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April 25, 2012

Brown University

To whom it may concern

I am delighted to write this letter of recommendation for Dr Adrian Nestor who is applying for a position in your department. Dr. Nestor is a superb young computational/neuro scientist, amongst the very best in his peer group, and I am very (unreservedly) supportive of his application. I first met Dr Nestor through his Ph.D adviser at Brown University, Dr Michael Tarr, with whom I have a collaborative relationship. I was very impressed with Dr Nestor even when he was a relatively junior student and was struck by his serious and thoughtful approach to the field. Dr Nestor received a Ph.D. degree in Cognitive Science from Brown University in 2009 and his thesis work on the featural code of face perception was highly acclaimed. He had also done some intriguing work on color and lighting and their role in face recognition and this work received attention in the media and was 'out of the box' and intriguing. In the course of his graduate training, Dr Nestor acquired extensive experience in both computational theory of the visual system, as well as expertise in functional magnetic resonance imaging (fMRI) and these complemented his already expert ability to conduct psychophysical investigations. All told, he is very sophisticated technically but even more than that, he has a serious theoretical computational approach to his research, which is very powerful and innovative.

In recognition of his excellent graduate career, Dr Nestor received several awards including the Alfred Galpert fellowship in computational cognitive science and various training fellowships (Institute for Pure and Applied Math; Golden Greeble from PEN McDonnell consortium). He published roughly five papers from his graduate research (and still has a few others in preparation) and, even at this early stage, proved himself to be an excellent, conscientious researcher.

Unsurprisingly, then, I was especially enthusiastic to receive Dr Nestor's application to do a postdoc at CMU with both David Plaut and I as co-advisors. We had just received a NSF grant that had money for a postdoc and Dr Nestor came to work with us about 2 years ago. He has done exemplary work during this period – the project concerns the mechanisms by which the neural system comes to be specialized/optimized for face and word recognition. Soon after he started at CMU, Dr Nestor conducted a large scale imaging study (participants came back to the scanner 3 times) with sufficient signal and massive statistical power to examine the neural code associated with individual face recognition (for example, identifying 4 different individuals across variations in facial expression). The research adopted a number of cutting-edge statistical and technical procedures that allowed us to uncover the unique patterns associated with each of the four faces and we showed that a number of cortical regions have the ability to do this differentiation. The work was published in PNAS recently and we also received positive reviews in the media. A complementary paper, examining the neural code of individual word pattern recognition, across variation in font, is under revision at present (the reviews are positive and I suspect the revisions we have made will address the few concerns of the reviewers). This work, too, was meticulously executed by Dr Nestor and he has served as an excellent bridge between

David Plaut, who brings computational approaches to bear and myself, who adopts a more empirical approach. This has been a very successful postdoc experience and research collaboration. I can think of only a handful of young investigators who could have handled the complexity of these projects – Dr Nestor's fearless approach to enormous data sets coupled with this skill in functional imaging and in statistical analysis (and harnessing cutting-edge techniques like a spatio-temporal searchlight) enabled him to bring these projects to fruition and to make a novel and valuable contribution to the field.

The second phase of the postdoc research is underway and Dr Nestor is currently undertaking an even more ambitious and promising research project. He is undaunted by complexity and has set up a new experiment (5 sessions per participant) to examine neural responses to 60 different faces which vary along a host of dimensions. His converging use of psychophysics (he has already run a series of behavioral experiments using these same 6 faces and understands well the nature of behavioral responses and the face/space created by these stimuli) and very high-end imaging offers an unprecedented look into the mechanisms supporting complex visual recognition. Dr Nestor has submitted a grant to NSF to support this work and we are awaiting the outcome of the evaluation.

We also have a number of side projects underway – for example, one study examines the topography of cortical responses to faces in individuals who have congenital prosopagnosia, using the same face paradigm that is now published in the PNAS paper mentioned above. I am also initiating a new project examining the brain organization (especially in the visual system) of individuals who have undergone a (partial or complete) hemispherectomy and I am not sure I would be bold enough to do it were it not for Dr Nestor's sophistication in imaging skills. This is an exciting project and I am sure the results will be highly instructive. The key question concerns the nature of the cortical reorganization that occurs in kids who have had an entire hemisphere removed. Surprisingly, in such cases, the deficits are not as extreme as one might have predicted. In the near future, we will be characterizing both the properties of early as well as higher-order visual cortex in these individuals and a systematic investigation of this sort, using cutting-edge imaging and analytic techniques, has not been done to date.

Dr Nestor is very careful, very hard working and very committed. We meet every couple of weeks and each time he brings to the table a major advance he has made. He is disciplined and self- sufficient and is easily working as an independent junior investigator and colleague. He is happy to share his knowledge and has taught many of us a range of new skills and techniques. He is undaunted by data and thrives on making sense of it. He is very careful and thorough in his work and is a true scholar. He is also amicable and helpful and he has taught students in my place when I was unable to make a class or session. He does so willingly and with great preparation and care.

Out of the twenty or so postdocs I have had over the years, I would rate Dr Nestor in the top 1 or 2. His work is of the highest standard and he is well placed to launch a successful career as a junior investigator. I believe he has barely hit his stride and expect that he will produce even more innovative and creative work as he moves forward.

It would be remiss of me if I did not comment on how congenial and pleasant it is to work with Dr Nestor – he is rather quiet and reserved and while everyone else is jumping in with comments, he seems to be cogitating and ruminating. He then comes out with very well considered and powerful suggestions. He also has a dry sense of humor, which comes to the surface and further enhances the easygoing flexible approach he has. I enjoy working with him enormously and your gain will be my loss.

In sum, Dr Nestor has done exemplary cognitive/ computational neuroscience research and this places him in an optimal situation for a junior faculty position. His experiences to date and his unique qualifications in the particular field of experimental functional imaging, as well as his own methodological and computational innovations in this domain, make him an excellent addition to any cognitive and/or computational neuroscience department. I fully expect Dr. Nestor to make important contributions to the field in the future and recommend him without reservation for this position. I predict that he will have a stellar career and that he will have a great academic

career.

Sincerely,

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