Intellectual Property – Driver of Innovation:
Making Our Lives Healthier, Safer, and More Productive
Questions for the Record
Submitted May 2, 2017

QUESTIONS FROM SENATOR COONS FOR DR. CONOR MADIGAN

1. What role has Kateeva's patent portfolio played in securing its venture capital funding?

As Kateeva has developed its patent portfolio, Kateeva's patents have become an important part of Kateeva's desirability to investors since Kateeva's patent portfolio would allow Kateeva to strongly defend its business against "copy-cats" if ever the "copy-cats" got good enough to compete with Kateeva's product on the basis of price-performance. This consideration was especially critical for Kateeva as there are many examples over the last 10 years of companies in Kateeva's industry reverse engineering and copying competitor's products. In general, a strong IP portfolio, and a strong plan for enforcement, are essential ingredients to winning venture investment in a high tech industry where the risk of technology duplication is real. An additional consideration for investors was the ability to take action against overseas infringement through the International Trade Commission to address investor concerns that enforcing our IP overseas might not be as predictable as it is in the U.S.

2. Kateeva has many issued patents and pending applications at the U.S. Patent and Trademark Office. Based on this experience, where do you see room for improvement in the patent application process?

Kateeva suggests that the Applicant interview process at the PTO be supported and expanded on an on-going basis. Though it is understood and appreciated that the Examination Corps has a burdensome work load, statistics show that there is greater success at advancing prosecution, and greatly improved customer satisfaction, when practitioners can engage in prosecution matters directly with an Examiner. As an Applicant Kateeva has benefited significantly from the on-site interview process. It gives an Examiner and their Supervisor the opportunity to hear directly from the Applicant their position on the points raised during the prosecution process and has been instrumental for Kateeva in resolving misunderstandings on both sides and reaching mutually beneficial outcomes.

Kateeva would like to see the pendency and backlog of applications filed with the PTO reduced and the quality of the examining corps increased. As such, Kateeva encourages the hiring of additional, and retention of current, qualified examiners. In addition, Kateeva encourages more interaction and cross-education between the examining core and associated industries, perhaps by means of facility tours and conferences.

3. Based on your written testimony, it appears that some of the original work that led to the creation of Kateeva happened at a university, namely the Massachusetts Institute of Technology. What role do you believe universities play in the innovation ecosystem of this country?

Whereas Kateeva's products do not utilize any technology owned by MIT or developed by the co-founders while at MIT, the R&D work performed there by the three co-founding engineers and the two co-founding faculty (Prof. Vladimir Bulovic and Prof. Martin Schmidt) served to train the founding team in the skills and knowledge needed to ultimately develop the

technology solutions that would go on to differentiate Kateeva's products from the rest of the industry. Without a doubt, there would be no Kateeva without the training received by the founders at MIT.

More broadly, research Universities like MIT provide perhaps the greatest fountainhead of innovation in this country. Many innovations derive from expansive and fundamental scientific exploration, and research Universities enable that kind of exploration better than any other environment by bringing together brilliant minds, world-class facilities, and aculture of intellectual study. In many ways, research Universities are the innovation incubator. And as the primary funding source for University research programs, government grants are essential. As a result, Kateeva warns that cutting research grant funding will have an immediate and long lasting negative impact on the innovation economy here in the U.S.

4. Does Kateeva rely on trade secret protection? If so, how does the company decide whether to protect a particular innovative development by either patents or trade secrets? Do you think changes to either of these legal regimes are needed to achieve a better balance between the two?

Kateeva assesses the decision to seek trade secret protection on a case-by-case basis and typically views patent and trade secret protection as complimentary when Kateeva's overall portfolio of innovations is views as a whole. Most of Kateeva's core innovations are protected by patents, but some "recipes" or "know-hows" are protected as trade secrets. In general, Kateeva prioritizes patent protection and seeks protection when patent protection is not attractive, for example, when disclosing an innovation will enable a competitor to copy Kateeva's product and there is a significant risk that Kateeva would not be able to obtain or enforce strong patent rights.

Kateeva does not have any specific recommendations on the balance of the legal regimes, but does view the recent Protect Trade Secrets Act positively.

5. Based on Kateeva's experience hiring a domestic workforce, have you been able to readily find a workforce sufficiently educated for your business needs? If not, do you believe there are any steps Congress could take to help address a shortage of such skilled workers?

Kateeva faces two competing factors when hiring its domestic workforce in Silicon Valley. On the one hand we benefit from having top engineering and science professionals from around the world located in the region. On the other hand these professions are in very high demand and largely enjoy full employment. As a result, even though there is a wealth of local talent, our technical positions routinely take far longer to fill than non-technical positions, as we compete with many other companies searching for the same kind of talent. In many cases, we are looking for very specific skill-sets, and positions can remain open for 3 months and longer – an eternity in the fast moving high technology industry – adding stress to the current workforce and limiting our productivity and competitiveness.

There are at least three actions I believe Congress could take to increase engineering and science talent in the US in general and Silicon Valley in particular.

1. *Improve visa access and flexibility for non-US citizens who earn their degrees in US Universities. The number of U.S. citizens and permanent residents earning graduate degrees in science and engineering fell 5 percent in 2014 from its peak in 2008. At the*

same time, the number of students on temporary visas earning the same degrees soared by 35 percent, according to survey data collected by the National Science Foundation and National Institutes of Health. Most of these graduates will require a work visa to be eligible to work in the US. Current processes are limited and not flexible enough for US companies to recruit the best of the graduates from US universities due to limitations on visas for these graduates. As a result, some of the best talent we have graduating from our US universities cannot be recruited to work in US companies, and therefore leave the country even though they want to stay and contribute to the U.S. economy.

2. *Improve the primary and secondary educational focus in the US on STEM. The pipeline for STEM majors in universities should also focus more on non-traditional sources such as women and minorities. Either through partnership with companies or from government driven initiatives, we should sponsor programs that increase the number of students entering US universities who major in science and engineering.*
3. *Create incentives for companies to increase the number and scale of US university/technical industry collaborations. Increasing company and university partnerships improves the pipeline talent between companies and universities. Universities may gain with increased funding on research which can attract more and more incoming students. Companies may gain with improved pipeline of graduates*

6. Has Kateeva sought patent protection abroad? Are there actions the U.S. government could take to further facilitate the process of getting patent protection abroad?

As a truly global business, Kateeva has benefited from the Global Patent Prosecution Highway (PPH), which provides for expedited examination of claims allowed or issued in one participating jurisdiction in any other participating jurisdiction. As such, this is very important patent alliance that allows a US company to seek global patent protection on an expedited schedule.

We would hope to see continued support for the maintenance and expansion of this alliance.

In general, Kateeva encourages the continued harmonization and integration of the industrialized countries' patent laws, offices, and prosecution processes, such as that provided by the Patent Cooperation Treaty (PCT). Ideally, at some point in the not too distant future, patents will be granted and enforced on a global, rather than regional, basis.

As one technical note, since the PPH for expedited examination extends beyond PCT contracting states, we suggest keeping the two programs separate, or, if they are harmonized, ensuring that the country scope of the PPH does not shrink when carrying out such harmonization.