Academic Dental Careers Fellowship Program (ADCFP) Fellowship Plan 2013

STUDENT SCHOOL

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Personal Objectives

The objectives of the fellowship program are to:
1. Gain insight into the life of a dental educator
2. Improve oral and written communication
3. Expand/augment my research skills

Outcome measures include, but are not limited to, the following:
- Number of hours spent in each form of teaching
- Student ratings of my performance
- Faculty rating of my teaching
- Self-reflection of my teaching
- Abstracts submitted from research
- Poster presentations
- Publication of research
Mentor-Fellow Meeting Schedule

Dr. XXXX and I have agreed to meet a minimum of two times monthly. Our schedule permits meetings on Wednesdays during the lunch hour. If need be, appropriate rescheduling will be made in order to meet the biweekly requirement.

Career Reflection Essay (excerpt)

My first glimpse of education from an instructor's prospective came during my junior year of undergraduate studies when I became involved with a campus organization called XXXX. The XXXX went to great lengths to promote community service and leadership development. One of the initiatives was weekly tutoring in both math and reading to inner city grammar school children. Enter Marquez: a third grader with a penchant for art, and my first tutee. Our first encounter was met with some tribulation as he was disinterested in an after-school program focused on course work. He deemed Spiderman video games and drawing more important than spelling tests and multiplication. After months of weekly sessions, there was very little improvement in his reading comprehension; I had to come up with a new strategy. With some research, I stumbled upon a supplemental lesson plan produced by the U.S. Department of Education called “Spider-Man and Amazing Adventures.” These language activities actually had Marquez engaged – there was marked success after a short period of time. He and I continued to work together throughout the school year, and I like to believe that though he was able to learn times tables and improve his reading, the lessons I learned from him are far more valuable. Since then, I've found my experiences as a tutor to first and second year dental students to be just as enjoyable. It's a truly rewarding experience and I anticipate this unique program to offer the same benefits.

Teaching Assignments

Clinical
I will serve as an assistant preceptor for the XXXX clinical rotation, an experiential learning for sophomore dental students. During the Spring semester, second year dental students meet Wednesdays from 9am-12pm to admit new patients to the clinic. They record medical history, take radiographs, complete risk assessments, and perform dental examinations. I will be available during this time to assist with the process. XXXX also gives me an opportunity to participate in inter-professional education (IPE). Nutrition students and dental students work together to perform dietary assessment of the patients. In addition, a faculty member/physician from the Department of XXXX serves as a medical preceptor to the dental students in the program. The clinical activities are supplemented with group discussions lead by content experts in cariology, periodontics, nutrition, pathology, pediatric dentistry, and internal medicine.
Didactic
I will provide didactic instruction to first and second year dental students in Preventive Dentistry in the Fall semester and Cariology in the Spring.

Laboratory
I will be an instructor in the simulation laboratory for Basic Procedures in Fixed Prosthodontics and Basic Procedures in Operative Dentistry for both the first and second year students. This will take place during both the Fall and Spring semesters.

Small Group
During weeks five through nine of the Fall semester on Monday, Wednesday and Friday, I will be a facilitator in the XXXX sessions. I will assist eight to nine first year students achieve learning objectives for the course through 2-hour small group sessions per week.

Research Project Description

Under the guidance of Dr. XXXX, I will be assessing dental and dental hygiene students’ knowledge and opinion of XXXX. I will first develop a research protocol/proposal with the guidance of my mentor and subsequent to necessary approval from the Institutional Review Board (IRB), I will collect data through self-administered questionnaires. I will analyze the data with the mentor’s help, submit abstracts to local and national meetings, and submit manuscript(s) to dental journals. I will develop a poster for presentation at local and national meetings including the 2014 ADEA Annual Session & Exhibition in San Antonio, Texas. This will not only allow me to reflect on the program, but provide an opportunity to network with dental school administrators and faculty—a crucial aspect to this fellowship. I plan on submitting a manuscript for publication at the conclusion of my research. Please see the timeline below.

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**Other Activities Planned**

Additionally, I will be participating in seminars and fellowships offered by the University Center XXXX, which “is dedicated to working with the faculty, students, and staff at XXXX University to create an enriching and rewarding experience for everyone.” XXXX offers noontime seminars every Thursday on a variety of topics related to learning and teaching throughout the academic year. Topics range from “Leading Successful Discussion Classes” to “Social Justice and the Research University”. I hope to attend at least 70% of these seminars. In addition, whenever time presents, I will be attending the seminars at the Center for XXXX. Topics at XXXX seminars include: quality improvement of facilitation skills, tools for interactive lecturing, etc.
2013-2014 ADEA ADCFP/Gies Fellowship Plan
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Personal Objectives

1. **Explore the different options for teaching and faculty positions available following a DMD education**
   There are a variety of faculty career options with different commitments in regards to time and focus on teaching, research, and clinical time. I would like to gain a holistic understanding of what options are available to a recent DMD graduate, the process of applying to these positions, and explore the various avenues of advancement in a faculty career.

   **Outcome measure:** Through interviews with various faculty members, including deans, department chairs, senior, mid-career, and junior faculty I will compile a portfolio that records the various routes to professional advancement and opportunities in academia. I will select professors with different levels of research, teaching, and clinical appointments and explore their motivations for choosing their specific career track and the steps they took to get where they are now.

2. **Consider postgraduate opportunities as they relate to advancement in an academic career**
   Advanced post-graduate education is a necessity for success in an academic career. Several opportunities are available to pursue a Ph.D., including a combined DMD-Ph.D. program at my current dental institution. There is also the option of completing a Masters or Ph.D. in a specialty/residency program.

   **Outcome measure:** While exploring various career tracks in academia, I will research post-graduate education opportunities that will fulfill the requirements to be a competitive applicant for these various career choices. I will identify and outline a specific career path that interests me most, and organize a timeline to achieve my educational and career objectives for the next 10 years.

3. **Enhance my communication and teaching skills**
   As a teaching assistant for the DMD course Periodontic Treatment Planning and Disease Control I will give a lecture to the second year DMD students, assist in their preclinical laboratory, and facilitate a case study discussion. This teaching experience will undoubtedly enhance my ability to convey my knowledge to others and will be an opportunity to identify my strengths and weaknesses as a teacher both in the clinic and in the classroom. I will also take the opportunity to shadow my mentor in the DMD and graduate periodontology clinic to observe the expectations and practices of a clinical faculty.

   **Outcome measure:** Following the delivery of a lecture to the DMD students, I will include a brief survey to evaluate how the students felt my presentation went, with respect to delivery, clarity, relevance to their education, and learning outcome. I will
include a comments section to encourage extemporaneous feedback that will help me to identify areas of potential growth as an educator.

4. **Collaborate with faculty on an educational research study.**
   My background in research has focused on social science and basic and clinical science. I enjoy my previous areas of involvement and would like to continue to pursue projects in basic and clinical sciences; however, an opportunity arose for me to become involved in educational research that was a suitable project to complete for the ADCFP/Gies Fellowship. Educational research is a growing field that would benefit from the contribution of researchers who are experienced in reporting scientific data and methodology. I look forward to the opportunity to work alongside experts in the field and broaden my scope of research interests and experiences.

**Outcome measure:** At the conclusion of my ADCFP/Gies Fellowship, I will present a poster that discusses my research at the 2014 ADEA conference. I will also submit a draft for publication in a journal, such as the Journal of Dental Education or in FORUM. My project is a part of a more extensive on-going study, and I plan to become involved in later phases of the study.
Teaching Assignments

- Classroom Presentation Fall 2013. Periodontic Treatment Planning and Disease Control
- Group Case Conference Fall 2013. Periodontic Treatment Planning and Disease Control
- Lab Instruction - Fall 2013. Clinical: Act as a teaching assistant in the DMD pre-clinical introduction to periodontics
- Lab Shadowing- Fall 2013 and Spring 2014: Shadow Dr. XXX in DMD clinics as she supervises periodontal treatment on comprehensive care patients.

Research Project

**Topic area and title:** Perceptions of wellness and burnout among dental students.

**Synopsis of the project: rationale, basis study design, and methodology, including data collection and analysis:**

Few studies have assessed dental students' opinions of dental school. Limited evidence from investigations among other health professional students has shown that students may be affected by issues including burnout and a decrease in self-perceived wellness.

The aim of this study is to measure lack of perceived wellness and burnout in graduate and professional (dental) students and to determine what factors can lead to these endpoints.

An online questionnaire will be distributed to graduate students as a pilot group and then to first, second, third and fourth year professional (dental) students at the University of XXXX.

The questionnaire is a combination of research instruments which include modified versions of the following:
- The Copenhagen Burnout Inventory
- The Perceived Wellness Survey
- MOS Social Support Survey,
- Mental Health Inventory
- The Baeke Physical Activity Questionnaire
- The Dental Student Learning Environment Survey

Demographic data will also be requested in the survey and will gather information regarding gender, ethnicity, year of study, age, marital status and if they are a parent, to assess whether these factors may influence wellness trends.
Data entered by respondents will be collected automatically through the relevant computer program (Survey Monkey®) and analyzed initially using the program's inbuilt capacity. Further statistical analysis will include quantitative and qualitative review of raw data and assessment of association between inventory answers and demographic parameters.

**Research hypothesis or question(s)**
Do issues of decreased perceived wellness and/or burnout affect dental students? How do these issues differ among students at different stages of the dental program? Do demographic factors influence students’ perceived wellness and burnout?

**Name of the faculty member(s) who will supervise the student during the project**

XXXXXX

**Student’s role and responsibilities on the project (what tasks will the student perform?)**
Organization and assistance with administration of the survey
Data analysis and documentation of findings
Manuscript preparation
# ADFCP 2013-2014 Fellowship Plan

## Fellowship Plan

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**Personal Objectives for Fellowship Year**

My knowledge and experience within the field of academic dentistry will increase through participation in the ADEAGies/AADR Academic Dental Careers Fellowship Program (ADCFP) and through the achievement of my five primary Fellowship goals. Combined with my present enthusiasm for education and research, completing my Fellowship goals will enable me to pursue a dynamic future career within academia.

1. **Goal:** My first goal is to work effectively as a mentee with a mentor. This goal requires taking an active leadership role within a successful mentor-mentee relationship.

   **Tangible outcome measures:**
   To achieve this goal, I will work as a mentee with my mentor, who will serve as my mentor for my research project, which I am completing through my Masters of Science in Clinical Research. Additionally, Dr. XXX will serve as my Fellowship mentor. The tangible outcomes measured will be the successful completion of my clinical research project on time, the building of a network of faculty involved in clinical and translational research to support the development of future projects, the development of relationships with additional mentors, and acquiring mentorship regarding faculty work-life balance.

2. **Goal:** My second goal is to develop teaching skills to be an effective teacher and role model for dental students in a range of areas.

   **Tangible outcome:**
   The teaching practicum portion of the Fellowship will provide me with knowledge and tools to become an effective teacher and role model for dental students. Putting the information to use in my home institution (while teaching in the four settings described by the Fellowship) will provide the opportunity to apply the information. In order to tangibly measure my development as a teacher, I will ask for feedback from faculty and students. Additionally, I will write a reflection to assess my progress and future goals.

3. **Goal:** Using the knowledge and skills obtained from my second Fellowship goal, I will complete my third Fellowship goal: to teach dental students about clinical research, its vital role in translating research from bench-top to clinic, and its future role in dentistry.

   **Tangible outcome:**
   Because clinical research is a specific area of interest for me, I will use the teaching skills that I have developed through this program in a small-group discussion
setting at the XXXX. Dental students in their third year of study complete a rotation at the XXXX facility, providing an opportunity to practice my role as an educator in an area of personal interest. I will evaluate my performance and the application of my newly acquired teaching skills using student and faculty feedback. A written reflection paper will be beneficial, too.

4. Goal: My fourth Fellowship goal is to better understand the breadth and scope of becoming a faculty member.

Tangible outcome:
This goal will be best accomplished by completing the faculty and administrator interviews as described for the Fellowship program. While I understand that there is a specific protocol for these interviews, including a list of provided interview questions, I will take this opportunity to ask additional questions related to my own curiosities about academic dental careers. For example, I would like to learn more about the unique challenges that women and minority faculty members face and tips for successful work-life balance.

5. Goal: My final Fellowship goal will be to become competent in communicating my clinical research findings to multiple audiences.

Tangible outcome:
In order to accomplish this goal, I will present the findings of my clinical research project in a variety of settings. First, I will present my findings to dental and dental hygiene students and faculty at the University of Dentistry’s Annual Research Day. Second, I will present at poster at the National Clinical and Translational Sciences Predoctoral Program Conference at Mayo Clinic, sharing my findings with student and faculty clinical researchers of various disciplines, including medicine, dentistry, pharmacy, and public health. I will also present the information through the Fellowship program at the ADEA annual session, providing an opportunity to present to students and faculty who share my interests in dental education and academic dentistry.

I believe that the guidance and support that I will receive through participation in the ADEAGies/AADR Academic Dental Careers Fellowship Program and the accomplishment of my program goals will make me a stronger candidate for a future academic dental career. I will use this knowledge and experience throughout a career encompassing patient care, dental education, and multidisciplinary research, which I am committed to practice at the highest standard.
Schedule of Bi-Weekly Meetings with Mentor

Thursday, April 18, 2013
Thursday, May 2, 2013
Thursday, May 16, 2013
Thursday, May 30, 2013
Thursday, June 13, 2013
Thursday, June 27, 2013
Thursday, July 11, 2013
Thursday, July 25, 2013
Thursday, August 8, 2013
Thursday, August 22, 2013
Thursday, September 5, 2013
Thursday, September 19, 2013
Thursday, October 3, 2013
Thursday, October 17, 2013
Thursday, October 31, 2013
Thursday, November 14, 2013
Thursday, November 27, 2013
Thursday, December 12, 2013
Thursday, December 19, 2013
First Career Reflection Essay

Career goals and rationale: (EXCERPT)

My primary career goal is to engage in a dynamic career that encompasses aspects of education and research. I believe that an academic career will allow me to balance my interests in teaching, learning, and discovery with roles as an educator and researcher. Overall, by participating in all three environments of academia (clinic, teaching, and research), I will contribute the most to the advancement of patient care.

Teaching perspectives and philosophy: (EXCERPT)

From personal experience, and from feedback from my classmates, students respond best to teachers who are PASSIONATE about their work. I hope to always remain positive in my working situation and express my sincere interest in the teaching subject and in students’ learning.

Teaching Assignments

Summer Semester

Experience: Classroom Experience
Course: Professionalism and Ethics
Faculty: Dr. XXXX
Description: Lecture-based, topic TBD
Scheduled date: TBD

Fall Semester

Experience: Clinical Instructor
Course: “D2 Mentoring” in the Foundations Clinic
Faculty: Dr. XXXX
Description: Four half-day experiences mentoring second-year dental students in the Foundations Clinic, where they perform simple restorative procedures and dental prophylaxis
Scheduled dates: September 26, October 29, TBD, TBD
Winter Semester

Experience: Small group case conference/seminar
Course: XXXX Clinic Rotation
Faculty: Dr. XXXX
Description: Introduction to clinical research, the XXXX for Oral Health Research Facility, and review an example of clinical research with small group of third year students
Scheduled date: January or February 2014, TBD

Research Description
Protocol

Circulatory microbial components and immune regulators of patients with periodontal disease (CirCo)

A. Abstract (EXCERPT)

Studies have shown an association between periodontal disease and systemic diseases. This investigation aims to further investigate the mechanisms by which these conditions interact between periodontal infection and the immunological disorder, rheumatoid arthritis. The first objective is to identify the microbial components in the plasma of periodontitis patients. Activation of specific pathogen-recognition receptors (PRRs) on transfected and knock-out cells will allow the identification. Plaque/biofilm samples will be collected from healthy, periodontitis, rheumatoid arthritis (RA), and RA/Periodontitis-combined subject populations. Using 16s ribosomal DNA and qPCR, the percentage of microorganisms within the total sample flora that contain the identified components in plaque/biofilm samples will be calculated.

B. Hypothesis and Specific Aims: (EXCERPT)

The first aim of this study is to identify the microbial components found in the plasma of periodontitis patients. By inoculating cells transfected with specific PRRs, the microbial components can be identified.
This study will be the first to identify the microbial components present in the plasma of periodontitis and to determine their biological significance. Previous research has shown associations between systemic illnesses like RA and periodontal disease. The goal of this study is to identify the immune regulators in the serum of periodontitis patients in order for future studies to identify how they may affect other systemic illnesses.

D. Methods

D1. Subject Population: (EXCERPT)

Four subject populations are to be studied: 40 healthy patients, 20 patients with severe periodontal disease, 20 RA patients, and 20 RA patients with severe periodontal disease.

D2. Data collection: (EXCERPT)

Dental Screening Examination

One clinician will complete the dental exam for all patients, using a University of North Carolina periodontal probe for measurements. Pocket depths (PD) will be measured, in mm, from the gingival margin to the base of the pocket at 6 sites per tooth (mesiobuccal, buccal, distobuccal, distolinguval, lingual, and mesiolinguval.)

Within two weeks of screening, supragingival and subgingival plaque/biofilm samples will be collected from the six traditional probing sites on the tooth that is most affected and has the highest amount of supragingival plaque. After the sample
is collected using a sterile curette, it will be immediately stored in a labeled vial containing 150 μl of TE buffer (pH 7.6) at -80°C. Dental prophylaxis will be completed for healthy subjects and RA subjects without severe periodontal disease. Scaling and root planing procedures in all four quadrants will be completed for both populations with severe periodontal disease.

**Data Analysis** *(EXCERPT)*

Basic demographics will be summarized with means and proportions for each subject group; between-group comparisons will be made with a one-way analysis of variance. Biomarker levels will be summarized with medians for each group; between-group comparisons will be made with a Kruskal-Wallis test.

**Research Description**

**Roles and Responsibilities**

**Mentee is responsible for...**

Completing study coordinator training courses through the Michigan Institute for Clinical and Health Research

Assisting study team with study coordination, team communication, team meetings, and study recruitment

Recruiting efforts within multiple settings: Rheumatology Clinics and Dental Clinics, also managing online recruiting through Umclinicaltrials.org

Assisting with scheduling MCRU for patient blood draws and patient appointments

Assisting with screening appointments by administering consent forms with patient, taking X-rays as needed, recording dental and periodontal charting

Assisting with treatment appointments by assisting hygienist and/or completing prophylaxis or scaling and root planing procedures

Attending study team meetings
Prepare posters and presentations related to the study as necessary

**Mentor is responsible for**...

Attending study team meetings

Communicating with study team and answering questions through live meetings or email communications

As principal investigator, ensures study is progressing, successful, and organized with proper instruction and management of study team

Mentoring the mentee related to posters and presentations related to the study.

**Additional Activities**

In order to complete my fifth Fellowship objective--to become competent in communicating my clinical research findings to multiple audiences--I will present my research at the following conferences during the 2013-2014 year:

**Summer 2013**

(Abstracts accepted)

May 2013: National Clinical and Translational Sciences Predoctoral Program Conference, Mayo Clinic, Rochester MN

June 2013: 11th International Symposium on Periodontics & Restorative Dentistry,
Fellowship Plan - ADFCP 2013

Clinical Teaching
I plan to do clinical teaching for one of the following courses. Presently I am in the process of working out the schedule with the course directors.

- Introduction to Medicine L/R - Term: Spring 2014
  - Medical History rotation clinic ➔ This rotation involves students shadowing junior and senior peers while performing patient admissions in the Oral Diagnosis Clinics. Medical History Taking, Dentist-Patient Relations and Patient Interview
- Anesthesia/Pain/Emergency L - Term: Fall 2014
  - Nitrous Sedation sessions
- Restorative Clinics – Fall 2013 and Spring 2014
  - One afternoon/week for few weeks I will be working as a TA to teach the junior students on basic restorative procedures.

Didactic/Lecture Teaching
- PASS Preparatory Course
  - Lecture on “The HIV Infected Patient” – Oral Medicine under Dr.XXXX on 05/08/2013 – 1.00pm to 3.00pm
- One/Two more lectures among the following will be given. I am currently working out the schedules with the following course directors.
  - Anesthesia/Pain/Emergency L
    - Course Director: XXXX
    - Fall 2013/Spring 2014
    - a) Anatomy and Techniques for Maxillary or Mandibular Injections and Extraoral Injections b) Medical Emergencies
  - Introduction to Medicine L/R
    - Course Director: XXXX
    - Spring 2014
    - a) Medical Interview Lecture - Diagnostic Techniques and Procedures b) Head and neck exam lecture c) Vital signs Lecture d) Review Lecture
  - Radiological Anatomy L
    - Course Director: XXXX
    - Spring 2014
    - Introduction, terminology, image acquisition. Interpretation of intraoral normal landmarks
  - Radiology L/C
    - Course Director: XXXXX
    - Fall 2013/Spring 2014
    - Extraoral radiographic techniques - skull views, tomography, Computed tomography, CBCT, MRI, Nuclear medicine
Laboratory Teaching

- TA – Program for Advanced Standing Student Class - GRD
  - I will be teaching in preclinical lab to students of Advanced Standing on every Saturday over a 3 months period.
  - The dates are
    - 04/20/2013 – Denture set up
    - 04/27/2013 – Class I and V amalgam preps and restoration
    - 05/04/2013 – Class IV composite restoration
    - 05/18/2013 – Finish #19 FM, start with #21 PFM prep
    - 06/01/2013 – Final Impression. Provisional #30 omnivack shell
    - 06/08/2013 - #8 Provisional restoration with putty
ADCFP 2013 Research Project

Research Proposal:

Bisphosphonates (BPs) are currently the most widely used antiresorptive agents that act by interfering with the action of osteoclasts. They are employed for treating osteoporosis, rheumatoid arthritis, osteitis deformans and other conditions that lead to bone fragility as well as malignant bone diseases like multiple myeloma and bone metastases. Though BPs prevent bone resorption, they also impair proper bone turnover leading to compromised bone healing. This results in the exposure of necrotic bone in the oral cavity following trauma to the oral mucosa leading to Bisphosphonate Related Osteonecrosis of the Jaw (BRONJ). Frank bone exposure may be complicated by secondary infection leading to osteomyelitis. This condition is seen mainly in patients receiving intravenous BPs but cases have been reported in patients who are taking oral BPs.

Patients, on BPs, undergoing routine dental surgical procedures, including tooth extraction, periodontal surgery or dental implant placement comprise a majority of BRONJ cases. Infection with actinomycosis, diabetes and corticosteroid treatment have also been reported to be important contributing factors for BRONJ.

No definitive treatment guidelines for BRONJ exist. Two main approaches – conservative management and aggressive resection have been reported in the literature. The treatment approaches include daily Irrigation, Local Debridement with Antimicrobial rinses, use of Antibiotics and Antimycotics to control infection before and after dental treatment, use of Low Level Laser Therapy (LLLT) through Nd:YAG laser, use of Ozone Therapy, use of Plasma Rich In Growth Factors (PRGF), Short-Term Teriparatide Therapy and Surgical Treatment to remove the necrotic bone especially in more advanced cases.

We aim to retrospectively review cases of BRONJ during the last 5 years at the Hospital of University of XXXX. We will review various treatment approaches used in this set of patients. We will also assess the outcomes of the different kinds of treatment approaches and possibly recommend a preferable modality.

References:

- Gan To Kagaku Ryoho. 2012 Dec;39(13):2573-5. A case report - bisphosphonate-related osteonecrosis of the jaw(stage 0) successfully treated with sitafloxacin].


