**DARPA Safe Genes rollout, San Diego, May 2 2017 (A. Shiels notes from attending):**

-Overall, very worthwhile trip, and was quite fascinating to hear the developments in this technology and get to meet/hear from some of the leaders in the field (Esvelt was perhaps the most impressive).

-Renee Wegryn (Safe Genes Program Leader), was very nice to meet. She looks forward to visiting NWRC and seeing our facilities, and others in her team also mentioned this. She was very understanding of our need to do a cooperative agreement with CSU to hire a postdoc for the Private Alleles part—she mentioned we should talk to the budget person covering our DARPA (I forgot his name, and I didn’t actually get to meet him).

-I’m guessing there were ~75 people in attendance at Safe Genes in San Diego. Almost all were academics from universities around US, but also some representation from UK (a few from Oxford, and London; Owain and Paul from Australia).

-Renee said there are 7 Safe Genes projects that were funded, and then a few more “seedling” ones (4). It also sounds like they are funding two companies to increase technology in multiplexing, and the related.

-Renee said the Safe Genes projects account for $65M, but then mentioned with all other support in the room it was $100M.

-A key point Renee made was to hold tight on announcing our awards or projects until the contracts are completed. Once our contracts are in place we can announce/tweet/post on web, etc etc. The other item they made a big deal about was talking to the press—if the press wants to know anything about our DARPA-funded research, DARPA would like to vet our script to the press before it goes to press. They also made a big deal about not trying to speak for DARPA.

-Another key point that was made was that THERE IS NO OPEN RELEASE OF GENE DRIVE ORGANISMS AS PART OF SAFE GENES.

Talks (see Safe Genes schedule, scanned pdf):

1. Biodegradable gene drives (Zach Adelman, Texas A&M): Finding ways for current gene drives to fail (fail in a way they want them to)
2. Controlling and countering gene editing in mosquitos (Andrea Cristanti)
3. Restoring ecosystems (ours-John Godwin; well done) – only project testing mammals/vertebrates; only one with government partners (USDA and CSIRO); only one with a female research scientist as part of the team, as far as I could tell. In attendance from our group aside from me and John Godwin were Jason Delborne (UNC), Owain Edwards (CSIRO), and Paul (Univ of Adelaide).
4. YFA Lightning talks: Michael Smanski,
5. YFA Lightning talks: Andrew Nuss (UNR): his was really interesting because looking at using gene drives and odor receptors so mosquitos will choose other animals to visit/bite rather than humans.
6. Kevin Esvelt (MIT): Daisy chain drives. A great speaker and hugely interesting talk. Multiple chromosomes (autosomes) involved (daisy chain, daisy field, and some other new terms like Daisy quorum). Can make it so political boundaries are recognized by having hybrids die-out (eg mosquitos; but he’s also working on nematodes). Check his “Responsive Science” webpage—he will be updating it weekly to fully disclose everything they are doing. I guess his claim to fame has been explaining how CRISPR works. Feels we should all be 100% transparent with our work. He gains local acceptance by this and by bringing a local skeptic on the steering committee (by the end the skeptic becomes a supporter). Much discussion later with his point about how he thinks that this technology’s release will be inevitable (eg, tons of efforts in China, not complicated technology, even high schoolers are working with gene drives, he says).
7. Omar Akbari: gene drives for mosquito control. Seems they plan to test all possible reversals, erasers, and kill drives. Their team is heavily California-based (many UC schools involved).
8. Modeling seedlings: Economics of mosquito control (Mike Bonsall, Oxford Univ). He discussed possible population models when adding gene-drive organisms to wild population; basically just presented all possibilities (not very helpful, I thought).

-After lunch data sharing

-LEEDR (basically Ethics) lightning talks (3 min each):

-Safety 1st principal (do no harm) to make this ethical. Science/public health vs. security/terror

-Jason Delborne from our group gave a nice 3 min talk

-Ken (MIT) was guy I was sitting next to that frequently voiced his opinions (especially on public engagement)

-Following on Esvelt’s comment: he made the big point that physical containment is not reliable (human error cannot be prevented), so ecological and genomic containment are the ways needed.

See the scanned schedule for Day 2 (I missed that, as I returned to Colorado…and our group was not going on for “Sidebar” until 5:30pm).