

To Climate Center Committee Members:

In March 2005, the Climate Center funded a proposal that I submitted, "Wind and Rain-Induced Air-Water Gas Exchange: A Pilot Study at University of Delaware's Air-Sea Interaction Laboratory", at a reduced budget of \$3000.

Using this money, we went down to Delaware in March 2005 and conducted our experiment. The result was the first systematic study on the relationship between wind, rain, and gas exchange, and suggested that wind and rain may affect gas exchange in a linear way. This has many interesting implications for gas exchange (and ultimately for biogeochemical cycles and climate) that I won't describe here.

Anyway, the experiment was reported on the local Delmarva television station (we became recognized everywhere we went in Lewes, DE). The video news clip is no longer available, but the story is here:

<http://www.wboc.com/Global/story.asp?S=3109002>

The science is not quite right, but hey, all publicity is good publicity, right?

The results from the experiment were presented at the 37th Liège Colloquium on Ocean Dynamics in Liège, Belgium in May 2005:

Ho D.T., W.R. McGillis, F. Veron, N. Scott, Rain and wind-induced air-water gas exchange, 37th Liège Colloquium on Ocean Dynamics, Gas Transfer at Water Surfaces, Liège, Belgium, 2005.

Furthermore, the results from the study were submitted for publication in *Journal of Marine Systems* in November 2005, and accepted in February 2006. The article is currently in press, and attached:

Ho, D.T., F. Veron, E. Harrison, L.F. Bliven, N. Scott, and W.R. McGillis, The combined effect of rain and wind on air-water gas exchange: A feasibility study, *J. Mar. Sys.*, doi:10.1016/j.jmarsys.2006.02.012, 2007.

Based on the results from the experiment, in August 2006, Wade McGillis (LDEO), Fabrice Veron (Delaware), and I submitted a proposal to NSF/OCE/PO entitled: "Collaborative Research: Wind, Waves, Rain and Their Effects on Air-Water Gas and Momentum Exchanges" to conduct follow up experiments at University of Delaware's Air-Sea Interaction Laboratory in order to elucidate some of our initial findings. We have been informed by Eric Itsweire at NSF's Physical Oceanography Program that they intend to fund our proposal, at a budget of \$384,745 for Ho and McGillis, and \$311,429 for Veron (total = \$696,174).

Anyway, I am writing for several reasons:

1. I wanted to thank the Climate Center for the seed funding, without which the experiment would not have been possible.
2. I realize that not all seed funding germinate, and since this one obviously did (A \$3k investment for an almost \$700k return + interesting scientific results + publicity + presentation + paper), I thought you would want to know about it.
3. I want to express my strong believe that what the Climate Center provides is an important source of funding for pilot project, such as the one we conducted at Air-Sea Interaction Laboratory, and without it, a lot of exploratory work wouldn't be possible. Because of this, I hope that LDEO scientist will be able to compete for this funding for a long time to come.

Keep up the good work.

Cheers,  
David Ho