



DUKE UNIVERSITY MEDICAL CENTER

Department of Neurobiology

March 24, 2005

Biocomplexity Faculty Search Committee
c/o Prof. Rob de Ruyter van Steveninck
Department of Physics
Indiana University
Swain Hall West 117
Bloomington IN 47405-7105

Dear Dr. de Ruyter van Steveninck,

I am writing this letter in strong support of Dr. Alexay Kozhevnikov, who is applying for a position in your department. I have known Alex for several years, and now know him well enough to comment on his scientific aptitude and personal qualities, but not well enough to comment on his potential in the classroom. I believe that Alex possesses substantial intellectual and scientific abilities, and could make valuable contributions in neuroscience research in the future.

I first met Alex several years ago, when I began to collaborate with his advisor at Bell Labs, Dr. Michale Fee. From the very start, Alex was both wonderfully helpful to me and the quintessential lab scientist. He has extremely good hands and superb technical training, so he stands out in a setting where challenging experiments are the order of the day. To calibrate this a bit, I believe that Michale Fee is an expert experimentalist, and I know that he views Alex as his equal in executing the challenging chronic recording method they have developed. My impression is that Michale felt that the miniature microdrives Alex built were simply the best. Given that Michale had designed and built the originals, and my own experience is that building them is a bit like building a fine watch, Alex's handicraft is exceptional.

Of course you can see from Alex's CV that he represents that very attractive breed of experimental physicists smitten by an interest in biology. In this case, he has focused on the neurobiology of birdsong, which is really a great match for someone with his technical acumen. He played a prominent part on a seminal paper on song premotor activity of identified neurons in the song nucleus HVC, a sensorimotor area essential to learned vocal control in songbirds. This work was published in *Nature* a few years ago, with Alex as a middle author, but my sense is that this work was an almost equally shared effort on the part of the three authors. His present work has extended these difficult experiments into even more challenging terrain- the analysis of singing-related activity in the HVC of juvenile songbirds undergoing vocal learning. This will continue to be a very

fruitful direction for some time to come, and I believe that he could play a prominent role in driving this wave of experimentation.

Although Alex came to neurobiology only recently, he is a quick learner and a serious student, and is rapidly making up for lost time. I know that he is very well-versed in the biophysical aspects of neuroscience, but I suspect he is still learning about cell biology and the more general aspects of biology that are relevant to birdsong, such as ecology and ethology. I have no doubt that he has the drive and intellect to acquire the knowledge he will need to be fluent in all relevant aspects of neuroscience in short order.

My own interactions with Alex suggest that he will be very effective in a lab environment. Besides my interactions with Alex while he and Michale were at Bell, I also worked with Alex for a month-long stint at the Marine Lab in Woods Hole, where he helped train one of my postdocs in the art of microdrive manufacture and chronic recordings. Alex was simply superb at this, with lots of patience and also the fantastic ability to troubleshoot things in a very efficient manner. The lab setting is where he shines, and my guess is that in the right environment and with talented students, he can do very well.

Although my sense of Alex is obviously quite positive, the one issue I can't fully address concerns his ability to write and teach formally in English. He is razor sharp, but English is simply not his native language. He speaks in the vernacular fluently, but how he will perform when he has to write and speak in a slightly more formal manner is hard to say. I really don't have enough information to know, but Michale should be able to give you a pretty good take on this issue.

In short, I believe that Alex is an extremely capable experimentalist, and thinks deeply and effectively about fundamental problems in neuroscience. Personally, he has a great sense of humor and a wonderful work ethic. I have really warmed to him over the past several years, and count him as one of the people that will make a significant mark over the next decade. I would be glad to try to help answer any other questions you might have about Alex, so please don't hesitate to call (919 684-5025) or email (mooney@neuro.duke.edu) me.

Sincerely,



Richard Mooney