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Summary of TG-Bug Work to-date (Distilled)

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**Background**: Francis (Frank) Yee and I met during the summer of 2000. I had joined Teradyne-Boston during Feb 2000. Frank joined as a contract verification engineer that summer. Our project was re-assigned to another group during the fall of 2001. Frank’s contract ended and I left Teradyne Sept 2002. We kept in touch through a group of friends about future opportunities. We worked together submitting proposals for DoD, DARPA semiconductor projects during 2004. Our team won a Phase 1 grant which was completed during 2005. Our Phase 2 proposal was not accepted and we went off to other jobs. A common friend learned Frank and I both had Parkinson’s Disease (PD) and we re-connected during late 2020. Frank has been working on PD for years; studying, networking, making proposals. I helped Frank with some proposal evaluations and then met Carl and Jon thru Frank.

**TG-Bug**: Frank and I initially (Jan-Apr 2021) focused on researching PD causes, research reports and ideas for proposals to existing teams. Frank’s previous work with Harvard and MIT led to virtual attendance at 2020-21 conferences. We soon learned Toxoplasma Gondii (T Gondii) had been an on-going PD research topic world-wide (US, India, China, Brazil, EU). Other PD research had been underway for years; alpha-synuclein (protein), vagus nerve pathway gut to brain, genetic markers (testing), environmental toxins, family genetics. Recent promising human trials focused on stem cell therapies, non-invasive brain surgery (focused gamma or sound), drugs for alpha-synuclein and early T Gondii research.

With so much work underway on PD for decades plus international interest we noticed a consensus around T Gondii as a world-wide threat, perhaps via inflammation, the common cause for other neurological and auto-immune conditions: ALS, dementia, addictions, lupus, R arthritis, OCD, schizophrenia, suicide, traffic accidents and others. The US CDC estimates T gondii is in 30 to 50 % of human population.

Our current thoughts are the T Gondii research is at a stage where several project proposals could be made; T Gondii testing, T Gondii vaccine, T Gondii therapies. Projects could include both human and pet/animal opportunities. Leading university labs are at UC-San Diego and the Univ of Chicago.

**Next steps:** 1) review opportunities (with MD, PhD?) 2) narrow focus 3) develop pitch decks for each opportunity using the “How can this be?” method 4) attend “VenCaf” style conferences 5)...

Three key references are helpful in understanding the scope of T Gondii, e.g. world-wide, all climate zones, underestimated threat, infects all mammals, no assured cure once infected, no vaccine, …

**References**:

Toxoplasma gondii: An Underestimated Threat? Trends in Parasitology, December 2020, Vol. 36, No. 12

The Life‑cycle of Toxoplasma gondii Reviewed Using Animations. Attias et al. Parasites Vectors (2020) 13:588

Key Limitations and New Insights Into the Toxoplasma gondii Parasite Stage Switching for Future Vaccine Development in Human, Livestock, and Cats. Frontiers in Cellular and Infection Microbiology [www.frontiersin.org](http://www.frontiersin.org/) November 2020 Volume 10 Article 607198