

Could you create integrated circuits from individual components instead of etching silicon? How would you create a silicon-protein interface that could let you control proteins with a computer? Could you build a general-purpose telerobotics system that enables people to use a robot as an extension of their own body anywhere in the world or in space? Would it be possible to create a programmable system that puts together nanoscale building blocks?

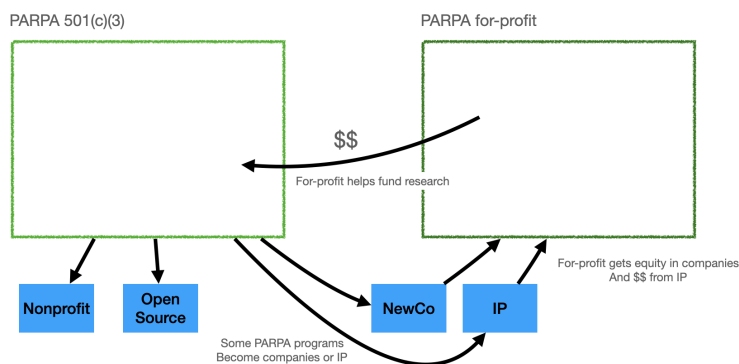
PARPA (**P**riate **A**dvanced **R**esearch **P**rojects **A**gency) is a new organization that will design, fund, and coordinate ambitious, public goods-oriented research programs focusing on new paradigms in manufacturing, near-magical materials, and technologically-empowered human capabilities. New frontiers are essential for human flourishing and permissionless, repairable, repurposable, and flexible technologies are critical for opening those frontiers. These technologies require concerted effort before hitting a tipping point where they feel like the future and appeal to profit-seeking private capital or risk-averse public capital.

**Why a new institution?** Because these programs are too long-term for startups and VCs, too engineering-heavy for academia, and too risky for governments. PARPA's structure is based on the [US Government's DARPA](#) (Defense ARPA) because they are one of the few examples of an institution that can consistently create technological trends instead of following them. While DARPA continues to do great work, that work must always have a strong defense application and they are still beholden to congress and taxpayers. There is a fundamental tension between government accountability and the unconventional moves necessary to do high-variance work. Additionally, DARPA's ability to get technology into the world is constrained: they can't directly bring projects together at the end of a program under a single umbrella unless a branch of the military continues running with it. A private organization avoids these constraints.

The ARPA model revolves around 4-to-7-year, \$10-50m programs that require coordinating several distributed research projects. Program managers effectively act like CEOs for each program – making decisions with little friction. Program design is a core part of PARPA's process because we believe planning matters and public technological roadmaps can help rally work and resources around promising technologies outside of PARPA's direct efforts.

PARPA will be focused on creating “valuable” technology, not capturing that value. If PARPA does its job right, it could shepherd industry-defining technologies in the same way that PARC or Bell Labs did. However, a few programs will become companies. With that in mind, PARPA is structured as a hybrid organization (see figure) to become as self-sustaining as possible. The

non-profit will be in the driver's seat – running the programs to make sure that we work on programs based on potential impact, not profit.



**PARPA is seeking donations** to run at least seven programs in the next five years to prove out the model. To learn more, go to [parpa.org](http://parpa.org) or contact Ben Reinhardt at [bzreinhardt@gmail.com](mailto:bzreinhardt@gmail.com).

**People:** [Ben Reinhardt](#) is the CEO of PARPA. He did a PhD with NASA's chief technologist and then helped start a bunch of companies. PARPA is advised by some of the world's leading researchers and entrepreneurs.