MINI-SYMPOSIUM PROPOSAL

(1) **Title**

Two-sex and other multi-species interactions in ecology and human population dynamics

(2) **Organizers**

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(3) **Purpose**

Two-sex models are built and analyzed for biological systems in which the distinction between females and males plays an important role. Examples are general demographic models (both in human and animal populations), sexually transmitted diseases, evolutionary models, etc. In theoretical ecology, models of pest control are developed where the bi-sexual mode of reproduction is used to partially or totally sterilize the target population or to disrupt mating.

Despite its long history, two-sex modeling is still rich in open questions. This is partly due to the inherent complexity of the models (the number of equations usually doubles) and also because the mathematical description of two-sex interactions is complicated and, at times, subject to conflicting assumptions. Even more importantly, at times, two models that describe the same phenomenon may lead to fundamentally different predictive results.

The main goal of this mini-symposium is to present to the audience the latest results from various branches of mathematical biology where two-sex models are used. The second objective is to stimulate the interest in developing two-sex models for problems that are traditionally approached via one-sex models. To this end, we plan to

invite a group of presenters consisting of both well-established and junior researchers with contributions in a wide variety of fields such as demography, ecology, epidemiology and/or evolution.

(4) **Speakers**

We will have 8 speakers and we request two blocks for this mini-symposium. Below we provide the list of speakers that confirmed or are likely to confirm their participation. We are still inquiring the availability for other speakers and we are confident we will fill these 8 slots but, in some cases, the final confirmation will occur after the proposal submission deadline.

Confirmed speakers:

- Dr. Hisahi Inaba, University of Tokyo, Japan
- Dr. Mimmo Iannelli, University of Trento, Italy
- Dr. Oscar Angulo, University of Valladolid, Spain
- Dr. Daniel Maxin, Valparaiso University, U.S.A.
- Dr. Fabio A. Milner, Arizona State University, U.S.A.

Speakers that are likely to confirm later:

- Dr. Ludek Berec, Institute of Entomology, Biology Centre ASCR, Czech Republic
- Enahoro Iboi, Arizona State University, U.S.A.
- Dr. Elissa Schwartz, Washington State University, U.S.A.