**Full GBIRd Meeting and Update**

**August 1st 6 PM - Washington DC**

**August 2nd 8 AM – Canberra, ACT**

**August 2nd 10AM – Wellington, NZ**

**Focus Area Updates:**

**Island Selection Update (status, progress, challenges, critical situations)**

**Australia**

* Coordinating with Keith Morris from Western Australia (WA) dept of environment to identify WA islands that meet the criteria.
  + Awaiting WA islands list along with potential sites of immigration/emigration from Keith.
  + Awaiting finalizing of sampling protocols by John G and Tony P.

**New Zealand**

* Coordinating with James Russell. Appears no NZ islands meet the strict criteria used within DARPA grant.
* We are now considering small NZ islands that don’t have rodents present that could be used as trial sites, with mice sourced from remote NZ islands larger than our 300ha cut-off that may be future targets themselves (but not initial trial islands). Genetic characterization may need to be conducted outside of DARPA grant.

**USA**

* Aaron Shiels coordinating island list. US has no database for invasive mammals on islands as NZ and AU do, slowing progress.
* Global island database searched by IC for US islands <300ha and >1km from other landmass, resulting in ~600 islands
  + Next step to try and identify which of these 600 islands have invasive Mus populations on them, or could be useful trial sites as being conducted for NZ.

**Regulatory Update (status, progress, challenges, critical situations)**

**Australia**

* Owains speaking on gene drive risks at the Australian College of Toxicology and Risk Assessment (ACTRA) Annual Meeting in Canberra at the end of September
  + Valuable opportunity to interact with regulators on the topic

**New Zealand**

* First engagement made with NZ policy makers and regulators; 2.5 hour roundtable discussion with representatives from 12 agencies
* Strong positive discussion; meeting notes currently being written up as confidential to the discussion group
* No deal-breakers for genetic biocontrol application to invasive mammal control identified
* PF2050 currently very political – next steps for discussions like this will depend on direction from government top-level

**USA**

* Three major discussions about program with FDA, then with FDA/USDA/EPA.
* Waiting for them to make an assessment

**Stakeholder/Community Engagement Update (status, progress, challenges, critical situations)**

**Australia**

* CSIRO investment of $3.5M confirmed for community/stakeholder engagement research related to synthetic biology.  Owain Edwards to attempt to leverage a co-investment from DARPA's LEEDR funding to direct a portion of this investment specifically to support the GBIRd project.
* CSIRO/WA Department of Parks and Wildlife/University of Western Australia planning a PhD project to examine connectivity of mouse populations on WA islands using genome-wide markers in order to inform the selection of potential release sites.

**New Zealand**

* large scale nation-wide survey (n=8500) to understand New Zealanders level of acceptance of novel pest control technologies and the underlying values, beliefs, and world-views, that relate to acceptance to begin 5 Aug; results early Oct
* strong government support for engaging country with gene drive for pest control; cross-government agencies having prelmimarny discussions to develop proposed approach

**USA**

* Primary DARPA contract signed
* Productive/Positive conversations with NZ Engagement leads

**CRISPR/Cas9 Mice (status, progress, challenges, critical situations)**

* Three Grey Mice Produced
* Building up colony from the grey mice developed
  + high numbers of stock/parents will enable more rapid and efficient production of the "test" mice

**t-sry Mice (status, progress, challenges, critical situations)**

Working to make sure gRNAs and Cas9 can cut *in vivo* (verified they cut *in vitro*) and then focus will be on how to increase the chances of having homologous recombination occur during gene editing

* 19 pups were born from microinjection experiments. No signs of gene editing observed.
* 8 different guide RNAs were screened for cutting ability, 4 of them cut the t complex *in vitro*.
* Currently working on *in vivo* experiment to test cutting efficiency in tw2 mouse embryonic fibroblasts (MEFs). Optimizing the experimental conditions for the cells now and will then test the 8 gRNAs again to see if Cas9 is able to cut inside the living cell.
* In the process of reprogramming tw2 MEF cells into induced pluripotent stem cells.

**Communications Update (status, progress, challenges, critical situations)**

* Website Developed
* Extensive Media Exposure
* *Earned success including Audubon*
  + *http://www.audubon.org/magazine/summer-2017/how-genetically-modified-mice-could-one-day-save*

**Risk Assessment (status, progress, challenges, critical situations)**

* Anticipating DARPA contract to come thru
* hazard analysis activities not due to commence until Jan 2018 - the lead in time is for the geneticists to settle on the construct details