

## Abstract:

Bisphenol A (BPA) is a common chemical used in the manufacturing of plastics. This chemical, however, has been shown to pose a health risk to both animals and humans. These risks include disrupting normal endocrine function as well as causing metabolic disorders, as it can mimic the effects of estrogen by binding to and activating the estrogen receptor. Also, during pregnancy, even small exposures to Bisphenol A during fetal development can be detrimental. Because of these negative health effects, we will use zebrafish as a model to determine the role of these compounds during development, as the zebrafish genome has a high homology to the human genome. With the negative effects of BPA, alternatives like Bisphenol B (BPB), Bisphenol C (BPC), and Bisguaiacol F (BGF) are being studied in our lab in hopes of finding a less estrogenic chemical. Preliminary data from our lab has shown BPC and BPB are as potent as BPA at activating the estrogen receptor. However, BGF, a green alternative made from paper pulp products, does not appear to be estrogenic. This research will look at the effects BPB, BPC, and BGF have on embryo development, specifically, the effects on the development of the heart, yolk sac, cranium, and pigmentation. Total RNA will be isolated for analysis of known estrogen response using real-time quantitative reverse transaction PCR (RT-qPCT).