Geography & Program in Planning
UNIVERSITY OF TORONTO

March 23, 2010

Prof. Connie Woodhouse
Laboratory of Tree-Ring Research
University of Arizona
105 W. Stadium
Tucson, AZ 85721

Re: Faculty Position in Dendrochronology

Dear Committee:

I am pleased to provide this reference letter for Dr. Yude Pan, who applied for this position in you laboratory.

I have known Yude for over 10 years, first through her leadership in Sino-Eco and later through collaboration on a USA forest carbon cycle project. Sino-Eco is a large international organization involving scientists in USA, Canada, Europe and China, and Yude played an important role in organizing various activities that fostered international collaboration. In the last three years, I have been collaborating with Yude's group in using USDA Forest Inventory and Analysis (FIA) data for US forest carbon cycle estimation. The key point of the collaboration is to compile a continent-wide forest age map as an input to ecosystem models for carbon source and sink estimation. Yude plays a leadership role in this work (a paper is submitted to Biogeosciences), and several papers on the derivation and use of the map are also submitted or in preparation. Through this collaboration, I am very much impressed by Yude's dedication to science and ability to lead a project in an effective and efficient manner. She often amazes me with her ability to summarize, in a short order, complex information from various sources in writing proposals. She is a scientist with vision and attention to technical details, and therefore she has led a highly successful career so far.

Dr. Yude Pan would fit in your research program very well. The major technique that she used in her Ph.D. thesis research was tree-ring analysis. After her graduation, she spent half a year in the Columbia University Lamount Tree-ring Laboratory. She is therefore very familiar with dendrochronology techniques. She has mostly used these techniques to gain new long-term datasets for validating ecological models for climate change studies. Since her Ph.D. graduation in 1993, she has been working with several renowned regional and global ecologists including Jerry Melillo, David McGuire, David Schimel, Rich Birdsey, etc. Yude has made her marks on global change ecology through her influential publications, in particular her papers in Global Change Biology (1996), Oecologia (1998), and Journal of Vegetation Science (2002), which are frequently cited. Her studies on the impacts of climate change and elevated CO2 on plant growth and carbon cycle have been the basis for many follow-on studies. She contributed significantly to the development and refinement of the Terrestrial Ecosystem Model (TEM), which is one of the

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leading ecological models for regional and global applications. This expertise would be exactly what is needed for your research program.

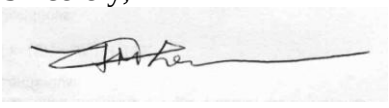
Two years ago, Yude was invited to University of Toronto to give a presentation on her modeling work for the carbon cycle in the Northeast temperate forest region in USA. For this study, she used an ecosystem model (PnET-CN) in combination with a comprehensive dataset including soil texture, gridded climate, atmospheric pollution, nitrogen deposition, and vegetation structure derived from remote sensing. She conducted a careful modeling study to separate the influences of the various factors (climate, atmospheric composition, and land use) on the carbon cycle at the regional scale. Through this study, she not only demonstrated her mastery of the major scientific issues in the terrestrial carbon cycle research but also her superb technical skills in handling the complex spatial datasets through the use of GIS and additional programming. These would be the essential skills needed for ecological modeling.

Through her many influential publications, she has become a well-known scientist internationally. She served on some of the high profile international committees such as the Scientific Committee for an IGBP regional carbon cycle workshop in Beijing and the Organizing Committee for a North America Carbon Program All Investigator's Meeting. I participated in both meetings, which were well attended by participants who are most active in regional and global carbon cycle research. Her influence on global change ecology is highly visible internationally.

Through personal conversations, I understand that Yude has made an academic position as her pursuit. She enjoys the academic environments at the University of Pennsylvania and University of Princeton, and she has gained some experience in teaching graduate courses and in serving on graduate committees. I have no doubt for her teaching ability because I have attended several of her seminars and conference presentations. Her English is fluent and clear (without noticeable accent), and her organization of slides is superb. In addition to her deep insights to scientific issues being addressed, she always speaks with charm and elegance and is naturally attractive to the audience. I trust that she would be an excellent teacher.

I strongly recommend Dr. Yude Pan to this position. With her extensive experience in ecosystem and climate change research, she will be able to establish a vibrant research program immediately in your school. She will also be able to collaborate effectively with other ecologists and scientists at your university.

Sincerely,



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