**Prompt:** Tell us in 100 words or less how characterizing genetic variation in your favorite plant or animal species with HiFi sequencing will contribute to a healthier population and planet

**Using HiFi sequencing, we would be able to construct a novel genome of the Hardin crayfish (*Faxonius wrighti*), a rare species that lives in a very narrow geographic range in West Tennessee. My work is being used for an SSA report to petition the listing of this crayfish species for protection under the U.S. Endangered Species Act. This reference genome can be used for applications such as clarifying taxonomic status. We would also use resequencing methods to study adaptive loci and relate that to difference in environmental stressors between populations. Conservation concerns primarily result from channelization and habitat loss.**

**Genome sequencing is a powerful tool for understanding adaptive variation and demographics of endangered species. Conservation actions for crayfish are urgently needed; 20% of species are threatened with extinction. Genomic resources for crayfish are lacking. Only one genome has been published for the crayfish family Cambaridae (>400 species). This project would use PacBio technology to construct a novel genome of *Faxonius wrighti*, a rare Tennessee crayfish. Long-read sequencing is critical for WGS in crayfish due to their repetitive genomes. Our results would inform conservation needs of *F. wrighti*, which is currently under consideration for listing under the Endangered Species Act.**

Start writing down if we had ability to get sequencing done, what will it do for Hardin cray fish?

Taxonomic status is uncertain = help resolve taxonomic status

Will help regulatory community to most efficiently use of precious conservation money. For us to understand the

Going to help us better interpret pop gen analysis

Exposed to different sets of environmental stressors from one population to the next

Wrighti is a rare species with limited geographic range

Federal listing

Tax status is uncertain

Talk about tangible applications achieved with sequence