Developmental deformities induced by the ecotoxicological contaminant Tris(4-chlorophenyl)methanol (TCPMOH) in zebrafish (Danio rerio)



Ashley Schwartz
Computational Science PhD Student
Advisors: Uduak George, Karilyn Sant



Goal

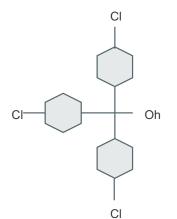
Determine the impact of an environmental pollutant (TCPMOH) on embryonic development

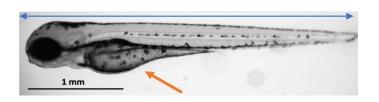
Methods

- Image Analysis
- Ordinary Differential Equation
 Development
 - Complex Network Model Analysis

Results

TCPMOH increases embryonic deformities and mortality in zebrafish





$$\frac{dy}{dt} = -\alpha y - \beta \left(1 - \frac{y}{k_1} \right) yl \qquad \frac{dl}{dt} = \gamma \left(1 - \frac{l}{k_2} \right) ly$$

