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Dear colleagues:

I am delighted to write in support of Dr. Kevin Redding. He is a superb scholar, scientist and educator.

I have known Dr. Redding for over 10 years. I met him when he was a post-doctoral fellow in the group of Prof. Jean-David Rochaix at the University of Geneva and was immediately impressed with him. Although he had been in that group for only a few months from a rather different field of research, Redding was sophisticated in his discussion of the projects underway. He was confident, knew the literature and he was able to engage me in an intellectual dialogue. Since that time I have seen Dr. Redding at conferences and have read some of his work. I will restrict my comments to the more biologically oriented papers because I am most familiar with those.

Redding has made a number of important contributions in photosynthesis already. One of the two most visible works is his demonstration of two active electron transfer branches in photosystem I. The reason this was even a question is because the quinone type photosystems (bacterial RC or photosystem II) use only one of two possible electron transfer paths. Redding and co-workers demonstrated elegantly and convincingly through the spectroscopic analysis of site-directed mutants that both branches were active and unequally so. What strikes me as special about Redding is that he is not merely the "molecular biologist" on these projects. In discussing his work at meetings, it is obvious that Redding is intellectually immersed in all components of the project. Redding is a real scholar. When I see that he is trained as a cell biologist, yet publishes in the area of spectroscopy and physical chemistry and can discuss the biophysical work with authority and knowledge, I am impressed. This is definitely not true of other molecular biologists in the field who collaborate with spectroscopists. In ongoing work, Redding is relating cofactors and electron paths deduced from structure to spectrally identified species and features. These mechanistic questions of the path of electron flow are of fundamental interest in chemistry. In any event, the project is a good training vehicle for students and post-doctoral scholars. There is no question that fundamental discoveries about PSI will result.

In my opinion, the second important set of contributions from Redding's laboratory is the work on identification of chloroplast quinol oxidases. This topic has historically been descriptive and phenomenological, but with the advent of reverse genetic and genomic technologies there is the potential to make some break through discoveries about electron transfer pathways. In respiration, there is good evidence that under "reducing pressure", electrons are "dumped" through a non-proton pumping terminal oxidase, namely the alternative oxidase. Redding proposes that a similar mechanism operates in the chloroplast for dumping

electrons when there is too much pressure on the reducing side of PSII. I like this model. I also think it is an important and topical question. There is much interest today in regulation of redox metabolism and electron flux. Redding has already established himself in this sub-area and he is in an excellent position to exploit his system.

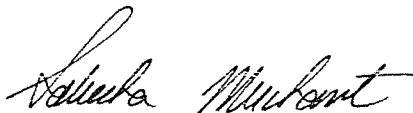
Besides these two main areas of research, I see that Redding is also looking at PSI degradation and has devised a methodology for determination of topology of thylakoid membrane proteins. I am familiar with both research problems because my laboratory is interested in similar things. Although it is early to comment on Redding's contributions in the area of biogenesis and degradation, I am sure that he will make a mark in this area as well. Certainly, we will try out his method for topology prediction. We have used a different approach in a heterologous system, which is not as intellectually satisfying as the one published by Redding in FEBS Lett.

I should also comment on Redding's demonstration that PSI is essential (Redding et al. 1999). Although this is a one-off type of paper, it was important to the field because of the high visibility of Greenbaum's work (published in multiple papers in Science and Nature) indicating that PSI is not essential for certain electron transfer pathways. Redding and co-workers undertook a series of highly analytical, thoughtful and decisive experiments to demonstrate that the conclusions published in the "magazine" journals were wrong. I admired Redding for his dedication to the work because it was a thankless project. To me it showed that Redding is a real scholar; for him research is about understanding nature. His persistence in correcting the literature shows his commitment to scholarship.

In looking through Redding's CV, I noted that he has published significantly since joining the faculty at the University of Alabama, been awarded a CAREER grant from the NSF, and secured and renewed funding from the DoE (not easy!). I don't doubt that he will maintain a well-funded program for the foreseeable future. You will note also that Redding has attracted a number of well-regarded scientists as collaborators on his projects, like Pierre Joliot and Bill Rutherford, who speak very highly of him. This attests to Redding's value to the photosynthesis community.

What I have seen of Redding at meetings suggests that he is a high-energy, stimulating lecturer who is committed to learning. One cannot create knowledge effectively if one is unable or uninterested in distributing the knowledge. Therefore, it is no surprise to me that Redding is an excellent classroom teacher. I have not met students from his laboratory yet, but I would accept any of Redding's students to my own group based solely on his recommendation because I value his teaching and judgment.

Sincerely,

A handwritten signature in black ink, appearing to read "Sabeeha Merchant". The signature is fluid and cursive, with the first name being more prominent.

Sabeeha Merchant  
Professor of Biochemistry