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Dear Search Committee,

I write this letter to express my strong and enthusiastic support for my former graduate student Dr. Leonid Rubchinsky, who is applying for tenure-track assistant professorship in your department.

I have known Dr. Rubchinsky for about 10 years and have closely followed his scientific career since his earlier university years in Russia. When he was a junior student in the University of Nizhny Novgorod, I was impressed by his academic achievements and genuine interest in scientific research and offered him a research assistant position in my department in the Institute of Applied Physics of the Russian Academy of Science. Dr. Rubchinsky promptly established himself as a hard-working, enthusiastic and creative group member and, together with one of my graduate students, performed a thorough investigation of synchronized periodic evolution of disorder in nonlinear oscillatory media.

After obtaining Bachelor's degree in the University of Nizhny Novgorod Dr. Rubchinsky won a highly prestigious Russian award – Presidential fellowship (established by the Russian President Boris Yeltsin in early 90<sup>th</sup>). He used this fellowship to study in the University of California, San Diego, where he was affiliated with the Department of Physics and the Institute for Nonlinear Science, and also was involved in a collaborative project with the group of Prof. Selverston from UCSD Biology department. I think that this involvement was instrumental in shaping his research interests in mathematical and computational neuroscience.

Upon completion his fellowship and earning Master's degree from UCSD Dr. Rubchinsky returned back to his native Nizhny Novgorod and become doctoral student in the Institute of Applied Physics of the Russian Academy of Science. Being critically minded, nicely educated innovative researcher, he had very successful research career, performing a series of studies of dynamics of networks of coupled nonlinear oscillators. He studied very interesting effects of spatial inhomogeneity in such oscillatory networks, which explained how spatial inhomogeneity could influence chaotic and regular dynamics. These studies naturally lead to his Ph.D. thesis in nonlinear dynamics, defended in the end of 2000. He published his results in a series of respected research journals, both Russian and international. These research results draw an attention of scientific community, which is nicely confirmed by invitations to present his results in several international meetings.

Soon after his thesis defense Dr. Rubchinsky was offered a postdoctoral position in University of California, Davis. His present research in collaboration with neurobiologist Dr. Sigvardt and biomathematician Dr. Kopell is a nice example of how life sciences can be advanced with the help of mathematical tools. The results of Dr. Rubchinsky's biomathematical research of the dynamics of basal ganglia networks and human motor control is of a significant importance. The successful development of

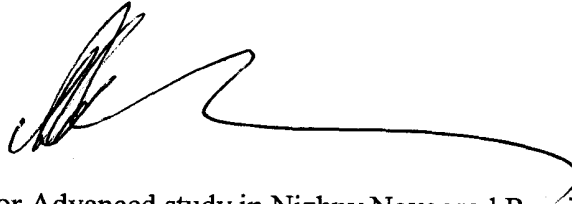
the minimal biophysically-based models of basal ganglia motor circuits and development of methods of analysis of nonstationary neural dynamics, recently accomplished by Dr. Rubchinsky definitely leads him to the establishment of an independent research program in biomathematics. I am sure he will creatively develop the results he already obtained to expand on more detailed modeling, which could lead to the advancement of the understanding of the principles of operation of basal ganglia and pathological physiology of Parkinson's disease. The collaboration he established with clinicians in Davis and Sacramento is very crucial for success of such a research program.

Throughout his study and research in graduate school Dr. Rubchinsky has shown strong teaching abilities. His service as a teaching assistant in UC San Diego in a variety of courses (targeted to different student groups from non-science majors to physics students) provided him with a valuable teaching experience. Possessing this crucial experience, he later excelled in the University of Nizhny Novgorod teaching a lecture course in dynamics of neural systems, in spite of the fact that he was still a doctoral student. That was definitely a challenging job, the University of Nizhny Novgorod is one of the strongest Russian universities in science. Dr. Rubchinsky proved to be a great speaker, a wonderful lecturer, who can carefully prepare lectures tailored to student's needs, even though his lecture course covered relatively new material, so it was impossible to chose a single textbook and use it for every lecture. He easily interacts with students in a friendly and collegiate manner and is very good in detecting students' educational and intellectual needs. Therefore, his students can receive information and training and acquire necessary skills in the best, unobstructed way.

Dr. Rubchinsky is a well-established young scientist, whose research style is characterized by open-mindedness, thoughtful approach to the problems he works on, versatile erudition and wide range of scientific interests. His strong focus in biomathematics might be grounded in his intuition for qualitative and quantitative mathematical description of dynamical processes in nature, the intuition built upon solid educational background in mathematics, physics and biology. Dr. Rubchinsky's potential for establishing strong research collaboration with biologists (and not only biologists) is very high due to his ability to convey ideas both ways: from life sciences to mathematical formalism and back. This is nicely confirmed by his current productive collaboration with clinical scientists.

In spite of having an independent personality, he can listen to both senior and junior colleagues and cooperate with them effectively. He is persuasive writer and speaker. He definitely possesses leadership characteristics to become a leader of a research group. And other group members will value his ability to manage people, talk, listen, and compromise and exchange ideas.

Prof. Mikhail Rabinovich



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