

Gene Drive Files Expose Leading Role of US Military in Gene Drive Development.

genedrivefiles.synbiowatch.org/2017/12/01/us-military-gene-drive-development

admin

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A trove of emails (The Gene Drive Files) from leading U.S. gene drive researchers reveals that the U.S. Military is taking the lead in driving forward gene drive development.

Emails obtained through a freedom of Information request by U.S.–based Prickly Research reveal that the U.S. Defense Advanced Research Projects Agency (DARPA) has given approximately \$100 million for gene drive research¹, \$35 million more than previously reported², making them likely the largest single funder of gene drive research on the planet³. The emails also reveal that DARPA either funds or coordinates with almost all major players working on gene drive development as well as the key holders of patents on CRISPR gene editing technology⁴.

These funds go beyond the US; DARPA is now also directly funding gene drive researchers in Australia (including monies given to an Australian government agency, CSIRO)⁵ and researchers in the UK. The files also reveal an extremely high level of interest and activity by other sections of the U.S. military and Intelligence community.

Secret Military Study draws in Monsanto: The emails reveal that the secretive JASON group of military advisors produced a classified study on gene drive this year (2017). The report was commissioned following an earlier classified 2016 JASON report on “genome editing” that has not previously been publicly reported on although it “received considerable attention among various agencies of the U.S. government.”⁷

The 2017 JASON Gene Drive study was framed to address “potential threats this technology might pose in the hands of an adversary, technical obstacles that must be overcome to develop gene drive technology and employ it ‘in the wild’, and understanding of the expertise and resources that would be required to advance the technology. The study will focus on what might be realizable in the next 3-10 years, especially with regard to agricultural applications.”⁷ Emails show that the JASON study was initiated with a two day meeting of a select group of invited gene drive researchers in June 2017. At the meeting, the VP of Global Biotechnology for Monsanto gave a presentation on crop science and gene drives.⁸ This is the first time that Monsanto’s interest in gene drives has been apparent. The co-chair of the JASON report explained that “it is unlikely that (the report) will be publicly disclosed...(but) will be widely circulated within the U.S. intelligence and broader national security community.”⁷

Army and Spooks for Gene Drives: The emails reveal the U.S. Army Corps of Engineers' (ACE) involvement in convening closed door meetings on gene drives 9 10) to fund work by Jason Delbourne, a member of the DARPA-funded GBIRD gene-drives Group at North Carolina State University. 11 The Intelligence Advanced Research Projects Agency (IARPA), an organization within the Office of the Director of National Intelligence, has also expressed interest in funding gene drive work. A member of the GBIRD gene drive group describes IARPA as “basically the intelligence agencies version of DARPA, which may be more frightening!” 12 Another GBIRD partner from USDA calls IARPA’s interest “a very important funding opportunity,” and explains that “IARPA is eager for USDA to partner on a proposal but we cannot be lead.” 13

Is DARPA funding work 'targeting' Africans? The emails raise questions about the close relationship between the flagship “Target Malaria” gene drive project and DARPA. Because Target Malaria hopes to deploy their gene drives in African countries they have been at pains to emphasize independence from military agendas. However emails from DARPA’s Safe Genes Manager Renee Wegryzn suggests that Target Malaria’s Andrea Crisanti may also be either a lead grantee or subcontractor for DARPA’s Safe Genes project. 14 At the ‘kickoff’ meeting for DARPA gene drive grantees, Andrea Crisanti of Target Malaria is listed as one of eight “Safe Genes Performer” presentations. 15 In other emails, the term “Safe Genes Performer” is used to designate teams under a funding contract with DARPA’s Safe Genes program 16; “Performer” appears to be the agencies’ specific term for “grantee,” defined: “an “R&D Performer” is a contractor that is under contract to DARPA to perform specific research and development related to a specific program. This definition includes both prime and subcontractors.” 17

All other seven “Safe Genes Performers” have publicly announced that they are receiving DARPA funding. No such announcement has been made regarding Target Malaria/Imperial College. 19. DARPA has also convened a project called LEEDR, initiated via a presentation by Delphine Tizzy of Target Malaria. LEEDR focuses on societal engagement around gene drives, but is intended exclusively for the DARPA’s “Safe Genes community” 18.

DARPA gene drive funds cause internal conflict and spin guidelines: The Gene Drive Files also reveal conflict about the lead role that U.S. military funding is taking. Todd Kuiken of North Carolina State University, listed in the files as a key member of the GBIRD consortia (developing gene drive mice), openly railed in press against the impact of DARPA’s investment in “militarizing the environment,” pointing out that the UN Environmental Modification Convention (ENMOD) may be being violated. 21

GBIRD however receives \$6.4 million of DARPA funds, prompting Heath Packard of the NGO Island Conservation (and also GBIRD’s Public Relations representative) to complain that “The lack of communications internally (NCSU & GBIRD) prior to this

story publishing, the timing of the story, and the partners/stakeholder/donor fallout related to this story are concerning.” 22

He repeatedly asked Kuiken to “pull for the team” 23 and “Please do all you can to avoid criticizing GBIRD and our pursuit of DARPA,”24 suggesting that Kuiken instead publicly “acknowledge we have so much more to do and many aspects of the project that require different colored money.”24 The Gene Drive Files also include extensive “recommended strategy and talking points”25 prepared by Packard who explains that he is “available for consultation and coaching if we find ourselves under attack in the media by detractors concerned about the ‘color’ of the DARPA funding.” Packard anticipates the researchers will receive morality questions about how they could pursue this technology “knowing that the U.S. Dept. of Defense has obviously concluded that it will be used for nefarious (dual-use) purposes, maybe against our own people?” He advises gene drive researchers to respond with sweeping statements about the team’s good intentions, to point to DARPA’s past role in funding the internet and GPS and to answer difficult questions with the deflecting statement: “Those are the exact types of questions we endeavor to answer in this investigation.”

References:

1. “Renee said the Safe Genes projects account for \$65M, but then mentioned with all other support in the room it was \$100M.” See File: [AS notes on DARPA safe genes rollout san diego may 2 2017](#)
2. It had already been publicly disclosed that DARPA’s Safe Genes Project had awarded \$65 million – see [Nature.com](#)
3. The other known major investors in gene drives are the Bill And Melinda Gates Foundation in conjunction with the Federal National Institutes of Health (FNIH) who have invested \$75 million into Target Malaria Consortium, Tata Trusts which made a \$70 million donation to UC San Diego to establish a center of research on gene drives and ‘active genetics,’ the Open Philanthropy Project which provided \$17.5 million to Project Malaria and just over \$1.2 million to FNIH, and The European Union which grants 1.5 million Euros to Target Malaria researchers.
4. The key patent holders for CRISPR are the Doudna Lab at University of Berkeley, The Broad Institute and Harvard’s Church lab/ Wyss Institute. DARPA Safe Genes Project funds all of these
5. Budget emails make it clear that DARPA funds awarded to GBIRD are being channeled to CSIRO and the Safe Genes Announcement also mentions University of Adelaide as a recipient. See files: [20170414-FW North Carolina State University \(NCSU\) Proposal Restoring Ecosystems and Biodiversity through Development of Safe a \(N0023940xC1D49\).PDF](#) and also [20170718-Re EMBARGO COPY – DARPA Safe Genes press release-89.pdf](#)

- 6.** The Agenda for Safe Genes kickoff event identifies Mike Bonsall of University of Oxford as a ‘seedling’ grant and Andreas Crisanti of Project Maria as a “Safe Genes Performer.” See file: [DARPA safe genes schedule for May2-4 2017 rollout.pdf](#)
- 7.** For information on JASON studies, see file: [20170614-Re JASON Gene Drive study-197.pdf](#)
- 8.** For Agenda of JASON study meetings, see file: [Gene Drive agenda.docx](#)
- 9.** Email from Royden Saah -“Army Corps of Engineers – Several of us met with the Army Corps of Engineers just before the DARPA proposers’ day in DC. They are convening a meeting in Massachusetts on safety aspects of synthetic biology releases in May.” See file: [20170717-Re \[gbird\] Update – Engagements – and Other Important Items-101.pdf](#)
- 10.** See file: [20170403-Gene Drive Breakout group – Army Corps Workshop in May-299](#)
- 11.** “This project, funded by the Engineer Research and Development Center Environmental Laboratory of the Army Corps of Engineers.” See file: [Postdoc – Synthesizing Engagement for SynBio.pdf](#)
- 12.** [20170716-FW \[gbird\] Update – Engagements – and Other Important Items-472.pdf](#)
- 13.** [20170716-FW \[gbird\] Update – Engagements – and Other Important Items-472.pdf](#)
- 14.** “In speaking with Luke Alphey and Andrea Chrisan [sic] this week, it is clear that the PIs are not pushing down the invite instructions to the subs.” See file: [20170406-Fwd DARPA Safe Genes Kick Off- Hotel Deadline FRIDAY-314 \(N0024093xC1D49\).PDF](#)
- 15.** In the Safe Genes Kickoff Agenda, Andrea Crisanti speaks for 20 mins on Day 1 and is listed as “Safe Genes Performer Presentation: Controlling and Countering Gene Editing in Mosquitos.” See file: [DARPA safe genes schedule for May2-4 2017 rollout.pdf](#)
- 16.** “For this reason, the audience for the kickoff meeting will include not only Safe Genes performers, but also DARPA- funded small businesses and DARPA Young Faculty Awardees, along with performers from other relevant DARPA programs.... Because not all performers will be under contract by the time of the meeting, DARPA will not be publicizing the kickoff meeting.” See file [20170419-Fwd DARPA Safe Genes Press Release Guidance-215.pdf](#)
- 17.** <http://www.jhuapl.edu/vendorforms/forms/DARPA%20OCI%20Certification.pdf>
- 18.** [20170629-Invite to LEEDR Webinar on July 19-279.pdf](#)

19. <http://targetmalaria.org/who-we-are/>

20. See <http://targetmalaria.org/who-we-are/> and click on Ethics Advisory Committee: “Claire joined BAE Systems in January 2014 as Group Communications Director and is a member of the BAE Systems plc Executive Committee.”

21. Todd Kuiken, “[DARPA’s Synthetic Biology initiatives Could Militarize the Environment. Is this something we are comfortable with?](#)” Slate. May 3rd 2017.

22. See file [20170503-Mtg. Request-628.pdf](#)

23. See file: [20170713-FW QUICK TURN DARPA REQUEST – Press Release-115.pdf](#)

24. See file: [20170718-Re DARPA announcement-19.pdf](#)

25. See file: [20170716-Re QUICK TURN DARPA REQUEST – Press Release-370.pdf](#)