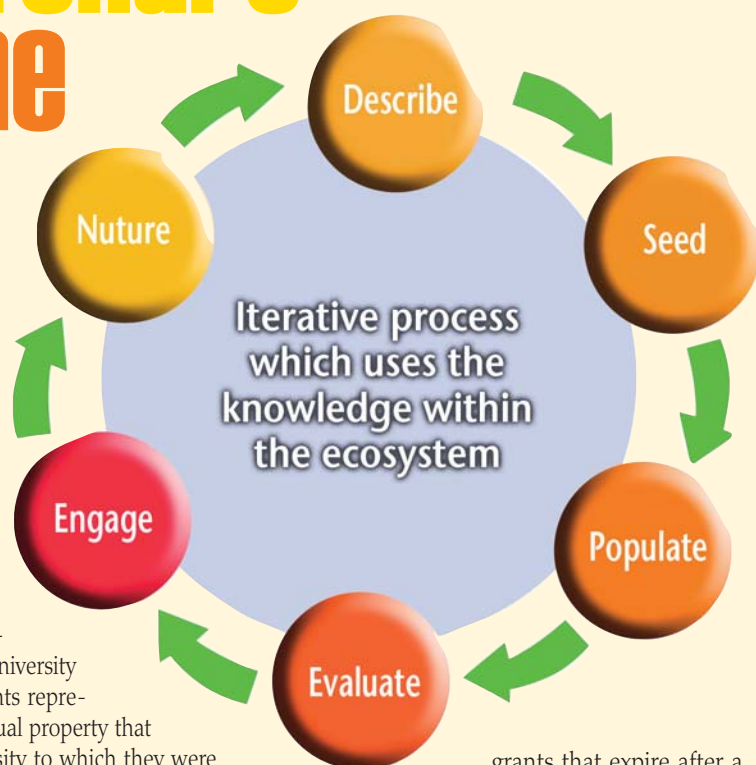


Why Faculty Tenure Matters to the University Innovation Ecosystem

By Melba Kurman



Today's university technology transfer model is built on the assumption that inventing faculty will remain employed by a single university for the long term, if not for life. In the face of harsh economic realities, if universities eventually buckle to public pressure and hire faculty according to renewable, short-term contracts, research administrators would need to revise – perhaps dramatically re-vamp – their university intellectual property strategies. Outside academia, the switch to a mobile faculty workforce could introduce unintended negative consequences to our nation's university technology transfer capabilities.

A frequently overlooked benefit of faculty tenure is that it introduces long-term stability into the university innovation ecosystem. This stability is crucial for two reasons. First, tenure gives university faculty another variant of academic freedom — the freedom to pursue exploratory and open-ended basic scientific research. Bold, game-changing research is risky and sometimes yields nothing but a dead end; yet if given time and support, can yield much greater social rewards. Second, to become commercially viable, university patents typically require years of faculty inventor involvement, a professional commitment to an uncertain outcome that mobile faculty would not be able to make for several reasons.

At most universities, patents and commercial patent licenses remain the cornerstones of the formal university technology transfer process. Un-

like other modes of open knowledge exchange employed by university research faculty, patents represent a unit of intellectual property that belongs to the university to which they were disclosed. If an inventor leaves a university, her patent remains behind. At first glance, the know-how captured in university-owned patents appears to be an appealingly cut and dried unit of knowledge that can be readily transferred between parties. In actuality, the knowledge in university patents is not easily transferrable without the continued involvement of its inventor. Placing patents into university custody is a viable model of technology transfer only if university inventors remain at the same university and are able to commit to the long development timeframes needed to bring the patented knowledge to commercial fruition.

To check these thoughts with people who manage university patent portfolios and research activities, I spoke to two research administrators and a technology transfer specialist. While the presence of a mobile teaching workforce is already well-documented in discussions of university tenure, I learned that most university research divisions manage the commercialization process for a growing number of mobile inventors. Clearly, graduate students and postdocs have long been a significant source of valuable inventions. A second mobile faculty workforce is that of researchers whose temporary positions are funded by "soft money"

grants that expire after a few years. The number of mobile university inventors remains small. Michael Pazzanni, Vice President for Research and Graduate and Professional Education at Rutgers University, estimates that roughly five percent of the inventing faculty at Rutgers are funded by soft money.

Howard Grimes, Vice President for Research and the Dean of the Graduate School at Washington State University, points out that university faculty are not that easy to move around as many people think, especially faculty who are very productive. Grimes said, "the big inventors have a big infrastructure around them that would make it challenging for them to move every three to five years. The inventors who disclose a lot of inventions tend to earn lots of money in research grants, have large numbers of graduate students, and lots of expensive lab equipment. If a prolific inventor decided to change universities, the move would not happen quickly, which would leave us time to figure out the best way to handle the inventor's invention disclosures, patents and maybe startups."

Collaborative research grants are also pushing university research managers to adjust and clarify their patent management strategies. Pazzanni

notes that since “many federal research grants require collaboration across universities, a lot of the intellectual property Rutgers handles spans multiple institutions, which is almost like having a mobile faculty workforce.” At Rutgers, to maintain continuity, some departed faculty continue to develop inventions managed by Rutgers by consulting with the company commercializing their research. At Washington State, Grimes encourages faculty to connect with companies early in the research process before inventions and patents become a reality. “If a university has correctly set up the initial terms and expectations of that partnership, regardless of changes to the situation, the original university should still be in a very good position.”

Mobile inventors make a user-friendly technology transfer process more, not less important. Lee Taylor, Technology Licensing Specialist at the University of Hawaii technology transfer office, has found that researchers paid by soft money grants are frequently his most productive inventors. In his experience, the better the inventor’s relationship with the technology transfer office, the smoother the transition when they come and go. “If a technology transfer office has a habit of involving the inventors closely in the commercialization process, things will go more smoothly. Transparency and trust are key.”

If the numbers of mobile university inventors were to remain small, an adept research administrator may be able to compensate for any introduced disruptions. I wonder what the impact would be, however, were the entire university research ecosystem to shift to a corporate, at-will mode of employment. Perhaps we would discover an unforeseen side-effect: given its reliance on proprietary forms of knowledge exchange, today’s formal university technology transfer process may not be conducive to a mobile faculty workforce.

True, one could make a convincing case that university-owned patents are a minor channel of university knowledge exchange and a relative late-comer to the game of university knowledge sharing. Most channels of university knowledge do not involve long-term contractual commitments, for example academic publishing, faculty consulting, student matriculation and conferences. At least in theory, a mobile faculty inventor could continue to publish, teach and network from a variety of different employers without missing a beat. In addition, most tenured faculty today do not formally disclose inventions to their university employer, much less work to bring their patented inventions to commercial fruition.

What makes university research special is that it tackles big, unanswered scientific questions that in the short term may have little immediate commercial or social application. Abolishing university faculty tenure may introduce an unintended negative consequence of depriving inventions of the lengthy nurturing they need from their faculty inventor in order to spring to life. Lee Taylor says the biggest challenge he faces with departing faculty inventors is if the inventor has lost interest in the inventions he has “left behind.” Taylor says, “an uninterested inventor can be a disincentive to the technology transfer staff since the level of inventor’s interest plays such an important role in bringing an invention to market.” According to Taylor, if an inventor leaves in the middle of the patent prosecution process, “we would likely continue to pursue the patent, but perhaps in a narrower scope.”

If university researchers were hired and fired with the same frequency as those in the private sector, university patent portfolios could lose their commercial and social value. With every faculty transition, future universities might accumulate yet more abandoned patents of diminished commercial potential. To maintain the commercial value of their patent portfolios, universities would face operational challenges in working closely together to share patent costs and coordinate common, mutually agreeable licensing terms. Building a patent portfolio would become an even costlier and more unpredictable practice than it is today.

More serious issues could arise if a departed inventor chose to continue to spend his new university’s resources to develop a patent owned by his previous employer. His new university might perceive the inventor’s ongoing involvement as a conflict of interest or a conflict of time. After all, the financial beneficiary of the inventor’s efforts would be his prior university. In fact, unless special arrangements were made between the old university and the new university, the inventor’s new university would receive no financial compensation at all. A similar challenge could develop with a university startup if a former university were to remain the owner of a significant chunk of equity, making it the primary beneficiary of the startup’s success.

Another potential downside of a mobile faculty workforce could be meeting the demands of star faculty in employment negotiations, an arena in which public universities would find it difficult to compete with private universities. Imagine if technology transfer terms were on the negotiating table. A star faculty member could demand a

much larger share of patent royalties than the standard 30% cut given by most universities today. A star faculty could negotiate favorable startup terms, permitting the university to take only a small, pre-agreed upon percentage of equity. Additional negotiable perks could include asking for dedicated technology transfer staff resources, demanding flexible intellectual property clauses in consulting engagements, and the use of a generous patent budget.

Switching gears, to play devil’s advocate for a minute, perhaps the technology transfer process would survive the abolishment of tenure and in response, evolve to meet the operational challenges introduced by a mobile faculty workforce. For example, universities could ease their operational burdens by mingling their inventions into a common patent pool. In fact, a mobile faculty workforce could bring university technology transfer strategies full circle, back to the days before the passage of the Bayh-Dole Act of 1980 — an outcome whose interpretation depends on whom you ask. The Bayh-Dole Act gave universities the option to own and commercially license the patents resulting from federally funded research. If university patents were to lose their commercial value in the absence of a committed faculty inventor, perhaps universities would decline to invest in obtaining patents, and instead, revert to placing university inventions into the public domain.

In these tough economic times, faculty tenure may appear to be an outdated luxury. Yet, a stable faculty workforce may indirectly aid our ailing economy by increasing the downstream commercial and social value of university patents and startups based on university research. Rather than justifying tenure as a protector of academic freedom, university administrators should articulate its value as a critical component of a vibrant university innovation ecosystem. By demonstrating the contribution of a tenured faculty workforce to the technology transfer system, university research administrators might better convince an increasingly skeptical public that maintaining the tenure system is good for everybody, not just for professors. ■



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