

## CS181 example persuasive memo

**Question:** Should the Stanford CS department partner with Yoyodyne on a fellowship program where Yoyodyne Inc. sends fellows to apply to our PhD program with full funding, the company's researchers co-advise them during their PhD research, and the company pays the students as consultants to Yoyodyne during their research?

**My view:** I realize the proposal is preliminary, but as I heard it, the proposed arrangement seems likely to pose some problems of appearance, and also substantive problems, that make it worth thinking about how we would defend it if questioned. (Especially in the context of outsiders calling us "Get Rich U" and asking things like, "There are no walls between Stanford and Silicon Valley. Should there be?")

### - [Mixing of sponsored research and admissions]

Outside entities sponsor fellowships and scholarships for students all the time, but as far as I know, the university rarely receives PI-administered **sponsored research grants** that are contingent on admitting a particular student, with that fact known to the relevant admissions committee. (Imagine if we had this at the undergraduate level...)

This could create a situation where the admissions committee is under pressure to admit a particular candidate, because iff we do so, a colleague (who may or may not also be on the admissions committee) is going to receive a PI-administered grant.

### - [Mixing of consulting and sponsored research]

As a new faculty member, when I wanted to both consult for Logiscorp and have Stanford receive gift funding from Logiscorp directed to support my research, the university required me to certify that, "The subject of my consulting is not related to my research." They warned me that it would be improper to ask students to work on something related to my consulting.

By contrast, as I understood the proposed arrangement, we would be sanctioning an arrangement where first-year PhD students are both consulting for Yoyodyne (with an NDA) and doing Yoyodyne-sponsored research at Stanford, both on the same or similar topics.

This could create a situation where for every single bit of progress that a student makes, they have to ponder, "Is this something I'll just keep inside Yoyodyne [for which I am paid generously], or is this something I'll publish as an academic or share with my colleagues at Stanford?"

That would be an unhealthy position to put a fresh PhD student. It's not healthy for our mission as academics (to share knowledge with the public) and it's probably not healthy for the collegiality of the department.

If the student is spending that much time at Yoyodyne, eating the free food at Yoyodyne, feeling like "part of the team" at Yoyodyne, and receiving most of their

income from Yoyodyne, I'm doubtful the public interest would emerge as the winner when it counts.

**- [Mixing of consulting and co-advising]**

From what I understood, the student will both be consulting at Yoyodyne *and* co-advised by a Yoyodyne PhD. Will the consulting boss and the co-advisor be the same person? I think we ought to worry about what it means to have a co-advisor who both holds some of the authority of advisor (to influence if/when the student receives a Stanford degree) *and* owes a duty to Yoyodyne and can influence the student to do things for Yoyodyne, with the power to end the student's (likely considerable) consulting pay if they go astray, or to recommend the student for bonuses if they please the company.

**- [Presence of effective publication restrictions]**

We never accept "publication restrictions" on sponsored research. But in this arrangement, Yoyodyne is (1) the keeper of proprietary data that the student is using for their projects, (2) the student's consulting client, with the power to increase/decrease/end their pay, (3) the academic co-advisor of the student's doctoral work, and (4) the sponsor of a research grant that is paying for the student's tuition and stipend at Stanford.

The student (and PI) have a duty to the public to publish our research for the public benefit, but with all these levers of control, Yoyodyne would effectively have publication control over the student's research.

What happens if the student wants to publish a finding, and Yoyodyne (as represented by the co-advisor/consulting boss) doesn't want them to, or wants them to withhold some details? What if the student finds that a prior Yoyodyne result was incorrect or overclaimed, and wants to write a response?

Again, if the student is spending that much time at Yoyodyne, eating the free food at Yoyodyne, feeling like "part of the team" at Yoyodyne, and receiving most of their income from Yoyodyne, I'm doubtful that the student would be highly motivated to fight for what counts. We would be putting the students in a really tough position right out of the gate.

**- [Mixing of "Yoyodyne PhD" students and non-chosen PhD students]**

It's one thing to have some students receive a fellowship, working alongside and collaborating with students who are supported by a sponsored research grant or who have to TA more frequently. For the most part, my impression is that we treat the students on a roughly equal basis once they are at Stanford, irrespective of funding source.

This program seems like it risks creating an "übercaste" of students who do not really view themselves as primarily Stanford students, and are not the same kind of citizen in the department. Would they still be interested in collaborating on academic projects that are not as closely related to Yoyodyne's corporate interests?

Would these students still rotate with three advisors during their first year? What if they decide their best fit is with a different advisor in a different area?

Another risk here is what it does to our reputation among the PhD admits (and therefore our yield, even in areas other than those of interest to Yoyodyne), if it creates the perception that we are not a “real” research department or that research here is more corporate-flavored than elsewhere.

#### **- [Further down the Yoyodyne rabbit hole]**

Every 22 months, Yoyodyne spends the *entire Stanford endowment* on research and development. They have a particular view on what research problems are worth pursuing.

Unlike Yoyodyne, we owe our primary duty to the public interest and to our students. I’m not sure that our limited mindshare is best directed at getting further sucked in to the Yoyodyne way of thinking about what is important to be working on, and analyzing the company’s proprietary data for its benefit. They probably have enough people working on their way of thinking already!

What we saw with the “Yoyodyne Weather Forecast” is that Yoyodyne can get interested in a problem, and claim success in every conceivable venue (Science magazine, The Wall Street Journal, PBS “Nova”). A few years later, it turns out they were mistaken: the system’s estimates diverged wildly from the underlying data series. Yoyodyne removed the bad results from their website and, for years, refused to share them with researchers (even though they were previously available). Later, the company quietly abandoned the whole thing, and never did a definitive analysis about why it failed, which to me is much more interesting than the initial premature claims of success. And because the system is proprietary and Yoyodyne controls access to the underlying data, nobody else can do this analysis. In my view, this level of control over what research gets done is not healthy for the field or, as we depend more on this kind of system in everyday life, for our society.

#### **- [There are probably other structures that would serve Yoyodyne’s and our interests in a better way]**

If Yoyodyne wants there to be more Stanford PhD graduates in academic areas of interest, of course in general that’s fantastic and in line with our interests. Seems like there are several ways to make this happen that would avoid the above concerns:

- Co-advise some of our existing students (omit the contemporaneous consulting)
- Endow some professorships
- Come and be a visiting professor. If Yoyodyne’s top researchers want to be adjunct faculty at Stanford and spend 20% of their time here, holy cow, that would be amazing and we’d be lucky to have them.
- Give fellowships to first-year students who are already admitted. (Or give sponsored research grants with a no-patent clause, but not quid pro quo for admitting a particular student.)