Good morning,

My name is Linden Rhoads, and I am testifying today from Seattle Washington. I've been asked to participate because from 2008 to 2014, I served as the Vice Provost for Commercialization for the University of Washington. During my tenure the university agreed to a substantial temporary increase of the budget for tech transfer, which we used to implement an integrated slate of programs designed to radically increase licensing and spin-out activity, and we were successful. So my experience is a reinforcing data point for anyone who posits that there is gold in the academic research hills, and that we could as a nation be mining more of it. The University of Washington has a massive research enterprise, conducting over $1.5B of mostly federally funded research every year. Yet, as with most research universities, there had been little to show for it in commercialization output when I arrived; the ten year run rate for spin-outs from the university was 8 per year, and many of these were companies destined to be small hobby businesses. In my last year at UW we spun out 21 companies -- that put UW at third in the nation for academic spin-outs -- with the majority of those companies being venture capital appropriate companies that had the potential to scale, create jobs, and have real impact. I was not a career academic executive. The UW hired in me a serial technology entrepreneur two of whose ten start-ups had been spin-outs from the university's computer science and engineering department. I was hired to be a change agent, and made a multitude of programmatic changes that drove the spectacular improvement in results over the 6 years I ran the office. We brought in in-house patent agents with specialization in both IT and life science who were available to confer free of charge with research faculty about IP in areas in which they were considering writing research grants, seeking promising "IP white space." We launched an entrepreneur-in-residence program that provided broad mentorship to entrepreneurial faculty and would-be entrepreneurial faculty, and introduced potential CEOs with industry and highly technical and scientific subject matter expertise to our world class researchers. We created advisory boards of industry experts who could advise our life science faculty on regulatory issues, clinical trial design, and the right approach to the FDA. Because in many cases the only way our faculty/entrepreneur teams could amass sufficient capital to spin-out a life science start-up was with an SBIR grant, we hired an SBIR grant writer to assist us in doing a better job of garnering that support. We awarded $1.25M *annually* in $50K "commercialization" grants to the most promising translational

projects, requiring that the funds be used not necessarily for science, but for some step that would reduce technical or market risk and thus increase the likelihood that the project could attract ROI funding from for-profit investors. We launched the university's first incubator, a building with wet lab space as well as office space for start-ups. We raised a $20M venture fund, The W Fund, that invested exclusively in spin-outs from Washington's non-profit research institutions. I still serve as the General Manager of The W Fund and we are making our last investment, a follow-on investment in one of our 19 portfolio companies, this month. Expert sector-specific mentorship, value-creating gap funding, and strong IP support created significant new opportunities and economic success from UW's already stellar research enterprise. This level of support is necessary because university researchers balance commercialization efforts with their academic teaching and research workload. The programs I've mentioned required passion for seeing the research that had consumed millions in federal funding and the careers of star researchers actually get to a patient and improve their health. But these programs also required *funding*. Very few tech transfer offices, especially those at public universities, have adequate funding. UW had had one big tech transfer hit, The Hall patents, that provided a base level of funding to the tech transfer office. I convinced the university administration to invest over $2M more *per year* while I was there to allow us to spend more on the programs I've mentioned as well as bump up patent activities. It was a happy coincidence that my arrival coincided with a moment when this public university was positioned to accede to my request. My successor started when the Hall patents had just expired, and spent 5 years winding down many of the programs that had yielded great results. Support of the innovation ecosystem is a long-term play and while short-term gains can be achieved, game-changing potential is lost when programs must be dismantled. This is why tech transfer administrators are wary of programs that suggest that minimal capital investments will have great results, or that significant capital investments over only a few years will have sustained results. Too often government or foundations offer universities a few hundred thousand dollars to a million dollars a year for one to three years with the idea that somehow after the program funding ends, the program will be self-sustaining. The continual pivoting and change is not helpful. What is needed is ideally a ten-year commitment of the substantial funds major tech transfer offices need to provide comprehensive innovation support including the funds to *speculatively* protect the intellectual property generated by federally funded research, including filing international patents where

appropriate. Only a few elite private institutions can afford to do this adequately today. This is at least a $3M price tag per $1B of federally funded research per year, on top of the funding such offices currently have available in their budget for base operations. Such funding would allow universities to align their considerable tech transfer talent with entrepreneurs and investors in bridging the gap between promising discovery research and life-improving technologies and products. I'd also like to commend the iCorps HUBS. My colleagues in tech transfer continue to laud these programs that train researchers to pursue customer directed discovery and to focus on the end user, and that encourage well managed expert industry mentorship. *I'd be happy to answer any questions.*