

January 3, 1989

Dear Andrew:

The purpose of this letter is to invite you to participate in a small conference on "The Potentials of Biotechnology for Improving Grain Yield of Rice Under Water Limited Conditions." It will be held September 18-22, 1989, at the Rockefeller Foundation's Bellagio Study and Conference Center on Lake Como in Italy. Dr. Andrew Hanson, of Michigan State University, is assisting the Foundation in organizing the meeting.

Over the past three years the Foundation has supported the establishment of an International Program on Rice Biotechnology. The goal is to assure that new techniques for crop genetic improvement, based on advances in molecular and cellular biology, are developed for rice and used to produce improved varieties that address priority needs of less developed countries. Considerable progress has been made in developing the techniques of rice genetic engineering. High priority has been given to drought tolerance as a rice improvement goal. Accordingly, the objective of the Bellagio meeting is to bring together plant physiologists, biochemists, molecular biologists and geneticists to critically discuss a range of ideas on how new knowledge and techniques might best be used to improve grain yield of rice under water limited conditions. Discussion will center on a series of "position papers" presented by scientists on their own and related recent research. Although rice will be the focus, the issues to be covered are relevant to most crops.

The outcome of the conference will not be a set of published papers, but a brief report, to be drafted by senior scientists attending (who will not give individual position papers). This report will evaluate: (a) the strengths and weaknesses of the research ideas discussed, as applied to rice; (b) the time scale for progress in these areas; and (c) whether promising target areas for rice research can be identified.

A list of topics and likely participants is attached. In selecting the topics, three criteria were applied in the form of questions. First, is this a biochemical/molecular area where progress is being made? Second, could it build on the progress made in RF-supported projects on rice genetic mapping and transformation? Third, is it possible to articulate a reasonable connection between the biochemistry/molecular biology and grain yield? Here, the equation emphasized by Passioura was applied:

$$\text{Grain yield} = W \times \text{WUE} \times \text{HI}$$

where W is water available for transpiration, WUE is water use efficiency (net photosynthesis/transpiration), and HI is harvest index.

OK

As you can see from the attached list of topics, we felt that a position paper reflecting your research and ideas on "enzymes and genes for betaine synthesis in plants" would be an excellent introduction to discussion. I should expand briefly on what we mean by position paper. In essence, this would be a 20-30 minute talk on the general topic listed, drawing heavily but not exclusively on your own research and ideas. Where appropriate, the talk should include exciting work in other laboratories, and so provide a reasonably broad picture of the field in which you are a leader. We appreciate that this is somewhat more demanding than presenting solely research from your own laboratory, but we think it is important for the success of a small meeting of this type.

Information concerning the Bellagio Study and Conference Center is enclosed. The date of arrival at the Center is Monday, September 18, 1989 and the date of departure is Friday, September 22. While at the Center you will be a guest of the Rockefeller Foundation. However, if you arrive earlier or depart later than the designated dates, you will need to make arrangements for your hotel accommodations.

The Rockefeller Foundation will cover travel costs. However, it will be necessary for you to make appropriate travel reservations, and we would appreciate your taking advantage of any lower rates available through advanced booking. Travel advisory forms and additional information will be sent upon your acceptance of this invitation.

Sincerely,

Gary H. Toenniessen
Associate Director for
Agricultural Sciences

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