hancock
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Room 232 - 2259 Lower Mall
Vancouver, BC V6T 1Z4 CANADA
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email: maz5@georgetown.edu

Dr. Aaron Weinberg
Department of Biological Sciences
Case Western Reserve University
School of Dental Medicine
2124 Cornell Road
Cleveland, OH 44106-4905
(216) 368-6729
email: aaron.weinberg@case.edu
November 1, 2011

Dr. Ann Progulske Fox  
Dept. of Oral Biology  
University of Florida  

Dear Ann,

It gives me great pleasure to write a letter of recommendation on behalf of Dr. Gill Diamond who has applied to your institution for a position. I know Gill very well having written a review with him some years ago, although we have not collaborated research-wise. He has published 46 peer reviewed papers and 15 peer reviewed reviews to date with 21 of these (and 2 submitted) coming in the past 5 years. This is excellent progress and attests to a vibrant research program. These manuscripts reflect in particular insights into the mechanisms of defensin expression and action in mucosal or epithelial contact by bacteria, with particular emphasis on oral pathogens. Overall he is considered one of the leaders in this area worldwide. The quality and reach of his research is best judged by his election by his peers as Vice Chair of the Gordon Conference on Antimicrobial Peptides held in Italy in 2011 and subsequently Chair of the 2013 conference, this being the premier antimicrobial peptides meeting in the world. During the past decade he has consistently maintained strong research funding, another endorsement of his research success.

Regarding teaching, Gill has graduated 5 Ph.D.s and 4 M.Sc students, one of whom Alex Cole I also know quite well and who is making a considerable impact in the antimicrobial peptides field and has taught several undergraduate courses as instructor or director. He has also served on several UMDNJ committees, with particular strong representation on conflict of interest and research integrity committees and served as a mentor and co-chair of an NIH study section. He is a terrific person to deal with and would make an excellent colleague.

Overall I have no hesitation in recommending Gill Diamond for a position in your Department.

Sincerely yours,

[signature]

Robert E.W. Hancock, PhD, OC, FRSC  
Canada Research Chair in Microbiology
December 27, 2011

Dr. Ann Pregulski-Fox, PhD
Professor, Department of Oral Biology
college of Dentistry,
University of Florida
Gainsville, FL 32611

RE: Dr. Gill Diamond

Dear Dr. Pregulski-Fox,

It is my pleasure to provide this letter of reference on behalf of Dr. Gill Diamond (tenured Associate Professor at UMDNJ). I believe my insights can best serve you as regards Gill’s research accomplishments and his impact on the field of mucosal immunity; specifically in the area of antimicrobial peptides (AMPs). AMPs are host-defense molecules produced by all living organisms, including bacteria, fungi, plants, invertebrates, vertebrates as well as humans. There is now evidence that these peptides represent key components at epithelial surfaces, where they play an important role in defining the composition of microbiota and its interaction with the host. In addition to their microbicidal activity, several AMPs function also as chemoattractants for cells of both the adaptive and innate immunity and are able to modulate immune responses. Thus, AMPs constitute a link between innate and adaptive immunity. The field is growing and of intense interest to both federal and corporate funding sources.

I first met Gill at the inaugural Gordon Conference on AMPs in 1997. Gill had already distinguished himself as a successful postdoc, having studied with Michael Zasloff and Chuck Bevins at the University of Pennsylvania. With their guidance, Gill was instrumental in discovering the first mammalian beta defensins; i.e., tracheal antimicrobial peptide (TAP) (Diamond et al, PNAS, 1991); an AMP exclusively expressed in bovine mucosal epithelial cells. That seminal paper led to further studies by that group and others in the area of cystic fibrosis, which persists to this day. It also led to vigorous investigations by numerous laboratories in Europe and the US to identify beta defensins in humans. Jens Schroder’s
group at Kiel University in Germany discovered human beta defensins 1, 2 and 3 in skin epithelium. Tom Ganz’s group at UCLA discovered beta defensins in urogenital epithelium and my team discovered beta defensins in the oral epithelium. I owe it to Gill, Michael and Chuck for getting me into the field, as my lab was interested in finding if AMPs play a role in wound healing and maintaining microbial homeostasis in the oral cavity.

Since his seminal discovery, Gill, as an independent investigator, has been studying regulation and expression of beta defensins in various epithelial and adaptive immune cells, the involvement of inflammatory-response elements in coordinating expression of AMPs, microbial and viral regulation of AMP expression (most recently by the oral pathogen A. actinomycetemcomitans) and air-borne pollutants and their ability to inhibit AMP airway epithelial cell expression. Most recently, Gill has been focusing more attention on exploiting AMPs for translational purposes. In that regard, he has found that vitamin D mediates induction of LL-37, a potent microbicidal and immunoregulatory AMP, in gingival epithelial cells, and has been developing AMP-mimetics to combat periopathogenic biofilms and inflammation.

While I may be subjective in my assessment of Dr. Diamond’s impact on the field, his publication record and recognition by others in the field speaks for itself. Aside from the splendid publications in the areas I alluded to above, he has 13 reviews in the topic of AMPs. Why would editors of journals invite him to contribute his insights if not for the fact that he is seen as a leader in the field? Of the PhD students Gill has mentored, I know of two who have attained leadership roles of their own. Alex Cole is a successful independent investigator at the University of Central Florida, and Nick Beckloff is the director of the genomics core at my university’s medical school. At the 8th Gordon Conference on AMPs, held in Italy last May, Gill was elected vice Chair, meaning that he will co-Chair the 9th Gordon Conference on AMPs in 2013 in Ventura, CA. Finally, Gill has been consistently funded from government, industry and foundations throughout his professional career. Therefore, I can say, without hesitation, that Dr. Diamond is a leader in the field of antimicrobial peptides with an international reputation.

While I cannot provide personal perspectives on Gill’s teaching capabilities, his CV demonstrates his varied teaching experience as course director and instructor of a number of courses, ranging from cell biology and genetics to ethics in science, at various institutions, as well as having been a thesis advisor to 30 graduate students over the last 11 years. Moreover, he appears to have extensive experience in both graduate school and research administration, as attested by his extensive supervisory responsibilities for graduate and undergraduate students, as well as his involvement in both medical and dental school committees at UMDNJ.

If I had the opportunity to hire Gill at my institution, I wouldn’t hesitate one bit. If this opportunity befalls your institution, and it fits with your strategic plan and Gill’s skill set, I would strongly urge you to not waiver either.

Sincerely,

Aaron Weinberg, DMD, PhD