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Dear Members for the Faculty Search Committee:

I am writing this letter to enthusiastically recommend Peter Robin Hiesinger for a faculty position in your department. Robin joined my lab as a postdoctoral fellow in September 2000 after graduating from the laboratory of Dr. Fischbach at the University of Freiburg, Germany. His interest and participation in developing new imaging techniques for the fly brain during his graduate work sparked my interest when he applied. In addition, Robin had an excellent training in computational biology, expertise which filled a niche in my lab. Combined with his longstanding interest in the molecular mechanisms of how synapses recognize each other and identify their proper targets or partners, his talents made him an excellent fit for my laboratory. Robin did a wonderful job here; he not only brought his expertise in computational biology and imaging to my lab, but he did it with a collaborative and highly interactive spirit. This attribute is best illustrated with his current CV. He also very successfully pursued his own goals (see below). It is obvious that much of the work of my lab in the past few years has benefited tremendously from Robin's input in several key areas.

Robin was very eager to learn genetics and isolate mutations that affect synapse formation. He decided to join the lab because of the large eyFLP screen to identify genes involved in neurotransmitter release. It was Robin's idea to extend the scope beyond neurotransmitter release towards synapse formation. He was a driving force! Robin programmed a Web-based database that is accessible to all team members for upload and analysis of data that has become a core part of this large team effort. He also developed programs and algorithms for confocal data analysis and presentation which proved invaluable and are now used by every member of my lab. He presented several seminars at Baylor and recently at a Zeiss Imaging Symposium about 3D visualization and deconvolution algorithms. Again, Robin was very helpful to students, post-docs and faculty and has become a popular consultant and authority regarding computational biology and imaging. It should be noted that he did most of the immunohistochemical work and confocal imaging himself, including very complex dissections of particular areas of the fly brain and visual system. His enthusiastic and collaborative personality is reflected in the number of papers from my lab that he co-authored within which he put his stamp on the microscopy and visualization data.

Robin's primary research objective has always been focused on a key question: How can so few genes 'encode' so many synapses? He has and will pursue this question for many years to come using every possible approach that may provide answers: genetics, confocal microscopy,

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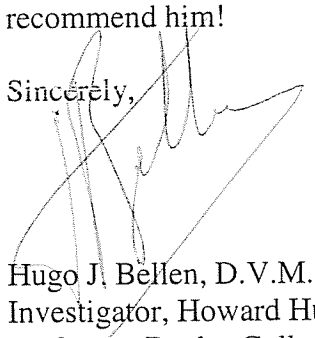
transmission electron microscopy, molecular and cellular methods, live imaging, and he will undoubtedly adopt novel technologies. The complex network of synapses developed by neurons in the fly visual system is one of Robin's fascinations. Already in his graduate work he identified a link between synaptic specificity and vesicle trafficking in developing photoreceptor neurons. Together with his work in my lab, he has really opened a new door to the understanding of the cell biological basis of synaptic partner selection, a field that has so far been dominated by studies on cell adhesion molecules. After his extensive screening and mapping efforts, Robin successfully characterized two genes that strengthen the link between vesicle trafficking and synaptic specificity: the exocyst component sec15 and the V0 vesicle-ATPase subunit type a. The isolation of sec15 mutations in the screen was a great opportunity because mutations in the exocyst were previously thought to cause cell lethality. Together with Sunil Mehta, a neuroscience graduate student he successfully guided in the lab, he performed an in-depth analysis of the visual system synaptic defects of sec15 mutant photoreceptors. His work provides a clear link between specific protein trafficking events and the neuronal targeting defects. Robin's intellectual leadership in the sec15 project earned him a co-first authorship on a paper that was published in Neuron. In parallel, Robin has been developing the V0 v-ATPase project, which really has blossomed into two independent stories. His investigation of the molecular mechanisms of V0 function addresses a long-standing controversy about the basic mechanism of membrane fusion. This project led him to acquire further expertise in yeast molecular biology, electrophysiology and biochemistry. This work was recently published in Cell. In addition, the V0 subunit mutations cause general vesicle trafficking defects selectively in specific optic lobe neurons that are required to organize optic lobe wiring. Both stories are very elegant and complementary and show that Robin masters numerous techniques, has a tremendous insight in the biology of the visual system of the fly, and masters the genetics to tackle these complex questions. He is currently writing two other manuscripts on his work. I have been very impressed by Robin's scientific accomplishments.

In summary, Robin is a driven, very smart, highly focused, and interactive scientist. He is an excellent and engaging speaker, and has been an extremely valuable contributor to the success of my laboratory. There is no doubt in my mind that Robin is extremely well prepared to set up his own laboratory and that he will be a very successful independent investigator. I most strongly recommend him!

Sincerely,



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