The following summarizes research progress during the last 12 months and research goals for the next 12 months.   
  
     My first aim, Conservation of genome wide recombination rates in a wild white footed deer mouse, was submitted to Heredity in February and we are finishing the first round of revisions. I gained experience that will be useful to apply to future research, such as identifying ordering new model strains, obtaining equipment and establishing contacts for field work. Through writing up this paper and performing these analyses, I gained experience using software tools including; sequence alignment tools, geo-spatial visualization, markdown language, version control and limitations of mixed models.  
I have refined the pipeline for applying an image analysis software tool for analysis of my image data. In addition to producing results for this project, it will be applied for results on my (aims) focused on heterochiasmy and single bivalent patterns.  I gave two talks on these results at MidWestPopGen in August 2018 and ESS in April 2019. At PEQG 2017 in Madison I presented a poster with preliminary my results for my 2nd and 3rd aims, Heterochiasmy patterns in the house mouse. The next six months will be focused on collecting and analyzing data for my second aim. 

[**bret.payseur@wisc.edu**](mailto:bret.payseur@wisc.edu)

[**kbroman@biostat.wisc.edu**](mailto:kbroman@biostat.wisc.edu)[**ane@stat.wisc.edu**](mailto:ane@stat.wisc.edu)[**skop@wisc.edu**](mailto:skop@wisc.edu)[**nathaniel.sharp@wisc.edu**](mailto:nathaniel.sharp@wisc.edu)

**Dissertation title** Evolution of the sexual dimorphism in recombination rates in house mice

**Training during the last 12 months**

Last fall my first chapter was published. It was a great experience to participate in the peer-review and journal submission process. The rest of my energy has been focused on completing the manuscript for my second chapter of my thesis, on the sexual dimorphism in the evolution of recombination rates in house mice. My abstract for presenting this work was accepted for an oral presentation at TAGC 2020, however I did not present virtually so I could focus on writing. I’ve been able to virtually attend talks and conferences TAGC, Meiosis in Quarantine and the EES series. Which are nice opportunities to hear research from other labs. I’ve utilized the Writing Centre’s workshops and I’ll be a writing program sponsored by GSA and U Kansas.

**One page research progress, goals for the next 6 months**

I completed the analysis and data cleaning of the results that will go into my second and third chapters. There were some unexpected results for the relationship between genome-wide recombination rates and the amount of crossover interference. I examined the general patterns of sexual dimorphism in crossover number and other traits within the framework and assumptions for models from the literature. During quarantine I’ve been focusing on the writing and completion of all the figures, tables and supplemental material for submission. I’ve generate results on evolution of levels between cell variation for CO counts and started to incorporate these into an outline for my third chapter. My goals for the next 6 months will be to submit my second chapter, write a manuscript for my third chapter, write a thesis intro and conclusion and defend my thesis.

**Career development goals for the next year**

My career goal for the next 6 months is to apply to industry positions. I’ve updated my resume, I just need to be better about showing it to others and get feedback for tailoring it to industry positions.

**What has gone well**

I had one informational interview about applying to industry jobs. It’s been a little difficult to know it position titles I see on job sites would be a good fit for my skill set.

**Professional development after grad**

A good guideline for the annual meeting is to prepare ~20-30 slides (which will expand to a longer discussion with questions from your committee). Your presentation should include an update on your progress, restating your aims (or changes made to the original aims), and should also provide a plan for future directions and a timeline for completion through to graduation. Complete your Annual Committee Form and send it out to your committee before the meeting, ask your meeting Chair to complete their portion at or after your meeting. Completed forms should be turned into the Student Services Coordinator in room 1426 of the Genetics and Biotechnology Center.