

INSTITUTE ON THE
ENVIRONMENT

UNIVERSITY OF MINNESOTA

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MINI GRANT PROJECT SUMMARY

Please complete the project summary and return the completed form to Alyssa Johnson, Administrative Assistant at the Institute on the Environment, at joh10074@umn.edu. Paper copies will not be accepted. Please also attach any photos, publications, brochures, event agendas or other materials that were a result of the mini grant summary.

Date of Report Submission:	26 April, 2016
Project PI & Dept/School	Heimpel, G.E., Entomology, CFANS
Project Title:	Invasive Species in the Galapagos Islands
Grant Amount \$:	\$3,000

Project Context & Purpose

Please include the original project purpose statement and revise for any changes that occurred in the project after the start date with a short explanation of the changes.

We propose a workshop focusing on invasive species in the Galapagos Islands at the U of MN Institute on the Environment in early June 2015. The workshop will bring together three units at the University of Minnesota – the Department of Entomology, the College of Veterinary Medicine, and the College of Biological Sciences in a novel way. A nucleus of expertise in Galapagos Ecology and Conservation has emerged at the U of MN over the past 5 years with important research and conservation efforts by Drs. Julia Ponder and George Heimpel, and innovative teaching by Dr. Sehoia Cotner. We wish to build upon this nucleus to invite prominent scholars that are studying invasive species and conservation in the Galapagos to exchange ideas and foster collaborations. The proposed workshop will feature presentations and directed discussions on invasive species and conservation in the Galapagos that will be open to the public as well as opportunities for press releases and involvement.

Work Completed

Please provide a summary of the work that was completed for the mini grant project.

The workshop was held on June 3 and 4, 2015 at I on E. We used the seminar room and commons on June 3 and the board room on June 4.

June 3 featured five 45-minute presentations, two by PIs of the Mini-Grant (Drs. S. Cotner and J. Ponder) and three by invited speakers (Dr. Patricia Parker from the University of Missouri, Dr. Heinke Jäger from the Charles Darwin Foundation and Dr. Jennifer Koop from the University of Massachusetts). Dr. G. Heimpel moderated the session and another invited guest, Dr. Rachel Atkinson (from the Inter-American Development Bank), provided expert commentary. Over lunch, tours of the Raptor Center were offered. Approximately 30 participants went on these tours.

A web site was established with help from CBS staff and this website was used to register audience members for the June 3 event. The number of registrants was 53 and very little attrition was noted over the course of the day. Registrants included faculty members, post-docs and graduate students from various departments at the U of MN as well as some members of the general public. Audience members were very active in asking questions and making interesting observations, especially during a round-table discussion at the end of the first day.

On June 4, participants engaged in a fundraising strategizing session. This session included the three PIs and four guests along with three other interested scientists from the U of M: Mariana Bulgarella, Kyungsoo Yoo, and Carlos Rodrigo. This session went from 8 AM – noon. After this, a tour of the quarantine laboratory in which the Heimpel lab is conducting research on invasive parasitic flies in the Galapagos was offered to the participants. All four of the invited participants went on this tour, which was led by Mariana Bulgarella, Paola Lahuatte and George Heimpel.

Partnerships & Collaborations

Please provide a summary of the project personnel, partnerships and collaborations that worked directly on the project or were started as a direct result of the mini grant project.

The workshop established and/or strengthened collaboration between the U of MN I on E with the following organizations/personnel

Invited Speaker **Dr. Heinke Jaeger** is a scientist at the **Charles Darwin Foundation** in Galapagos, Ecuador, and an ongoing collaboration between her and all P.I.s (Drs. Heimpel, Ponder and Cotner) was strengthened through the workshop.

Invited speaker **Dr. Patricia Parker** is a professor at the **University of Missouri** and a scientist at the **St. Louis Zoo**, and this workshop strengthened a collaboration between Dr. Parker and Dr. Ponder and the Raptor Center more generally and established a collaboration between Dr. Parker and Dr. Heimpel.

Invited speaker **Dr. Jennifer Koop** is an assistant professor at the **University of Massachusetts** and the workshop strengthened a collaboration between Dr. Koop and Dr. Heimpel.

Dr. Rachel Atkinson of the **Inter-American Development Bank** was invited for expert commentary and the workshop strengthened collaborations between herself and Dr. Jaeger.

The workshop featured two tours – one of the **Raptor Center** and one of the **U of MN containment facility** on the St. Paul campus, and these tours strengthened links between the I on E and these two organizations.

More generally, the workshop established a collaboration between the I on E and Charles Darwin Foundation in Galapagos.

Project Outcomes & Impacts

Please provide a summary of the outcomes and /or impacts of the mini grant project including future plans for the project.

Day 2 of the workshop featured a small-group brainstorming session with the following outcome areas identified as funding priorities:

1. Risk Assessment for rat eradication in Floreana
2. Pathways of Invasion for *Philornis downsi* and *Plasmodium* (pathogen responsible for avian malaria)
3. Biological Control of invasive species in Galapagos
4. Documenting impacts of invasive species
5. Incorporating Undergraduate Education in the study of Galapagos invasions

Particular impacts of the workshop and resulting collaboration:

1. Proposal submitted and awarded to the Galapagos National Park Directorate by Drs. Jaeger and Atkinson. The proposal was on the control of invasive species in Galapagos and it came directly out of discussions at the workshop. Amount awarded: \$180,000.
2. Submission of NSF pre-proposal by J. Koop and G.E. Heimpel on topic 2 above in Feb. 2015. The title of the proposal is 'Patterns and evolutionary processes of invasion for a parasitic nest fly of Darwin's finches'. The pre-proposal is pending.
3. Invitation by Dr. Patricia Parker for G.E. Heimpel to contribute to a book chapter on invasion of *Philornis downsi* into Galapagos. The title of the book will be, 'Disease Ecology: Examples from Galapagos', edited by P. Parker for Springer. The chapter is in progress.
4. Drs. Cotner and Heimpel supported the submission of a CBS Grand-Challenges post-doctoral submission (not funded).

Future plans for the project

1. All three P.I.s (Drs. Heimpel, Ponder & Cotner) have offered to co-establish an exhibit about University of Minnesota research and education in the Galapagos Islands for the new Bell Museum once it moves to the St. Paul campus. The offer has received a positive reply from George Weiblen, the Interim Science Director.
2. It was agreed that the topic of Biological Control in Galapagos could be a topic for a future workshop.