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Dr. Connie Woodhouse
Associate Professor
Geography, Regional Development & Dendrochronology
And the Laboratory of Tree-Ring Research

Dear Dean Woodhouse & Search Committee Members:

It is my pleasure to write to you on behalf of **Dr. Christopher J. Still** whom I understand you are considering for your open position at the Laboratory of Tree-Ring Research at the UofA. I have known Chris since 1996 and have been involved in past promotion reviews of his research, teaching, and service accomplishments. I have also participated in a wide range of workshops with Chris where he and I ran some of the sessions, have heard him give talks and seminar and most recently began collaborative research with him so I feel like I know Chris quite well.

I first got to known Chris as a graduate student when he was working with Joe Berry at Stanford when he attended the stable isotope ecology course I help teach at the University of Utah each summer and it was then when I first came to appreciate his keen intelligence, zest for research, skills for asking important questions, and broad-based approach in conducting the science he does. After this I began interacting with Chris as a postdoctoral fellow here at Berkeley when he was working with Inez Fung. During this time we had the opportunity to begin working together on research topics of mutual interest (e.g., fog and its importance for California ecosystems) as well as helping run some workshop activities associated with the Biogeosphere-Atmosphere Stable Isotope Network (*BASIN*) that I direct. All of my interactions with Chris have been very fun, positive, intellectually rich and extremely rewarding. He is a first rate scholar and among the top two or three biogeoscientists and isotope modellers that I know of at the same points in their respective careers. He is a major contributor to our understanding about the drivers behind the global water and carbon cycles (and therefore global change) where he uses diverse and interdisciplinary approaches that embraces the fields of plant physiology and ecology, stable isotope biogeochemistry, atmospheric science, geography and modeling. For me, few people can master such a broad range of disciplines as well as Chris clearly has and for this reason he adds a great deal to not only any research project but to the department he is a member of – I would welcome Chris as a fellow faculty colleague.

Regarding his rsearch, by all measures I know of Chris excels as a scientist. As noted above, he has tackled some very challenging research issues at the interface between the biological and atmospheric sciences and it is here where his work has gotten the attention of the international community. He has approached research on the carbon cycle in perhaps one of the most creative ways I have seen in recent years. Using a combination of geographical (GIS), physiological, isotopic and modeling approaches Chris has shown the importance of different physical and biological drivers in controlling carbon fluxes, cycling and sequestration. He has applied this broad-based approach in very novel ways and explored how photosynthetic pathway (C3 vs. C4), vegetation type (grasslands, boreal forests, tropical montane cloud forests) and the resources that plants require (light, CO_2, water) impact the manner and magnitude by which carbon cycles on Earth. The multifaceted nature of Chris' work on carbon cycle problems and questions is brilliant, insightful and has had real impact on how we now think about the controls, at several levels, on carbon cycling. Also, his use of stable isotopes has been extremely helpful and insightful in helping to identify ways that we as a community can pin-point the controls over carbon and water fluxes. This information is essential if we are to have robust predictive models for how ecosystems with respond and change under future climate change. Work in Chris' group over the past 5+ years on fog-vegetation interactions on Santa Cruz Island is very exciting and is yielding new and important insights as to how the plants that inhabit this otherwise drought-prone environment can thrive, how it impacts their performance and how this in turn this can be linked to ecosystem processes. This area of research has in fact turned out to be an exciting venue for a collaborative project between Chris' lab and mine, including one aspects that lead to Park Williams PhD dissertation that merged tree-ring isotope analyses with climate analyses (in 2009). Then, beginning in 2007 Chris and I were funded to begin a collaborative project in Santa Cruz Island bishop pine forests aimed at exploring the linkages between fog water inouts, tree carbon fixation and water use and soil microbial C-cycling. This project has involved two post-docs, Mariah Carbon (at UCSB) and Anthony Ambrose (at UCB) who have been able to show just how critical the fog water inputs are to driving both plant C and water fluxes and the relative importance of autotrophic (plant) vs. heterotrophic respiration and C-cycling. Working with a host of methods, including some very new and innovative 14-C measurements and tree sapflow coipled with a new set of process-based models we are now able to show when and how important the linkages between fog, trees and soils are. This in turn is being compared to my ongoing work in northern California in both bispop pine and redwood forests with this work of Chris' and ours on the Channel Islands. It is the first project that I know of that spans such breadth; from climate science to plant physiology to microbial ecology and biogeochemistry.

His publications are of the highest quality in very well respected journals and he has done a fine job of publishing as both the lead author and an essential contributor to research papers that require interdisciplinary teams (i.e., no single person could write some of the papers he has helped put out). Funding for his research program is solid

and I expect will increase because of the level he is participating in co-writing large multi-investigator proposals and projects. On such proposals and projects Chris appears to always be among the “leaders” in both drafting the proposal and in developing the ideas (as he did with our proposal funded in 2007). I have also reviewed two of his recent grants, including his NSF Career proposal and they were well conceived and written with sound and exciting science. I ranked his Career proposal as “excellent” for this reason. He is well known to biogeoscientists as being interdisciplinary, intellectually sharp with a knack for asking hard questions, interactive, a creative thinker and truly excited about science. He always thinks “outside the box” and for this reason his work will have a lasting impact on the field.

From reviewing his CV it appears that he his done a fair share of teaching since arriving at UCSB and this has only increased. The *Oceans and Atmospheres* and *Biogeography* courses seem like important ‘core’ courses in his current department and therefore Chris is making an important contribution to the program. In addition, he has co-sponsored graduate courses on climate change and the carbon cycle, and on merging GIS with isotope data which allowed him to meet and interact with the graduate students. I have heard him give several talks and seminars over the years that have revealed him to be an effective, engaging and interesting speaker. For this reason I can imagine that he is also a very good teacher and would add stimulating dimensions to any department’s curriculum.

As a graduate student advisor and mentor it appears that Chris is doing well. Over the past several years I have had the chance to observe him interacting with his own graduate students (Doug Fischer in particular) at conferences and here in Berkeley and I was impressed with how he involved them in discussions and pushed them to state their views, but was also patient, critical and quick to provide guidance when the students were puzzled about an issue or had a question. His students appeared to me to respect him a great deal and his approach to advising and showed trust in his judgment and his knowledge. Like all of us, as he gains more experience I expect he will become an important and valued mentor and leader for graduate education in your department and your institution.

In reviewing his record of service I feel that Chris has always involved himself in service at the department, University and professional levels. Professionally he is engaged at all levels; participating in all of the things we hope our colleagues involve themselves with – reviewing papers and grants, serving on different types of committees, and taking a leadership role at international meetings (like AGU where he has lead the Biogeosciences section). He is invited regularly to national and international meetings and as a departmental invited speaker and has participated in activities that highlight the accomplishments from his own program as well as broader issues in ecology, biogeochemistry, stable isotope and atmospheric science.

In closing and to reiterate, I strongly recommend that you consider Dr. Still to the post you have advertised. By all measures I know of he an outstanding scientist, colleague, teacher, mentor, and citizen. As I stated above, I would welcome having Chris as one of my faculty colleagues for sure. He is exceptional among his peers and your University and the Tree-ring Lab would no doubt benefit from his skills in research, teaching and service.

If you should have any questions please feel free to contact me.

Yours sincerely,

Todd E. Dawson

Todd E. Dawson
Distinguished Professor of Environmental Biology
Director, Center for Stable Isotope Biogeochemistry, UC Berkeley
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