

URL: <https://stvp.stanford.edu/blog/videos/gravity-pro-b-government-projects-and-spin-off-companies>

Hennessy explains there are opportunities for spin-off technology from big science government projects which can lead to startups and companies. GPS, which was a successful spin-off of Gravity Pro-B, is an example. He believes that the best environments for discovery and creativity are ones that include a wide range of people with different expertise. Universities are special because they provide the opportunity for people to work together and share ideas, creating a more productive, and more interesting, environment.



## Transcript

The answer to that is "Yes, there already is an incredible spin off of Gravity Pro-B," because the early work in Gravity Pro-B help lead to the development of GPS systems.. So there are already is one big important spin-off that occurred.. Actually quite some time ago related to that project but the basic notion of how you would do ultra precise location because the Gravity Pro-B satellite has to be pointed and guided in an ultra precise fashion in order to tell whether the frame dragging affect the curves.. I think there are opportunities in that.. Obviously there are some pieces of the technology which are less clear, the world's most precise gyroscope but far beyond the precision that we need for ordinary things.. So these very high end science projects often produce that.. There are lots of other great examples of that but possibly the one that I think is most compelling is the story of cyclotron radiation discovered as a complete side effect of building accelerators.. In fact if your building accelerators for the purpose of smashing atoms, an undesirable side effect because energy is lost and radiation is lost but of course that radiation is channeled then not only to build a great tool for doing further scientific explorations to build the most bright x-ray light sources in the world but also to be used for cancer treatment.. So there are wonderful outcomes from basic science as well as from work live researching.. My belief is that the best environments for discovering creativity are ones that encompass that full range of discipline from people working quite fundamental basic questions, theory to people working on more experimental kinds of things and that there is cause for realization between those two ends of the spectrum and that's one of the great things about a university; that you can have people working on quite fundamental basic science and you can have people working on the applications of those scientific insights and they work together and share ideas and concepts and I think that makes us all more productive and its makes it a much more interesting place to be..