

PROMOTION RECOMMENDATION
The University of Michigan
School of Dentistry

Margherita R. Fontana, DDS, PhD, associate professor of dentistry, with tenure, School of Dentistry, is recommended for promotion to professor of dentistry, with tenure, School of Dentistry.

Academic Degrees:

Fellow	2012	Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women, Drexel University College of Medicine, Philadelphia, Pennsylvania
PhD	1996	Indiana University, School of Dentistry, Indianapolis, Indiana
DDS	1990	Universidad Central de Venezuela, Dental School, Caracas, Venezuela

Professional Record:

2012-present	Cariology Discipline Co-Coordinator, University of Michigan, School of Dentistry
2009-present	Affiliate Professor, Indiana University
2009-present	Associate Professor, with tenure, University of Michigan, School of Dentistry
2005-2009	Graduate School endorsement to direct doctoral dissertations, Indiana University
2004-2009	Associate Professor, with tenure, Indiana University, School of Dentistry
1999-2009	Graduate Faculty Member, Indiana University, School of Dentistry
1999-2005	Associate Member, Graduate Member, Indiana University, School of Dentistry
1998-2004	Assistant Professor, Preventive and Community Dentistry, Indiana University, School of Dentistry
1997-2009	Director Microbial Caries Facility, Indiana University, School of Dentistry
1997-1998	Visiting Assistant Scientist, Oral Health Research Institute, Indiana University, School of Dentistry
1992-1994	Research Assistant, Oral Health Research Institute, Indiana University, School of Dentistry
1991-1992	Research Assistant, Dental Research Institute, Universidad Central de Venezuela, Dental Research Institute
1989-1990	Teaching Assistant, Department of Oral Pathology, Universidad Central de Venezuela, Dental School

Teaching:

Professor Fontana has been instrumental in the development of the political landscape and formal dental curricula of cariology both nationally and internationally over the last decade. Cariology has been recognized in dentistry for many years, but the focus was primarily on the microbiologic aspects of the caries disease. In the late 1990s the entire discipline of cariology was reinvented, focusing on behavior management, an admission that disease diagnosis was imprecise and often wrong, the creation of formal risk assessment schema, development of new caries prevention strategies, and a friendlier political environment shifting from predominately treatment-based dental practices to ones built on prevention and active monitoring. Professor Fontana has been immersed in many of these agendas and has provided core leadership during the first decade of the new century. She has developed leading-edge educational courses at Indiana University and at the University of Michigan in the past four and a half years, developing a strong cariology model for the entire four year DDS curriculum, initiated training programs for both full-time and adjunct faculty, supported changes in the American Dental Association (ADA) billing codes to allow charges for risk assessment and management rather than just treatment, and pushed forward with a new research base

to provide improved evidence for these changes. During this time she has been one of the top ten individuals nationally and internationally providing pivotal leadership in creating a curriculum for cariology.

Professor Fontana, along with Professor Gonzalez-Cabezas, focuses on all aspects of cariology as a team. Professor Fontana focuses on prevention strategies in clinical trials and caries risk assessment while Professor Gonzalez-Cabezas focuses on evaluating new caries preventive strategies or materials in laboratory tests, as well as defining guidelines for preventive regimes such as fluoride releasing products. As a team, they have made great strides in cariology. Both bring special and individual talents to the problems of managing dental caries and both are making joint and individual contributions to the future of cariology.

Before coming to Michigan, Professor Fontana received a huge number of accolades for her teaching success and leadership. This has continued while at Michigan. She has been instrumental in initiating a new curriculum for the doctor of dental surgery (DDS) program. She played a major role in explaining problem-solving and critical thinking options for students, presented her own course design, led sessions for thinking about teaching with case presentations and established an online library for these tools. She has helped in the development of a cariology theme for each curricular year, developed a second cariology course, proposed, and is laying the foundation for, a new advanced course in cariology, provided early training for faculty in new techniques for caries detection and risk assessment and is working with the Michigan Dental Association explaining the foundation being taught to new graduates of the School of Dentistry and demonstrating the benefits for the state's practitioners.

Her course materials are available online and are shared broadly. Many colleagues nationally and internationally are interested in studying the school's new curriculum and model for teaching cariology, which is profoundly due to Professor Fontana's advancements in teaching. At the same time, Professor Fontana is a member of a group pushing for a new cariology curriculum model at the American Dental Education Association (ADEA). Work in this cariology special interest group has led to detailed outcome assessments, faculty training plans and a proposal for patient based assessment in the clinic. The principal international forum for cariology research is the Organization for Research in Caries (ORCA), which partners in the efforts for an international curriculum. OCRA had held two major international symposia, in which Professor Fontana was instrumental in the program development.

Professor Fontana has received CRLT support for her efforts that have provided risk assessment models as part of the electronic health record, the planning of new clinical test cases for students, the expansion of the OSCE evaluations for third and fourth year dental students, and the efforts of advanced critical thinking in the curriculum.

Professor Fontana has been a strong mentor for DDS, MS and PhD students throughout her career. She has mentored 69 students since 1997, and 20 since joining the University of Michigan. That total group has received not less than 42 university and national grants and awards for their efforts. She takes a hands-on approach while working with students, challenges them to research key issues, teaches them problem-solving skills and rewards them for thinking outside of the box. In her first year as a new course coordinator she received acclaim from the students as their clinical science teacher of the year.

Research:

Professor Fontana has 65 peer-reviewed publications, on which she is first author on more than half. She has seven other publications, three accepted articles, eight submitted articles and two book chapters spanning her clinical research and teaching efforts with the dominant theme being the principles of modern cariology. She has a continual record of peer-reviewed publications since 1995. Twenty articles have appeared over the last four years. Some of the more recent publications include *Journal of Dental Research*, *Journal of Evidence-Based Dentistry*, *Community Dentistry and Oral Epidemiology* and *Journal of Dentistry*. Professor Fontana has recently published a major review article in the *Michigan Dental Association Journal* which is being sought after by several other dental associations for reprinting in their own journals. Additionally, Professor Fontana has 239 published abstracts of which 23 have occurred in the last four years.

Professor Fontana has been funded by a broad base of grants and contracts. Before joining the University of Michigan she was a PI on two R21 grants, an investigator on three NIH grants and a PI/Co-PI on 61 corporate contracts. Since joining the University of Michigan she has been awarded a U01 grant of \$7,569,792.00 to assess caries in underserved toddlers in primary health care settings. She has pending grants on which she is the PI for an R01, subcontractor on one, and proposed co-investigator on three others. She has been the PI or co-PI on eight corporate contracts. Her research has been presented in 76 national lectures before joining Michigan and 47 additional lectures in the past four years.

Professor Fontana collaborates broadly and has working relationships with several major universities in the U.S., Europe and South America. Her productivity continually increases. There is no doubt that she will be a productive and prolific contributor to the scientific literature for the rest of her career.

Recent and Significant Publications:

Fontana M, Santiago E, Eckert GJ, Ferreira-Zandona AG. "Risk Factors of Caries Progression in a Hispanic School-Age Population," *J Dent Research*, 2011; 90, pg. 1189-1196.

Fontana M, Jackson R, Eckert G, Swigonski N, Chin J, Ferreira-Zandona A, Ando M, Stookey GK, Downs S, Zero DT. "Identification of Caries Risk Factors in Toddlers," *J Dent Research*, 2011; 90, pg. 201-214.

Fontana M, Zero DT, Beltran-Aguilar ED, Grey SK. "Techniques for Assessing Tooth Surfaces in School-Based Sealant Programs," *J American Dent Association*, 2010; 141 (7), pg. 854-860.

Gooch BF, Griffin SO, Gary SK, Kohn WG, Rozier RG, Siegal M, Fontana M, Brunson D, Carter N, Curtis DK, Donly KJ, Haering H, Hill LF, Hinson HP, Kumar J, Lampiris L, Mallatt M, Meyer DM, Miller WR, Sanzi-Schaedel SM, Simonson R, Truman BI, Zero DT. "Preventing Dental Caries through School-Based Sealant Programs: Updated recommendations and reviews of evidence," *J American Dent Association*, 2009; 140 (11), pg. 1356-1365

Fontana M, Gonzalez-Cabezas C. "Minimal Intervention Dentistry: Part 2, Caries Risk Assessment in Adults," *British Dent J*, 2012; 21, pg. 447-451.

Service:

Professor Fontana has been a consultant to Proctor and Gamble, Gillette, Dental Decks, Centers for Disease Control and Prevention, American Academy of Pediatric Dentistry, American Dental Association, Delta Dental National Scientific Advisory Committee, American Dental Association Council on Scientific Affairs and Pfizer. Her advice is sought by all major companies and associations dealing with issues of cariology, prevention and risk assessment.

Since 1995, Professor Fontana has served as a reviewer on several international journals as well as the National Institute of Dental and Craniofacial Research (NIDCR.) She has served on the Data Safety and Monitoring Board for the Centers for Research to Reduce Disparities on two R34 review panels and a U01 special review panel, as well as acting as a reviewer of grants for other national research agencies in other countries.

At the school and university level, Professor Fontana has been a key contributor to the new curriculum in the School of Dentistry as a member of the Clinical Implementation and Curriculum Innovation Committee, Grand Rounds Curriculum Committee, Oral Health Sciences Core Curriculum subgroup, and co-discipline coordinator for cariology. She has served as the chair of the Ad Hoc Curriculum Committee for Health Promotion and Disease Prevention. She is now a member of the Special Interest Advisory Group for the Center on Research in Learning and Teaching (CRLT.) As well, she is currently a member of the School of Dentistry Executive Committee.

External Reviewers:

Reviewer (A): "There is no doubt from the CV, that Dr. Fontana has experience within all fields of teaching, including administrative duties, managing courses, devising courses, etc."

Reviewer (B): "She has also clearly achieved national and international recognition for her research and has been identified as a leader in her field. Notable, in 2011 she was selected to participate in the Executive Leadership in Academic Medicine (ELAM) Program for Women. In 2012, she received a Presidential Early Career Award in Science and Technology, a landmark accomplishment for a dentist-scientist."

Reviewer (C): "Perhaps the most impressive attributes of Professor Fontana are her ability to articulate issues from a variety of creative perspectives, each with potential to apply to patients, and her ability to elicit and coalesce ideas for a variety of scholars at different stages of career development"

Reviewer (D): "Dr. Fontana not only describes the importance of these procedures in studies, but she is also personally engaged to implement the techniques in daily practice."

Reviewer (E): "Dr. Fontana has been very generous in accepting several invitations every year to present this evidence and translate its implications to diverse audiences in both national and more limited conference and workshop settings. I think her popularity as an educator, even knowing that she will challenge longstanding practices and recommend that public health practitioners make more effort to evaluate the effectiveness of their efforts, is a testament to her ability to synthesize, interpret, and effectively communicate relevant scientific evidence."

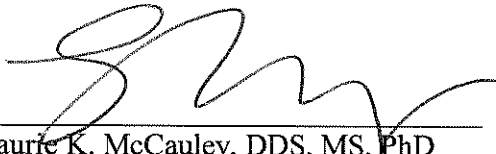
Reviewer (F): "Dr. Fontana deserves special recognition for her continued funding during this challenging time. Dental caries is the most common infectious disease in humans. Dr. Fontana's

scholarly and educational activities in the fields of cariology and preventive dentistry have had significant impacts on the educational model and practice of operative dentistry.”

Reviewer (G): “She has completed her training at the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women as a fellow. This shows her commitment to University leadership and teaching. It is rare to find a researcher who has excellent teaching skills and leadership potential.”

Reviewer (H): “I strongly and enthusiastically recommend Dr. Fontana for this faculty promotion. Dr. Fontana is an award-winning educator and researcher with a national reputation as a leader in caries diagnosis and risk assessment. Among her many awards, last year she received the very prestigious Presidential PECASE award. To my knowledge, only one other dentist has ever won this award.”

Summary of Recommendation: Professor Fontana is a co-director within the department and a co-discipline coordinator for the School of Dentistry. Her leadership role has provided unparalleled strides for the school in this area. Professor Fontana is critical to the mission of the unit. She is admired by all for her style, productivity and leadership. It is with support of the School of Dentistry Executive Committee that I recommend the promotion of Margherita R. Fontana, DDS, PhD for promotion to professor of dentistry, with tenure, School of Dentistry.

A handwritten signature in black ink, appearing to read 'L. McCauley', written over a horizontal line.

Laurie K. McCauley, DDS, MS, PhD
Dean, School of Dentistry

May 2014