

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF CELL AND DEVELOPMENTAL BIOLOGY
DEPARTMENT OF LEARNING HEALTH SCIENCES

Michael Hortsch, Ph.D., associate professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, and associate professor of learning health sciences, without tenure, Department of Learning Health Sciences, Medical School, is recommended for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, and professor of learning health sciences, without tenure, Department of Learning Health Sciences, Medical School.

Academic Degrees:

Ph.D.	1987	Ruprecht-Karls-Universität Heidelberg, Germany
Diplom.	1983	Free University of Berlin, Germany

Professional Record:

2013-present	Associate Professor of Learning Health Science, University of Michigan
1998-present	Associate Professor of Cell and Developmental Biology, University of Michigan
1991-1998	Assistant Professor of Cell and Developmental Biology, without tenure, University of Michigan

Summary of Evaluation:

Teaching: Since joining the Department of Cell and Developmental Biology (CDB), Dr. Hortsch established himself as one of the most highly regarded teachers and educational researchers at the University of Michigan Medical School. He is currently the course director of three major histology courses (medical, dental and graduate/undergraduate). Over the past six years, Dr. Hortsch has transformed medical histology into a top-rated course at the University of Michigan. He consistently receives outstanding evaluations from medical, dental, graduate and undergraduate students for his teaching. Dr. Hortsch successfully integrates multiple teaching approaches into an educational plan that goes well beyond conveying mere facts and information and extends into building intellectual and scientific skills. Students specifically mention his ability to present complex material in a meaningful context and a comprehensible way. He not only earns praise for his traditional teaching (lectures and lab session), but also for his creation of novel electronic teaching resources, specifically the Michigan Histology Website and his series of SecondLook review tools, which are now available as mobile smartphone and computer tablet applications. Almost all undergraduate students who worked in Dr. Hortsch's lab have gone on to achieve advanced degrees, and two of Dr. Hortsch's post-doctoral fellows are now on the faculty at other universities. Dr. Hortsch makes significant contributions to the department and the university by mentoring faculty colleagues by helping them to become better teachers.

A few years ago, Dr. Hortsch completely redesigned the graduate histology course, CDB450/550. This course now attracts 50 to 65 undergraduate and graduate students annually. Alumni give this course unusually high praise: “This is BY FAR one of the best courses I have taken – EVER” and “This class is my favorite of all the courses I have taken at U of M.” Dr. Hortsch has received every highly regarded university teaching award (the Kaiser Permanente Award for Excellence in Pre-clinical Teaching, the Provost’s Teaching Innovation Prize, and the Endowment for the Basic Sciences Teaching Award). Many of the learning resources that Dr. Hortsch has created are used by thousands of students and faculty nationally and internationally

Research: In the most recent past, Dr. Hortsch has refocused his scholarly activities on the field of medical education. Nonetheless, he continues to regularly publish his research data in eminent, peer-reviewed medical education journals. His research now addresses the impact of new teaching technologies on student learning. He works to identify and understand the important parameters that influence how electronic and computer educational resources affect learning outcomes. This work has been widely recognized by the medical education community and has led to a number of invitations to present his research results at national meetings.

Recent and Significant Publications:

Hortsch M: Virtual biology: Teaching histology in the age of facebook. *FASEB J* 27:411-413, 2013.

Holaday L, Selvig D, Purkiss J, Hortsch M: Preference of interactive electronic versus traditional histology learning resources by University of Michigan medical students during the first year histology component. *Med Sci Educ* 23:607-619, 2013.

Johnson S, Purkiss J, Selvig D, Holaday L, Hortsch M: Learning histology – dental and medical students’ study strategies. *Eur J Dent Educ* 19: 65-73, 2015.

Selvig D, Holaday L, Purkiss J, Hortsch M: Correlating students’ educational background, study habits and resource usage with learning success in medical histology. *Anat Sci Educ* 8:1-11, 2015.

Hortsch M: Taking a *SecondLook*[™] at a time-efficient self-review resource. *Med Sci Educ* 26:3-4, 2016.

Service: Dr. Hortsch has a long and distinguished record of service to the CDB department, the University of Michigan, and the national and international scientific communities. For many years, he directed the CDB graduate program and was a member or chair of several other departmental committees. Most recently, he served on the CDB Curriculum Committee. For the last few years, Dr. Hortsch has been a member of the steering committee of the University of Michigan Academy of Medical Educators, and has regularly served as a mentor to junior faculty colleagues at the annual University of Michigan Health Sciences Teaching Academy. During his time on the University of Michigan faculty, Dr. Hortsch reviewed research manuscripts for 44 different scientific journals, six in the field of medical education. Dr. Hortsch is currently an

editorial board member of five international scientific journals and has regularly been recruited by national and international foundations as a reviewer for research applications (among many others, most recently for the Italian Ministry for Education, University and Research, the NSF Computational Biology Review Panel, and the NSF IGE Review Panel). Dr. Hortsch is an active and contributing member of several professional societies, including the American Society for Cell Biology (ASCB), the American Association of Anatomists (AAA), and the International Association of Medical Science Educators (IAMSE). He currently serves as a member of an AAA Committee and is reorganizing the society's regional meeting.

External Reviewers:

Reviewer A: “Dr. Hortsch has made and continues to make substantial contributions to national and international discourse in medical education, as is appropriate to a leader in the field. He is also involved in developing important resources for improving the teaching of histology—most recently a beautifully designed and executed tool for studying histology, and over many years, the development, expansion and maintenance of the University of Michigan's well-known, world-class virtual slide resource. Moreover, given the difficulty of obtaining grants in medical education research, Dr. Hortsch has an impressive record of obtaining steady funding to support his various projects....The virtual slide collection is widely used internationally and has made a very positive name for the University of Michigan in the area of histology and pathology in medical education.”

Reviewer B: “...the University of Michigan's virtual slide website that Dr. Hortsch manages is a global resource with significant impact. The openly available site is invaluable for those schools not financially able to maintain their own library. Every colleague I have in other Universities is keenly aware of the site....Dr. Hortsch is a pioneer in the use of digital media and his works are recognized nationally and internationally. To my knowledge, no one has created a more comprehensive digital resource for Histology instruction.”

Reviewer C: “...Dr. Hortsch is an outstanding scholar. His interest in modern electronic teaching resources and how they affect student learning is at the forefront of current medical educational research. His findings have challenged conventional thinking and provided research evidence that help to support some of the changes that are occurring in teaching methodologies.”

Reviewer D: “His efforts in teaching go beyond service, however, and reach into the realm of scholarship, especially with his work on how students make use of the educational resources available to them and how those resources are best presented. In histology teaching, his publications are seminal studies in the area of resource utilization and I personally look forward to future examples of his analysis of effective teaching approaches in health sciences education....Clearly Dr. Hortsch has developed a national and international reputation in biomedical research and education of which he and the University of Michigan can be proud.”

Reviewer E: “Dr. Hortsch is well-known nationally and internationally for his work on innovating histology education. His approaches to implementing highly interactive online modules in teaching histology gained international and national attention. His design, which could be regarded as one of the most successful in the United States, delivers high quality

microscopic images (in virtual microscopy format) over the Web to learners not only in your university but to many users all over the world. This histology program placed University of Michigan on the map of most desirable places for students who want to obtain the best training in microscopic sciences....He is clearly the kind of person in your institution that makes all other members of your faculty and students better.”

Reviewer F: “I consider Dr. Hortsch to be a leading voice among those concerned with the education of medical students in the anatomical sciences. His focus on teaching anatomy to medical and dental students has allowed him to develop a body of work that is notable for its quality and impact.”

Summary of Recommendation:

Dr. Hortsch’s scholarly endeavors and accomplishments have been exemplary. Students and faculty colleagues regard Dr. Hortsch as one of the best and most innovative teachers at the University of Michigan Medical School. Many of the educational tools which Dr. Hortsch envisioned and created are used world-wide by students and faculty at many other institutions of higher learning. I am pleased to recommend Michael Hortsch, Ph.D. for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, and professor of learning health sciences, without tenure, Department of Learning Health Sciences, Medical School.



Marschall S. Runge, M.D., Ph.D.
Executive Vice President for Medical Affairs
Dean, Medical School

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