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2 June 2014

TO WHOM IT MAY CONCERN

Dr Clement Riedel

It is my pleasure to write this letter to support the application of Dr Clement Riedel for his I-140 immigrant petition in the EB1—Extraordinary Ability category. I am an Emeritus Research Director of the French Scientific Research National Council (CNRS). I have studied biochemistry, with a particular interest in enzymes, for 45 years. I have written more than 200 papers in prestigious international peer-reviewed journals (including *Nature*, *Biochemistry* and others) and several books on the subject. I am therefore well qualified to judge Dr Riedel's research.

I met Dr Riedel at an international congress last November at which he presented to me his research in the laboratory of Dr Carlos Bustamante at the University of California, Berkeley. He impressed me very favourably as someone to whom the description as a *researcher of extraordinary ability* certainly applies. Although I do not have an extensive acquaintance with him, I know his supervisor Dr Bustamante very well and have discussed Dr Riedel with him. Dr Bustamante is one of the foremost researchers working in the USA at present, and his work in single-molecule biophysics, a currently very active field, is very highly regarded throughout the world. He is in a position to restrict his group to students and post-doctoral fellows of the highest ability.

Dr Riedel's own work focusses on the study of soft and biological matter at the nano-scale. He has written 12 papers in high-quality journals, as well as two book chapters. He is currently studying the effect of a chemical reaction on a single enzyme catalysing this reaction. Enzymes are present and play a fundamental role in all living organisms. Understanding how they work and the effect of catalysis on their structure and diffusion is of the utmost importance and has a wide range of application, notably in biology and medicine: enzymes have many essential functions, such as signal transduction, active transport and virus integration.

In order to carry out his research, Dr Riedel had to master several techniques, including protein purification, modification and use of different affinity tags, solubilization assays, protein precipitation, dialysis, size-exclusion chromatography, fluorescence assays, and interpretation of single-molecule data. He has developed an assay at the single-molecule level that permits enhanced diffusion of a protein during catalysis to be measured by fluorescence correlation spectroscopy. Dr Riedel measured a linear dependence between the diffusion of the enzyme and the reaction rate of the reaction. Their theory predicts that the heat released by the reaction is one of the factors affecting the enzyme. This research is in preparation to be submitted to the journal *Nature* — one of the foremost scientific journals in the world. Dr Riedel's research is of fundamental interest for basic science and I have no doubt that it will have a high impact.

Dr Riedel was born in La Réunion, and obtained his secondary education there. This is one of the most remote areas of France, very far from the European continent, and the fact that he has already advanced so far in his career, at such a young age, is a strong recommendation. I have no doubt that he will advance much further as a researcher.

Based on his outstanding scientific qualities, I regard Dr Riedel as thoroughly qualified to obtain the right of permanent residence in the USA under the EB1-A category. I do believe that his high-quality research will benefit the USA.

Athel Cornish-Bowden
Directeur de Recherche Émérite au CNRS