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EDUCATION

1999 B.S. in Biological Sciences

Wright State University, Dayton, Ohio

2006 Ph.D. in Biomedical Sciences (Advisor: Michael Leffak, Ph.D.)

Wright State University, Dayton, Ohio

POST-DOCTORAL TRAINING

2006-2011 DNA Repair and DNA Damage Kinase Signaling

(Advisor: Nobel Laureate Aziz Sancar, M.D., Ph.D.)

Department of Biochemistry & Biophysics, Lineberger Comprehensive Cancer Center
University of North Carolina School of Medicine, Chapel Hill, North Carolina

2016-2017 Skin Biology and Aging

(Advisor: Jeffrey Travers, M.D., Ph.D.)

Department of Pharmacology and Toxicology

Wright State University Boonshoft School of Medicine, Dayton, Ohio

ACADEMIC APPOINTMENTS

2011-2012 Research Assistant Professor (Laboratory of Aziz Sancar, M.D., Ph.D.)

Department of Biochemistry & Biophysics

University of North Carolina School of Medicine, Chapel Hill, North Carolina

2012-2013 Teaching Assistant Professor

Department of Biological Sciences

Florida Institute of Technology, Melbourne, Florida

2013-2016 Research Assistant Professor (Laboratory of Aziz Sancar, M.D., Ph.D.)

Department of Biochemistry & Biophysics

University of North Carolina School of Medicine, Chapel Hill, North Carolina

2014 Adjunct Instructor

Wake Technical Community College, Raleigh, North Carolina

2017-2019 Research Assistant Professor (Laboratory of Jeffrey Travers, M.D., Ph.D.)

Department of Pharmacology and Toxicology

Wright State University Boonshoft School of Medicine, Dayton, Ohio

2019-2024 Assistant Professor

2024-present Associate Professor

Department of Pharmacology and Toxicology

Wright State University Boonshoft School of Medicine, Dayton, Ohio

Oct 2021- Present Research Health Scientist

Dayton VA Medical Center, Dayton, Ohio

OTHER SCIENTIFIC POSITIONS

1999-2000 Laboratory Technician

Lab Support, Inc. (Procter & Gamble Pharmaceuticals), Cincinnati, Ohio

2000 Summer Intern

Procter & Gamble Pharmaceuticals, Cincinnati, Ohio

2010-2014 Contract Editor

American Journal Experts, Durham, North Carolina

RESEARCH FUNDING

Current Research Support

NIGMS R01 GM130583

“DNA damage response kinase signaling in non-replicating human cells and tissues”

2/1/2019 – 1/31/2025 25% effort (\$200,000 direct costs/year)

Role: Principal Investigator

This project will examine the mechanisms of ATR protein kinase activation and function in non-replicating cells and tissues, including human skin.

VA Clinical Merit Award CX002241

“Mapping DNA Repair and Error-Prone DNA Synthesis in Geriatric Skin”

10/1/2021 – 09/30/2025 (~\$240,000 direct costs/year; 5/8ths VA effort)

Role: Principal Investigator

This project will test the hypothesis that epidermal keratinocytes from the skin of older individuals are predisposed to carry out a more mutagenic form of DNA replication following UVB exposure.

NIEHS R01 ES030113

“Circadian clock disruption: A risk factor for environmental mutagenesis”

11/1/2020 – 10/31/2024 5% effort (~\$30,000 direct costs/year)

Role: Co-investigator

This is a sub-contract on a project examining how shift work impacts DNA repair activity in UV-irradiated skin of mice and humans in collaboration with Shobhan Gaddameedhi (North Carolina State University).

NIEHS R01 ES031087

“UVB radiation-generated microvesicle particles as effectors for photosensitivity”

2/1/2024 – 1/31/2026 25% effort (\$225,000 direct costs/year)

Role: Co-Principal Investigator (along Jeffrey Travers)

This project is investigating the role for extracellular vesicles in UVB photosensitivity.

Previous Research Support

DoD Defense University Research Instrumentation Program (DURIP) FA9550-23-1-0080

“High-Throughput Luminometry to Support AFRL Collaborative Projects on the Interplay between Circadian Rhythms and Cellular Responses to Operational Stress”

2/1/2023 – 1/31/2024 (\$87,375 direct costs)

Role: Principal Investigator

This grant funded by the Air Force Office of Scientific Research (AFOSR) was to purchase equipment to monitor luminescence in cultured cells exposed to Air Force-relevant operational stressors.

Ohio Cancer Research #5020

“Circadian Clock Modulating Drugs in Cancer Prevention and Treatment”

7/1/2020 – 6/30/2022 (\$30,000 direct costs/year)

Role: Principal Investigator

This project will test the hypothesis that pharmacological drugs that target circadian clock genes can be used to modulate genomic stress responses and improve cancer treatment and prevention.

NIEHS R21 ES024425

“UV Light and Autoimmunity: A Role for Small Excised DNA Oligonucleotides”

8/1/2014 – 7/30/2016 50% effort (\$275,000 total direct costs)

Role: Co-investigator

This project examined my hypothesis that the sedDNA byproducts of DNA repair bind and induce signaling of inflammatory and innate immune pattern recognition receptors (PRRs) in skin cells and that patients with subacute cutaneous lupus erythematosus develop antibodies against specific DNA repair proteins.

UNC Center for Environmental Health and Susceptibility Pilot Project

“A Novel Role for UV-generated sedDNAs in Inflammation and Autoimmunity”

4/1/2014 – 3/31/2015 (\$25,000 total direct costs)

Role: Principal Investigator

The goal of this pilot intramural project was to identify sedDNA-interacting proteins involved in inflammation and autoimmunity and to screen autoantibodies in patients with lupus.

NCI T32 CA09156

UNC Lineberger Comprehensive Cancer Center

NIH-NRSA Institutional Postdoctoral Fellowship in Basic Research

12/1/2006 – 11/30/2008

Role: Postdoctoral Trainee

The goal of this postdoctoral training fellowship was to develop an in vitro, cell-free system to study the coupling of human nucleotide excision repair with DNA damage checkpoint signaling.

PUBLICATIONS

Original Research Articles:

1. Cvammen W, Rider SD Jr, **Kemp MG**. (2024). Analysis of circadian clock gene expression in epidermal human skin indicates that body location impacts rhythm amplitude. *Journal of Investigative Dermatology*. (in press).
2. Carpenter MA, Thyagarajan, A, Owens M, Annamraju R, Borchers CB, Travers JB, and **Kemp MG**. (2024). The acid sphingomyelinase inhibitor imipramine enhances the release of UV photoproduct-containing DNA in small extracellular vesicles in UVB-irradiated human skin. *Photochemistry & Photobiology*. (in press).
3. Cvammen W and **Kemp MG** (2024). The REV-ERB antagonist SR8278 modulates keratinocyte viability in response to UVA and UVB radiation. *Photochemistry & Photobiology*. (in press).
4. Christian L, Manjrekar P, Henkels KM, Rapp CM, Annamraju R, Lohade R P, Singh S, Carpenter M A, Khan S., **Kemp MG**, Chen Y, Sahu RP, and Travers JB. (2024). Evidence for the involvement of keratinocyte-derived microvesicle particles in the photosensitivity associated with xeroderma pigmentosum type A deficiency. *Photochemistry & Photobiology*. (in press).
5. Carpenter, MA, Yerrapragada, S, Alex, A, **Kemp, MG**. (2024). Protocol for immunoblot detection of UVB photoproducts in extracellular DNA. *STAR Protocols*. 5(1): 102838.
6. Cvammen, W, Rider, SD, Travers, JB, **Kemp, MG**. (2023). Effects of Age and Sex on the Expression of Core Circadian Clock Genes in Human Skin Epidermis. *Journal of Investigative Dermatology*.
7. Gaikwad P and **Kemp MG**. (2022). Cathepsin L inhibition prevents the cleavage of multiple nuclear proteins upon lysis of quiescent human cells. *MicroPublication Biology*. eCollection 2022.
8. Carpenter MA, Ginugu M, Khan S, and **Kemp MG**. (2022). DNA containing cyclobutane pyrimidine dimers is released from UVB-irradiated keratinocytes in a caspase-dependent manner. *J Investigative Dermatology*. 142(11): 3062-3070.
9. Kim SH, Kim GH, **Kemp MG***, and Choi J-H*. (2022). TREX1 degrades the 3' end of the small DNA oligonucleotide products of nucleotide excision repair in human cells. *Nucleic Acids Research*. 50(7):3974-3984. (*co-corresponding author)
10. Cvammen W and **Kemp MG**. (2022). Flavonoid nobiletin exhibits differential effects on cell viability in keratinocytes exposed to UVA versus UVB radiation. *Photochemistry & Photobiology*. 98(6): 1372-1378.
11. Khan S, Cvammen W, Anabtawi N, Choi J-H, and **Kemp MG**. (2022). XPA is susceptible to proteolytic cleavage by cathepsin L during lysis of quiescent cells. *DNA Repair*. 109: 103260.
12. Mahajan AS, Arikatla VS, Thyagarajan A, Zhelay T, Sahu RP, **Kemp MG**, Spandau DF, and Travers JB. (2021). Creatine and nicotinamide prevent oxidant-induced senescence in human fibroblasts. *Nutrients*. 13(11): 4102.
13. Spandau DF, Chen R, Wargo JJ, Rohan CA, Southern D, Zhang A, Loesch M, Weyerbacker J, Tholpady SS, Lewis DA, Kuhar M, Tsai WY, Castellanos AJ, **Kemp MG**, Markey M, Cates E, Williams AR, Knisely C, Bashir S, Gabbard R, Hoopes R, and Travers JB. (2021). Randomized controlled trial of fractionated laser resurfacing on aged skin as prophylaxis against actinic neoplasia. *J Clin Invest*. 131(19): e150972.
14. Anabtawi N, Cvammen W, and **Kemp MG**. (2021). Pharmacological inhibition of cryptochrome and REV-ERB promotes DNA repair and cell cycle arrest in cisplatin-treated human cells. *Scientific Reports*. 11(1): 17997.
15. Carpenter MA and **Kemp MG**. (2021). Topical treatment of human skin and cultured keratinocytes with high-dose spironolactone reduces XPB expression and induces toxicity. *JID Innovations*. 1(3): 100023.
16. Sarkar S, Porter KI, Dakup PP, Gajula RP, Koritala BSC, Hylton R, **Kemp MG**, Wakamatsu K, and Gaddameedhi S. (2021). Circadian clock protein BMAL1 regulates melanogenesis through MITF in melanoma cells. *Pigment Cell Melanoma Res*. 34(5): 955-965.

17. Liu L, Awayemi AA, Fahy KE, Thapa P, Borchers C, Wu BY, McGlone CL, Schmeusser B, Sattouf Z, Rohan CA, Williams AR, Cates EE, Knisely C, Kelly LE, Bihl J, Cool DR, Sahu RP, Wang J, Chen Y, Rapp CM, **Kemp MG**, Johnson RM, and Travers JB. (2021). Keratinocyte-derived microvesicle particles mediate ultraviolet B radiation induced systemic immunosuppression. *Journal of Clinical Investigation*. 131(10): e144963.
18. Hutcherson RJ, Gabbard RD, Castellanos AJ, Johnson RM, Travers JB, **Kemp MG**. (2021). Age and insulin-like growth factor-1 (IGF-1) impact PCNA mono-ubiquitination in UVB-irradiated human skin. *Journal of Biological Chemistry*. 296: 100570.
19. Alkawar AMM, Castellanos AJ, Carpenter MA, Hutcherson RJ, Madkhali MAO, Johnson RM, Bottomley M, **Kemp MG**. (2020). Insulin-like Growth Factor-1 Impacts p53 Target Gene Induction in UVB-irradiated Keratinocytes and Human Skin. *Photochemistry & Photobiology*. 96(6): 1332-1341.
20. Choi J-H, Han S, and **Kemp MG**. (2020). Detection of the small oligonucleotide products of nucleotide excision repair in UVB-irradiated human skin. *DNA Repair*. 86: 102766.
21. Travers JB, **Kemp MG**, Weir NM, Cates E, Alkawar AM, Majahan AS, Spandau DF. (2020). Wounding with a microneedling device corrects the inappropriate ultraviolet B radiation response in geriatric skin. *Arch Dermatol Res*. 312(1): 1-4.
22. Shaj K, Hutcherson RJ, **Kemp MG**. (2020). ATR kinase activity limits mutagenesis and promotes the clonogenic survival of quiescent human keratinocytes exposed to UVB radiation. *Photochemistry & Photobiology*. 96(1): 105-112.
23. Hutcherson RJ and **Kemp MG**. (2019). ATR kinase inhibition sensitizes quiescent human cells to the lethal effects of cisplatin but increases mutagenesis. *Mutation Research*. 816-818: 111678.
24. **Kemp MG***, Krishnamurthy S, Kent MN, Schumacher DL, Sharma P, Excoffon KJDA, Travers JB*. (2019). Spironolactone depletes the XPB protein and inhibits DNA damage responses in UVB-irradiated human skin. *J Invest Dermatology*. 139(2): 448-454.
25. Poudel S, Yao J, **Kemp MG**, Leffak M. (2018). Interaction between DUE-B and Treslin is required to load Cdc45 on chromatin in human cells. *J Biol Chem*. 293(37): 14497-14506.
26. Dakup PP, Porter KI, Little AA, Gajula RP, Zhang H, Skorynakov E, **Kemp MG**, Van Dongen HPA, and Gaddameedhi S. (2018). The circadian clock regulates cisplatin-induced toxicity and tumor regression in melanoma mouse and human models. *Oncotarget*. 9(18): 14524-14538.
27. Baek S, Han S, Kang D, **Kemp MG***, Choi JH*. (2018). Simultaneous detection of nucleotide excision repair events and apoptosis-induced DNA fragmentation in genotoxin-treated cells. *Scientific Reports*. 8(2265): 1-11. (***co-corresponding author**).
28. **Kemp MG**. (2017). DNA damage-induced ATR kinase activation in non-replicating cells is regulated by the XPB subunit of transcription factor II-H (TFIIH). *J Biol Chem*. 292(30): 12424-12435.
29. **Kemp MG**, Spandau DF, Simman R, and Travers JB. (2017). Insulin-like Growth Factor-1 Receptor Signaling is Required for Optimal ATR-CHK1 Kinase Signaling in Ultraviolet B (UVB)-irradiated Human Keratinocytes. *J Biol Chem*. 292(4): 1231-9. (***co-corresponding author**)
30. Canturk F, Karaman M, Selby CP, **Kemp MG**, Kulaksiz-Erkmen G, Hu J, Li W, Lindsey-Boltz LA, and Sancar A. (2016). Nucleotide excision repair by dual incisions in plants. *Proc Natl Acad Sci USA*. 113(17): 4706-10.
31. **Kemp MG** and Sancar A. (2016). ATR kinase inhibition protects non-cycling cells from the lethal effects of DNA damage and transcription stress. *J Biol Chem*. 291(17): 9330-42.
32. Lindsey-Boltz LA, **Kemp MG**, Hu J, and Sancar A. (2015). Analysis of ribonucleotide removal from DNA by human nucleotide excision repair. *J Biol Chem*. 290(50): 29801-7.
33. Choi JH, Kim SY, Kim SK, **Kemp MG**, and Sancar A. (2015). An integrated approach for analysis of the DNA damage response in mammalian cells: Nucleotide excision repair, DNA damage checkpoints, and apoptosis. *J Biol Chem*. 290(48): 28812-21.
34. Hao J, Li Y, de Renty C, Xiao H, **Kemp MG**, DePamphilis ML, and Zhu W (2015). And-1 coordinates with Claspin for efficient Chk1 activation in response to replication stress. *EMBO J*. 34(15): 2096-110.
35. **Kemp MG**, Lindsey-Boltz LA, and Sancar A. (2015). UV light potentiates STING (stimulator of interferon genes)-dependent innate immune signaling through deregulation of ULK1 (Unc51-like kinase 1). *J Biol Chem*. 290(10): 12184-94.
36. Gaddameedhi S, Selby CP, **Kemp MG**, Ye R, and Sancar A. (2015). The circadian clock controls sunburn apoptosis and erythema in mouse skin. *J Invest Dermatology*. 135(4): 1119-27.
37. Lindsey-Boltz LA*, **Kemp MG***, Capp C, and Sancar A. (2015). RHINO forms a stoichiometric complex with the 9-1-1 checkpoint clamp and mediates ATR-Chk1 signaling. *Cell Cycle*. 14(1): 99-108. (***co-first author**)

38. **Kemp MG**, Gaddameedhi S, Choi JH, Hu J, and Sancar A. (2014). DNA repair synthesis and ligation affect the processing of excised oligonucleotides generated by human nucleotide excision repair. *J Biol Chem.* 289: 26574-26583.
39. Choi JH, Gaddameedhi S, Kim SY, Hu J, **Kemp MG**, and Sancar A. (2014). Highly specific and sensitive method for measuring nucleotide excision repair kinetics of ultraviolet photoproducts in human cells. *Nuc Acids Res.* 42: e29.
40. Lindsey-Boltz LA, **Kemp MG**, Reardon JT, Derocco V, Iyer RR, Modrich P, and Sancar A. (2014). Coupling of human DNA excision repair and ATR-mediated DNA damage checkpoint in a defined in vitro system. *J Biol Chem.* 289: 5074-5082.
41. Hu J, Choi JH, Gaddameedhi S, **Kemp MG**, Reardon JT, and Sancar A. (2013). Nucleotide excision repair in human cells: Fate of the excised oligonucleotide carrying DNA damage in vivo. *J Biol Chem.* 288: 20918-20926.
42. Hassan BH, Lindsey-Boltz LA, **Kemp MG**, and Sancar A. (2013). Direct role for the replication protein Treslin (Ticrr) in the ATR-mediated checkpoint response. *J Biol Chem.* 288: 18903-18910.
43. **Kemp MG**, Reardon JT, Lindsey-Boltz LA, and Sancar A. (2012). Mechanism of release and fate of excised oligonucleotides during nucleotide excision repair. *J Biol Chem.* 287: 22889-99.
44. Yilmaz S, Sancar A, and **Kemp MG**. (2011). Multiple ATR-Chk1 pathway proteins preferentially associate with checkpoint-inducing DNA substrates. *PLoS One* 6(7): e22986.
45. **Kemp MG**, Lindsey-Boltz LA, and Sancar A. (2011). The DNA damage response kinases DNA-dependent protein kinase (DNA-PK) and Ataxia telangiectasia mutated (ATM) are stimulated by bulky adduct-containing DNA. *J Biol Chem.* 286: 19237-46.
46. Sercin O and **Kemp MG**. (2011). Characterization of functional domains in human Claspin. *Cell Cycle.* 10(10): 1599-1606.
47. Choi JH, Lindsey-Boltz LA, **Kemp M**, Mason AC, Wold MS, and Sancar A. (2010). Reconstitution of RPA-covered single-stranded DNA-activated ATR-Chk1 signaling. *Proc Natl Acad Sci USA.* 107(31): 13660-5.
48. Gaddameedhi S, **Kemp MG**, Shields JM, Reardon JT, Smith-Roe SL, Kaufmann WK, and Sancar A. (2010). Nucleotide excision repair capacity of melanocytes and melanoma cell lines. *Cancer Res.* 70(12): 4922-30.
49. **Kemp MG**, Akan Z, Yilmaz S, Grillo M, Smith-Roe SL, Kang TH, Cordeiro-Stone M, Kaufmann WK, Abraham RT, Sancar A, and Unsal-Kacmaz K. (2010). Tipin-RPA interaction mediates Chk1 phosphorylation by ATR in response to genotoxic stress. *J Biol Chem.* 285(22): 16562-71.
50. Chowdhury A, Liu G, **Kemp M**, Chen X, Katrangi N, Myers S, Ghosh M, Yao J, Gao Y, Bubulya P, Leffak M. (2010). The DNA unwinding element binding protein DUE-B interacts with Cdc45 in preinitiation complex formation. *Mol Cell Biol.* 30(6): 1495-507.
51. **Kemp MG**, Mason AC, Carreira A, Reardon JT, Haring SJ, Borgstahl GE, Kowalczykowski SC, Sancar A, and Wold MS. (2010). An alternative form of replication protein A expressed in normal human tissues supports DNA repair. *J Biol Chem.* 285(7): 4788-97.
52. Kang TH, Reardon JT, **Kemp M**, and Sancar A. (2009). Circadian oscillation of nucleotide excision repair in mammalian brain. *Proc Natl Acad Sci USA.* 106(8):2864-7.
53. **Kemp M**, Bae B, Yu JP, Ghosh M, Leffak M, and Nair SK. (2007). Structure and function of the c-myc DNA-unwinding element-binding protein DUE-B. *J Biol Chem.* 282(14): 10441-8.
54. Ghosh M, **Kemp M**, Liu G, Ritzi M, Schepers A, and Leffak M. (2006). Differential binding of replication proteins across the c-myc replicator. *Mol Cell Biol.* 26(14): 5270-83.
55. Casper JM^{*}, **Kemp MG^{*}**, Ghosh M, Randall GM, Vaillant A, and Leffak M. (2005). The c-myc DNA-unwinding element-binding protein modulates the assembly of DNA replication complexes in vitro. *J Biol Chem.* 280(13): 13071-83. (^{*}co-first author)
56. **Kemp MG**, Ghosh M, Liu G, and Leffak M. (2005). The histone deacetylase inhibitor trichostatin A alters the pattern of DNA replication origin activity in human cells. *Nuc Acids Res.* 33(1): 325-336.

Reviews/Book Chapters/Commentaries:

1. Chiou YY and **Kemp MG**. (2024). RNA polymerase tracking along damaged DNA: Impact on DNA repair and mutagenesis. *Proceedings of the National Academy of Sciences USA.* 121(23): e2408073121.
2. Yan S, Zhao J, **Kemp M**, and Sobol RW. (2022). Editorial: Mechanistic studies of genome integrity, environmental health, and cancer etiology. *Front Cell Dev Biol.* 10: 1026326.
3. Frommeyer TC, Rohan CA, Spandau DF, **Kemp MG**, Wanner MA, Tanzi E, Travers JB. (2022). Wounding Therapies for Prevention of Photocarcinogenesis. *Frontiers in Oncology.* 11: 813132.

4. Lubov JE, Cvammen W, and **Kemp MG**. (2021). The Impact of the Circadian Clock on Skin Physiology and Cancer Development. *Int J Mol Sci.* 22(11), 6112.
5. Ume AC, Pugh JM, **Kemp MG**, and Williams CR. (2020). Calcineurin inhibitor (CNI)-associated skin cancers: New insights on exploring mechanisms by which CNIs downregulate DNA repair machinery. *Photoderm Photoimmunol Photomed.* 36(6): 433-440.
6. Gabbard RD, Hoopes RR, and **Kemp MG**. (2020) Spironolactone and XPB: An Old Drug with a New Molecular Target. *Biomolecules*, 10(5): 756.
7. **Kemp MG**. (2019). Damage removal and gap filling in nucleotide excision repair. *The Enzymes: DNA Repair*, 45: 59-97.
8. Khan AQ, Travers JB, and **Kemp MG**. (2018). Roles of UVA Radiation and DNA Damage Responses in Melanoma Pathogenesis. *Environmental and Molecular Mutagenesis*, 59(5): 438-60.
9. **Kemp MG**, Spandau DF, and Travers JB. (2017). Impact of Age and Insulin-like Growth Factor-1 on DNA Damage Responses in UV-irradiated Human Skin. *Molecules*. 22(3).
10. **Kemp MG**. (2017). Crosstalk Between Apoptosis and Autophagy: Environmental Genotoxins, Infection, and Innate Immunity. *J Cell Death*. 1-6.
11. **Kemp MG** and Hu J. (2017). Post-Excision Events in Human Nucleotide Excision Repair. *Photochemistry & Photobiology*. 93(1): 178-91.
12. Song J, **Kemp MG** and Choi J-H. (2017). Detection of the Excised, Damage-containing Oligonucleotide Products of Nucleotide Excision Repair in Human Cells. *Photochemistry & Photobiology*. 93(1): 192-8.
13. Sancar A, Lindsey-Boltz LA, Gaddameedhi S, Selby CP, Ye R, Chiou YY, **Kemp MG**, Hu J, Lee SH and Ozturk N. (2015). Circadian Clock, Cancer, and Chemotherapy. *Biochemistry*. 54(2): 110-23.
14. **Kemp MG** and Sancar A. (2012). DNA excision repair: Where do all the dimers go? *Cell Cycle*. 11(16): 2997-3001.
15. **Kemp M** and Sancar A. (2009). DNA distress: just ring 9-1-1. *Current Biology*. 19(17): R2864-7.

Other Writing:

1. **Kemp MG**. (2015). NextGen's tools for the future. *Science*. 347(6230): 34.
2. **Kemp MG**. (2015). NextGen's course catalog. *Science*. 347(6217): 24.
3. **Kemp MG**. (2014). NextGen Voices: Science advocacy. *Science*. 344(6179): 37.

TEACHING EXPERIENCE

Wright State University (Dayton, OH)

- **Journal Club: Genome Stability and Human Disease** (PTX7002; 15 contact hours)
This course introduces students to the latest research in the field of genome stability and involves critically reading and reviewing primary research articles.
 - Summer 2021, Fall 2021, Fall 2022, Fall 2023
- **Pharmacology and Toxicology of DNA Damaging Agents** (PTX8002; 45 contact hours)
I developed this survey course that examines how different environmental, dietary, and chemotherapeutic compounds damage DNA and the different mechanisms by which human cells respond to DNA damage.
 - Spring 2020, 2021, 2023, 2024
- **Career Planning in Pharmacology & Toxicology** (PTX8007; 15 contact hours)
I developed this course to help our department's graduate students identify and pursue relevant career pathways in the biomedical sciences.
 - Spring 2019, Fall 2019, Fall 2020, Spring 2021 (online), Spring 2022 (online), Fall 2022, Spring 2023 (online), Fall 2023 (online)
- **Cell Biology** (PTX6002)
I posted weekly discussion questions covering coursework and reviewed student submissions.
 - Fall 2017 (online)

Wake Technical Community College (Raleigh, NC)

- **General Biology I Laboratory** (15 laboratory sessions)
I was the instructor for the laboratory section of an introductory, freshman-level biology course for science majors. (15 laboratory sessions)
 - Spring 2014

Florida Institute of Technology (Melbourne, FL)

- **Biological Discovery I** (45 contact hours)
I was the instructor for an introductory, freshman-level course covering fundamental concepts in molecular and cellular biology and genetics.
 - Spring 2013
- **Genomic Instability and Human Disease** (45 contact hours)
I developed a new course for graduate students and advanced undergraduates covering the molecular and cellular mechanisms that maintain genome stability in humans.
 - Spring 2013

Wright State University (Dayton, OH) – Graduate Student Teaching

- **Horizons in Medicine Program** (1 week; Summer 2004, 2005)
I led a group of 20-25 local high school students through a week of laboratory exercises introducing basic principles of biochemistry and molecular biology.
- **Graduate Teaching Assistant** (2002-2003)
I coordinated and supervised laboratory exercises for an undergraduate microbiology course. For two graduate biochemistry courses, I graded problem sets and held review and problem-solving sessions.

STUDENTS & TRAINEES

Wright State University (Postdoctoral/Thesis Project Advisor)

- 2024- **Dibya Guragai** (M.S. Pharm/Tox)
2024- **Sameer Cholakkathody** (M.S. Pharm/Tox)
2024- **Ushaswini Atluri** (M.S. Pharm/Tox)
2024- **Eniola Alabi** (M.S. Pharm/Tox)
2024- **Angitha Nair** (M.S. Pharm/Tox)
2024- **Irusha Dahal** (M.S. Pharm/Tox)
2023-2024 **Aleena Alex, PharmD** (M.S. Pharm/Tox)
2021-2022 **Saman Khan, Ph.D.** (Postdoctoral Trainee)
2022- **Sri Meghana Yerrapragada** (Ph.D. Biomedical Sciences)
2022-2023 **Hrishikesh Kadam** (M.S. Pharm/Tox)
2022-2023 **Prashant Gaikwad** (M.S. Pharm/Tox)
2022-2023 **Swathi Kavuri** (M.S. Pharm/Tox)
2020-2024 **William Cvammen** (Ph.D. Biomedical Sciences)
2020- **Alex Carpenter, Ph.D.** (Postdoctoral Trainee)
2020-2021 **Vivek Gogusetti** (M.S. Pharm/Tox)
 - Currently: Research Assistant II/Lab Manager, Cincinnati Children's Hospital
2020-2021 **Meghana Ginugu** (M.S. Pharm/Tox)
 - Currently: Research Assistant, Cincinnati Children's Hospital
2019-2021 **Nadeen Anabtawi, Pharm.D.** (M.S. Pharm/Tox)
 - Currently: Ph.D. Student, Ohio State University College of Pharmacy
2019-2020 **Amber Castellanos** (M.S. Anatomy)
 - Currently: Medical Assistant, The Dermatology Group, Cincinnati, OH
2019-2020 **Mariyyah Madkhali** (M.S. Pharm/Tox)
2018-2020 **Abdulrahman Alkawar** (M.S. Pharm/Tox)
 - Currently: Ph.D. Student, Wright State University Biomedical Sciences
2018-2019 **Rebekah Hutcherson** (B.S. Biochem/Mol Bio Honors Research Project)
 - Currently: Medical Student, University of Toledo
2017-2019 **Kavya Shaj, Pharm.D.** (M.S. Pharm/Tox)
 - Currently: Toxicologist, Kimberly-Clark, India

Wright State University (Dissertation & Thesis Committees)

- 2023-2024 **Taskin Sabit** (M.S. Pharm/Tox, Travers)
2022-2023 **Rushabh Lohade** (M.S. Pharm/Tox, Travers)
2022-2023 **Krishna Awashti** (M.S. Pharm/Tox, Sahu)
2022-2024 **Bryan Mayville** (Ph.D. Biomedical Sciences, Hussain)

2021- **Miliben Bhakta** (Ph.D. Biomedical Sciences, Sulentic)
 2021- **Resha Shretha** (Ph.D. Biomedical Sciences, Leffak)
 2021-2022 **Mashaal Alyaha** (M.S. Pharm/Tox, Xu)
 2020-2021 **Lea Christian** (M.S. Pharm/Tox, Travers)
 2020-2021 **Shravya Arikatla** (M.S. Pharm/Tox, Travers)
 2020-2021 **Shweta Bhadri** (M.S. Pharm/Tox, Travers)
 2020-2022 **Sydney White** (M.S. Pharm/Tox, Sulentic)
 2020- **Sankhadip Bhadra** (Ph.D. Biomedical Sciences, Xu)
 2020-2024 **Akshay Hira** (Ph.D. Biomedical Sciences, Kadakia)
 2020-2024 **Venicia Hawach** (Ph.D. Biomedical Sciences, Leffak)
 2019-2024 **Rujuta Gadgil** (Ph.D. Biomedical Sciences, Leffak)
 2019- **Eric Reed** (Ph.D. Biomedical Sciences, Sulentic/Nelson)
 2019-2020 **Avinash Mahajan** (M.S. Pharm/Tox, Travers)
 2019-2020 **Alaah Madhi** (M.S. Pharm/Tox, Xu)
 2018-2019 **Pariksha Thapa** (M.S. Pharm/Tox, Travers)
 2018-2019 **Rittu Samuel** (M.S. Pharm/Tox, Xu)
 2018-2019 **Darlington Osei Abrefa** (M.S. Microbiology & Immunology, Xu)

Wright State University (Lab Rotations and Short Research Projects)

2024 (Spring) 3 Pharm/Tox rotation students
 2023 (Fall) 9 Pharm/Tox rotation students
 2022 (Fall) 2 Pharm/Tox rotation students
 2022 (Spring) Sri Meghana Yerrapragada (Ph.D. Biomedical Sciences Lab Rotation)
 2021 (Fall) 5 Pharm/Tox rotation students
 2021 (Sum) Miliben Bhakta (Ph.D. Biomedical Sciences Lab Rotation)
 2021 (Spring) 3 Pharm/Tox rotation students
 2020 (Sum) Danielle Gibson (M.D./Ph.D. Biomedical Sciences Lab Rotation)
 2020 (Spring) Abdullah Althaiban, Qassem Ozran (Research Experience)
 2020 (Spring) William Cvammen, Akshay Hira (Ph.D. Biomedical Sciences Lab Rotations)
 2019 (Fall) 10 Pharm/Tox rotation students
 2019 (Fall) Bushra Alharbi (Research Volunteer)
 2019 (Fall) Rittu Samuel, M.S. (Research Volunteer)
 2019 (Spring) Hawra Alkhlaiteet, M.S. (Research Volunteer)
 2018 (Fall) 6 Pharm/Tox rotation students
 2017 (Fall) Kavya Shaj, Pharm.D. (Pharm/Tox Lab Rotation)
 Christina Borchers (Medical Student Research Elective)

University of North Carolina (2007-2015; provided mentoring and training)

2015 **Gulnihal Kulaksiz Erkmen**, M.D., Ph.D. (Visiting Scientist, Hacettepe University, Ankara, Turkey)
 2007-2011 **Ozdemirhan Sercin** (Ph.D. Student)
 ▪ Currently: Group Leader, BioMedX, Germany
 2009-2011 **Secil Yilmaz** (Visiting Ph.D. Student)
 ▪ Currently: Assistant Prof, Genome and Stem Cell Research Center, Erciyes Univ, Kayseri, Turkey
 2007-2008 **Zafer Akan** (Visiting Ph.D. Student)
 ▪ Currently: Associate Prof, Dept of Biophysics, Celal Bayar Univ, Manisa, Turkey

Florida Institute of Technology (2012-2013)

2012-2013 **Ivana Rocha** (High School Science Fair Project – Won 2nd place, Biochemistry section at Brevard County Science Fair)
 2012-2013 **Ghaidaa Kashgari** (M.S. Biotechnology Internship)
 ▪ Currently: Post-doc, University of California-Irvine
 2012-2013 **Venkata Perumalla Raghavandra** (M.S. Biotechnology Internship)
 2012-2013 **Barani Govindarajan** (M.S. Biotechnology Research Experience)
 ▪ Currently: Ph.D. student, Wayne State University
 2012-2013 **Amy Sutphin** (Undergraduate Research)

2012-2013 **Janie Griffin** (Undergraduate Research)
2012 (Fall) **Sagar Patel** (M.S. Biotechnology Internship)
2012 (Fall) **Sesha Vankamamidi** (M.S. Biotechnology Research Experience)
2012 (Fall) **Niveditha Krishna** (M.S. Biotechnology Research Experience)

HONORS AND AWARDS

April 2023 **Excellence in Medical Education and Research Award (junior faculty)**, Wright State University Academy of Medicine
May 2019 **Newly Independent Investigators Engagement Program**, Environmental Mutagenesis and Genomics Society
Mar 2018 **Travel Award**, Society for Investigative Dermatology
Sept 2016 **Emerging Scientist Travel Award**, Environmental Mutagenesis and Genomic Society
May 2016 **1st Place, Platform Presentation**, 18th Annual Midwest DNA Repair Symposium
May 2011 **1st Place, Platform Presentation**, 13th Annual Midwest DNA Repair Symposium
May 2010 **1st Place, Platform Presentation**, 12th Annual Midwest DNA Repair Symposium
Dec 2006 **NIH-NRSA Institutional Postdoctoral Training Fellowship**, Lineberger Comprehensive Cancer Center, University of North Carolina
Sept 2003 **Oral Presentation Award**, Wright State University Molecular Biology Retreat
May 2003 **Student Excellence Award**, Wright State University Biomedical Sciences Ph.D. Program
Aug 2002 **Sigma Xi Student Membership Award**, Wright State University
June 1999 **Cum laude Graduation Honors**, Wright State University
Apr 1995 **Charles H. Hewitt Memorial Scholarship**, Wright State University
Mar 1999 **McDonald's Scholarship Recipient**

PROFESSIONAL SOCIETY MEMBERSHIPS

American Society for Biochemistry and Molecular Biology (ASBMB), 2015-present
Environmental Mutagenesis and Genomics Society (EMGS), 2016-present
American Society for Photobiology (ASP), 2016-present
Society for Investigative Dermatology (SID), 2017-present

SERVICE

Departmental and University Activities

- **Ad-hoc committee to recommend applicants for NSF MRI**, Wright State University (Jan 2023)
- **Curriculum Committee**, Wright State University Biomedical Sciences Ph.D. Program (2022-2024)
- **Admissions Committee**, Wright State University Biomedical Sciences Ph.D. Program (2021-2022)
- **Dept. Education Committee**, Wright State University Pharm/Tox Dept (2021-present)
- **Dept. Website Redesign Committee**, Wright State University Pharm/Tox Dept (2020)
- **Nominating Committee**, Wright State University Biomedical Sciences Ph.D. Program (2019-2021)
- **Poster Judge**, Wright State University Boonshoft School of Medicine Annual Medical Student Research Symposium (2018, 2019)
- **Curriculum Review Committee**, Florida Institute of Technology Department of Biological Sciences (2012-2013)
- **Mission Statement Committee**, Wright State University Department of Biochemistry & Molecular Biology (2006)

Professional Societies

- **Honors and Awards Committee**, Environmental Mutagenesis and Genomics Society (2017-present; Chair 2019-present)
- **Excellence in Science Award Committee**, FASEB (2021-2023)

Manuscript Reviewer (2011-present)

- *Biochemistry, Biology, Biomolecules, BMC Dermatology, Cancers, Cell Cycle, Cells, Cosmetics Clinical, Cosmetic, and Investigational Dermatology, FEBS Letters, Int J Molecular Sciences, Journal of Biological Chemistry, Journal of Investigative Dermatology, Mutation Research, Nucleic*

Grant Reviews

June 2024	Ohio Cancer Research Associates (ad-hoc)
June 2024	Worldwide Cancer Research (ad-hoc)
Nov 2023	NIH Arthritis, Connective Tissue and Skin Disorders (ACTS) Study Section; R01/R21 Grants (member conflicts; ad-hoc)
Sept 2022	Oak Ridge Associated Universities (ORAU)/ Nazarbayev University Research Council (Kazakhstan)
Feb 2022	NIH Cancer Prevention Study Section; R01/R21 Grants (ad-hoc)
Oct 2021	United Kingdom Medical Research Council Predoctoral Clinical Research Fellowship
Mar 2021	NIH/NINDS CounterACT Program; U01/U54 Grants (ad-hoc)
June 2020	United Kingdom Medical Research Council Career Development Award
Feb 2019	University of Iowa Center for Health Effects of Environmental Contamination
Jul 2018	Netherlands Organization for Scientific Research (NOW)
Jul 2017	Netherlands Organization for Scientific Research (NOW), Earth and Life Sciences Division

SCIENTIFIC SYMPOSIA

Sept 2023	Co-Chair, Platform presentations on “Radiation in cancer biology and treatment”, Annual Meeting of the Environmental Mutagenesis and Genomics Society, Chicago, Illinois
Sept 2022	Co-chair, Symposium on Circadian Clock and Aging in Skin Carcinogenesis, 40th Meeting of the American Society for Photobiology, Albuquerque, New Mexico
May 2022	Co-chair, Photobiology Symposium, Society for Investigative Dermatology Annual Meeting, Portland, Oregon
Sept 2019	Co-chair, Symposium: Circadian Clock Disruption and its Impact on Genomic Instability and Environmental Carcinogenesis, 50 th Annual Meeting of the Environmental Mutagenesis and Genomics Society, Washington D.C.
May 2017	Co-organizer, Annual Midwest DNA Repair Symposium, Wright State University Department of Pharmacology & Toxicology, Dayton, Ohio

INVITED SEMINARS/TALKS

Feb 2024	Wright State University Department of Biochemistry & Molecular Biology Brownbag Series, Dayton, Ohio
Sept 2023	Annual Meeting of the Environmental Mutagenesis and Genomics Society, Chicago, Illinois
Aug 2023	Monthly Webinar, American Society for Photobiology, “Where to all the dimers go? One the fate of UV photoproducts in damaged DNA”
Feb 2023	Wright State University Department of Biochemistry & Molecular Biology Brownbag Series, Dayton, Ohio
Sept 2022	40th Meeting of the American Society for Photobiology, Albuquerque, New Mexico (co-chair, Symposium on Circadian Clock and Aging in Skin Carcinogenesis)
Oct 2021	Wright State University Department of Pharmacology & Toxicology, Dayton, Ohio
Feb 2021	University of Georgia College of Public Health Department of Environmental Health Science, Athens, Georgia (online via Zoom)
Sept 2020	51 st Annual Meeting of the Environmental Mutagenesis and Genomic Society; Virtual Meeting (oral presentation, online)
May 2020	78th Annual Meeting of the Society for Investigative Dermatology; Virtual Meeting (pre-recorded presentation)
Jan 2020	Wright State University Department of Biochemistry & Molecular Biology, Dayton, Ohio
Oct 2019	University of Cincinnati College of Medicine Department of Molecular Genetics, Biochemistry, and Microbiology, Cincinnati, OH

Aug 2019 DNA Repair Symposium at the 18th Congress of the European Society for Photobiology/17th International Congress on Photobiology, Barcelona, Spain

April 2019 Florida International University Biomolecular Sciences Institute, Miami, FL

Sept 2018 49th Annual Meeting of the Environmental Mutagenesis and Genomic Society 2018, San Antonio, TX (Symposium on UV Carcinogenesis)

Sept 2018 North Carolina State University Toxicology Program, Raleigh, NC

May 2018 39th Biennial Meeting of the American Society for Photobiology, Tampa, FL
Joint ASP/ESP Symposium on “Cutaneous DNA damage: new insights and approaches from translational human studies”

Jan 2018 Wright State University Department of Biochemistry & Molecular Biology, Dayton, Ohio

Sept 2017 17th Congress of the European Society for Photobiology, Pisa, Italy

Nov 2016 Indiana University Department of Dermatology, Indianapolis, Indiana

Oct 2016 University of Kentucky Department of Toxicology and Cancer Biology, Lexington, Kentucky

Sept 2016 Wright State University Department of Biochemistry & Molecular Biology, Dayton, Ohio

May 2016 38th Meeting of the American Society for Photobiology, Tampa, Florida

Dec 2015 NIEHS R21 Grantee Meeting on “The Role of Environmental Exposures in Autoimmune Disease”, Research Triangle Park, North Carolina

Apr 2015 University of Toledo Department of Biochemistry and Cancer Biology, Toledo, Ohio

Dec 2014 University of Mississippi Department of Biochemistry, Jackson, Mississippi

Nov 2011 Florida Institute of Technology Department of Biological Sciences, Melbourne, Florida

Jan 2011 Tufts University Department of Biology, Medford, Massachusetts

OTHER RESEARCH PRESENTATIONS

June 2024 Annual Midwest DNA Repair Symposium (poster presentation), Louisville, Kentucky

May 2023 Annual Midwest DNA Repair Symposium (poster presentation), Iowa City, Iowa

May 2022 Annual Meeting of the Society for Investigative Dermatology; (poster presentation), Portland, Oregon

May 2021 Annual Meeting of the Society for Investigative Dermatology; Virtual Meeting (poster presentation)

May 2020 78th Annual Meeting of the Society for Investigative Dermatology; Virtual Meeting (pre-recorded presentation)

Sept 2019 50th Annual Meeting of the Environmental Mutagenesis and Genomics Society (poster presentation), Washington D.C.

May 2019 77th Annual Meeting of the Society for Investigative Dermatology (poster presentation), Chicago, Illinois

May 2019 21st Annual Midwest DNA Repair Symposium (poster presentation), St. Louis, Missouri

May 2018 5th International Investigative Dermatology Meeting (oral and poster presentation), Orlando, Florida

May 2018 20th Annual Midwest DNA Repair Symposium (poster presentation), Case Western Reserve University, Cleveland, Ohio

May 2017 19th Annual Midwest DNA Repair Symposium (poster presentation), Wright State University, Dayton, Ohio

Sept 2016 47th Annual Meeting of the Environmental Mutagenesis and Genomics Society (oral and poster presentation), Kansas City, Missouri

May 2016 18th Annual Midwest DNA Repair Symposium (oral and poster presentation)
Ohio State University, Columbus, Ohio

Jun 2015 17th Annual Midwest DNA Repair Symposium (poster presentation)
Indiana University, Bloomington, Indiana

Oct 2014 Department of Biochemistry and Biophysics Department Retreat (poster presentation),
University of North Carolina, Chapel Hill, North Carolina

May 2014 16th Annual Midwest DNA Repair Symposium (oral and poster presentations), Wayne State University, Detroit, Michigan

Sept 2012 43rd Annual Meeting of the Environmental Mutagen Society (oral presentation), Bellevue, Washington

May 2012 14th Annual Midwest DNA Repair Symposium (poster presentation), University of Cincinnati, Cincinnati, Ohio

May 2011 13th Annual Midwest DNA Repair Symposium (oral presentation), University of Toledo, Toledo, Ohio

Oct 2010 Genetics and Environmental Mutagenesis Society Meeting (oral presentation), Durham, North Carolina

May 2010 12th Annual Midwest DNA Repair Symposium (oral presentation), University of Louisville, Louisville, Kentucky

Oct 2007 Determinants of Genome Stability in Human Disease Conference (poster presentation), Chapel Hill, North Carolina

Feb 2006 Wright State School of Medicine Central Research Forum (poster presentation), Dayton, Ohio

Sept 2005 Eukaryotic DNA Replication Meeting (poster presentation), Cold Spring Harbor Laboratory, New York

Sept 2003 Molecular Biology Retreat (oral presentation), Wright State University, Dayton, Ohio

Sept 2003 Eukaryotic DNA Replication Meeting (poster presentation), Cold Spring Harbor Laboratory, New York

Feb 2001 Biophysical Society Meeting (poster presentation), Boston, Massachusetts