

Curriculum Vitae

Balaji Sadhasivam, PhD

Assistant Professor
Department of Occupational and Environmental Health
Hudson College of Public Health
University of Oklahoma Health Sciences Center
801 NE 13th St, Suite 417, Oklahoma City, OK 73104.
Phone: 405-271-2070 x46867 (office)
Email: Balaji-Sadhasivam@ouhsc.edu;

EDUCATION AND TRAINING

- 2011-2017** *Doctor of Philosophy in Animal Biotechnology and Endocrinology*
University of Madras, Tamil Nadu, India.
- 2009-2010** *Master of Philosophy in Endocrinology*
University of Madras, Tamil Nadu, India.
- 2007-2009** *Master of Science in Animal Biotechnology (degree with distinction)*
Bharathiar University, Coimbatore, Tamil Nadu, India.
- 2004-2007** *Bachelor of Science in Animal Science and Biotechnology*
Bharathiar University, Coimbatore, Tamil Nadu, India.

PROFESSIONAL BACKGROUND

Oct 2023 - Present, Assistant Professor

Department of Occupational and Environmental Health, Hudson College of Public Health,
University of Oklahoma Health Sciences Center, OKC, USA.

My research understands the impact of exposure to secondhand tobacco smoke (SHS) (environmental tobacco smoke) on cancer treatment outcomes with the following specific aims: 1) Characterizing the impact of SHS exposure on cancer chemotherapy efficacy; 2) Establishing cancer patient-driven xenograft model to assess the impact of tobacco and cancer chemotherapy; 3) Correlating tobacco exposure and cancer treatment outcomes among diverse cancer population.

Feb 2019 – Sep 2023, Postdoctoral Fellow,

Department of Otolaryngology-Head and Neck Surgery, University of Oklahoma Health Sciences Center, OKC, USA.

My current research is focused on understanding the impact of exposure to secondhand smoke, and electronic cigarette aerosol exposure-induced cancer risk and cancer treatment outcomes with the following specific aims: 1) Chemical characterization of electronic cigarette aerosol; 2) Measure the impact of tobacco and electronic cigarette use induced mutagenicity in the smoking and vaping population in Oklahoma; 3) Characterize electronic cigarette aerosol and secondhand smoke extract induced cellular toxicity and treatment response outcome (*In-vitro*).

Mentor: Lurdes Queimado, MD PhD

July 2016 - Jan 2019 Fellow, Associate Research,

Department of Otolaryngology-Head and Neck Surgery, University of Oklahoma Health Sciences Center, OKC, USA.

My research mainly focused on: 1) The quantification of nicotine in the electronic cigarette aerosol and tobacco smoke extracts using Gas Chromatography Mass Spectroscopy; 2) The assessment of electronic cigarettes aerosol induced cellular toxicity and DNA damage; 3) The optimization of a novel qPCR-based assay (qPADD) and quantification of nuclear DNA damage in the oral epithelial cells in smokers and vapers; 4) The sequencing of mitochondrial DNA alterations among Oklahoman vaping population; 5) Correlation study of DNA damage and cancer risk in patients with grades of cervical lesion and cancer.

Mentor: Lurdes Queimado, MD PhD

Sep 2009 – June 2016 Graduate Research Assistant/Project Fellow (Predoctoral and Doctoral degrees)

Department of Endocrinology, University of Madras, Tamil Nadu, India.

I studied the effect of environmental toxicants, such as polychlorinated biphenyls, Chromium VI, and methimazole (hypothyroidism drug), induced reproductive disorders in rat models. To mimic real-life environmental and/or occupational exposure, I exposed pregnant/lactating mothers to these environmental endocrine toxicants during the specific window for prenatal/postnatal organ development and assessed the F₁ progeny's reproductive health. I quantified gene expression of various reproductive functional biomarkers (androgen/ estrogen/ thyroid/ follicle-stimulating hormone receptors) using qPCR and western blotting, measured cellular toxicity, studied interaction among biomolecules, and reproductive hormones titre in the F₁ male progeny rats.

Mentor: Michael Aruldas, PhD; Project Principal Investigator: Ilangovan Ramachandran, PhD

June 2007 – April 2009 Graduate Research Assistant (Masters Degree)

Department of Zoology, Bharathiar University, Coimbatore, Tamil Nadu, India.

During my master's dissertation, I studied liver toxicity induced by environmental pollutant 4-tert-octylphenol in fish *Labeo rohita* by assessing the activity of liver enzymes.

Mentor: Mathan Ramesh, PhD

AWARDS AND HONORS

International/National

- 2022 Received the **Robert Maxwell Byers Award** for the best clinical research paper submitted to the American Head and Neck Society Annual Meeting at COSM 2022. *Title: Exposure to secondhand smoke extract increases cisplatin resistance in head and neck cancer cells.*
- 2015 **Prof. N. J. Chinoy Best Oral Presentation Award (2nd prize)**. 2015 International Conference on Bioactive Chemicals for Reproduction and Human Health and 33rd

Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology, Davangere University, Karnataka, India.
Title: Gestational hypothyroidism alters the levels of serum sex steroids and their receptors in the epididymis of adult progeny rats.

Institutional

- 2023 **Most Interdisciplinary Work Award** at 2023 Translational Institute Research Meeting Day in TSET Health Promotion Research Center, OKC, OK
Title: Secondhand smoke exposure alters cisplatin-induced cell death and alters cell death and survival pathway in HNSCC.
- 2023 **Outstanding Poster Presentation Award (2nd place).** 2023 Stephenson Cancer Center Annual Cancer Research Symposium, OKC, OK
Title: Increased Mutagenicity Observed in Oklahoma Vaping Population.
- 2023 Awarded the Stephenson Cancer Center **Trainee Research Conference and Workshop Travel Award** for attending the SRNT 29th Annual Meeting, Society for Research on Nicotine and Tobacco (SRNT), San Antonio Riverwalk, TX. March 1-4, 2023
Title: E-Cigarette Use Increases Mutagenicity Among Vaping Population In Oklahoma.
- 2022 Awarded the Stephenson Cancer Center **Trainee Research Conference and Workshop Travel Award** for attending the American Head and Neck Society (AHNS) Annual Meeting at COSM 2022, April 27-28, 2022, Dallas, TX.
Title: Exposure to secondhand smoke extract increases cisplatin resistance in head and neck cancer cells.
- 2022 **Outstanding Poster Presentation Award (2nd place).** 2022 Stephenson Cancer Center Annual Cancer Research Symposium, OKC, OK.
Title: Secondhand smoke exposure alters drug transporters and induces cisplatin-resistant in head and neck cancer cells.
- 2021 **Outstanding Poster Presentation Award (2nd place).** 2021 Stephenson Cancer Center Annual Cancer Research Symposium, OKC, OK.
Title: E-cigarette aerosol alters mitochondria DNA damage and biogenesis.
- 2020 **Trainee Research Conference and Workshop Travel Award** for the 2021 American Association for Cancer Research Annual Virtual Meeting by Stephenson Cancer Center, OKC, OK.
Title: DNA damage level correlates with grade of cervical dysplasia: A potential biomarker to assess cervical cancer risk.
- 2020 **Outstanding Poster Presentation Award (3rd place).** 2020 Stephenson Cancer Center Annual Cancer Research Symposium, OKC, OK.

Title: DNA damage detection by q-PADDA: a promising tool for assessment of cervical cancer risk.

2018 Invited **Reviewer, abstracts for the Society for Research on Nicotine and Tobacco** Annual Meeting.

2018 **My innovative work in Mitochondrial DNA damage** was recognized and selected for oral presentation at Mitochondrial Retreat 2018, Oklahoma City, OK. All other presenters are established Faculty.
Title: Mitochondrial DNA damage.

MEMBERSHIP IN SCIENTIFIC SOCIETY

2018-Present: Associate Member, The American Association for Cancer Research

2018-Present: Trainee Member, Society for Research on Nicotine and Tobacco

2009-2016: Member, Society for Reproductive Biology and Comparative Endocrinology

REVIEWER

1. Frontiers in Cell and Developmental Biology
2. Cells
3. International Journal of Environmental Research and Public Health
4. Toxics
5. Chronobiology International
6. Molecular and Cellular Biochemistry
7. Epilepsy & Behavior
8. Life
9. Journal of Clinical Medicine
10. PLOS ONE
11. Therapeutics and Clinical Risk Management
12. Genes

SERVICE AT SCIENTIFIC MEETING

2023 Judge, Medical students research presentation at University of Oklahoma College of Medicine 2nd annual research symposium at University of Oklahoma Health Sciences Center, OKC, USA, Dec.1, 2023.

2023 Session Moderator (Session III: Cancer Metabolism – Biology and Targets) at END2Cancer Conference, OU Health Stephenson Cancer Center, Oklahoma City, USA. Nov.30 to Dec.1, 2023.

2023 Judge, Postdoctoral Research presentation at Cell Biology Research Retreat, University of Oklahoma Health Sciences Center, OKC, USA. October 26-27, 2023.

PEER REVIEWED PUBLICATIONS

Citation- [Balaji Sadhasivam - Google Scholar](#)

1. **Sadhasivam B**, Navaneethabalakrishnan S, Ajit Kumar N, Jaganathan A, Bhaskaran R, Ramachandran I and Mariajoseph MA. Gestational-onset Hypothyroidism Affects Genes Controlling Epididymal Sperm Maturation in F1 Progeny Rats. *Journal of Endocrinology and Reproduction*, Vol 26(2), 45-53, June 2022, DOI: 10.18311/jer/2022/30421.
2. Manyanga J, Ganapathy V, Bouharati C, Mehta T, **Sadhasivam B**, Acharya P, Zhao YD, and Queimado L. Electronic cigarette aerosols increase the expression of drug efflux transporters and cisplatin resistance in human oral cancer cells. *Scientific reports* 11 (1), 1-14, 2021.
3. Floyd E, Greenlee S, Oni T, Sadhasivam B and Queimado L. The effect of flow rate on a third-generation sub-ohm tank electronic nicotine delivery system-comparison of CORESTA flow rates to more realistic flow rates. *International Journal of Environmental Research and Public Health* 18 (14), 7535, 2021.
4. Lazer LM, **Sadhasivam B**, Palaniyandi K, Muthuswamy T, Ramachandran I, Balakrishnan A, Pathak S, Narayan S, Ramalingam S. Chitosan-based nano-formulation enhances the anticancer efficacy of hesperetin. *International Journal of Biological Macromolecules*, 107:1988–199, 2018.
5. Navaneethabalakrishnan S, Mariajoseph MA, Tochwawng L, Loganathan A, **Sadhasivam B**, Mani KK, Liaquat Alikhan SB, Navin AK, Chinnaiyan M, Ramachandran I, Karundevi B. Transient gestational exposure to drinking water containing excess hexavalent chromium modifies insulin signaling in liver and skeletal muscle of rat progeny. *Chemico-Biological Interactions*, 277:119-128, 2018.
6. Ganapathy V, Manyanga J, Brame L, McGuire D, **Sadhasivam B**, Floyd E, Rubenstein D, Ramachandran I, Wagener T, Queimado L. Electronic cigarette aerosols suppress cellular antioxidant defenses and induce significant oxidative DNA damage. *PLoS ONE*, 12(5): e0177780, 2017. Our manuscript documenting that e-cigarettes reduce DNA repair has been in PLoS One's top 10% most cited articles for the past 3 years.
7. Mani KK, Mariajoseph MA, Liaquat Alikhan SB, Ganapathy V, **Sadhasivam B**, Ganesh KM, Navaneethabalakrishnan S, Navin AK, Mary FM, Venkatachalam S, Ramachandran I, Stanley JA, Banu SK, and Akbarsha MA. Gestational exposure to hexavalent chromium at the critical window of testis differentiation represses the expression of Sertoli cell tight junction proteins and hormone receptors in adult F1 progeny rats. *Reproductive Toxicology*, 69:84–98, 2017.
8. Elayapillai S, Thangavelu SK, **Sadhasivam B**, Senthamilselvan B, Paulraj RS, Sakthivel D, Bhaskaran RS, and Jagadeesan A. Lactational exposure effect of polychlorinated biphenyl on rat Sertoli cell markers and functional regulators in prepuberal and puberal F1 offspring. *Journal of Endocrinological Investigation*, DOI: 10.1007/s40618-016-0539-0, 2016.

9. Rasiah PK, Srinivasan R, Bency T, Kalimuthusamy N, **Sadhasivam B**, Kumarasamy A. Transcriptional regulation of crystallin, redox, and apoptotic genes by C-Phycocyanin in the selenite-induced cataractogenic rat model. *Molecular Vision*, 21: 26-39, 2015.
10. Sekar P, Ganapathy V, Mani KK, **Sadhasivam B**, Akbarsha MA, and Mariajoseph MA. Impact of gestational and lactational exposure to hexavalent chromium on steroidogenic compartment of post-natal rat testis. *Journal of Endocrinology and Reproduction*, 15 (1&2): 15-26, 2011.

PUBLISHED ABSTRACTS

1. **Sadhasivam B**, Manyanga J, Ganapathy V, Bouharati C, Rubenstein D, Wren J, Acharya P, Zhao D, Queimado L. Secondhand smoke exposure alters cisplatin-induced cell death and alters cell death and survival pathway in HNSCC. *Cancer Res (2023) 83 (7_Supplement): 384*. DOI: <https://doi.org/10.1158/1538-7445.AM2023-384>.
2. **Sadhasivam B**, Jackson CG, Smith KM, Coles T, Jhingan I, Stewart R, Hahn EH, Johnston SE, Zhao YD, Ganapathy V, Queimado L. DNA damage level correlates with grade of cervical dysplasia: A potential biomarker to assess cervical cancer risk. *Cancer Research 81 (13_Supplement), 2547-2547*.
3. Chinnaiyan M, Brobst D, **Sadhasivam B**, Ganapathy V, Johnston SE, Zhao D, Kreml GA, Queimado L. DNA damage on HPRT as a biomarker of susceptibility to tobacco-induced cancer. *Cancer Research 81 (13_Supplement), 2075-2075*.
4. **Sadhasivam B**, Gunderson CC, Hahn EH, Johnson SE, Zhao YD, Ganapathy V, Queimado L. Mitochondrial DNA damage: a promising tool to screen cervical cancer risk. *Cancer Research 79 (13_Supplement), 4219-4219*.

ORAL AND POSTER PRESENTED AT CONFERENCES

International

1. Chinnaiyan, M, Chissoe, G, Acharya, P, **Sadhasivam, B**, Ganapathy, V, Brobst, D, Zhao, Y, Queimado, L. "Prevalence of Marijuana Use and Co-Use Among Combustible Tobacco and Electronic Cigarette Users in Oklahoma City Metropolitan Population", 7th Annual Conference of Research Society on Marijuana (RSMj), Long Beach, CA, Poster. July 2023.
2. **Sadhasivam B**, Manyanga J, Ganapathy V, Bouharati C, Rubenstein D, Wren J, Acharya P, Zhao D, and Queimado L. Secondhand smoke exposure alters cisplatin-induced cell death and alters cell death and survival pathway in HNSCC. AACR Annual Meeting 2023, American Association for Cancer Research (AACR). April 14-19, 2023.
3. Ganapathy, V, Manyanga, J, McGuire, D, Brobst, D, **Sadhasivam, B**, Chinnaiyan, M, Georgescu, C, Wren, J, Queimado, L. "E-Cigarette Aerosol Exposure Increases NF-KB and Modulates Inflammatory Markers in Oral Epithelial Cells", AACR (American Association for Cancer Research) Annual Meeting 2023, Orlando, FL, Poster. April 2023.
4. **Sadhasivam B**, Chinnaiyan M, Coles T, Chissoe G, Brobst D, Ganapathy V, and Queimado L. E-Cigarette Use Increases Mutagenicity Among Vaping Population In Oklahoma. SRNT 29th Annual Meeting, Society for Research on Nicotine and Tobacco (SRNT), San Antonio Riverwalk, TX. March 1-4, 2023.
5. Ganapathy, V, Brobst, D, Manyanga, J, **Sadhasivam, B**, Chinnaiyan, M, Queimado, L. "E-Cigarette Aerosols Modulate the Expression of Antioxidant and Inflammation Markers in

Human Bronchial Cells", SRNT 2023 Annual Meeting, San Antonio, TX, Oral Presentation. March 2023.

6. Chinnaiyan, M, Chissoe, G, Acharya, P, **Sadhasivam, B**, Ganapathy, V, Brobst, D, Zhao, Y, Queimado, L. "Prevalence of marijuana use and co-use among combustible tobacco and electronic cigarette users in Oklahoma City metropolitan population", SRNT 2023 Annual Meeting, San Antonio, TX, Poster. March 2023.
7. **Sadhasivam B**, Manyanga J, Ganapathy V, Bouharati C, Mehta T, Mathews B, Castles S, Rubenstein D, Tackett AP, Acharya P, Zhao D, and Queimado L Cisplatin Resistance In Head And Neck Cancer: Impact of Secondhand Smoke Exposure. 2022 American Head and Neck Society Annual Meeting at COSM 2022, Dallas, TX.
8. **Sadhasivam B**, Raj V, Hahn EH, Ganapathy V, Chinnaiyan M, Wagener TL and, Queimado L. E-Cigarette aerosol increases mitochondrial Biogenesis in oral epithelial cells. 2021, 27th Annual Meeting, Society for Research on Nicotine and Tobacco.
9. **Sadhasivam, B**, Jackson, CG, Smith, KM, Coles, T, Jhingan, I, Stewart, R, Hahn, EH, Johnston, SE, Zhao, YD, Ganapathy, V, Queimado, L. "DNA damage level correlates with grade of cervical dysplasia: A potential biomarker to assess cervical cancer risk", AACR Annual Meeting 2021, American Association for Cancer Research (AACR), Virtual Meeting, Poster. April 2021.
10. Chinnaiyan, M, Brobst, D, **Sadhasivam, B**, Ganapathy, V, Johnston, SE, Zhao, YD, Kreml, G, Queimado, L. "DNA damage on HPRT as a biomarker of susceptibility to tobacco-induced cancer", AACR Annual Meeting 2021, American Association for Cancer Research (AACR), Virtual Meeting, Poster. April 2021.
11. Ganapathy, V, Manyanga, J, **Sadhasivam, B**, Bouharati, C, Mehta, T, Zhao, D, Queimado, L. "The Electronic Cigarette Enigma: Role in DNA Damage, Cisplatin Resistance and Stemness", International Virtual Learning Series Webinar, Karpagam Academy of Higher Education, Oral Presentation. September 28, 2020.
12. **Sadhasivam, B**, Gunderson, CC, Coles, T, Stewart, R, Hahn, EH, Johnston, SE, Zhao, YD, Ganapathy, V, Queimado, L. "Nuclear DNA Damage as a Potential Tool to Predict Cervical Cancer Risk", NIH Virtual IDeA Program Meeting, National Institutes of Health (NIH), Oral Presentation. September 22, 2020.
13. Ganapathy, V.*, Manyanga, J.*, **Sadhasivam, B.***, Bouharati, C.*, Mehta, T.*, Zhao, D., Queimado, L., "Electronic Nicotine Delivery System: effects on DNA damage, cisplatin resistance and stemness in oral epithelial cells", 83rd International Virtual Learning Series Webinar, Arulmigu Kalasalingam College of Pharmacy, The Tamil Nadu Dr. M.G.R. Medical University, Oral Presentation. September 14, 2020.
14. Queimado, L, Wagener, TL, Zhao, YD, **Sadhasivam, B**, Chinnaiyan, M, Ganapathy, V. "Using In Vivo DNA Damage to Assess Electronic Cigarettes as a Harm Reduction Tool", SRNT 26th Annual Meeting, Society for Research on Nicotine and Tobacco (SRNT), New Orleans, LA, Poster. March 2020.
15. Manyanga, J, Mehta, T, **Sadhasivam, B**, Queimado, L. "Electronic cigarette aerosols increase clonogenic survival in oral cancer cells after cisplatin treatment", AACR Annual Meeting 2019, American Association for Cancer Research (AACR), Atlanta, GA, Oral Presentation. April 2019.
16. **Sadhasivam, B**, Gunderson, C, Hahn, EH, Johnson, SE, Zhao, YD, Ganapathy, V, Queimado, L. "Mitochondrial DNA damage: a promising tool to screen cervical cancer

- risk", AACR Annual Meeting 2019, American Association for Cancer Research (AACR), Atlanta, GA, Oral Presentation. April 2019.
17. Manyanga, J, Bouharati, C, Ganapathy, V, **Sadhasivam, B**, Queimado, L. "Exposure to Electronic Cigarettes Aerosol Increases Cisplatin Resistance in Pharyngeal Cancer Cells", SRNT 25th Annual Meeting, Society for Research on Nicotine and Tobacco (SRNT), San Francisco, CA, Oral Presentation. February 2019.
 18. Queimado L, Manyanga J, Brame L, McGuire D, **Sadhasivam B**, Floyd E, Brobst D, Zhao D, Rubenstein D, Wagener T, Ramachandran I, and V Ganapathy. Electronic Cigarette aerosols induce DNA damage and decrease repair. Society for Research on Nicotine and Tobacco 24th Annual Meeting, February 21-24, 2018, Baltimore, MD.
 19. Manyanga J, **Sadhasivam B**, Bouharati C, Ganapathy V, Mehta T, Brobst D, and Queimado L. Secondhand smoke exposure increases cisplatin resistance in oral cancer cells. Society for Research on Nicotine and Tobacco 24th Annual Meeting, February 21-24, 2018, Baltimore, MD.
 20. Gautham, C., Mohan, M., Senthilkumar, K., **Balaji, S.**, Sivakumar, R., Queimado, L., Aruldas, M. M., Srinivasan, N., Kumaran, R. I., Ravi Sankar, B., Ramachandran, I., "A small molecule inhibitor of the Wnt pathway, iCRT14, inhibits breast cancer cell growth and stemness", International Conference on Biochemical Understanding of Cancer Cell Survival and Progression, Coimbatore, Tamil Nadu, India, Poster. February 2018.
 21. Mohan, M., Vidya, B. K., Gautham, C., Senthilkumar, K., **Balaji, S.**, Sivakumar, R., Queimado, L., Aruldas, M. M., Srinivasan, N., Kumaran, R. I., Ravi Sankar, B., Ramachandran, I.*, "Ormocarpum cochinchinense leaf extract reduces human ovarian cancer cell proliferation and induces apoptosis by regulating Wnt/ β -catenin signaling", International Conference on Biochemical Understanding of Cancer Cell Survival and Progression, Coimbatore, Tamil Nadu, India, Poster. February 2018.
 22. Manyanga, J, **Sadhasivam, B**, Bouharati, C, Ganapathy, V, Mehta, T, Brobst, D, Queimado, L. "Secondhand smoke exposure increases cisplatin resistance in oral cancer cells", SRNT 24th Annual Meeting, Society for Research on Nicotine and Tobacco (SRNT), Baltimore, MD, Poster. February 2018.
 23. Ramachandran IK, Daniel W, Ramya KS, Senthilkumar K, **Sadhasivam B**, Ramadoss S, Bhaskaran RS, Queimado L, Mariajoseph AM, Narasimhan S and Ramachandran I. Modulation of osteoblastic differentiation of bone stem cells in the rat by a novel osteoprotective activity in *Ormocarpum cochinchinense* leaf extract. International Society for Stem Cell Research 2016 -14th Annual Meeting, June 22-25, 2016. San Francisco, CA.
 24. Ramachandran IK, Daniel W, Ramya KS, Senthilkumar K, **Sadhasivam B**, Ramadoss S, Bhaskaran RS, Queimado L, Mariajoseph AM, Narasimhan S and Ramachandran I. Modulation of bone stem cell differentiation and bone remodeling by a novel osteoprotective activity in the *Ormocarpum cochinchinense* leaf extract. Global Technology Community Bio Conferences - Stem Cell Summit 2016, 13th Stem Cell Research and Regenerative Medicine, April 25-27, 2016. Boston, MA.
 25. **Sadhasivam B**, Navaneethalakrishnan S, Navin AK, Jagadesan A, Ramachandran I, Bhaskaran RS and Mariajoseph AM. The putative mechanism underlying impaired post-testicular sperm maturation in adult rats subjected to transient gestational-onset hypothyroidism. International Symposium on Integrative Physiology and Comparative Endocrinology (ISIPCE-2016), Department of Zoology, Banaras Hindu University, Varanasi, India, 12th -14th Feb. 2016. Oral Presentation.

26. **Sadhasivam B**, Navaneethabalakrishnan S, Navin AK, Jagadesan A, Ramachandran I and Mariajoseph AM. Gestational hypothyroidism alters the levels of serum sex steroids and their receptors in the epididymis of adult progeny rats. International Conference on Bioactive Chemicals for Reproduction and Human Health and 33rd Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology, Davangere University, Karnataka, India, 26th-28th February 2015. **Won Prof. N. J. Chinoy Best Oral Presentation Award (2nd price)**.
27. **Sadhasivam B**, Mani KK, Liaquat Alikhan SB, Ganapathy V, Navaneethabalakrishnan S, Navin AK, Akbarsha MA, Narasimman S, and Mariajoseph AM. Gestational exposure to hexavalent chromium disrupts pituitary - testis axis and hormone receptors in Sertoli cells of F1 progeny. International Conference on Recent Trends in Biomedical Sciences and 32nd Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology, Holy Cross College, Trichy, Tamil Nadu, India, 7th to 9th Jan 2014.
28. **Sadhasivam B**, Indira A, Mani KK, Liaquat Alikhan SB, Ganapathy V, Narasimhan S, Jayaraman G, and Mariajoseph AM. Expression patterns of androgen, estrogens, thyroid hormones, and retinoid X receptors mRNA in Sertoli cells of postnatal rats with transient gestational exposure to hexavalent chromium. International Symposium on Current Trends in Endocrine and Reproductive Health and 29th Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology. Department of Zoology, Mysore University, Karnataka, India, 10th to 12th Feb 2011.

National

1. **Sadhasivam B**, Chinnaiyan M, Coles T, Chissoe G, Brobst D, Ganapathy V, and Queimado L. Increased mutagenicity observed in Oklahoma vaping population. Annual Graduate Research Education and Technology (GREAT) Symposium, University of Oklahoma Health Sciences Center, Oklahoma City, OK, Oral Presentation. March 27-30, 2023.
2. **Sadhasivam B**, Chinnaiyan M, Coles T, Chissoe G, Brobst D, Ganapathy V, and Queimado L. Increased mutagenicity observed in Oklahoma vaping population, 48th Annual Graduate Research Education and Technology (GREAT) Symposium, University of Oklahoma Health Sciences Center, Oklahoma City, OK, March 27-30, 2023. *Flash Talk*.
3. **Sadhasivam B**, Chinnaiyan M, Coles T, Chissoe G, Brobst D, Ganapathy V, and Queimado L. Increased mutagenicity observed in Oklahoma vaping population. 2023 Stephenson Cancer Center Annual Cancer Research Symposium, Oklahoma City, OK March 10 2023. **Won Outstanding Poster Presentation Award (2nd place)**.
4. **Sadhasivam B**, Manyanga J, Ganapathy V, and Queimado L. Does secondhand smoke exposure affect head and neck squamous cell carcinoma treatment outcome? 2022 8th Annual Otolaryngology-Head and Neck Surgery Research Day, Oklahoma City, OK.
5. **Sadhasivam B**, Manyanga J, Ganapathy V, Bouharati C, Mehta T, Mathews B, Castles S, Rubenstein D, Tackett AP, Acharya P, Zhao D, and Queimado L. Secondhand smoke exposure alters drug transporters and induces cisplatin-resistant in head and neck cancer cells. 2022 Stephenson Cancer Center Annual Cancer Research Symposium, Oklahoma City, OK. **Won Outstanding Poster Presentation Award (2nd place)**.
6. **Sadhasivam B**, Raj V, Hahn EH, Ganapathy V, Chinnaiyan M, Wagener TL and, Queimado L. E-cigarette aerosol alters mitochondria DNA damage and biogenesis. 2021

Stephenson Cancer Center Annual Cancer Research Symposium, Oklahoma City, OK. **Won Outstanding Poster Presentation Award (2nd place).**

7. **Sadhasivam B**, Raj V, Hahn EH, Ganapathy V, Chinnaiyan M, Wagener TL and, Queimado L. E-Cigarette and mitochondria: implications on oral health. 2021, 8th Annual Otolaryngology-Head and Neck Surgery Research Day, Oklahoma City, OK.
8. **Sadhasivam B**, Gunderson CC, Coles T, Stewart R, Hahn EH, Johnston SE, Zhao YD Ganapathy V, Queimado L. "DNA damage detection by q-PADDA: a promising tool for assessment of cervical cancer risk", 2020 Stephenson Cancer Center Annual Cancer Research Symposium, University of Oklahoma Health Sciences Center, Oklahoma City, OK. February 7, 2020. **Won Outstanding Poster Presentation award (3rd place).**
9. **Sadhasivam B**, Gunderson C, Hahn E, Johnston S, Zhao Y, Ganapathy V, Queimado L. "Mitochondrial DNA damage: a promising tool to screen cervical cancer risk", 44th Annual Graduate Research Education and Technology (GREAT) Symposium, University of Oklahoma Health Sciences Center, Oklahoma City, OK, Oral Presentation. April 1-4 2019.
10. **Sadhasivam B**, Gunderson CC, Hahn EH, Johnston SE, Zhao YD, Ganapathy V, Queimado L. "Optimization of mitochondrial DNA damage detection to predict cancer risk", 6th Annual Otolaryngology-Head and Neck Surgery Research Day, University of Oklahoma Health Sciences Center, Oklahoma City, OK, Oral Presentation. April 27, 2019.
11. **Sadhasivam B**, Gunderson C, Hahn EH, Johnston SE, Zhao YD, Ganapathy V, Queimado L. "A novel promising biomarker to assess cervical cancer risk", 2019 Stephenson Cancer Center Annual Cancer Research Symposium, University of Oklahoma Health Sciences Center, Oklahoma City, OK. February 1, 2019.
12. **Sadhasivam B**, Brobst DE, Ganapathy V, Manyanga J, Krempl G, Nilesh V, Cannon T, Medina J, Wagener T, Floyd E, Zhao YD and Queimado L. Cancer risk assessment in tobacco exposed populations. 5th Annual Otolaryngology Research Day, Oklahoma City, OK, April 7, 2018, Oral presentation.
13. **Sadhasivam B**, Ganapathy V, Brobst DE, Manyanga J, and Queimado L. DNA Damage detection: sensitivity among q-PADDA, comet, and LORD-Q assays. 4th Annual Otolaryngology-Head and Neck Research Day, OUHSC, Oklahoma City, OK. April 8, 2017. Oral presentation.
14. **Sadhasivam B**, Navaneethabalakrishnan S, Navin AK, Mani KK, Liaquat Alikhan SB, Akbarsha MA, Jayaraman G, Narasimhan S, and Mariajoseph AM. Transient gestational exposure to hexavalent chromium leads to specific changes in the expression pattern of androgen receptor and their co-regulators mRNA in Sertoli cells of puberal rats. National Conference on Endocrinology and Reproduction: Innovatives in Reproductive Biotechnology and 30th Annual Symposium of the Society for Reproductive Biology and Comparative Endocrinology, Dharward University, Karnataka, India, 11th-13th February 2013.
15. **Sadhasivam B**, Navaneethabalakrishnan S, Navin AK, Mani KK, Liaquat Alikhan SB, Akbarsha MA, Jayaraman G, Narasimhan S, and Mariajoseph AM. Transient lactational exposure to hexavalent chromium modifies the expression pattern of specific cell surface and intracellular hormone receptors in Sertoli cells of puberal rats. National Conference and 30th Annual Symposium of the Society for Reproductive Biology and Comparative Endocrinology on Novel Aspects and Emerging Trends in Reproduction and Endocrinology, Department of Zoology, University College of Science, Mohanlal Sukhadia University, Udaipur. India. 30th Jan-1st February 2012.

16. Lalmuankimi T, Navaneethabalakrishnan S, **Sadhasivam B**, Navin AK, Mani KK, Akbarsha MA, Jayaraman G, Narasimhan S and Mariajoseph AM. Effects of gestational exposure to excess CrVI on glucose oxidation in liver and skeletal muscle of post-natal rats. National Conference and 30th Annual Symposium of the Society for Reproductive Biology and Comparative Endocrinology on Novel Aspects and Emerging Trends in Reproduction and Endocrinology, Department of Zoology, University College of Science, Mohanlal Sukhadia University, Udaipur. 30th Jan-1st February 2012.
17. **Sadhasivam B**, Indira A, Mani KK, Liaquat Alikhan SB, Ganapathy V, Narasimhan S, Jayaraman G, and Mariajoseph AM. Expression patterns of androgen, estrogens, thyroid hormones, and retinoid X receptors mRNA in Sertoli cells of postnatal rats with transient gestational exposure to hexavalent chromium. International Symposium on Current Trends in Endocrine and Reproductive Health and 29th Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology. Department of Zoology, Mysore University, Karnataka, India, 10th to 12th Feb 2011.

PROFESSIONAL DEVELOPMENT

- 2023** Completed and Certified, Oklahoma Center for Mentoring Excellence (OCME) program provided by The University of Oklahoma Health Science Center.
- 2023** Enrolled in New Leader Development (NLD) program provided by The University of Oklahoma Health Science Center. Expecting to complete and earn the certificate by spring 2024.
- 2023** Raising a Resilient Scientist: The Mental Health and Well-being of Your Trainees hosted by NIH Office of Intramural Training & Education.

RESEARCH AND SUPPORT

2020-2025 Postdoctoral fellow in NIH/NCI funded R01CA242168, Queimado (PI)

Title: Biological impact of exclusive and dual e-cigarette use on oral cancer risk.

Role: Setting up experiments and leading the project for Aim 1 (Assessing mutagenicity associated with e-cig use); generated preliminary data, assist with scientific input, and contributed with writings for the methodology and budget justification of the proposal.

2020-2022 Postdoctoral fellow in TSET Health Promotion Research Center grant: Queimado (PI) Gunderson (Co-PI)

Title: Linking health risk factors, systemic DNA damage, and cervical cancer risk

Role: Leading analyst - Generated data for the grant proposal, drafted the methodology and questionnaires for IRB, and led all the laboratory experiments as an independent researcher to the successful completion of the project. First authorship in manuscript reporting findings (under preparation).

2020-2021 Postdoctoral fellow in OSCTR/NIH IDeA Program Pilot grant: Queimado (PI)

Title: A new molecular tool to predict cervical cancer progression

Role: Leading analyst- Generated data for the proposal and successful completion of the grant as an independent researcher, drafted the methodology and questionnaires for IRB approval.

2019-2020 Research Associate in PHF Bridge grant: Queimado (PI)

Title: Biological impact of exclusive and dual e-cigarette use on oral cancer risk

Role: Leading analyst - Generated preliminary data (standardization and extraction of total RNA in the oral epithelial cells) and, assisted with methodology writing.

2018-2019 Research Associate in PHF grant: Queimado (PI)

Title: The Role of Electronic Cigarettes in Oral Mucosa Genotoxicity and Oncogenesis

Role: Generated data as a team member that contributed to the funding of R01CA242168.

2016-2020 Research Associate in NIH-funded R33: R33CA202898, Queimado (PI)

Title: A novel molecular assay for early detection and assessment of cancer risk

Role: Generated data for the successful completion of the grant as a team member.

PARTICIPATION IN GRANT WRITING WORKSHOPS/SEMINARS

March 2022 Attended WVCTSI Virtual Grant Writing Workshop presented by Dr. Robert Milner from the Keck School of Medicine of USC and Dr. Joan Lakoski, WVCTSI Director of Investigator Development, supported by National Institute of General Medical Services, 5U54GM104942-03.

Nov. 2021 Participated in NIH-Sponsored Grant Writing Seminar presented by Lauren Broyles, PhD, and hosted by The Stephenson Cancer Center's Education, Training and Career Enhancement Core and the Health Promotion Research Center, OUHSC, OKC.

TECHNICAL EXPERIENCE

1. Nicotine measurement by Gas Chromatography Mass Spectroscopy
2. Experimental animal handling (Rats) and fish (*Labeo rohita*)
3. Establishing primary cell culture (Head and neck cancer, Sertoli and Leydig cells)
4. Cell culture techniques and assays (MTT, clonogenic, spheroid assay, live cell imaging with Incucyte S3)
5. PCR-based q-PADDA and LORDq assay for DNA damage quantifications
6. Ames test to detect mutagenicity (Bacterial culture of TA100, TA97a, YG1024)
7. Histology and Immunocytochemistry
8. Co-immunoprecipitation for protein-protein interaction
9. Isolation of cellular fractions from blood and cells (e.g., Plasma, Nuclear, Mitochondria)
10. Protein isolation, Western Blot analysis, qPCR, Electrophoresis, and ELISA
11. Processing of biological samples (Blood, Urine, Saliva, Oral epithelial cells)
12. Statistical analyses with Prism (GraphPad).

TEACHING AND TRAINING STUDENTS

When	Who	How	Title	Outcome
-------------	------------	------------	--------------	----------------

2022	Tristen UnruhCone, Ph.D. Graduate Student, Rotation OUHSC	Taught him the biology of cancer cell biomarkers for cell proliferation and double-strand DNA damage; trained him to do immunocytochemistry of Ki67 and γ H2AX for dsDNA damage.	Studies on head, and neck cancers involving biomarkers for cell proliferation and DNA damage	Tristen is still doing lab rotations at OUHSC
2022	Neha Guruswamy, a High School senior attending Francis Tuttle Technology Center's	Taught her the basic science of electronic cigarettes, mitochondrial biology, and head and neck cancer.	Effect of e-cigarette aerosols on mitochondrial biogenesis in human oral epithelial cells	Oral Presentation as Senior Capstone Project for Biomedical Innovations at Biosciences and Medicine Academy. Medical Student, University of Missouri, KS
2022	Zishan Mahmood, Medical student OU Medicine; TSET Health Promotion Research Center Summer Research Fellow	Taught him basic electronic cigarette/chemistry and mutagenicity; Trained him to do Ames assay to assess mutagenicity among e-cigarette users.	Mutagenicity associated with distinct e-cigarette devices.	Medical Student University of Oklahoma, OK
2022	Katie Johnson, Research technician in Dr. Queimado's laboratory, at OUHSC	Taught her the basics of cancer biology, mitochondrial biogenesis, and the methodology of DNA and urine extraction. Trained her to do real-time qPCR for mtDNA damage and copy number quantification.	Effects of e-cigarette in mitochondrial DNA damage and biogenesis	Medical Student Candidate
2021	Tristan Cole, medical student	Taught him the basics of cancer biology, electronic	Evaluation of e-cigarette	Won Jesus E. Medina M.D.

	at OU Medicine; Otolaryngology Head and Neck Surgery Summer Research Scholar	cigarette chemistry, and mutagenicity. Trained him to do an Ames assay to assess mutagenicity.	mutagenicity in vapers using ames test	Award for Excellence in Research by a Medical Student at 9 th Annual Otolaryngology-Head and Neck Surgery Research Day, April 2, 2022, OUHSC, Oklahoma City, OK.
2021	Isha Jhingan , Trainee, Stephenson Cancer Center	Trained her on biological sample collection such as blood, and cervical epithelial cells.	Linking health risk factors, systemic DNA damage, and cervical cancer risk	Medical Student at OU Medicine
2021	Sasha Spikes , Research Technician in Dr. Queimado's laboratory, OUHSC	Taught her the basics of cancer biology, the methodology of DNA, and urine extraction.	Mutagenicity associated with e-cig use	NA
2020	Jimmy Manyanga , GPiBs PhD student	Trained him to do DNA/RNA extraction.	Electronic cigarettes: implications on cancer risk and cisplatin resistance in oral epithelial cells	Completed PhD. Scientist at Cytovance Biologics, OKC.
2019	Vijay Raj , medical student at OU Medicine; Otolaryngology Head and Neck Surgery Summer Research	Taught him about cancer biology, head and neck cancer, DNA damage, vaping, and mitochondrial biogenesis. Trained him to do qPCR to assess mitochondrial DNA damage and copy number.	E-cigarette effects on mitochondrial DNA damage and mitochondrial dynamic	Completed MD

	Scholar			
2018	Elizabeth Hahn , TSET Health Promotion Research Center Summer Intern Fellow	Taught her cancer biology and potential risk factors and molecular biology methodology. Trained her to do qPCR in DNA damage and copy number quantification.	Using DNA damage to predict risk for cancer	Medical Student OU Medicine
2018	Mayilvanan Chinnaiyan , Research Associate, Dr. Queimado's laboratory, OUHSC.	Taught him basic molecular biology techniques qPCR, and qPADD, and trained him on cell culture and Ames assay.	Oral mucosa DNA damage quantification	Postdoctoral fellow OUHSC.
2017	Samuel Castles , medical student, OU Medicine; Otolaryngology Head and Neck Surgery Summer Research Scholar	Taught him tissue culture techniques.	Smoking and cisplatin resistance in head and neck cancer	Currently doing his Residency in Alaska Family Medicine, AK
2017	Matthew Krutz , Trainee, Stephenson Cancer Center	Trained him on cervical epithelial cells sample collection.	Validation of a novel assay for quantification of DNA damage in cervical samples	MD; Resident in Otolaryngology Head and Neck Surgery at OU Medicine.

LEADERSHIP IN COMMUNITY

2013 Secretary, Postgraduate Hostel for Men, University of Madras, Taramani Campus, Chennai, Tamil Nadu, India.

2008 Secretary, Postgraduate Hostel for Men, Bharathiar University, Coimbatore Tamil Nadu, India.

