

Dustin R. Rousselle

Curriculum Vitae

March 2026

Indiana University School of Public Health Bloomington

Innovation Center

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Focus

Dustin is pursuing graduate (PhD) training in Environmental Health with a research focus on Inhalation Toxicology. His work investigates the mechanisms underlying sex differences in ozone-induced inflammation using primary lung epithelial cells and specialized animal models.

Education

2023-present Candidate, Doctor of Philosophy in Environmental Health

Indiana University, Bloomington, IN, 47403

2021-2023 Master of Science in Environmental Health (June 2023)

Indiana University, Bloomington, IN, 47403

2016-2020 Bachelor of Science in Biology (May 2020)

Summa Cum Laude

University of Louisiana at Monroe, Monroe, LA, 71209

Professional Experience

09/2022 - 07/2023 **Laboratory Manager**, Department of Environmental Health, Indiana University Bloomington

04/2021 - present **Graduate Research Assistant**, Department of Environmental Health, Indiana University Bloomington

08/2019 - 12/2019 **Supplemental Instructor**, University of Louisiana at Monroe

04/2017 - 05/2020 **Undergraduate Researcher**, University of Louisiana at Monroe

Academic and Professional Honors

Awards

03/2026	IRSS Outstanding Graduate Student Award
2024-2026	T32 Fellowship (Common Themes in Reproductive Diversity)
03/2024	School of Public Health Student Travel Award
03/2024	Society of Toxicology Graduate Student Travel Support Award
03/2023	School of Public Health Student Travel Award
2016-2020	President's List, University of Louisiana at Monroe (6 semesters)
2017-2020	Deans' List, University of Louisiana at Monroe (2 semesters)
2016-2020	Academic Excellence Scholarship from University of Louisiana at Monroe (4 years)
2016-2020	Taylor Opportunity Program for Students Honors Award (4 years)

Society Memberships

2022-present	Society of Toxicology Inhalation and Respiratory Specialty Section Occupational and Public Health Specialty Section
2023-present	Indiana Academy of Science

Published Peer – Review Articles

*Co-First Author

1. Ekpruke, C.D., **Rousselle, D.**, Alford, R., Borges-Sosa, O., Babayev, M., Sharma, S., Dinwiddie, L., Parker, E., Bradley, S., Retzner, M., Silveyra, P. (2026) **Sex Chromosomes and Gonadal Sex Interactions in Airway and Immune Responses to Allergen Challenge.** *Am J Physiol Lung Cell Mol Physiol.* doi: <https://10.1152/ajplung.00210.2025>
2. Rebuli, M., **Rousselle, D.**, Dinwiddie, L. and Silveyra, P. (2026) **Sex Differences in Lung Responses to Challenge.** In: McQueen, Charlene A. (ed.) *Comprehensive Toxicology, 4th Edition, vol. 9, pp. 245–262.* London: Elsevier. <https://doi.org/10.1016/B978-0-323-95488-4.00171-6>
3. Allen, K.B.*, **Rousselle, D.***, Aston, C., Colón Montañez, K., Silveyra, P., Chen, W., Eckert, J., Siatkowski, M., Vitiello, P. and Bhatti, F. (2025). **Surfactant Proteins A and D Nucleotide Variants: Association with Retinal Vascular Disease in Preterm Infants, Independent of Severity of Lung Disease.** *Pediatr Res.* <https://doi.org/10.1038/s41390-025-04435-w>
4. Dawkins, K. E., **Rousselle, D.**, Linder, B. A. (2025). **Dopaminergic modulation of oxygen-sensing organs during hypoxia: a translational perspective from zebrafish gills to human pathophysiology.** *J Physiol*, 603: 4447-4449. <https://doi.org/10.1113/JP289187>

5. Ekpruke, C. D., Borges-Sosa, O., Hassel, C. A., **Rousselle, D.**, Dinwiddie, L., Babayev, M., Bakare, A., & Silveyra, P. (2025). **Sex-Specific Anti-Inflammatory Effects of a Ketogenic Diet in a Mouse Model of Allergic Airway Inflammation**. *International Journal of Molecular Sciences*, 26(7), 3046. <https://doi.org/10.3390/ijms26073046>
6. **Rousselle, D.**, Silveyra, P. **Acute Exposure to Ozone Affects Circulating Estradiol Levels and Gonadotropin Gene Expression in Female Mice**. *Int J Environ Res Public Health*. 2025 Feb 5;22(2):222. <https://doi.org/10.3390/ijerph22020222>.PMCID: PMC11855596.
7. Ekpruke, C. D., Alford, R., **Rousselle, D.**, Babayev, M., Sharma, S., Parker, E., Davis, K., Hemmerich, C., Rusch, D. B., & Silveyra, P. (2024). **Sex-specific alterations in the gut and lung microbiome of allergen-induced mice**. *Front. Allergy* 5. <https://doi.org/10.3389/falgy.2024.1451846>. PMCID: [PMC11358121](https://pubmed.ncbi.nlm.nih.gov/PMC11358121/)
8. Sharma, S., **Rousselle, D.**, Parker, E., Ekpruke, C. D., Alford, R., Babayev, M., Commodore, S., Silverya, P. (2024). **Sensitivity of Mouse Lung Nuclear Receptors to Electronic Cigarette Aerosols and Influence of Sex Differences: A Pilot Study**. *Int. J. Environ. Res. Public Health*, 21(6):810. <https://doi.org/10.3390/ijerph21060810>
9. Commodore, S., Ekpruke, C. D., **Rousselle, D.**, Alford, R., Babayev, M., Sharma, S., Buechlein, A., Rusch, D. B., & Silveyra, P. (2024). **Lung proinflammatory microRNA and cytokine expression in a mouse model of allergic inflammation: Role of sex chromosome complement and gonadal hormones**. *Physiological Genomics*, 56(2), 179–193. <https://doi.org/10.1152/physiolgenomics.00049.2023>
10. Ekpruke, C. D., Alford, R., **Rousselle, D.**, Babayev, M., Sharma, S., Commodore, S., Buechlein, A., Rusch, D. B., & Silveyra, P. (2024). **Transcriptomics analysis of allergen-induced inflammatory gene expression in the Four-Core Genotype mouse model**. *Physiological Genomics*, 56(2), 235–245. <https://doi.org/10.1152/physiolgenomics.00112.2023>
11. Commodore, S., Sharma, S., Ekpruke, C. D., Pepin, R., Hansen, A. M., **Rousselle, D.**, Babayev, M., Ndeke, J. M., Alford, R., Parker, E., Dickinson, S., Sharma, S., & Silveyra, P. (2023). **Thirdhand vaping exposures are associated with pulmonary and systemic inflammation in a mouse model**. *Journal of Environmental Exposure Assessment*, 2(4), 22. <https://doi.org/10.20517/jeea.2023.27>

12. Siddaiah, R., Oji-Mmuo, C., Aluquin, V. P. R., Kawasawa, Y. I., Donnelly, A., **Rousselle, D.**, Fuentes, N., Austin, E. D., & Silveyra, P. (2023). **Multimomics endotyping of preterm infants with bronchopulmonary dysplasia and pulmonary hypertension – A pilot study.** *Pulmonary Circulation*, 13(2), e12232. <https://doi.org/10.1002/pul2.12232>

Manuscripts Under Review or in Preparation

*Co-First Author

Ekpruke, C.D., **Rousselle, D.**, Babayev, M., Borges-Sosa, O., Dinwiddie, L., Merritt, D.M., Hemmerich, C.M., Rusch, D.B., Bradley, S., Retzner, M.L., Parker, E., Silveyra, P. (In Preparation) **Mechanistic role of estrogen receptor β in airway hyperresponsiveness and lung inflammation following allergen exposure.**

Commodore, S., Ekpruke, C.D., Borges-Sosa, O., **Rousselle, D.**, Babayev, M., Igwe, C., Hemmerich, C., Rusch, D.B., Silveyra, P. (In Preparation) **DNA Methylation and the Role of Estrogen Receptors in House Dust Mite-Induced Airway Hyperresponsiveness.**

Abstracts

* Presenting Author

1. **Rousselle D***, Silveyra P. *The Interactions between Chromosomal and Gonadal Sex Affect Lung Function After Sub-Chronic Ozone Exposure.* OVSOT Annual Meeting, November 14, 2025
2. Coggan M*, **Rousselle D**, Silveyra P. *Investigating the Effects of Estradiol and Progesterone on Human Epithelial Lung Cells by Using BEAS-2B Cells.* Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Diversity in STEM (NDiSTEM) meeting. Conference. Columbus, OH, October 31-November 2, 2025
3. Chirumamilla P*, Silveyra P, **Rousselle D**, Sharma S, Commodore S. *Evaluation of Sex Differences in DNA Methylation and Lung Tissue Gene Expression in a Mouse Model of E-cigarette Exposure.* SACNAS NDiSTEM meeting. Columbus, OH, October 31-November 2, 2025
4. Ekpruke CD*, **Rousselle D**, Babayev M, Borges-Sosa O, Dinwiddie L, Silveyra P. *Estrogen Receptor β Mediates Allergen-Induced Airway Hyperresponsiveness: Insights from Knockout Mouse Models.* Sex Differences and Women's Health Research Conference. New Orleans, LA, October 23-25, 2025
5. **Rousselle D***, Silveyra P. *Changes in Gene Expression in the lungs of the Four Core Genotype Mouse Model After Exposure to Sub-Chronic Ozone.* Gordon Research Center: Cellular and Molecular Mechanisms of Toxicity. Andover, New Hampshire, August 13, 2025

6. Ekpruke CD*, Borges-Sosa O, Hassell C, **Rousselle D**, Dinwiddie L, Babayev M, Bakare A, Silveyra P. *Sex-Specific Anti-inflammatory Effects of a Ketogenic Diet in a Mouse Model of Allergic Airway Inflammation*. 2025 ATS meeting. San Francisco, CA, May 16-21, 2025. Am J Respir Crit Care Med 2025;211:A3444
7. Alam F*, **Rousselle D**, Silveyra P. *Investigating The Effects Of E-liquid On Lung Epithelial Cell Inflammatory Gene Expression*. 2025 ATS meeting. San Francisco, CA, May 16-21, 2025. Am J Respir Crit Care Med 2025;211:A7560.
8. Babayev M*, Ekpruke CD, Borges-Sosa O, Sharma S, **Rousselle D**, Igwe C, Chirumamilla P, Boulos MC, Parekh A, Retzner M, Haggard P, Silveyra P. *Assessment Of Sex Differences In Urethane- Induced Lung Tumorigenesis In The "Four Core Genotypes" Mice*. Indiana University Simon Comprehensive Cancer Center's Cancer Research Day, Indianapolis, IN, May 8, 2025
9. Babayev M*, Ekpruke CD, Borges-Sosa O, Sharma S, **Rousselle D**, Igwe C, Boulos MC, Parekh A, Silveyra P. *The role of sex hormones and sex chromosomes in urethane-induced lung carcinogenesis*. American Association for Cancer Research, Chicago, IL, April 25-30, 2025. Cancer Res 2025;85(8_Suppl_2):Abstract nr LB167.
10. Ekpruke CD*, Borges-Sosa O, **Rousselle D**, Babayev M, Silveyra P. *Influence of sex chromosomes and gonadal sex on lung immune cell responses following allergen exposure*. Physiology Summit. Baltimore, MD, April 24-27, 2025. Physiology. 2025;40(S1):0291.
11. Babayev M*, Ekpruke CD, Borges-Sosa O, **Rousselle D**, Igwe C, Silveyra P. *Sex differences in urethane-induced lung tumorigenesis in mice*. Indiana Academy of Science. Indianapolis, IN, March 22, 2025.
12. Ekpruke CD*, **Rousselle D**, Alford R, Borges-Sosa O, Babayev M, Sharma S, Dinwiddie L, Parker E, Silveyra P. *Sex Chromosomes and Gonadal Sex Interactions in Modulating Airway Hyperresponsiveness and Immune Responses in FCG Mice*. Indiana Academy of Science. Indianapolis, IN, March 22, 2025.
13. **Rousselle D***, Silveyra P. *Gonadal sex hormones modulate the inflammatory response to house dust mites in female bronchial epithelial cells*. Society of Toxicology's 64th Annual Meeting, Orlando, FL. March 19, 2025
14. Igwe C*, Sharma K, Babayev M, **Rousselle D**, Sharma S, Ekpruke DC, Alford R, Buechlein A, Hemmerich C, Rusch D, Silveyra P, Commodore S. *Assessing the Impact of Thirdhand Vaping Exposures on Lung and Liver Gene Expression and DNA Methylation in a Mouse Model*. Society of Toxicology's 64th Annual Meeting, Orlando, FL. March 19, 2025
15. Coggan M*, Rousselle D, Silveyra P. *Investigating the Effects of Estradiol and Progesterone on Human Epithelial Lung Cells by Using BEAS-2B Cells*. Society of Toxicology's 64th Annual Meeting, Orlando, FL. March 17, 2025

16. Redmond E*, **Rousselle D**, Silveyra P. *Hormonal Triggers and Gene Expressions in Bronchial Epithelial Cells*. Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS). Pittsburgh, PA, Nov 13-16, 2024
17. Fecht K*, **Rousselle D**, Silveyra P. *The Effects of Dihydrotestosterone and Flutamide on Lung Epithelial Cells in Response to Allergens*. ABRCMS. Pittsburgh, PA, Nov 13-16, 2024
18. Gunasekara S*, **Rousselle D**, Silveyra P. *Investigating Androgen-mediated Mechanisms Triggered by House Dust Mites Using BEAS-2B Cells*. ABRCMS. Pittsburgh, PA, Nov 13-16, 2024
19. González-Rivera D*, **Rousselle D**, Silveyra P. *The effects dynamic concentrations of Estradiol have on lung epithelial cells in the presence of distinct gene expressors*. ABRCMS. Pittsburgh, PA, Nov 13-16, 2024
20. Gunasekara S*, **Rousselle D**, Silveyra P. *Investigating Androgen-mediated Mechanisms Triggered by House Dust Mites Using BEAS-2B Cells*. SACNAS NDiSTEM meeting. Phoenix, AZ, Oct 31-Nov 2 2024.
21. González-Rivera D*, **Rousselle D**, Silveyra P. *The effects dynamic concentrations of Estradiol have on lung epithelial cells in the presence of distinct gene expressors*. SACNAS NDiSTEM meeting. Phoenix, AZ, Oct 31-Nov 2 2024.
22. Ekpruke CD*, **Rousselle D**, Babayev M, Sharma S, Silveyra P. *Characterization of the role of estrogen receptors in exacerbating airway hyperresponsiveness*. American Physiological Society (APS) Physiology Summit. Long Beach, CA, April 4-7, 2024
23. Chirumamilla P*, **Rousselle D**, Sharma S, Commodore S, Silveyra P. *Evaluation of Sex Differences in DNA Methylation and Lung Tissue Gene Expression in a Mouse Model of E-cigarette Exposure*. APS Physiology Summit. Long Beach, CA, April 4-7, 2024
24. Colón Montañez K*, Brass K, **Rousselle D**, Aston C, Silveyra P, Bhatti F. *Identifying associations of human surfactant protein A SNPs and allelic variants with retinopathy of prematurity*. APS Physiology Summit. Long Beach, CA, April 4-7, 2024
25. **Rousselle D***, Silveyra P. *Sex Differences in Immune Related Gene Expression in Response to Ozone Exposure in Lung Epithelial Cells*. Society of Toxicology's 63rd Annual Meeting, Salt Lake City, UT, March 10-14, 2024.
26. Redmond E*, **Rousselle D**, Silveyra P. *Investigating the Effects of Vaping on Human Epithelial Lung Cells By Using BEAS-2B Cells*. SOT meeting. Salt Lake City, UT, March 10-14, 2024
27. Siddiqui A*, **Rousselle D**, Silveyra P. *Investigating the Effects of Vaping on Human Epithelial Lung Cells By Using HBE Cells*. SOT meeting. Salt Lake City, UT, March 10-14, 2024
28. Redmond E*, **Rousselle D**, Silveyra P. *Investigating the Effects of Vaping on Human Epithelial Lung Cells By Using BEAS-2B Cells*. Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS) meeting. Phoenix, AZ, Nov 15-18, 2023

29. Ekpruke CD*, Alford RR, **Rousselle D**, Babayev M, Sharma S, Commodore S, Buechlein A, Rusch D, Silveyra P. *Characterization of Allergic Airway Inflammation Gene Expression Profiles in the Four Core Genotype Mouse Model*. Indiana University Office of International Affairs J-1 scholar symposium. Bloomington, IN, Nov 8, 2023.
30. Redmond E*, **Rousselle D**, Silveyra P. *Investigating the Effects of Vaping on Human Epithelial Lung Cells By Using BEAS-2B Cells*. Indiana University Summer Research Symposium. Bloomington, IN, July 27, 2023.
31. Harris A*, **Rousselle D**, Silveyra P. *Characterization of Gene Expression Changes as a Result of E-cig Aerosol Exposure on A549 Cells*. Indiana University Summer Research Symposium. Bloomington, IN, July 27, 2023.
32. Crenshaw J*, Commodore S, **Rousselle D**, Silveyra P. *Exploring the Impact of Vaping on Bronchial Epithelial Cytokine Expression: Insights from a One-Hour Exposure Study*. Indiana University Summer Research Symposium. Bloomington, IN, July 27, 2023.
33. Sharma S*, **Rousselle D**, Ekpruke CD, Alford RR, Babayev M, Silveyra P. *Sex Influences on Nuclear Receptor Expression in Electronic Cigarette Induced Lung Inflammation*. American Thoracic Society 2023 Meeting, May 2023.
34. Ekpruke CD*, Alford RR, Commodore S, Sharma S, **Rousselle D**, Babayev M, Silveyra P. *The phenotypic effect of sex chromosomes versus sex hormones in a mouse model of allergic asthma*. American Thoracic Society 2023 Meeting, May 2023.
35. Brass K*, **Rousselle D**, Colón Montañez K, Silveyra P, Chen W, Eckert J, Bhatti F. *The Association of Surfactant Protein A And D Allelic Variants with Retinopathy of Prematurity*. Association for Research in Vision and Ophthalmology 2023, April 2023
36. Brass K*, **Rousselle D**, Colón Montañez K, Silveyra P, Chen W, Eckert J, Bhatti F. *The Association of Surfactant Protein A And D Allelic Variants with Retinopathy of Prematurity*. Pediatric Academic Societies Meeting, Washington DC, April 27- May 1, 2023
37. Ekpruke CD*, Alford RR, Sharma S, **Rousselle D**, Babayev M, Commodore S, Silveyra P. *Characterization of allergic inflammation and gene expression profiles in the Four Core Genotype mouse model*. APS 2023 Physiology Summit, Long Beach, CA, April 2023.
38. Sharma S*, **Rousselle D**, Ekpruke CD, Alford RR, Babayev M, Silveyra P. *Differential Expression of Nuclear Receptors and Determination of Potential of phthalates in electronic nicotine delivery systems (ENDS)*. Society of Toxicology's 62nd Annual Meeting, Nashville, TN, March 19-23, 2023. *The Toxicologist: Late-Breaking Supplement*, p124, PS5179
39. **Rousselle D***, Silveyra P. *Sex differences in acute ozone exposure's effects on viability and inflammatory gene expression in primary human bronchial epithelial cells*. Society of Toxicology's 62nd Annual Meeting, Nashville, TN, March 19-23, 2023. *The Toxicologist*, p478, PS4635
40. Commodore S*, Ekpruke CD, **Rousselle D**, Alford RR, Babayev M, Sharma S, Silveyra P. *Sex The role of sex chromosome complement and gonadal hormone in lung microRNA expression in*

a mouse model of allergic inflammation. Society of Toxicology's 62nd Annual Meeting, Nashville, TN, March 19-23, 2023. *The Toxicologist*, p343, PS4099

41. **Rousselle D***, Silveyra P. *Acute ozone exposure affects circulating estradiol levels and folliculogenesis in female mice*. Society of Toxicology's 61st Annual Meeting, San Diego, CA, March 27-31, 2022. *The Toxicologist*, p183, PS3493
42. **Rousselle D***, Talbert M. *The effects of fertilization and sex peptide on the survival of mated female Drosophila melanogaster exposed to high fat diet*. The Allied Genetics Conference, Washington, DC, April 22-25, 2020. TAGC20 Online: Abstract Book. p149, 1833C
43. Long E*, **Rousselle D**, Talbert M. *The impacts of obesity-promoting diets on feeding quantity over time in mated female w¹¹¹⁸ Drosophila melanogaster*. The Allied Genetics Conference, Washington, DC, April 22-25, 2020. TAGC20 Online: Abstract Book. p149, 1835B

Peer Mentoring

Medical Graduate Intern:

Fatima Alam (Summer 2024)

Project: "Human Bronchial Epithelial Cell Exposure to ENDS"

Undergraduate Students:

Addison Joyce (Fall 2025, Spring 2026)

Project: "Ovarian Gene Expression in Mice after Sub-Chronic Ozone Exposure"

Mackenzie Miller (Summer 2025)

Project: "Ovarian Follicle Counts in Mice After Sub-Chronic Ozone Exposure"

Dembo Baldeh (Summer 2024)

Project: "REAL-DEAL Summer Program"

Daniella Gonzalez Rivera (Summer 2024)

Project: "REAL-DEAL Summer Program"

Pablo Luna (Summer 2024)

Project: "REAL-DEAL Summer Program"

Emely Peregrina (Summer 2024)

Project: "REAL-DEAL Summer Program"

Amy Nguyen (Summer 2024, Spring 2025)

Projects: "REAL-DEAL Summer Program", "Role of sex on HDM induced inflammation using *in-vitro* models"

Melanie Vazquez (Summer 2024)

Project: "REAL-DEAL Summer Program"

Sarasi Gunasekara (Summer 2024)

Project: "REAL-DEAL Summer Program"

Karen Fecht (Summer 2024)

Project: "REAL-DEAL Summer Program"

Maddie Coggan (Spring 2024, Summer 2024, Spring 2025-Spring 2026)

Projects: "Inflammatory gene expression in co-culture lung epithelium and PBMC model to e-cig aerosols", "REAL-DEAL Summer Program", "Role of sex hormones on *in-vitro* exposure to HDM"

Aniya Harris (Summer 2023)

Project: "TEER and inflammatory gene expression in A549 cells exposed to e-cig aerosols"

Evelyn Redmond (Summer 2023, Summer 2024)

Project: "TEER and inflammatory gene expression in BEAS-2B cells exposed to e-cig aerosols", "REAL-DEAL Summer Program"

Jackson Crenshaw (Summer 2023, Fall 2023)

Project: "Inflammatory gene expression in BEAS-2B cells exposed to vapes containing nicotine"

Praveen Chirumamilla (Summer 2022, Fall 2022, Spring 2023, Fall 2023)

Project: "Sex differences in e-cig exposure effects"

Ayra Siddiqui (Fall 2022, Summer 2023, Fall 2023)

Project: "Inflammatory gene expression in 16HBE14o- cells exposed to e-cigs in vitro"

High School Students:

William Liao (Fall 2024 - Spring 2026)

Kyle Harris (Summer 2023, Fall 2023)

Engagement, Service, and Science Outreach

12/2023 - 5/2024	EOH Department Search Committee , School of Public Health, Indiana University
08/2023-present	Environmental Health Student Society, President , Indiana University
4/20/2023	Healthapalooza , Bloomington High South, Bloomington, IN
3/21/2023	Undergrad Gab with a Grad over Grub , Nashville, TN
01/2022-8/2024	Environmental Health Student Society, Records Keeper , Indiana University
06/2018-08/2019	Volunteer , St. Charles Hospital, Luling, LA