Summary of the project:

Working title: Endogenous Growth with Creative Destruction by Employee Spinouts

**Short Summary:**

The project analyzes the productivity growth, welfare and policy implications of the process of employee spinout entrepreneurship. An employee spinout is a startup founded by an ex-employee; this is different from a spin-off, which is a division of a firm that is separated legally. In order to study this question, I first develop a general equilibrium model of endogenous growth with creative destruction by employee spinouts (adding to the quality ladders framework in Grossman & Helpman 1991). The new feature is that R&D workers hired by incumbent firms can learn on the job how to attempt to improve the incumbent’s product, potentially stealing their monopoly. A tradeoff emerges that encouraging knowledge spillovers to spinouts can weaken monopoly rents, disincentivize R&D in the economy. More frequent spinout formation can reduce or improve welfare depending on the parametrization of the model. I compare the model equilibrium to the planner solution. In order to empirically discipline the analysis, I plan to estimate moments related to the key parameters using microdata on VC-funded spinouts and publicly traded parent firms. I identify spinout firms by name-matching founder biographies in the Venture Source data set with Compustat. I assess the causal impact on spinout formation of incumbent R&D by using an IV analysis based on federal- and state-level R&D tax incentives, as in Bloom et al. 2013, “Identifying Technology Spillovers and Product Market Rivalry.” Finally I assess the degree of competition between spinouts and parent firms by studying how parent firm variables – e.g. the stock price and sales – respond to funding of spinout firms by investors in the Venture Source data set (VC firms, PE firms, and other investors).

The calibration uses aggregate moments, such as the profit / sales ratio, average R&D intensity, labor productivity growth, spinout entry rates, the fraction of self-citing patents, the fraction of patents by incumbents; parameters from the literature, such as innovation-R&D elasticities; and estimates from the empirical part, namely the learning rate and the extent of spinout competition. I validate my model by comparing its predictions to stylized facts from the spinouts literature. The model provides an estimate of the share of growth accounted for by spinouts, incumbents, and others. Finally, I analyze the growth and welfare implications of various policies including restricting non-compete enforceability, restricting spinout formation more generally, and varying R&D subsidies.