

PROMOTION RECOMMENDATION
The University of Michigan
School of Dentistry

Vesa Matti Kaartinen, BS, MSc, PhD, associate professor of dentistry, without tenure, is recommended for the granting of tenure to be held with his title of associate professor of dentistry, School of Dentistry.

Academic Degrees:

PhD	1991	University of Kuopio, Finland, Biochemistry & Molecular Biology, Kuopio, Finland
MSc	1986	University of Kuopio, Finland, Biochemistry, Kuopio, Finland
BS	1984	University of Kuopio, Finland, Biochemistry, Kuopio, Finland

Professional Record:

2008-present	Associate Professor, Department of Biologic & Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, Michigan
2004-2008	Assistant Professor, Departments of Pathology and Laboratory Medicine and Surgery, Children's Hospital Los Angeles, The Keck School of Medicine of the University of Southern California, Los Angeles, CA
2003-2004	Assistant Professor, Department of Surgery, Children's Hospital Los Angeles, The Keck School of Medicine of the University of Southern California, Los Angeles, CA
1997-2004	Assistant Professor, Department of Pathology and Laboratory Medicine, Children's Hospital Los Angeles, The Keck School of Medicine of the University of Southern California, Los Angeles, CA

Summary of Evaluation:

Teaching: Professor Kaartinen has a proven track record of excellence in teaching both in the classroom and in the laboratory. His teaching record demonstrates that he has excelled in commitment and quality of teaching. The majority of his teaching was done at Children's Hospital of Los Angeles, (CHLA) a "soft money institute," where he was expected to cover 100% of his salary. In this environment, the expectations and time for didactic teaching are minimal. Despite this, he regularly taught in the "Seminars of the Pathology" class and received mainly positive student evaluations. He also lectured in two additional courses at USC: Biochemistry 543 (Developmental Biology) and CBY579 (Craniofacial Molecular Genetics). The nature of his course participation illustrates that he teaches the subject content at an advanced level and from a point of deep mastery. Professor Kaartinen has excelled at mentoring and advising numerous students and postdoctoral fellows. These include two masters, four doctoral and two undergraduate students, four post-docs, and four junior faculty members. This record indicates an exhaustive time commitment across all levels of research advising. His ability to mentor multiple students at different levels within his research lab and his ability to raise each of them towards high ranking research endeavors demonstrates his role as an enthusiastic, professional and encouraging teacher. His worldwide network of collaborators also gives his students the opportunity to get input from other expert international scientists. He has

made significant contributions to the discussions of the Oral Health Sciences Journal Club and has provided noteworthy contributions on the grant reviews of junior faculty at the School of Dentistry. Plans are being made for Professor Kaartinen to become course director for the School's Oral Mucosa course.

Research: Professor Kaartinen's body of work and expertise in craniofacial developmental biology and genetics brings great value to our School and University and is essential to the new directions of our department. His work is extremely important in understanding the underlying causes of cleft palate and congenital heart diseases. His publication and grant funding record are testaments to him being a leader in his field. He has made several important contributions in dissecting the roles of neural crest cells in craniofacial development and the functions of endothelial to mesenchymal transition in palatogenesis and the formation of outflow tract and endocardial cushion in the heart. He recently further extended his work into the endothelial to mesenchymal transition of epicardium and neovascularization and thus his work has great potential in designing therapeutic approaches for cardiac repair. He has authored more than 65 peer-reviewed manuscripts in high impact journals, as well as numerous textbook chapters and abstracts. His papers are exquisite in all aspects of hypothesis, rationale, approach, results and conclusions. He is both creative and critical in his own research and evaluating published literature. His independence as a researcher has given him recognition for speaking at international meetings. His work in the generation and characterization of gene-targeted mice is inherently collaborative, thus he is a significant source of scientific knowledge and resources for other principal investigators, post-docs and graduate students here at Michigan, nationally and internationally. As indicated on his curriculum vitae, his current funding and steady production of quality papers are strong indicators of continued funding success.

Recent and Significant Publications:

- Wang, J., Sridurongrit, S., Dudas, M., Thomas, P., Nagy A., Schneider, M.D., Epstein, J.A., Kaartinen, V. Atrioventricular Cushion Transformation Is Mediated by ALK2 in the Developing Mouse Heart. *Dev. Biol.*, 286; 299-310, 2005.
- Dudas, M., Kim, J., Li, Y-J., Nagy, A., Larsson, J., Karlsson, S, Chai, Y., Kaartinen, V. Epithelial and ectomesenchymal role of the type I Tgf- β receptor Alk5 during facial morphogenesis and palatal fusion. *Dev. Biol.*, 296; 298-314, 2006.
- Wang, J., Nagy A., Larsson, J., Dudas, M., Sucov, H.M., Kaartinen, V. Defective ALK5 signaling in the neural crest leads to increased postmigratory neural crest cell apoptosis and severe outflow tract defects. *BMC Dev. Biol.*, 6; 51, 2006.
- Zhou, W., Lin, L., Majumdar, A., Li, X., Zhang, X., Liu, W., Etheridge, L., Shi, Y., Martin, J., de Ven W.V., Kaartinen, V., Wynshaw-Boris, A., McMahon, A., Rosenfeld, MG., Evans, S. Modulation of morphogenesis by non-canonical Wnt signaling requires ATF/CREB family-mediated transcriptional activation of TGF β 2. *Nature Genet.*, 39; 1225-34, 2007.
- Yang, L-T., Kaartinen, V. Tgfb1 expressed in the Tgfb3 locus partially rescues the cleft palate phenotype of Tgfb3 null mutants. *Dev. Biol.*, 312; 384-395, 2007.
- Yang, L-T., Li, W-Y., Kaartinen, V. Tissue-specific expression of Cre recombinase from the Tgfb3 locus. *Genesis*, 46; 112-118, 2008.

Service: At CHLA, Professor Kaartinen served on the Institutional Animal Care and Use Committee as a member and as chairperson. He directed the Mouse Genome Core Facility at

CHLA and at the Saban Research Institute. He served on numerous organizing committees and task force committees as referenced in his curriculum vitae. He has participated as an ad-hoc reviewer on several NIH study sections and reviewed numerous manuscripts for multiple internationally recognized scientific journals. He served as a permanent member on the American Heart Association (Western Affiliates) Peer Review Committee. Given his track record of service, we have no doubt that Professor Kaartinen will continue on this impressive track record while here at Michigan. He currently is a member of the School's Grievance Panel.

External Review:

Reviewer (A): "Dr. Vesa Kaartinen is well respected among his colleagues and he would be promoted at [my institution]. The requirements for promotion here are teaching, service, and research and he fulfills our criteria for service and he exceeds our criteria for research."

Reviewer (B): "Dr. Kaartinen's scholarly record is very impressive. Importantly, his research accomplishments have had a large impact on two separate fields, craniofacial and cardiovascular developmental biology. His work is considered to be very strong and, as a result, he has an excellent reputation as a careful and creative scientist."

Reviewer (C): "I was asked to pick some most important publications from the list. I find this difficult since all Nature Genetics, Cell, Blood and PNAS papers are of outstanding quality. In fact, Dr. Kaartinen has not published poor or low quality papers."

Reviewer (D): "Dr. Kaartinen is at the top of his field. No other investigator has made such a significant impact to the subject of palate development. This has not been due to a single high impact paper, although his Nat Genet paper in 1995 was a splendid start, but due to sustained excellence over a period of more than a decade. Dr. Kaartinen's excellent scholarly record speaks for itself."

Reviewer (E): "What I can say from my own experience is that he is a good and clear presenter, speaker. He can express his ideas to the audience clearly and I think based on that, he can give good lectures. He seems enthusiastic about teaching and he values the academic training work."

Reviewer (F): "I am sure that with his promotion upon the move to the University of Michigan, Dr. Kaartinen will get more appropriate recognition. Certainly his record of accomplishment rates him highly for faculty members in Schools of Dentistry nationwide."

Reviewer (G): "I fully respect him as an outstanding scholar. He possesses a wealth of knowledge on molecular biology, cell biology and developmental biology. Most importantly, Dr. Kaartinen is an original, deep, and quick thinker, and always has great insights in the field. There is no doubt that Dr. Kaartinen will keep his cutting edge research."

Reviewer (H): "In sum, Dr. Vesa Kaartinen is a spectacular and highly competitive scientist. This is evident in his research program and productivity as well as his great success in obtaining external funding. There is no doubt that he will maintain his leadership in the field."

Reviewer (I): "With respect to focus, he has always maintained a well focused research program. I do not think he is one to pursue any research tangents unless they have very high

potential. I think that Dr. Kaartinen's standing among his peers in the field is consistently rising."

Summary of Recommendation: We are fortunate to have recruited this outstanding scientist, teacher and research mentor. His research excellence, significant publications, advanced level teaching, continuous track record of extramural funding and outstanding mentoring as well as substantive contributions in service all point to an impressive academic career. Given his motivation, there can be no question that he will continue to make major contributions in our understanding of cleft palate and congenital heart diseases. Thus, his past record and future promise overwhelmingly justify this promotion to associate professor with tenure.

I recommend that Professor Vesa Matti Kaartinen, BS, MSc, PhD, associate professor of dentistry, without tenure, be granted tenure to be held with the title of associate professor of dentistry in the Department of Biologic and Materials Sciences, School of Dentistry.

A handwritten signature in black ink, appearing to read "Peter J. Polverini", is written over a horizontal line.

Peter J. Polverini, DDS, DMSc
Dean, School of Dentistry

May 2009