Si Yol Yi, Biology

University: University of Missouri-Columbia
Year in School: Senior
Hometown: St. Louis, MO
Faculty Mentor: Dr. Carl Gerhardt, Biological Sciences
Funding Source: Life Sciences Undergraduate Research Opportunity Program

Wading in the gene pool: Female preference for long mating calls in gray treefrogs (Hyla versicolor)

Si Yol Yi, Noah Gordon, H. Carl Gerhardt, Allison Welch

Female gray treefrogs (Hyla versicolor) exhibit a clear preference for long mating calls. Moreover, the expression of this preference varies. The "good genes" model of sexual selection suggests that this is because females with extreme preferences mate with males with the most exaggerated traits, so their offspring will carry the genes for the extreme values of both trait and preference. Another possible explanation for variation in preference is that females in good physical condition will be better able to travel longer distances to find a longer calling male, resulting in a stronger call preference. We assessed the preference strength of lab-reared female frogs that are the offspring of short and long-calling fathers. We manipulated the condition of these females by placing them on a high and low feeding treatment. Frogs were tested in an anechoic chamber to determine preference strength, which was measured by using unequal playback levels of synthetic mating calls. We defined preference strength as the amount that the intensity of a long call can be reduced relative to the short call before the female prefers the shorter call. We found that preference strength was not significantly affected by father's call length, family, food treatment, or weight. Additionally, the response time for testing showed no relationship with either preference strength or weight. While there were no trends in the data, our sample size was small. Further testing with a larger sample size will give us a better idea of whether or not preference strength is affected by male call length or condition. Alternatively, female preference might be linked to variables we did not measure, such as age or past experience.