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To Whom It May Concern:

**RE: Reference for Dr. Joe Reiner**

I have known Joe Reiner well since the middle of 2001, when I first visited the laboratory of Luis Orozco at SUNY Stony-Brook. There we began a collaboration on the Cavity QED system which Joe and another Ph.D. student (Wade Smith) were working on. In early 2002, Joe visited me at Griffith University in Brisbane for a period of two weeks, during which we began a new theoretical collaboration. I also visited Stony-Brook in the middle of 2002, when we continued these collaborations.

The experimental work, for which Joe was a principal contributor, was the first quantum feedback experiment in the "deep quantum" regime, and resulted in a Physical Review Letter in 2002, and a follow-up Physical Review A paper in 2004. This work was featured as one of the top research results in Optics in 2002, in the special issue of *Optics and Photonics News*. The theoretical work also resulted in a paper in Physical Review A, on which Joe was first author. As his CV shows, he also has numerous other high-quality publications which I was not involved with.

In all of this work I have been impressed with Joe's depth of understanding. The theoretical project that he undertook with me was as difficult as those that I would give to a typical theory Ph.D. student at his stage. He very quickly developed a strong appreciation of the theory, and an intuition that was highly satisfactory. Considering that we had not even decided upon a project when he arrived, Joe achieved an enormous amount in the two weeks he visited me. Nevertheless, the greater part of the work had to be completed when Joe was back at Stony-Brook, and he showed there that he was able to work quite independently to obtain new theoretical results.

In his theoretical project with me, Joe showed a mastery of both numerical and analytical tools in quantum optics, including master equations, quantum trajectories, adiabatic elimination, and correlation functions. There is no doubt in my mind that his theoretical qualifications are equal to those of many theory Ph.D graduates. While I should leave comment on his skill in experimental techniques to those who have worked with him in the laboratory, he seemed to me to understand the experiment very well. Certainly he showed himself well capable of interpreting and reporting the results obtained in the experiment. I was not surprised to hear that he had gained a Commendation to Distinguished Doctoral Students from his Graduate Council

Overall, it has been a pleasure to work with Joe. He is very diligent, and has original ideas. He is friendly, and works well as part of a team. He also writes well and gives oral presentations of high quality. I hope you consider his application for your position very seriously.

Yours sincerely

A handwritten signature in black ink, appearing to read 'H. Wiseman', with a long horizontal flourish extending to the right.

Prof. Howard Wiseman  
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Griffith Centre for Quantum Dynamics,  
**Program Manager,**  
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P.S. When comparing this letter with others, especially from U.S. referees, please take into account that I do not write hyperbole in my letters of reference.