



United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

2 December 2011

To: IANAS Fellowship Panel

Re: Application of Carmen Lucía Yurrita Obiols

I am pleased to offer my strong support for Carmen Lucía Yurrita Obiols' application to the IANAS Fellowship program. She is an impressive new researcher with much promise for furthering our understanding of pollination and pollinating bees in tropical environments. In my position as a bee researcher at the USDA ARS Pollinating Insects Research Unit and adjunct professor in the Biology Department of Utah State University, it will be a pleasure to mentor her in her research and in turn to gain her insights on stingless bees.

I first met Carmen at the American Museum of Natural History's Bee Course in southern Arizona and more recently worked with her during a visit to Guatemala in 2009. I was invited there as a plenary session speaker at the VI Congreso Mesoamericano sobre Abejas Nativas which Carmen helped to organize. While on the visit I also assisted with pollination studies by identifying bees in the bee collection she helped to create. I was very impressed with the collection. Despite the fact that this is a young collection it is the best collection of Guatemalan bees to be found anywhere in the world. I was also impressed with the well organized congress and the quality of the Memorias that Carmen edited. In 2010 Carmen was able to visit here and work in my lab for a brief time.

Carmen is now doing outstanding research on the stingless bees of Central America and Mexico, revising the diverse genus *Melipona* that includes 20 or more species, some of them new to science. *Melipona* is of considerable importance because it has a long history of use by Mayans and other indigenous peoples for honey production and has potential for managed pollination of crops. A revision of *Melipona* is much needed, especially in light of the importance of this group as pollinators and their value to indigenous groups as a sustainable source of food and a marketable commodity. Carmen's research will have large benefits for pollination across Mexico and Central America and for the generation of local revenue through honey production.

The IANAS fellowship will provide a valuable opportunity to continue our collaboration on stingless bee research. During her earlier visit Carmen was able to study most of the species, develop a set of diagnostic characters, and acquire the necessary literature. But there are essential components of her work that she was not able to do. Specific tasks to complete that will be difficult to complete without the fellowship include: 1) taking high resolution images of diagnostic characters so that she can develop user-friendly identification keys, 2) study of types of *Melipona* species essential to ensure a sound taxonomic treatment of the genus, 3) study of additional specimens to determine distributional patterns for all species, 4) utilize our specimen level relational database to compile

existing bee records, 5) using the resulting data set, analyze environmental determinants of species distributions using ArcGIS, and 6) produce accurate digital maps of species distributions. Of particular importance will be the opportunity for her to study types and material from collections in the USA and Europe that Carmen would not have access to in Guatemala.

I am in a position to provide valuable mentoring for Carmen Yurrita. In addition to extensive experience with the taxonomy and systematics of bees, I have considerable experience with the bees of Mesoamerica, having co-authored book chapters on the bees of Mexico, the bees of Costa Rica, and most recently the bees of the Neotropics. Among numerous taxonomic publications on bees of the Neotropics are two revisionary studies on stingless bees published this year. It would be a great pleasure to have the opportunity to pass on my experience to Carmen in her research pursuits.

Our USDA-ARS Pollinating Insects Research Unit is uniquely qualified to support Carmen's research. We house the U.S. National Pollinating Insects Collection with over one million specimens including strong holdings in Central American bees. Our 32 drawers of stingless bees, mostly from Mesoamerica, make it one of the largest collections of bees of this group in North America. Carmen will have full access to all our resources including stereo microscopes with fiber optics illumination, a Keyence integrated imaging system for publication quality digital images, a database management system for specimen records, ArcGIS software for mapping and analyzing spatial patterns, and our extensive library of over 12,000 reprints on bees. Technical training for the imaging system and computer software including ArcGIS will be provided. We will also facilitate loans of Mexican and Central American types and other material from the numerous other institutions with holdings of Mesoamerican bees. And we will provide assistance in finding housing and other logistics during the fellowship.

Our USDA ARS laboratory is pleased to support the professional development of Carmen Lucía Yurrita Obiols. We anticipate that she will have increasing impact on pollination and bee systematics in Guatemala and across the Central American region. I have no doubt that her work will bring benefit to the people of Guatemala.

Yours sincerely,



Terry Griswold
Research Entomologist, USDA ARS
Adjunct Professor, Utah State University

USDA ARS Bee Biology & Systematics Laboratory
Utah State University • 5310 Old Main Hill, Logan, UT 84322-5310
Phone: (435) 797-2524 • Fax: 435-797-0461 • www.loganbeelab.usu.edu

An Equal Opportunity Employer

