

# Department of Natural Resource Sciences

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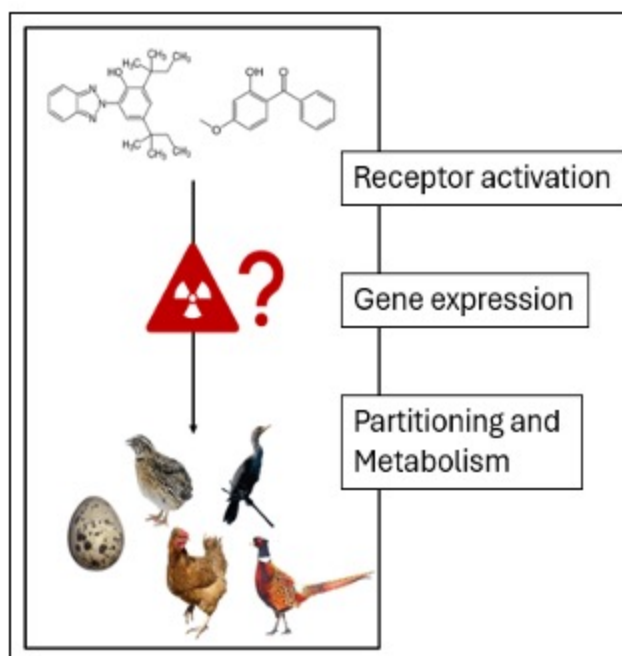
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## Using New Alternative Methods to Study Hazard of Ultraviolet Absorbents in Avian Species

Ramela Koumrouyan

PhD Candidate, Department of Natural Resource Sciences

**Abstract:** Ultraviolet absorbents (UVAs) are industrial chemicals that have been detected in various avian species, though there is limited knowledge of their effects. This thesis uses new alternative methods to discern not only hazard but also the mechanisms of action through which UVAs act in birds. Current results suggest that UVAs are not acutely toxic in early-life stage Japanese quail (*Coturnix japonica*) and Double-crested cormorants (*Nannopterum auritum*). Gene expression analyses demonstrate the dysregulation of genes in metabolic, endocrine and signaling pathways. These results must nevertheless be interpreted with emerging partitioning and metabolism data on specific UVA-species combinations. Overall, this thesis adapts risk assessment frameworks for emerging chemicals.



Ramela Koumrouyan  
PhD candidate  
Head lab



**BIO:** Ramela is a 5<sup>th</sup> year PhD candidate in Dr Jessica Head's lab. Before joining the Head lab, she completed a BSc in Biology at Concordia University. She is interested in using her knowledge in molecular biology, population ecology and ecotoxicology to enhance the field of chemical risk assessment. Her current thesis aims at determining the hazard of emerging chemicals in avian species. When she is not working, Ramela enjoys playing fiddle and practicing Brazilian jiu jitsu.