

PROMOTION RECOMMENDATION
The University of Michigan
School of Dentistry

Isabelle M.A. Lombaert, assistant professor of dentistry, School of Dentistry, is recommended for promotion to associate professor of dentistry, with tenure, School of Dentistry.

Academic Degrees:

PhD	2008	University Medical Center Groningen, Groningen, NL
MSc	2002	Ghent University, Ghent BE
BSc	1999	Ghent University, Ghent, BE

Professional Record:

2015-present	Assistant Professor, Department of Biologic and Materials Sciences and Prosthodontics, University of Michigan, Ann Arbor
2013-2015	Research Fellow, National Institute of Dental and Craniofacial Research, National Institutes for Health, Bethesda, MD
2008-2013	Post-doctoral Visiting Fellow, National Institute of Dental and Craniofacial Research, National Institutes for Health, Bethesda, MD

Summary of Evaluation:

Teaching: Professor Lombaert makes important contributions to the teaching mission of the School of Dentistry. She has been involved in teaching in various capacities including as a course director and classroom instructor. Her teaching involves students at all levels, including dental students, Master of Science students, PhD students, and post-doctoral fellows. Her teaching efforts in trying to stimulate the next generation of scientists is inspiring. She is involved in a special education project entitled “X-plore Engineering: Engineering a Cure for Cancer,” a program geared toward designing summer educational projects for elementary school students (4th-8th grade). Her teaching philosophy is to provide students with a conceptual package that integrates and challenges multiple research fields to co-exist within the school. Coming from a multidisciplinary background, Professor Lombaert strives to stimulate critical thinking, collaborative problem solving and data analysis in her teaching. She lectures to pre-doctoral students in courses DENT 509 and DENT 511, and she became the director of DENT 509 in 2018. She also provides lectures for other departments within the university, for post-doctoral fellows and PhD candidates to improve their ability to conduct research. Her student and peer teaching evaluations show that she demonstrates mastery of the material she presents and is very dedicated and committed to ensuring that students get the most out of the material. As evidenced by her courses and teaching evaluations, she has also demonstrated the capacity to adapt, change, and evolve her teaching content and how it is delivered in order to maximize the knowledge she aims to impart. Professor Lombaert was recognized for her teaching and awarded the Outstanding Faculty Award for Service, Support and Teaching Excellence from the Alpha Omega Chi Dental Michigan Chapter. The award is in recognition of her teaching efforts in DENT 509 to stimulate engaging and interactive group discussions for more effective student learning and retention of material.

Professor Lombaert has served as a mentor to an impressive list of students at all levels. She has mentored eight PhD candidates (six as primary mentor), nine graduate students (eight as primary mentor), six pre-doctoral students, and 18 undergraduate students from the College of Literature, Science, and the Arts, College of Engineering and School of Kinesiology. She has served on three PhD dissertation exam committees, and five PhD pre-candidate committees, one as the committee

chair. Her mentees and trainees routinely present their work at scientific and professional meetings and a testament to her successful mentorship is the long list of mentees who have received NIH funding including an F30 award and several T32 training grant positions. These teaching efforts have been highly impactful in that she has not only done well in her own career but already has begun to support and help cultivate the next generation of dental researchers.

Research: Professor Lombaert's research focus is to design translational concepts to treat patients suffering from salivary gland disorders caused by radiation of the head and neck, Sjogren disease and cancer of the salivary glands. These disorders disrupt the salivary flow of patients, which results in hyposalivation and the related dry mouth syndrome, xerostomia. This has a lifelong effect on the patient, diminishes their quality of life in their ability to taste, swallow effectively, and are at increased risk for dental caries. Since in rank, Professor Lombaert's research has been to repair the salivary glands after radiation exposure using two research lines. For the first, the molecular profile of transcription factor SOX10 in salivary gland epithelial stem/progenitors is evaluated. This research has resulted in funding for training DDS/PhD students and three published manuscripts. The second line of research involves collaborative work focusing on optimizing cell therapy strategies in the mini-pig model. These gene therapies are progressing into FDA clinical trial and have the potential to advance the care of patients with head and neck cancer. Since 2016, Professor Lombaert has published 16 peer-reviewed manuscripts, two as primary author and four as corresponding author. The publications are in well-respected scientific journals such as *Biomaterials*, *Stem Cell Reports* and *Science Advances*. Her publications have a high number of citations with an H-index of 19. She has two book chapters and is corresponding author on one. She has 16 invited presentation at various international and national groups and at the University of Michigan.

Professor Lombaert has established an independent research program that has been continuously supported by extramural federal funding. Currently, she is the principal investigator on R01 and R21 grants, and co-principal investigator on a U24 grant. Professor Lombaert has successfully acquired funding opportunities from MCubed and the Rackham Graduate Merit Fellowship. She is a focused researcher with a strong program that is both collaborative and independent.

Recent and Significant Publications:

- Lombaert IMA., Patel VN, Jones C, Villier D, Canada AE, Moore M, Berenstein E, Zheng C, Goldsmith CM, Chiorini J, Martin D, Zourelia L, Trombetta MG, Edwards PC, Meyer K., Ando D, Passineau MJ, Hoffman MP 2020. CERE-120 prevents irradiation-induced hypofunction and restores immune homeostasis in porcine salivary glands. *Mol Ther Clin Dev*, 18: 839-855. PMID: 32953934.
- Chang B, Cornett A, Nourmohammadi Z, Law J, Weld B, Crotts SJ, Hollister SJ, Lombaert IMA, Zopf DA 2020. Hybrid 3D-printed tissue scaffold with autologous cartilage approach mitigates soft tissue complications. *Laryngoscope*, doi: 10.1002/lary.29114. PMID: 33022112.
- Vining KH, Lombaert IMA, Patel VN, Kibbey SE, Pradhan-Bhatt S, Witt RL, Hoffman MP 2019. Neurturin-containing laminin matrices support innervated branching epithelium from adult epithelial salispheres. *Biomaterials*, 216: 119245. PMID: 31200143.
- Cornett A, Athwal HK, Hill E, Murphy III G, Yeoh K, Moskaluk CA, Witt RL, D'Silva NJ, Agarwal S, Lombaert IMA. 2019. Serial patient-derived orthotopic xenografting of adenoid cystic carcinomas recapitulates stable expression of phenotypic alterations and innervation. *Ebiomedicine*, doi: 10.1016/j.ebiom.2019.02.011 PMID: 30765319.
- Athwal HK, Murphy III G, Tibbs E, Cornett A, Hill E, Yeoh K, Berenstein E, Hoffman MP, Lombaert IMA. 2019. Sox10 regulates plasticity of epithelial progenitors toward secretory

units of exocrine glands. *Stem Cell Reports*, 12(2):336-380. PMID: 30713042.

Service: Professor Lombaert has an impressive record of service at the school, university, national and international levels. In the department, she was an active member for the recruitment process for the department chair and two searches for junior faculty positions. She was also an evaluator for faculty candidates for the Department of Periodontics and Oral Medicine. Within the school, she has served on the Nominations and Elections Committee, the Oral Health Sciences PhD Program Committee, and as a poster judge at the School of Dentistry Research Day. She serves on the Rackham Graduate Program for PhD in Biomedical Sciences where she is a judge for Research Day. She is a committee member on the Cell Plasticity and Organ Design Steering Committee, and the Biointerfaces Institute Fellowship Committee. On the national and international level, Professor Lombaert was a member of the American Association of Dental Research Fellowship committee, and served as the chair. Since 2016, she has been a member of the International Association of Dental Research Salivary Gland Research group and is currently serving as president. She is a member of the prestigious Gordon Research Conference for Salivary Glands and Exocrine Biology. Professor Lombaert has distinction of being elected to the International Multidisciplinary Salivary Gland Group, which organizes meetings across disciplines of oral surgery, pathology, radiation oncology and ear nose and throat. She is a reviewer for over 30 journals; many have very high impact factors. She has been a grant reviewer for numerous organizations and an abstract reviewer for the International Association of Dental Research.

External Reviewers:

Reviewer A: “Dr. Lombaert has an excellent publication record, with much of her work appearing in high ranking journals...She is the PI on multiple NIH funding mechanisms (e.g., ROO, RO1, and R21) and Co-PI on various additional grants...Overall, Professor Lombaert has many quality publications, a sustained history of federal and private funding and has provided a strong support for work building on her own.”

Reviewer B: “Her work on the role of SOX10 in regulating progenitor cell plasticity published in *Stem Cell Reports* in 2019 has provided significant new insights into the complex mechanisms underlying branching morphogenesis. Furthermore, she has been increasingly applying her expertise to tissue engineering with relevance to autoimmunity and cancer. Professor Lombaert is an outstanding scientist who bring to the profession impressive creativity and passion for science, coupled with scientific rigor, hard work and perseverance.”

Reviewer C: “Professor Lombaert has established herself as a leader in the field of salivary gland stem and progenitor cells and is emerging as a leader in the development of translational concepts to treat patients with salivary gland disorders...Professor Lombaert is clearly collaborative and a team player, and she has established several other research projects with collaborations that are completely independent of her post-doctoral mentor...It is impressive that Professor Lombaert has been continuously funded by the NIH since assuming her tenure-track appointment.”

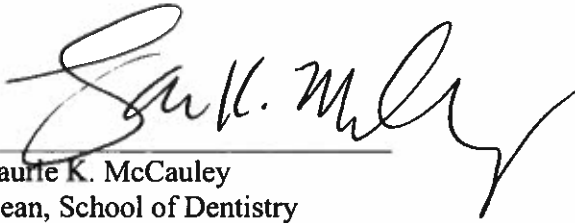
Reviewer D: “Professor Lombaert’s work is significant, interdisciplinary, innovative, and is having a genuine impact in her discipline which suggests that she has tremendous future promise. She is a premier scientist, regardless of rank, and is easily at the top of her peer group. Therefore, in my professional opinion, Professor Lombaert has exceeded the criteria of a distinguished record in research and a national reputation for significant contributions.”

Reviewer E: "As an assistant professor, Professor Lombaert has not only established an independent research program that is fully funded by NIH, but also with a translational focus that will benefit society. Professor Lombaert's research is highly visible, and she has regularly presented at national and international meetings as well as been invited for seminars at various institutions in the US."

Reviewer F: "I predict that her laboratory will continue to progress basic and translational research projects, attract future funding and produce significant publications."

Summary of Recommendation:

Professor Lombaert has established a well-funded, independent research program with demonstrated productivity. Her research program is gaining visible worldwide attraction in the exocrine biology community, and she is becoming a recognized leader in the salivary gland field. Her teaching and mentoring is considerable and her service contributions are impressive. It is with the support of the Executive Committee, that I recommend Isabelle M.A. Lombaert for promotion to associate professor of dentistry, with tenure, School of Dentistry.



Laurie K. McCauley
Dean, School of Dentistry

May 2022