

Earth BioGenome meeting 2019 - Insects Session agenda

Chairs: Kevin Hackett, Anna Childers, Monica Poelchau, Susan Brown

Abstract:

The 'Insects' breakout session will be an interactive meeting on arthropod-specific genome project issues. In this session, we aim to: start a conversation on how the arthropod research community at large can leverage momentum from the Earth BioGenome Project; discuss funding models for arthropod genome sequencing; and identify arthropod-specific solutions to technical problems that arise during genome projects. Presenters will direct and invite discussions on each of these topics. We encourage anyone interested in sequencing insect or arthropod genomes and contributing to the EBP project to attend.

Program:

BACKGROUND SESSION. Chair: Monica Poelchau (USDA-ARS)

- 9:00 am: **Welcome** (Kevin Hackett, USDA-ARS)
- 9:05 am: **Motivation for sequencing insects** (Stephen Richards, UC Davis)
 - o Rationale for sequencing insects.
- 9:20 am: **Introduction of participants** (Monica Poelchau, USDA-ARS)
 - o All session attendees will briefly answer a set of questions, provided by the chairs, about the genome projects that they are involved in.
- 9:35 am: **Funding discussion** (Stephen Richards, UC Davis)
 - o Funding models for arthropod genome sequencing.

TECHNICAL SESSION. Chair: Susan Brown (Kansas State University)

- 10:00 am: **Infrastructure – vouchering** (Jon Coddington, Smithsonian Institution)
 - o Concepts of vouchering and discussion of vouchering best practices.
- 10:15 am: **Infrastructure – databases** (Monica Poelchau, USDA-ARS; Christopher Childers, USDA-ARS)
 - o Introduce the concept of genome databases, and explain why are they important for data management and the Earth BioGenome Project.
- 10:30 am: Coffee Break
- 10:45 am: **Extraction, sequencing and assembly issues for insects** (Scott Geib, USDA-ARS; Brian Scheffler, USDA-ARS; Anna Childers, USDA-ARS)
 - o Present and discuss several topics relevant to insect DNA/RNA extraction, sequencing, and assembly, including but not limited to: low input methods; inbreeding strategies; sequencing and assembly strategies appropriate for the diversity of arthropods (ex: small vs. large body size, small vs. large genome size, haploid vs. diploid, short vs. long generation time). Unique solutions for unique challenges.
 - o Discussion of assembly standards appropriate for arthropods.

- 11:30 am: **Coordination of sequencing projects.** (Anna Childers, USDA-ARS; Monica Poelchau, USDA-ARS)
 - Broach the topic of how to coordinate distributed genome sequencing projects across Arthropoda.
- 11:45 am: **General discussion/wrap-up.**
 - Discussion of any outstanding issues for arthropod genome sequencing.