

Professional Development Grant Report

T Yamashita, Associate Professor of Biological Sciences

Grant award date: May 2008

Project Title: Development funds to attend the 2008 American Arachnology Society Meeting (AAS).

B. Abstract:

These funds will allow Dr Yamashita to attend the June 2008 AAS meeting in Berkeley, CA (June 25th to June 30th). At this meeting Dr. Yamashita will present the results of scorpion population genetics research funded through a 2007 PDG. In addition, a presentation will be made to encourage the Arachnology society members to attend the 2009 meeting at ATU's Lake Point Conference center.

C. Purpose/Objectives

The 2007 summer PDG allowed the expansion of a research project that focused on the population genetics and the genetic association of populations across the Striped Scorpion's geographic range. Several new populations were sampled and individuals added to several existing population samples. These additions have allowed better discrimination of population differences in the southern and western portions of the scorpion's geographic range. This additional sampling was important as this region of the scorpion's range shows marked genetic differences due to long temporal separation periods. In the poster presented at the Berkeley meeting, results such as phylogenetic trees that illustrates the genetic similarity among populations and a table that presents divergence times between population pairs will be presented.

In the last session of the 2008 conference, a presentation will be shown that provides background about the facilities and meeting site highlights for the next meeting. In this presentation, site facilities at the Point Place Conference center, session schedules, features of the local host's area, and field trips are discussed. The 2009 meeting will be a milestone for Tech as it will host faculty and scientists from many prestigious universities and museums from across the country as well as abroad.

D. Activities conducted and Results:

At the Berkeley AAS meeting, a poster was presented that highlighted one of the results from the scorpion population genetics work. I summarize the information presented in the poster with the following abstract:

Color morphs in *Centruroides vittatus* revisited- what phylogeographic analysis reveals about morphospecies

Tsunemi Yamashita

Department of Biological Sciences, Arkansas Tech University

Russellville, Arkansas USA

Centruroides vittatus is a widespread scorpion that is typically associated with the Chihuahuan Desert. Historically, this species was once described as three species based on morphology (*Centruroides vittatus* (Say, 1821), *Centruroides chisosaurus* (Gertsch, 1939), and *Centruroides pantheriensis* (Stahnke, 1956)). Currently, these three species are all considered as color variants of *Centruroides vittatus*. A recent phylogeographic analysis supports the taxonomic grouping of these variants into *C. vittatus*. No genetic distinction exists for these morphospecies; instead, geographic substructuring is apparent in the mtDNA dataset. Interestingly, these morphospecies were described from the Trans-Pecos region of Texas. In this region, phylogeographic analyses indicate strong genetic distinctiveness among populations, especially those in the western Trans-Pecos.

In addition to the poster presentation, an oral presentation was conducted to give information regarding the 2009 meeting scheduled at Tech's LakePoint Conference Center. This presentation was well received and it is expected that over one hundred scientists will attend this meeting.