

Certificación Núm. 112

Año Académico 2020-2021



Senado Académico
Secretaría

Yo, Claribel Cabán Sosa, Secretaria del Senado Académico del Recinto de Río Piedras, Universidad de Puerto Rico, **CERTIFICO QUE:**

En la reunión ordinaria a distancia celebrada de forma asincrónica a partir de 6 de mayo de 2021, y culminada de forma sincrónica el 11 de mayo de 2021, se acordó:

- Recomendar a la Junta de Gobierno de la Universidad de Puerto Rico la otorgación de la distinción académica de **Profesor Emérito** al **Dr. Nicholas Brokaw**, de la Facultad de Ciencias Naturales.

Y para que así conste, expido la presente Certificación bajo el sello de la Universidad de Puerto Rico, Recinto de Río Piedras, a los doce días del mes de mayo del año dos mil veintiuno.

Dra. Claribel Cabán Sosa
Secretaría del Senado

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Certifico correcto

Dr. Luis A. Ferrao Delgado
Rector



NICHOLAS BROKAW

Statement in Support of a Request for Emeritus Status

College of Natural Sciences, University of Puerto Rico-Río Piedras

SUMMARY STATEMENT

I am applying for emeritus professor status in the College of Natural Sciences of the University of Puerto Rico-Río Piedras (UPR-RP). I believe that my request is justified by my record of research, teaching, and service and by my continuing professional activities. At UPR-RP I was a Professor in the Institute for Tropical Ecosystem Studies (ITES) and the Department of Environmental Science in the years 2001-2018.

Highlights of my research in that period were: 1) leading (2001-2013) the *Luquillo Long-Term Ecological Research Program*, funded by NSF, and 2) publishing *A Caribbean Forest Tapestry: The Multidimensional Nature of Disturbance and Response* (Brokaw et al., Oxford Univ. Press).

Highlights of my teaching were: 1) three innovative graduate courses: *Tropical Forest Ecology*, *Environmental History*, and a version of *Special Topics in Modern Biology* (Zimmerman, Brokaw), and 2) taking 19 UPR undergraduates to Belize for field work (USDA grant, J. Zimmerman).

Highlights of my service were: 1) serving as Director of ITES and Acting Director of the Department of Environmental Science, and 2) authoring (with S. Ward) *IGERT: Human-Natural Ecosystems in the Urbanizing Tropics*, a proposal funded by NSF that provided financial support for about 30 UPR-RP PhD students and helped start the Department of Environmental Science.

My continuing professional activities include: 1) research in Puerto Rico and Belize, 2) work on an NSF proposal, 3) mentoring a PhD and a Master's student and membership on three other student committees, and 4) helping with a revision of the graduate program in the Department of Environmental Science.

DETAILED STATEMENT

I would like to be considered for emeritus professor status in the College of Natural Sciences, University of Puerto Rico-Río Piedras (UPR-RP). At UPR-RP I was a Professor in the Institute for Tropical Ecosystem Studies (ITES) in the years 2001-2008 and in the Department of Environmental Science in 2008-2018. I retired in May 2018.

In the years 2001-2018 I was active in research, teaching, and service. After retirement I am still involved with UPR-RP in those areas. Here I describe my 2001-2018 record as a professor and my post-retirement, continuing activities, that together make me a good candidate for emeritus status. My curriculum vitae is attached.

2001-2018 at UPR-RP

Research

During the period June 2001-2013 I was Principal Investigator (PI)/Director of the Luquillo Long-Term Ecological Research Program (LTER). This continuing program is a multi-disciplinary research program focusing on long-term environmental change, its causes, and its consequences in northeast Puerto Rico. LTER is based at UPR-RP and has been continuously funded by the US National Foundation. In the years 2001-2013, the LTER budget from NSF increased from about \$600,000 to \$1,000,000 per year. The LTER has involved, at any one time, about 25 Co-Principal Investigators and senior personnel from UPR-RP and about ten universities in the USA and the United Kingdom, and many graduate and undergraduate students from UPR-RP and elsewhere. The program includes several long-term research projects and numerous graduate student thesis and dissertation projects. As PI I led the writing of proposals for the prime and supplementary grants from NSF (see CV), organized monthly and annual meetings, represented LTER at national meetings of the LTER Network (of similarly funded sites in the US), managed the budget (including subawards to participating universities), managed local staff, and helped plan research.

Other grants (Brokaw PI or Co-PI) during this period came from the Smithsonian Institution, the Andrew Mellon Fund, UPR-RP, and NSF (five grants: Infrastructure, Ecology, Coupled Natural-Human Systems, travel, Integrative Graduate Education and Research Traineeship [IGERT]). I also obtained and administered 11 supplementary NSF grants to LTER.

I was author, co-author, or editor of 35 publications of various types during 2001-2018. My major publication was a synthesis of LTER research: *A Caribbean Forest Tapestry: The Multidimensional Nature of Disturbance and Response* (Brokaw, et al. [eds.]. 2012. Oxford Univ. Press). See my CV for details on publications.

Teaching

In the years 2001-2018 I taught the following undergraduate courses: *Ecology*, *Environmental Science*, and *Water Resources*; and the following graduate courses: *Tropical Ecosystems*, *Tropical Forest Ecology*, *Environmental History*, *Special Topics in Modern Biology*, *The Terrestrial Environment*, and parts of *Advanced Ecology*. *Tropical Forest Ecology* and *Environmental History* were special courses that I developed. *Special Topics in Modern Biology* was a particular version (Tropical Forest Community Dynamics) of “*Topics*”, developed by Jess Zimmerman and myself.

My singular teaching contribution (with Sheila Ward) has been taking 19 UPR undergraduates and two graduate students, during seven summers, to Belize, Central America, to do field work in a tropical forest (undergraduate participation funded by a US Dept. of Agriculture grant to J. Zimmerman). This was a formative experience for some undergraduates, who are now in graduate school in Puerto Rico and the US, in ecology and environmental science.

I gave departmental seminars in the UPR-RP Biology Department, the UPR-RP Department of Environmental Science (several), and the Eco-Merienda brown bag seminar; as well as three seminars in the Institute of Caribbean Studies, College of Social Sciences, UPR-RP.

See my CV for a list of PhD and Master's students for whom I served as advisor or committee member.

Service

As a professor at UPR-RP I was director or acting director of four entities. Foremost, I was Director/PI of the Luquillo LTER, 2001-2013 (see above). I was Director of the Institute for Tropical Ecosystem Studies for three years, and I was Acting Director of the Program in Environmental Science in 2008-2009 and of the Department of Environmental Science in the second semester 2017-2018. This last service was in my final semester before retiring.

I had an important role in the creation of the Department of Environmental Science and its graduate program. First, I presented the case for these advances at two College of Natural Sciences faculty meetings. Second, Sheila Ward and I convened meetings of faculty from different departments to develop a proposal to fund graduate work in the new department. We wrote *IGERT: Human-Natural Ecosystems in the Urbanizing Tropics*, a proposal funded by NSF at \$2,960,066. Once funded, I was part of the *IGERT* grant leadership team. The program provided two years of full funding for each of about 30 PhD students in the new graduate program, thus propelling the program to a strong start and producing the program's first PhD recipients. The *IGERT* grant also fostered a fruitful and lasting interdisciplinary approach to environmental science in the Department.

I served on departmental and *ad hoc* committees and represented the Department at College-level meetings. The most important was the *ad hoc* Committee for the Auto-Evaluation of the Environmental Science Graduate Program, for which I evaluated the Department's graduate curriculum and recommended revisions.

Continuing professional activities

After retirement, I continue my research, teaching, and service. With my PhD student Hervé Chevalier I am continuing a 30-year study of how hurricanes affect forest structure in the Luquillo Mountains, from pre-Hurricane Hugo to post-Hurricane María. I am also mentoring Master's student Eva Holupchinski, who is evaluating long-term and intra-island patterns of drought in Puerto Rico. Additionally, I serve on the committees of three other graduate students (Ose Pauleus, Loderay Bracero, Luis Avilés).

In Belize, Ward and I are working to produce basic knowledge, help conserve natural resources, and give students field experience. We are studying long-term tree dynamics in forest plots I established in 1991, and we are investigating the impact of ancient Maya land use on the modern forest.

In 2018 and 2019, since my retirement, we have taken seven UPR-RP undergraduates to Belize to continue this research. We maintain a web page on the ecology of Belize (<ecologynwbelize.org>) and we are working on academic papers and a field guide to Belize trees. I am helping write a proposal to the NSF Archaeology and Archaeometry program to fund further research in Belize.

Lastly, I am following up on my work evaluating the Department of Environmental Science graduate program by helping prepare a proposal to revise its curriculum.