

PROMOTION RECOMMENDATION
The University of Michigan
School of Public Health
Department of Environmental Health Sciences

Olivier J. Jolliet, associate professor of environmental health sciences, with tenure, Department of Environmental Health Sciences, School of Public Health, is recommended for promotion to professor of environmental health sciences, with tenure, Department of Environmental Health Sciences, School of Public Health.

Academic Degrees:

1988	PhD (in Physics)	Swiss Federal Institute of Technology Lausanne (EPFL)
1983	MS (in Physics)	Swiss Federal Institute of Technology Lausanne (EPFL)
1978	Baccalauréat in Latin-Mathematics	Gymnase de la Cité, Lausanne

Professional Record:

2005-present	Associate Professor, Environmental Health Sciences, School of Public Health, University of Michigan, Ann Arbor, Michigan
1999 - 2005	Assistant Professor, Team leader in industrial ecology - life cycle systems; Institute of Environmental Science and Technology at the EPF-Lausanne.
1999 & 2004	Invited scientist, National Lawrence Berkeley Laboratory
1997	Visiting Scholar on the environmental optimisation of materials, Massachusetts Institute of Technology (MIT), Cambridge, MA, Materials Systems Laboratory
1993 - 1998	Project Leader on life cycle impact assessment; Institute of Soil and Water Management of the Rural Engineering Department of the EPF-Lausanne
1991 - 1993	Project Leader on environmental life cycle assessment for agriculture; Swiss Federal Research Station for Farm Management and Agricultural Engineering, Taenikon,
1989 - 1991	Postdoctoral Researcher on optimisation of humidity and water balances; Silsoe Research Institute (Formerly the National Institute of Agricultural Engineering), Department of Physics, Silsoe, Great Britain
1986 - 1989	Professor of building physics; Department of Architecture, Geneva Engineers' School (part time)
1983 - 1989	Researcher on modelling of energy consumption in greenhouses; Solar Energy and Building Physics Laboratory, EPF-Lausanne

Summary of Evaluation:

Teaching: Professor Jolliet has taught EHS 508, "Principles of Risk Assessment," EHS 672, "Life Cycle Assessment," and EHS 600, "Professional Perspectives," the first two since 2007 and the latter since 2006. For Life Cycle Assessment, the instructor and overall course evaluations were 4.58 and 4.58, respectively; and for Principles of Risk Assessment, 4.58 and 3.88. The Life Cycle Assessment course has attracted students from throughout the campus (Engineering, Natural Resources and Environment, and Business, in addition to SPH students), providing them with both the basis for good practice in LCA as well as cutting-edge methods to evaluate the life cycle impacts of products on human health and ecosystems. Professor Jolliet also gives guest lectures in EHS 500 ("Principles in Environmental Health"), Psychology 808 ("Risk and Decision making"), and a number of short courses in North America and Europe.

Professor Jolliet has been chair, co-chair or member of multiple doctoral committees, and is presently mentoring four PhD students. His trainees have included two mentees appointed to faculty positions at Shandong University, China, and the Technical University Denmark.

Research: Professor Jolliet's research falls into three major thematic areas: (1) Multi-media fate and exposure modeling; (2) Physiologically-Based Toxicokinetic modeling (PBTK) and bioinformatics; and (3) Sustainability and Life Cycle Impact Assessment (LCIA). The multi-media fate and exposure modeling research focuses on the modeling of organic chemicals from source to population intake, via multimedia transfer and bioconcentration in the food chain. The ultimate aim is to reduce the uncertainty in predicting the intake fraction, which is the fraction of a chemical emission taken in by the population. Amongst the unique achievements of Professor Jolliet's research team in this domain has been the development of IMPACTworld, the first multi-continental, multi-media model covering both fate and exposure at the global scale and the first study (in collaboration with economists at the University of Geneva) to demonstrate that long range transport of POPs in shipped food is as important as long range atmospheric transport. With respect to PBTK, Professor Jolliet led the effort on the part of the University of Michigan dioxin team to use PBTK modeling to demonstrate the dominant influence of age and historical environmental change on dioxin serum concentrations. He also collaborated with Professor Martin Philbert's team to describe the tissue distribution and pharmacokinetics of polyacrylamide nanoparticles injected to rats. Professor Jolliet's team is widely considered to be one of the world leaders in the development of LCIA methods. Outstanding achievements include developing the first model to quantify the impacts of global trade and consumption on human health, using an approach that combines economic input-output analysis with pollutant fate, exposure and impact assessment, with application to particulate matter emissions.

Professor Jolliet's research, described in over 100 original peer-reviewed papers, has been heavily cited, with over 1,100 citations, 232 in 2009 alone, and his scopus author index has increased to 16 (16 publications have been cited at least 16 times). In terms of ongoing work, he has successfully transitioned his research proposals from the European to the American model, and currently has a robust funded research program to conduct life cycle assessment and environmental transport and fate modeling with the support of several federal research agencies, institutes, and private industries from around the world.

Recent and Significant Publications:

- Wenger Y, Schneider RJ 2nd, Reddy GR, Kopelman R, Jolliet O, Philbert MA. (2010) Tissue distribution and pharmacokinetics of stable polyacrylamide nanoparticles following intravenous injection in the rat. *Toxicology and Applied Pharmacology*. [Epub ahead of print] PubMed PMID: 21134391.
- Hong J, Shaked S, Rosenbaum R and Jolliet O. (2010) Analytical uncertainty propagation in life cycle inventory and impact assessment: Application to an automobile front panel. *International Journal of Life Cycle Assessment*, 15(5) 499-510.
- Milbrath M O, Wenger Y, Chang C-W, Emond C, Garabrant D, Gillespie BW and Jolliet O. (2009) Apparent half-lives of dioxins, furans, and PCBs as a function of age, body fat, smoking status, and breastfeeding. *Environmental Health Perspectives*, 117(3) 417-425.
- Rosenbaum R, McKone T and Jolliet O. (2009) CKow – A dynamic model for chemical transfer to meat and milk. *Environmental Science and Technology*, 43(21), 8191-8198.
- Hauschild M, Huijbregts M, Jolliet O, Margni M, MacLeod M, van de Meent D, Rosenbaum R and McKone T. (2008) Building a model based on scientific consensus for life cycle impact assessment of chemicals: The search for harmony and parsimony. *Environmental Science & Technology*, 42(19), 7032-7036.

Service: Professor Jolliet has chaired the EHS Admission Committee and the EHS Website Committee. He has also served as a member of the EHS Professional Degree & Curriculum Committee, the EHS

Academic Degree Committee, and as the leader of the EHS On Job On Campus training program. He has served the wider School of Public Health and University community as the associate director of the University of Michigan Risk Science Center, a member of the 2006 SPH Symposium Planning Committee, a member of the SPH Computing Services Advisory Committee, and a member of the Executive Committee of the Graham Environmental Sustainability Institute. Nationally and internationally, Professor Jolliet has served on the advisory boards of programs at Harvard, the United Nations Environmental Programme, the Society of Environmental Toxicology and Chemistry, and many other organizations. He has also been co-editor of the *Journal of Industrial Ecology* and a peer reviewer for several top journals including *Science* and *Environmental Health Perspectives*.

External Reviewers:

Reviewer (A): "I believe the quality and quantity of his work show outstanding scholarship"

Reviewer (B): "I have always regarded his work as being of very high quality and impact"

Reviewer (C): "Professor Jolliet is considered to be a major player among industrial ecologists"

Reviewer (D): "Dr. Jolliet is internationally recognized by his peer group as one of the leading researchers in LCIA and multimedia exposure modeling."

Reviewer (E): "...I am confident that he would easily meet the requirements for promotion to full professor at [my institution]."


Reviewer (F): "... I can assure you that his contribution is certainly a leading one."

Reviewer (G): "... Dr. Jolliet has an unusually creative mind coupled with an outstanding ability to collaborate with other scientists."

Reviewer (H): "I believe that Dr. Jolliet has one of the most in-depth research records in the life cycle impact community."

Reviewer (I): "The ways in which we collaborate, conduct research, and publish have changed significantly in recent years. Dr. Jolliet is clearly at the leading edge of these new approaches."

Summary of Recommendation: Professor Jolliet is an outstanding researcher and a dedicated teacher. His productivity has provided research and training opportunities to numerous students. I enthusiastically recommend Professor Olivier J. Jolliet for promotion to professor of environmental health sciences, with tenure, Department of Environmental Health Sciences, School of Public Health.



Martin A. Philbert
Dean, School of Public Health

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