

Distinguished Members of the Subcommittee on Workers Compensation and Worker Protection,

Thank you for inviting me to appear here this afternoon. It is truly an honor. My name is Jacqueline Speedy and I lead the Heinz School of Public Policy at Carnegie Mellon University, which I'm proud to say is the top ranked policy school in our Commonwealth. I'm here today to talk about an ongoing partnership between the state's Bureau of Workers' Compensation and CMU graduate students. I emphasize this because I appear before you today, not as someone who is an expert in the specifics of the analysis we have done, but as someone who facilitates this, and many other collaborations like this one. The real experts are the graduate students who have benefited deeply from applying the very latest data science methods to these projects and I report, somewhat happily, that they cannot be here today because they have graduated and are working in so many important industries: software, healthcare, government, injecting the knowledge gained from collaboration with you into corners of our economy far and near.

I believe this collaboration represents an outstanding example of universities and government working hand in hand. Bringing some of the very best minds in Pennsylvania to bear on important, expensive, and data-rich issues such as worker safety, I hope you agree, is a no-brainer. And we should do more of it.

In 2017, our partnership began with a straightforward question: ***could we use the bureau's 20 year dataset of PA workplace injuries and apply data analytics to uncover hidden patterns and build predictive models so that injuries could be better avoided?*** That first project revealed some interesting findings:

- The data available were sufficient for finding geographic and industry clusters of worker injuries. For example, these models can be used to answer questions about correlations between incidents and workers' age; the type of industry and the prevalence of injury; the most common types and causes of injuries; and more interesting findings like the number of hours worked on the day of injury; peak hours of injuries; and the relationship between injury and the use of safety equipment; and much more;
- Based on these clusters, the Bureau could deploy its limited resources to conducting trainings that would have the greatest impact;
- But mostly it led to more questions and the need for more data so we could build something truly useful for the Commonwealth.

So that initial project touched off another 7 projects, one of which just wrapped up last week. In these projects, we've provided more targeted analysis of specific industries and importantly, built models and dashboards that provide visual tools that the Commonwealth could continue to use and reload with current data as industries evolve and firms change. It is great to be able to analyze the data from past incidents to find patterns, but what if we built a tool that predicts injuries and illness *before* they happen? Instead of intervening *after* a worker gets hurt, can we

do it *before* they get hurt? Not only is this better for workers in PA, but it is better for firms and the state in avoiding the huge financial impact of workplace injuries and provides a game plan for how to best allocate and deploy the state's limited training and outreach resources. In the most recent phase of the project, our students did just that - they built a predictive analysis tool. Our hope is that we've helped the bureau gain insights that help them intervene to reduce, and hopefully prevent workplace injuries, a multi-billion dollar problem in the Commonwealth.

Let me conclude my brief remarks with what I think is the larger opportunity that you could facilitate. This partnership has led to other work, such a research study that we are currently conducting on what work decisions PA citizens make in reaction to federal unemployment insurance programs. Partnership with Carnegie Mellon and other five other Tier 1 research institutions in the state offer educational benefits to students, tax savings and improved services to citizens, and are helpful in drawing and retaining the best minds here to Pennsylvania. Too often we are prevented in working together to the fullest extent by a lack of creativity and inertia. But if we can codify a working relationship through formal partnership, we all win.