



## Undergraduate Research Symposium May 17, 2019 Mary Gates Hall

### Online Proceedings

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#### POSTER SESSION 2

Commons West, Easel 36

1:00 PM to 2:30 PM

##### **Effects of Prenatal Exposure to Domoic Acid on Infant Cognitive Development and Learning in a Nonhuman Primate Model**

*Scyler Li, Junior, Environmental Health*

*UW Honors Program*

*Mentor: Thomas Burbacher, Environmental Health*

*Mentor: Kimberly Grant, DEOHS*

Domoic acid (DA), a common marine neurotoxin found in marine organisms such as shellfish and finfish, is gaining public attention with increasing outbreaks in the USA, Australia, China, and some countries in Europe. Most DA outbreaks are observed along coastal regions, increasing the risk of exposure by seafood consumption. However, little is known about the effects of low level prenatal exposure of DA. To address this growing public health issue, we administered behavioral and cognitive tests on 27 *Macaca fascicularis* infants prenatally exposed to 0, 0.075, and 0.15 mg/kg/day of DA. Their cognitive capacities were analyzed based on their speed of learning new tests using the Wisconsin General Testing Apparatus (WGTA). The WGTA requires testers to present stimuli to the infant and, depending on the response, reward the infant for a correct response. I was one of several testers that worked with the infants during testing sessions 5 days per week. I also worked with the investigators and data analysis team to analyze the results of the WGTA tests. Results from early cognitive tests of object and spatial discrimination did not indicate a statistically significant detrimental effect of DA on these basic learning tasks. This suggests that DA does not have an impact on basic discrimination learning in the early stages of life (< 1 year). However, due to the potential for delayed toxicity of DA, more complex learning and memory tests are being administered as the infants mature. The results of this study will provide insights into future research and influence policies being implemented regarding seafood consumption and food safety.