

**Toxicology Interdepartmental Graduate Program
2019-2020 summary of activities**

Director of Graduate Education: Dr. Aileen Keating (CALS)

Supervisory Committee: Dr. Steven Bradbury (CALS), Dr. Jacek Koziel (CoE; CALS), Dr. Joel Coats (CALS), Dr. Richard Martin (CVM), Dr. Boris Jovanovic (CALS)

Program Administrator: Seth Shatto

2019-2020 Toxicology graduate students

Ahmed Abdalla (Dr. Anumantha Kanthasamy)
Caleb Corona (Dr. Coats)
Colin Wong (Dr. Coats)
Dharmin Rokad (Dr. Anumantha Kanthasamy)
Maria Gonzalez Alvarez (Dr. Keating)
Maura Hall (Dr. Coats)
Courtney Huerter (Dr. Coats)
Jacob Johnson (Dr. Coats)
James Klimavicz (Dr. Coats)
Niranjana Krishnan (Dr. Bradbury)
Bailey McGuire (Dr. Keating)
Scott Radke (Dr. Ensley (now KSU))
Cristina Santana (Dr. Gauger)
Dwayne Schrunk (Dr. Ensley (now KSU))
Rachel Sorensen (Dr. Jovanovic)
Mengisteab Wolday (Dr. Martin)
Hannah Wickham (Dr. Anumantha Kanthasamy)

Bharathi Palanisamy (TOX minor; Dr. Anumantha Kanthasamy)
Sireesha Manne (TOX minor; Dr. Anumantha Kanthasamy)

New students to the program in 2019:

Hannah Wickham (Dr. Anumantha Kanthasamy)
Nur Ashiqin Mohd Ridzuan Nirmal (Dr. Jovanović)
Imaobong Inyang (in rotation)

Graduating students (Since Summer 2019 and current employment):

	<u>Degree</u>	<u>Mentor</u>	<u>Current Employment</u>
Dharmin Rokad	PhD	Dr. Kanthasamy	Study Director at Covance Laboratories
Mengisteab Wolday	MS	Dr. Martin	Charles River Laboratories, PA
Sireesha Manne	PhD	Dr. Kanthasamy	Post Doc position at Mayo Clinic

Incoming students (Fall 2020):

Christian Haffner (MS)

Alyssa Otto (PhD)

Charity Nya (PhD) *international student, travel complications with COVID-19

Budget details:

Tox Budget for 2019-2020: \$60,716

Carryover funds from 2018-2019: \$22,658.52

Total Funds Available: \$83,374.52

Total used to support student tuition/stipend/benefits: \$54,026.52

Total used for DOGE incentive: \$5,303

Total used for miscellaneous: \$819.87 for Food. \$60 for Application Fee Waiver

Total Spent as of 6/23/2020: \$60,503.20

Unspent from 2019-2020 year: \$22,871.32

Graduate student awards:**Dharmin Rokad – Kanthasamy research group**

Travel Grant from the American College of Toxicology (2019) and presented his work in November of 2019 at the ACT conference.

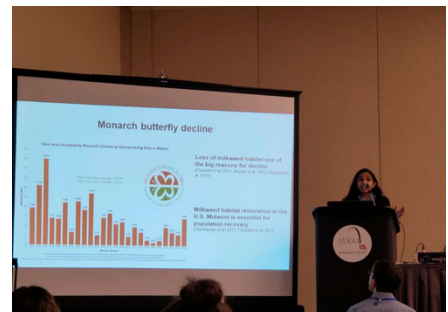
Defended Ph.D. Dissertation in February of 2020.

**Niranjana Krishnan – Bradbury research group**

Invited to present the following research in November 2019 at the Entomological Society of America Meeting:

Krishnan N, Bidne K, Hellmich R, Coats J, Bradbury S. 2019. Estimating the risk of insecticide exposure to the monarch butterfly (*Danaus plexippus*) at the patch and landscape scales. Talk at the Entomological Society of America, St. Louis, MO.

Krishnan N, Coats J, Bradbury S. 2019. Comparing the insecticide sensitivity of monarchs to bees and other butterflies. Poster at the Entomological Society of America, St. Louis, MO.



Research featured on journal cover. Krishnan N, Yang Z, Bidne KG, Hellmich RL, Coats JR, Bradbury SP. 2020. Assessing field-scale risks of foliar insecticide applications to monarch butterfly (*Danaus plexippus*) larvae. In *Environmental Toxicology and Chemistry*. DOI: 10.1002/etc.4672. <https://setac.onlinelibrary.wiley.com/doi/abs/10.1002/etc.4672>.

Awarded the Henry and Sylvia Richardson Research Incentive Grant by the Entomology Department at Iowa State University.

Cristina Santana - Gauger research group

American Association of Veterinary Laboratory Diagnostics Conference 2019
Low level exposure to hydrogen sulfide increases the pathogenicity of influenza a virus in swine. \$1,500 travel award included.

Central States Society of Toxicology Conference 2019

Effects of low level hydrogen sulfide exposure on the pathogenicity of influenza a virus in a swine model.

Society of Toxicology Conference 2020

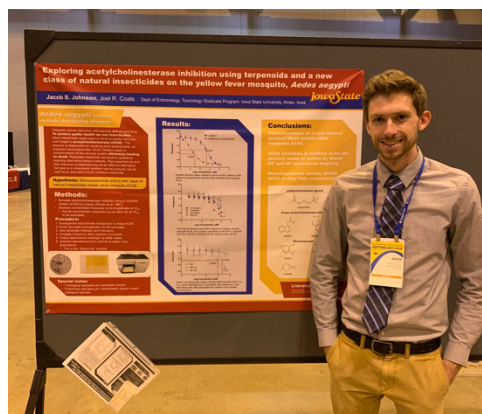
A simple large-animal whole-body inhalation exposure system to study environmentally relevant toxicant exposures.

James Klimavicz - Coats research group

Leadership Award – ISU Graduate and Professional Student Senate

Jacob Johnson - Coats research group

2019 Entomological Society of America (Photo Below)

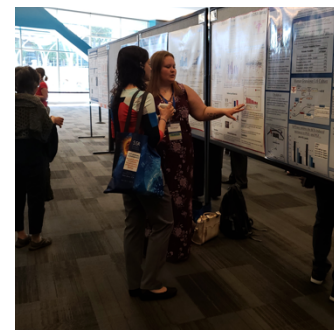
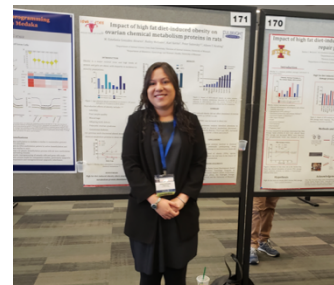


Estefania Gonzalez Alvarez & Bailey McGuire – Keating research group

González Alvarez, M. Estefanía, McGuire, Bailey, Keating, Aileen, K. 2020. Ovarian effects of perfluorooctanoic acid exposure in lean and obese mice. Abstract accepted for poster presentation at 2020 53rd Annual Meeting Society for the Study of Reproduction.

González Alvarez, M. Estefanía, McGuire, Bailey, Keating, Aileen, K. 2020. Investigating additive impact of obesity on zeralenone-induced ovotoxicity. Abstract accepted for poster presentation at 2020 Society of Toxicology 59th Annual Meeting. Anaheim, California. US. Abstract published in *The Toxicologist*, Supplement to Toxicological Sciences, 174 (1), abstract #1552, 2020.

González Alvarez, M. Estefanía, et al. 2019. Impact of high fat diet-induced obesity on ovarian chemical metabolism proteins in rats. Poster presented at the Society for the Study of Reproduction. 52nd Annual Meeting. Beyond Possible: Remarkable Transformation of Reproductive Biology. San José, California, US.



Rachel Sorensen – Jovanovic research group

Rachel received the prestigious ISU Brown Graduate Fellowship 2020-2021 from the office of VPR.

Rachel was also accepted into the 2020-2021 ISU DataFEWSion Traineeship Program

Honorable Mention by the National Science Foundation's Graduate in the Graduate Research Fellowship Program

Faculty awards:

Dr. Gary Munkvold

September 2019 Regents' Faculty Excellence Award – Iowa Board of Regents.

Dr. Kevin Schalinske

2019 Marget Ellen White Graduate Faculty Award – ISU.

2019 USDA Food and Agriculture Sciences Excellence in Teaching Award. Presented at the APLU meeting in San Diego, CA.

Dr. Joel Coats

August 2019 Fellow of the American Chemical Society.

Dr. Jacek Koziel

2019 Global Peer Review Award, top 1% in Field: Environment and Ecology, Publons.
(<https://publons.com/awards/peer-review/2019/by-field/>).

2019 Global Peer Review Award, Top 1% in Field: Cross-Field Award, Publons.
(<https://publons.com/awards/peer-review/2019/by-field/>)

Dr. Aileen Keating

2019 Stephen B. Harris Mid-Career Research Award, Reproductive and Developmental
Toxicology Specialty Section (Inaugural winner).

2019 Iowa State University Mid-Career Achievement in Research Award.

2019 Gamma Sigma Delta Honors Society Research Mission Award.

Toxicology Graduate Student Organization

The Toxicology Graduate Student Organization organized TOX trivia this March (Photo below). TSGO also met virtually through Webex in June and several other times throughout the 2019-2020 academic year.



Pharmacology and Toxicology Undergraduate minor

We had 11 students registered for the Pharmacology and Toxicology minor in 2019-2020.

Current Toxicology Faculty

Agricultural and Biosystems Engineering

Jacek Koziel, Professor

Animal Science

Stephanie Hansen, Professor

Aileen Keating, Associate Professor and Director of Graduate Education for Toxicology

Stephan Schmitz-Esser, Associate Professor

Biochemistry, Biophysics and Molecular Biology

Marit Nilsen-Hamilton, Professor

Biomedical Sciences

Vellareddy Anantharam, Adjunct Assistant Professor

Chandrashekhar (Chandru) Charavaryamath, Assistant Professor

Michael Cho, Professor and Lloyd Chair in Biomedical Sciences, Co-Director, Center for Advanced Host Defense, Immunobiotics and Translational Comparative Medicine (CAHDIT)

M. Heather Greenlee, Associate Professor

Anumantha Kanthasamy, Distinguished Professor, Eugene and Linda Lloyd Professor,

Director of Iowa Center for Neurotoxicology

Arthi Kanthasamy, Associate Professor

Richard Martin, Professor for Toxicology and Biomedical Sciences, M.R.C.V.S., Dip. E.C.V.P.T.

Jonathan Mochel, Associate Professor

Alan Robertson, Research Associate Professor

Ravindra Singh, Professor and Salsbury Chair

Thimmasettapp Thippeswamy, Professor

Chemical and Biological Engineering

Laura Jarboe, Associate Professor

Entomology

Keri Carstens, Collaborator Assistant Professor

Joel Coats, Distinguished Professor

Food Sciences and Human Nutrition

Ruth MacDonald, Professor, FSHN Department Chair

Aubrey Mendonca, Associate

Manju Reddy, Professor

Kevin Schalinske, Professor

Genetics Development and Cell Biology

Jo Anne Powell-Coffman, Professor

Natural Resource Ecology and Management

Steven Bradbury, Professor
Boris Jovanovic, Assistant Professor

Plant Pathology and Microbiology

Gary Munkvold, Professor

Veterinary Microbiology and Preventive Medicine

Qijing Zhang, BVSc, Professor and Frank Ramsey Endowed Chair, Associate Dean for
Research and Graduate Studies, College of Veterinary Medicine