Approved by the Regents
May 17, 2007

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Ursula H. Jakob, assistant professor of molecular, cellular, and developmental biology, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	1995	University of Regensburg
B.S./M.S.	1991	University of Regensburg

Professional Record:

2001 – present	Assistant Professor, Department of Molecular, Cellular, and Developmental Biology, University of Michigan
1998 – 2001	Assistant Research Scientist, Department of Biology, University of Michigan
1996 – 1998	Postdoctoral Fellow, Department of Biology, University of Michigan

Summary of Evaluation:

Teaching – Professor Jakob is an exceptionally talented and dedicated instructor. She has taught the very challenging introductory biology course and received excellent scores from her students. She also devoted a great deal of effort to improving this course by updating its content, designing new lecture presentations that incorporated new technologies, and integrating it with the rest of the biology curriculum. She was particularly effective at helping first-year graduate students to critically evaluate experimental design and the interpretation of research results. Her scores are among the highest that have been received by faculty instructors in this course. She has mentored numerous undergraduate and graduate students in her laboratory. Several of her students have written very supportive letters about her dedication, helpfulness, and interest.

Research – Professor Jakob has established an internationally recognized program in the field of protein structural studies, specifically those involved in protein folding and known as heat shock proteins (HSPs). In the last few years, she has published a series of papers that report fundamental discoveries about the mechanism of action of this protein. These results have caused a paradigm shift in our understanding of how this and other HSPs operate. Attesting to her stature in the field, she was the recipient of the prestigious Burroughs Wellcome Fund Career Award in Biomedical Sciences (2000-2004) and has received many invitations to speak at international meetings and to organize sessions at such meetings. She successfully obtained extramural research funding from the National Institutes of Health soon after establishing her laboratory, and has now secured a second concurrent NIH grant.

Recent and Significant Publications:

"Severe oxidative stress causes inactivation of DnaK and activation of the redox regulated chaperone Hsp33," with J. Winter, et al., *Molecular Cell*, 17, 2005, pp. 381-392.

"Protein thiol modifications visualized *in vivo*," with L. Leichert, *Public Library of Science Biology*, 2, 2004, p. e333.
"Identification of a redox regulated chaperone network," with J. H. Hoffmann, et al., *European Molecular Biology Organization Journal*, 23, 2004, pp. 160-168.
"The roles of the two zinc binding sites in DnaJ," with K. Linke, et al., *Journal of Biological Chemistry*, 278, 2003, pp. 44457-44466.

Service – Professor Jakob has performed excellent service in many capacities, including serving on the departmental executive committee and on several important university-wide committees. Her national and international contributions include organizing the 2003 Midwestern Chaperone Meeting and a session at the International Union of Microbiological Societies. She also has served as reviewer for a number of premier journals, such as the *Journal of Biological Chemistry*, *Cell*, and *Nature*, among others.

External Reviews:
Reviewer (A)
"...Ursula has already achieved a high status in the field of thiol redox proteins, already being invited to speak and to organize sessions. She uses a wide variety of approaches and her presence in the field of thiol redox chemistry and biology has been very important."

Reviewer (B)
"...she discovered that Hsp33 is a redox-regulated chaperone. This finding which was published in a landmark paper in *Cell*, opened a new field. ... She has now an impressive list of 28 publications which are highly cited. This together with invitations for talks at international conferences shows that she...has become one of the leading figures in this field."

Reviewer (C)
"...Dr. Jakob is an outstanding scientist who has developed an extremely strong independent research program during her years as an Assistant Professor. ... She...not only has the highest experimental standards, but communicates her work extremely well both verbally and in writing."

Reviewer (D)
"The work on Hsp33 is simply phenomenal. It ranges from elegant genetics and whole-cell experiments, via rigorous biochemical experiments, all the way to structural biology. Ursula is clearly the leader in the field that she initiated and she is well respected internationally for her achievements."

Reviewer (E)
"Promotion to Associate Professor with tenure requires evidence of a sustained, productive research program and generation of funds to support it. Dr. Jakob has clearly fulfilled that expectation as evidenced by her many publications in respected journals since her appointment as Assistant Professor in 2001. Her research is well funded by a grant from the National Institutes of Health. ... She serves on numerous Departmental and University wide committees and clearly she is a dedicated teacher."

Reviewer (F)
"Ursula is smart, productive, and [a] creative scientist. In addition, she is an excellent lecturer. ...[her] work has been published in a series of rigorous and intellectually inviting papers. ... Ursula is a rising scientific star and it seems to me that her promotion is overdue."

Reviewer (G)
"'Thrilling' is not a word often used to describe scientific findings but nonetheless this is what comes to mind when I think about the papers outlining her work on Hsp33. ... Two years ago Dr. Jakob invented a powerful new proteomic technique for identifying redox responsive proteins in prokaryotes. This straightforward but powerful method is opening up all sorts of new directions in the analysis of redox regulation. ...she is a caring and thoughtful teacher who has mentored numerous students to successful careers."

Reviewer (H)
"Dr. Jakob has published a very substantial body of work. ... One paper of hers with which I am familiar (Hoffman et al., 2004) has been cited by Faculty of 1000 as 'a must read'... ...her record is one of continuing intellectual development, as she produces more interesting and complex work with the passage of time."

Reviewer (I)
"Dr. Jakob's work is deeply mechanistic, rigorous, and highly creative. ... I am pleased to recommend her promotion to a tenured position in your Department with great enthusiasm."

Summary of Recommendation:
Professor Jakob's research is internationally recognized. She is an outstanding instructor and an energetic citizen. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Ursula H. Jakob be promoted to the rank of associate professor of molecular, cellular, and developmental biology, with tenure, in the College of Literature, Science, and the Arts.

Terrence J. McDonald
Arthur F. Thurnau Professor,
Professor of History, and Dean
College of Literature, Science, and the Arts

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