MAX PLANCK INSTITUTE FOR BIOCHEMISTRY
Department of Membrane and Neurophysics
Prof. Dr. Peter Fromherz

Biocomplexity Faculty Search Committee
c/o Prof. Rob de Ruyter van Steveninck
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To Prof. Rob de Ruyter, Biocomplexity Faculty Search Committee:

This serves as a letter of recommendation for Dr. Astrid Prinz, who has applied for a position as an assistant professor at your new Biocomplexity Institute. I have known Dr. Prinz for about ten years, and I was her advisor during both her diploma thesis and her PhD thesis.

I first met Dr. Prinz when she was a physics graduate student at Ulm University, where she took a biophysics class I was teaching. I well remember her most active participation in the class and the accompanying lab course that showed her keen interest in biophysics, and particularly neurophysics. When she asked me for an opportunity to conduct a one-year research project for her physics diploma, I therefore gladly invited her to join my new lab at the Max-Planck-Institute for Biochemistry in Munich.

In her diploma thesis, Dr. Prinz investigated the propagation of action potentials in grown neurites of cultured leech neurons. During the project, she demonstrated impressive skill in quickly mastering new tasks as diverse as dissecting and culturing nerve cells, probing their membrane dynamics with intracellular electrodes and voltage-sensitive dyes, and programming a state-

of-the-art photodiode based optical detection system. In addition, she developed a thorough understanding of signal propagation in neurons and applied this knowledge in computer simulations that helped analyze her experiments. Dr. Prinz summarized her results in a well-written thesis that earned her a physics diploma with honors and a grade at the top of her class.

After her diploma, Dr. Prinz extended her interest in neural dynamics to the small network level, and I was glad to keep her in my lab for her doctoral work on geometrically simple neural networks. Together with a fellow student, Martin Jenkner, Dr. Prinz was instrumental in establishing a culture system for neurons from the pond snail, and she subsequently developed a novel method for guiding the growth of neurites through patterning of proteinaceous substrates. For her PhD thesis, Dr. Prinz combined experimental and computational methods to investigate the electrical signaling in small neural networks, resulting in a body of work that was awarded a doctoral degree with honors (summa cum laude) by the Physics Department of the Technical University Munich. Among the 80 graduate students in my lab, Dr. Prinz certainly belonged to the top 5%.

During her time in my lab, Dr. Prinz matured from an inquisitive physics student to a most promising neuroscientist with a very strong background in neuronal modeling. This became especially evident when, towards the end of her time in my lab, Dr. Prinz made a significant contribution to the work of a postdoc in the lab, Juergen Kupper, by complementing his experimental work on genetically modified hippocampal neurons with simulations that helped us understand the role of the potassium current Kv1.3 in signal generation.

Dr. Prinz also demonstrated dedication and impressive talent in communicating knowledge to others. I remember enjoying many excellent talks she gave both about her own work and about the work of others, for example when reporting highlights from conference visits. In addition to her own talks, Dr. Prinz also organized visits from external speakers that contributed to seminars held in my lab. During the regular biophysics practical course that my lab taught in cooperation with other labs in Munich, Dr. Prinz

used her outstanding teaching skills to effectively instruct and supervise biology and physics graduate students in electrophysiological techniques. She co-taught this course for two years and received top evaluations from the students.

During our collaboration, Dr. Prinz became a vital part of my lab and worked productively with its diverse members, including physicists, biologists and chemists. More than most other students I have known, she quickly became a source of information and advice to her peers, to the point that more than three years after she left us to continue her studies as a post-doctoral fellow at Brandeis University, my current students still turn to her with technical problems or for advice during the writing of their theses.

I strongly and without any reservation recommend Dr. Prinz as an assistant professor at your new institute. I am absolutely convinced she will make use of her sound physics background, her broad knowledge of neuroscience, her computational experience and her communication skills to develop a really dynamic and productive lab at Indiana University.

Sincerely,

Peter Fromherz

Peter Fromherz
Professor for Biophysics
Director at the Max-Planck-Institute for Biochemistry