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Prof. Rob deRuyter  
Chairman of Biocomplexity Search Committee  
Indiana University/Dept. of Physics  
727 E. 3<sup>rd</sup> St./Swain West 165  
Bloomington, IN 47405-7105

Re: Rusty Lansford

Dear Prof. Rob deRuyter,

I am happy to write a letter to assist your committee in evaluating Rusty Lansford for a faculty post in your institution. I have worked with Rusty over a period of several years, as he made the transition into developmental biology and as he initiated some very demanding efforts at technology development. During this time, we have interacted for countless hours in many different settings, and watched him serve as a mentor to others. This allows me to write a very well-informed and very strong letter of recommendation.

Rusty Lansford joined my laboratory after gaining his Ph.D. from the laboratory of Professor Fred Alt (Columbia and Harvard) during an era of dramatic advancement in molecular immunology. Among his many accomplishments there was the development of the RAG blastocyst complementation assay. The cleverness and impact of his thesis work shows that he has the ability to work fruitfully in the most competitive areas of biomedical research. His abilities were obvious to many around him: in the letters I received in support of his application as a post-doctoral fellow, the authors used terms such as "the real thing" or "the right stuff".

Rusty joined my laboratory to combine his background and our technologies to study the cellular and molecular events critical for neural development. He felt that a great deal has been made in recent years of the expression patterns of putative control and signaling genes in the organization of the nervous system. While this can be suggestive of mechanism, it doesn't offer an easy means to move forward to more direct and decisive test experiments. Rusty realizes that work in the field could best be moved forward if the arsenal of techniques were expanded; he hoped to perform post-doctoral work that would allow him to develop some of the needed tools. It is a tremendous understatement to say that it is rare for a new post-doctoral fellow to have this degree of vision and drive.

Rusty's performance far exceeded my high expectations. Rusty advanced rapidly in the laboratory, from a period of watching over the shoulders of many of us to the

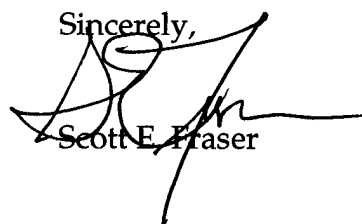
submission of his first paper within a year. His performance is notable on two counts. First, he applied what he learned very quickly, moving from knowing little about the field to generating first-rate data in weeks. Second, he initiated important aspects of the work, including establishing a collaboration with Regeneron and a beta-test relationship with Clontech for their Green Fluorescent Protein (GFP) products. The results were not only a great paper (on which he basically gave away first authorship to another post-doc to help her in her job search), but also a new family of GFP fusions and eGFP variants that are optimized for use in mice and chicken embryos.

Rusty has been fearless in taking on challenges. Because our approaches for labeling cells were not adequate for his needs, he developed a new family of optimized retroviral vectors. To make this happen, he designed a new set of benches in the lab, orchestrated the renovation, developed the needed biological resources and refined the molecular constructs to generate pseudotyped retroviruses. In five short months he went from the desire to generate a new set of reagents to performing the first test experiments. His strategy offers both a more reproducible stock of viral vectors and a much higher titer. His optimized viruses are 5-10 fold better than those available in other laboratories, making what would have been risky experiments nearly sure-fire. Surprisingly, he now occasionally supplies viral stocks back to the labs that originated the vectors on which his work was based.

Recently, Rusty has been developing new sets of technologies for cellular level molecular analyses. In a consortium with me and a group of physicists at Caltech, we have been developing nanosensors that we hope will be capable of analyses of the contents of individual cells. He has played a central role in linking the biology, chemistry and physics of the devices. We have come a long way towards our goal, thanks to his efforts. Again, he has been fearless, and amazingly capable.

The only issue on the down-side has been Rusty's reluctance to actively publish his work. He's played a key role in many different projects, and has carried each to near the point of writing them up. My hope is that in the next few months, Rusty will harvest some of the publications he deserves.

In addition to his roles in research, Rusty has been active in a variety of tasks. He has directed summer undergraduate research students, participated in administrative committees for the Provost, and been involved in student athletics. In short, he has played a role in activities in and out of the laboratory far beyond that of the typical post-doctoral scholar. It is this ability to see the "big picture" of an experimental series, and willingness to play roles on campus beyond the lab-bench, that makes me confident that Rusty has "the right stuff" to make a first-rate junior faculty member in the coming years.

Sincerely,  
  
Scott E. Fraser