Xiaoli Zhang, PhD
University of South Florida, College of Nursing
Tampa, Florida
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EDUCATION

2006 Doctor of Philosophy (PhD), Molecular Biology with minor in Genetics
Iowa State University, Department of Molecular, Cellular, and Developmental Biology
Ames, IA

2006 Master of Science (MS), Statistics
Iowa State University, Department of Statistics
Ames, IA

2001 Master of Science (MS), Molecular and Cellular Biology
University of Science and Technology of China (USTC), Department of Molecular, Cellular Biology and Genetics
Hefei, China

1995 Bachelor of Science (BS), Biochemistry
Yantai University, Department of Biochemistry
Yantai, China

PROFESSIONAL EXPERIENCE

PRESENT POSITION

2024-Present *Professor*
Director, Biostatistical Core
College of Nursing
University of South Florida
Tampa, FL

2024-Present *Professor (Courtesy Faculty Member)*
College of Public Health
University of South Florida
Tampa, FL

ACADEMIC APPOINTMENT & POSITION

2021-2024 *Associate Professor*
Department of Bioinformatics/Center for Biostatistics
The Ohio State University
Columbus, OH

2020-2024 *Affiliate faculty*
Translational Data Analytics Institute (TDAI)
The Ohio State University
Columbus, OH

2019-2021 *Research Assistant Professor*
Department of Bioinformatics/Center for Biostatistics
The Ohio State University
Columbus, OH

2006-2018 *Research Scientist*
Department of Bioinformatics/Center for Biostatistics
The Ohio State University
Columbus, OH

2001-2006 *Research Assistant*
Department of Molecular, Cellular, and Developmental Biology
Iowa State University
Ames, IA

1998-2001 *Research Assistant*
University of Science and Technology of China (USTC), Department of Molecular, Cellular Biology and Genetics
Hefei, China

ACADEMIC LEADERSHIP POSITION

2024-Present *Director, Biostatistics Core*
College of Nursing
University of South Florida
Tampa, FL

2024-Present *Director, Biostatistics and Bioinformatics Core*
Program Project (P01AI175399), Role of the non-canonical Inflammasome in SARS-CoV-2-mediated pathology and coagulopathy
The Ohio State University
Columbus, OH

2020-2024 *Chair, Award Committee*
Department of Biomedical Informatics
The Ohio State University
Columbus, OH

2020-2024 *Lead faculty Biostatistician*
Leukemia, Lymphoma, and Melanoma Research Group
The Ohio State University
Columbus, OH

2013-Present *Director of Biostatistics Core (Administrative and Biostatistics Core)*
Program Project (P01CA125066), Discovery of Anticancer Agents of Diverse Natural Origin
The Ohio State University
Columbus, OH

AWARDS AND DISTINCTIONS

2020 Inaugural Award for Excellence in Collaborative Research,
Department of Biomedical Informatics, The Ohio State University

2006 Research Excellence Award
Department of Biochemistry, Biophysics, and Molecular Biology, Iowa State University.
Presented to the graduate students in recognition of their outstanding research performance.

2006 President's Research Excellence Award, Iowa State University

Presented annually to the most outstanding Ph.D. students in recognition of their excellent research during graduate study.

2005 Graduate Student Travel Award
American Society of Plant Biologist meeting at Seattle, Washington and Plant Biology meeting at Madison, Wisconsin
Iowa State University

2001-2006 Premium for Academic Excellence (PACE) scholarship, Iowa State University.

PUBLICATIONS (**peer-reviewed**)

mentee, *Senior Author

1. *__Zhang, X__., #Huang, Y., #Yang, Y., Wang, Q. E., & Li, L. (2024). Advancements in prospective single-cell lineage barcoding and their applications in research. Genome Res. https://doi.org/10.1101/gr.278944.124
2. Singh, D., Qiu, Z., Jonathan, S. M., Fa, P., Thomas, H., Prasad, C. B., Cai, S., Wang, J. J., Yan, C., **Zhang, X**., Venere, M., Li, Z., Sizemore, S. T., Wang, Q. E., & Zhang, J. (2024). PP2A B55alpha inhibits epithelial-mesenchymal transition via regulation of Slug expression in non-small cell lung cancer. Cancer Lett, 598, 217110. https://doi.org/10.1016/j.canlet.2024.217110
3. Prislusky, M. I., Lam, J. G. T., Contreras, V. R., Ng, M., Chamberlain, M., Pathak-Sharma, S., Fields, M., **Zhang, X**., Amer, A. O., & Seveau, S. (2024). The septin cytoskeleton is required for plasma membrane repair. EMBO Rep, 25(9), 3870-3895. https://doi.org/10.1038/s44319-024-00195-6
4. #Kuang, Z., Miao, J., & *__Zhang, X__. (2024). Serum albumin and derived neutrophil-to-lymphocyte ratio are potential predictive biomarkers for immune checkpoint inhibitors in small cell lung cancer. Front Immunol, 15, 1327449. https://doi.org/10.3389/fimmu.2024.1327449
5. Prasad, C. B., Oo, A., Liu, Y., Qiu, Z., Zhong, Y., Li, N., Singh, D., Xin, X., Cho, Y. J., Li, Z., **Zhang, X**., Yan, C., Zheng, Q., Wang, Q. E., Guo, D., Kim, B., & Zhang, J. (2024). The thioredoxin system determines CHK1 inhibitor sensitivity via redox-mediated regulation of ribonucleotide reductase activity. Nat Commun, 15(1), 4667. https://doi.org/10.1038/s41467-024-48076-9
6. Badr, A., Daily, K. P., Eltobgy, M., Estfanous, S., Tan, M. H., Chun-Tien Kuo, J., Whitham, O., Carafice, C., Gupta, G., Amer, H. M., Shamseldin, M. M., Yousif, A., Deems, N. P., Fitzgerald, J., Yan, P., Webb, A., **Zhang, X**., Pietrzak, M., Ghoneim, H. E.,…Amer, A. O. (2024). Microglia-targeted inhibition of miR-17 via mannose-coated lipid nanoparticles improves pathology and behavior in a mouse model of Alzheimer's disease. Brain Behav Immun, 119, 919-944. https://doi.org/10.1016/j.bbi.2024.05.006
7. Denlinger, N., Song, N. J., **Zhang, X**., Jeon, H., Peterson, C., Wang, Y., Reynolds, K., Bolz, R. M., Miao, J., Song, C., Wu, D., Chan, W. K., Bezerra, E., Epperla, N., Voorhees, T. J., Brammer, J., Kittai, A. S., Bond, D. A., Sawalha, Y.,…Yang, Y. (2024). Postinfusion PD-1+ CD8+ CAR T cells identify patients responsive to CD19 CAR T-cell therapy in non-Hodgkin lymphoma. Blood Adv, 8(12), 3140-3153. https://doi.org/10.1182/bloodadvances.2023012073
8. Liu, Z., Liao, Y., Hwang, C. L., Rethorst, C. D., & *__Zhang, X__. (2024). Associations of online health information seeking with health behaviors of cancer survivors. Digit Health, 10, 20552076241238074. https://doi.org/10.1177/20552076241238074
9. Daily, K. P., Badr, A., Eltobgy, M., Estfanous, S., Whitham, O., Tan, M. H., Carafice, C., Krause, K., McNamara, A., Hamilton, K., Houle, S., Gupta, S., Gupta, G. A., Madhu, S., Fitzgerald, J., Saadey, A. A., Laster, B., Yan, P., Webb, A., **Zhang, X**…Amer, A. O. (2024). DNA hypomethylation promotes the expression of CASPASE-4 which exacerbates inflammation and amyloid-beta deposition in Alzheimer's disease. Alzheimers Res Ther, 16(1), 29. https://doi.org/10.1186/s13195-024-01390-2
10. Chan, W. K., Williams, J., Sorathia, K., Pray, B., Abusaleh, K., Bian, Z., Sharma, A., Hout, I., Nishat, S., Hanel, W., Sloan, S. L., Yasin, A., Denlinger, N., **Zhang, X**., Muthusamy, N., Vasu, S., de Lima,

M., Yang, Y., Baiocchi, R., & Alinari, L. (2023). A novel CAR-T cell product targeting CD74 is an effective therapeutic approach in preclinical mantle cell lymphoma models. Exp Hematol Oncol, 12(1), 79. https://doi.org/10.1186/s40164-023-00437-8

11. Daily, K. P., Badr, A., Eltobgy, M., Estfanous, S., Whitham, O., Tan, M. H., Carafice, C., Krause, K., McNamara, A., Hamilton, K., Houle, S., Gupta, S., Gupta, G. A., Madhu, S., Fitzgerald, J., Saadey, A. A., Laster, B., Yan, P., Webb, A.,…Amer, A. O. (2023). DNA hypomethylation promotes the expression of CASPASE-4 which exacerbates neuroinflammation and amyloid-beta deposition in Alzheimer's disease The Ohio State University College of Medicine. bioRxiv. https://doi.org/10.1101/2023.08.30.555526
12. Lavudi, K., Banerjee, A., Li, N., Yang, Y., Cai, S., Bai, X., **Zhang, X**., Li, A., Wani, E., Yang, S. M., Zhang, J., Rai, G., Backes, F., Patnaik, S., Guo, P., & Wang, Q. E. (2023). ALDH1A1 promotes PARP inhibitor resistance by enhancing retinoic acid receptor-mediated DNA polymerase theta expression. NPJ Precis Oncol, 7(1), 66. https://doi.org/10.1038/s41698-023-00411-x
13. Ahmed, E. H., Lustberg, M., Hale, C., Sloan, S., Mao, C., **Zhang, X**., Ozer, H. G., Schlotter, S., Smith, P. L., Jeney, F., Chan, W. K., Harrington, B. K., Weigel, C., Brooks, E., Klimaszewski, H. L., Oakes, C. C., Abebe, T., Ibrahim, M. E., Alinari, L.,…Baiocchi, R. A. (2023). Follicular Helper and Regulatory T Cells Drive the Development of Spontaneous Epstein-Barr Virus Lymphoproliferative Disorder. Cancers (Basel), 15(11). https://doi.org/10.3390/cancers15113046
14. Prasad, C. B., Oo, A., Qiu, Z., Li, N., Singh, D., Xin, X., Cho, Y. J., Li, Z., **Zhang, X**., Yan, C., Zheng, Q., Shao, J., Wang, Q. E., Kim, B., & Zhang, J. (2023). The thioredoxin system determines CHK1 inhibitor sensitivity via redox-mediated regulation of ribonucleotide reductase activity. Res Sq. https://doi.org/10.21203/rs.3.rs-2814118/v1
15. Hanel, W., Shindiapina, P., Bond, D. A., Sawalha, Y., Epperla, N., Voorhees, T., Welkie, R. L., Huang, Y., Behbehani, G. K., *__Zhang, X__., #McLaughlin, E., Chan, W. K., Brammer, J. E., Jaglowski, S., Reneau, J. C., Christian, B. A., William, B. M., Cohen, J. B., Baiocchi, R. A.,…Alinari, L. (2023). A Phase 2 Trial of Ibrutinib and Nivolumab in Patients with Relapsed or Refractory Classical Hodgkin's Lymphoma. Cancers (Basel), 15(5). https://doi.org/10.3390/cancers15051437
16. Liu, X., Chang, Y., Choi, S., Cai, C., *__Zhang, X__., & Pan, Z. (2023). Blocking Store-Operated Ca(2+) Entry to Protect HL-1 Cardiomyocytes from Epirubicin-Induced Cardiotoxicity. Cells, 12(5). https://doi.org/10.3390/cells12050723
17. Badr, A., Eltobgy, M., Krause, K., Hamilton, K., Estfanous, S., Daily, K. P., Abu Khweek, A., Hegazi, A., Anne, M. N. K., Carafice, C., Robledo-Avila, F., Saqr, Y., **Zhang, X**., Bonfield, T. L., Gavrilin, M. A., Partida-Sanchez, S., Seveau, S., Cormet-Boyaka, E., & Amer, A. O. (2022). CFTR Modulators Restore Acidification of Autophago-Lysosomes and Bacterial Clearance in Cystic Fibrosis Macrophages. Front Cell Infect Microbiol, 12, 819554. https://doi.org/10.3389/fcimb.2022.819554
18. Salvi, A., Young, A. N., Huntsman, A. C., Pergande, M. R., Korkmaz, M. A., Rathnayake, R. A., Mize, B. K., Kinghorn, A. D., **Zhang, X**., Ratia, K., Schirle, M., Thomas, J. R., Brittain, S. M., Shelton, C., Aldrich, L. N., Cologna, S. M., Fuchs, J. R., & Burdette, J. E. (2022). PHY34 inhibits autophagy through V-ATPase V0A2 subunit inhibition and CAS/CSE1L nuclear cargo trafficking in high grade serous ovarian cancer. Cell Death Dis, 13(1), 45. https://doi.org/10.1038/s41419-021-04495-w
19. Cai, S., Li, N., Bai, X., Liu, L., Banerjee, A., Lavudi, K., **Zhang, X**., Zhao, J., Venere, M., Duan, W., Zhang, J., Welliver, M. X., He, K., & Wang, Q. E. (2022). ERK inactivation enhances stemness of NSCLC cells via promoting Slug-mediated epithelial-to-mesenchymal transition. Theranostics, 12(16), 7051-7066. https://doi.org/10.7150/thno.73099
20. Eltobgy, M. M., Zani, A., Kenney, A. D., Estfanous, S., Kim, E., Badr, A., Carafice, C., Daily, K., Whitham, O., Pietrzak, M., Webb, A., Kawahara, J., Eddy, A. C., Denz, P., Lu, M., Kc, M., Peeples, M. E., Li, J., Zhu, J.,…Amer, A. O. (2022). Caspase-4/11 exacerbates disease severity in SARS-CoV-2 infection by promoting inflammation and immunothrombosis. Proc Natl Acad Sci U S A, 119(21), e2202012119. https://doi.org/10.1073/pnas.2202012119
21. Banerjee, A., Cai, S., Xie, G., Li, N., Bai, X., Lavudi, K., Wang, K., **Zhang, X**., Zhang, J., Patnaik, S., Backes, F. J., Bennett, C., & Wang, Q. E. (2022). A Novel Estrogen Receptor beta Agonist

Diminishes Ovarian Cancer Stem Cells via Suppressing the Epithelial-to-Mesenchymal Transition. Cancers (Basel), 14(9). https://doi.org/10.3390/cancers14092311
22. Aldrich, L. N., Burdette, J. E., Carcache de Blanco, E., Coss, C. C., Eustaquio, A. S., Fuchs, J. R., Kinghorn, A. D., MacFarlane, A., Mize, B. K., Oberlies, N. H., Orjala, J., Pearce, C. J., Phelps, M. A., Rakotondraibe, L. H., Ren, Y., Soejarto, D. D., Stockwell, B. R., Yalowich, J. C., & **Zhang, X**. (2022). Discovery of Anticancer Agents of Diverse Natural Origin. J Nat Prod, 85(3), 702-719. https://doi.org/10.1021/acs.jnatprod.2c00036
23. Hong, Z., Liu, T., Wan, L., Fa, P., Kumar, P., Cao, Y., Prasad, C. B., Qiu, Z., Liu, J., Wang, H., Li, Z., Wang, Q. E., Guo, P., Guo, D., Yilmaz, A. S., Lu, L., Papandreou, I., Jacob, N. K., Yan, C., **Zhang, X**.,…Zhang, J. (2022). Targeting Squalene Epoxidase Interrupts Homologous Recombination via the ER Stress Response and Promotes Radiotherapy Efficacy. Cancer Res, 82(7), 1298-1312. https://doi.org/10.1158/0008-5472.CAN-21-2229
24. Hong, F., Lin, C. Y., Yan, J., Dong, Y., Ouyang, Y., Kim, D., **Zhang, X**., Liu, B., Sun, S., Gu, W., & Li, Z. (2022). Canopy Homolog 2 contributes to liver oncogenesis by promoting unfolded protein response-dependent destabilization of tumor protein P53. Hepatology, 76(6), 1587-1601. https://doi.org/10.1002/hep.32318
25. Abu Khweek, A., Joldrichsen, M. R., Kim, E., Attia, Z., Krause, K., Daily, K., Estfanous, S., Hamilton, K., Badr, A., Anne, M. N. K., Eltobgy, M., Corps, K. N., Carafice, C., **Zhang, X**., Gavrilin, M. A., Boyaka, P. N., & Amer, A. O. (2021). Caspase-11 regulates lung inflammation in response to house dust mites. Cell Immunol, 370, 104425. https://doi.org/10.1016/j.cellimm.2021.104425
26. Shindiapina, P., Pietrzak, M., Seweryn, M., McLaughlin, E., **Zhang, X**., Makowski, M., Ahmed, E. H., Schlotter, S., Pearson, R., Kitzler, R., Mozhenkova, A., Le-Rademacher, J., Little, R. F., Akpek, G., Ayala, E., Devine, S. M., Kaplan, L. D., Noy, A., Popat, U. R.,…Baiocchi, R. A. (2021). Immune Recovery Following Autologous Hematopoietic Stem Cell Transplantation in HIV-Related Lymphoma Patients on the BMT CTN 0803/AMC 071 Trial. Front Immunol, 12, 700045. https://doi.org/10.3389/fimmu.2021.700045
27. Estfanous, S., Daily, K. P., Eltobgy, M., Deems, N. P., Anne, M. N. K., Krause, K., Badr, A., Hamilton, K., Carafice, C., Hegazi, A., Abu Khweek, A., Kelani, H., Nimjee, S., Awad, H., **Zhang, X**., Cormet-Boyaka, E., Haffez, H., Soror, S., Mikhail, A.,…Amer, A. O. (2021). Elevated Expression of MiR-17 in Microglia of Alzheimer's Disease Patients Abrogates Autophagy-Mediated Amyloid-beta Degradation. Front Immunol, 12, 705581. https://doi.org/10.3389/fimmu.2021.705581
28. Lordo, M. R., Wu, K. G., Altynova, E., Shilo, N., Kronen, P., Nalin, A. P., Weigel, C., **Zhang, X**., Yu, J., Oakes, C. C., Caligiuri, M. A., Freud, A. G., & Mundy-Bosse, B. L. (2021). Acute Myeloid Leukemia Alters Group 1 Innate Lymphoid Cell Differentiation from a Common Precursor. J Immunol, 207(6), 1672-1682. https://doi.org/10.4049/jimmunol.2100023
29. Johnson, L. J., Azari, S., Webb, A., **Zhang, X**., Gavrilin, M. A., Marshall, J. M., Rood, K., & Seveau, S. (2021). Human Placental Trophoblasts Infected by Listeria monocytogenes Undergo a Pro-Inflammatory Switch Associated With Poor Pregnancy Outcomes. Front Immunol, 12, 709466. https://doi.org/10.3389/fimmu.2021.709466
30. Estfanous, S., Krause, K., Anne, M. N. K., Eltobgy, M., Caution, K., Khweek, A. A., Hamilton, K., Badr, A., Daily, K., Carafice, C., Baetzhold, D., **Zhang, X**., Li, T., Wen, H., Gavrilin, M. A., Haffez, H., Soror, S., & Amer, A. O. (2021). Author Correction: Gasdermin D restricts Burkholderia cenocepacia infection in vitro and in vivo. Sci Rep, 11(1), 12447. https://doi.org/10.1038/s41598-021-92047-9
31. Ahmed, E. H., Brooks, E., Sloan, S., Schlotter, S., Jeney, F., Hale, C., Mao, C., **Zhang, X**., McLaughlin, E., Shindiapina, P., Shire, S., Das, M., Prouty, A., Lozanski, G., Mamuye, A. T., Abebe, T., Alinari, L., Caligiuri, M. A., & Baiocchi, R. A. (2021). Targeted Delivery of BZLF1 to DEC205 Drives EBV-Protective Immunity in a Spontaneous Model of EBV-Driven Lymphoproliferative Disease. Vaccines (Basel), 9(6). https://doi.org/10.3390/vaccines9060555
32. Sloan, S. L., Renaldo, K. A., Long, M., Chung, J. H., Courtney, L. E., Shilo, K., Youssef, Y., Schlotter, S., Brown, F., Klamer, B. G., **Zhang, X**., Yilmaz, A. S., Ozer, H. G., Valli, V. E., Vaddi, K., Scherle,

P., Alinari, L., Kisseberth, W. C., & Baiocchi, R. A. (2021). Validation of protein arginine methyltransferase 5 (PRMT5) as a candidate therapeutic target in the spontaneous canine model of non-Hodgkin lymphoma. PLoS One, 16(5), e0250839. https://doi.org/10.1371/journal.pone.0250839

33. Bill, M., Goda, C., Pepe, F., Ozer, H. G., McNeil, B., **Zhang, X**., Karunasiri, M., Kulkarni, R., Kalyan, S., Papaioannou, D., Ferenchak, G., Garzon, R., Bradner, J. E., Marcucci, G., Caligiuri, M. A., & Dorrance, A. M. (2021). Targeting BRD4 in acute myeloid leukemia with partial tandem duplication of the MLL gene. Haematologica, 106(9), 2527-2532. https://doi.org/10.3324/haematol.2020.271627
34. **Zhang, X**., & Golomb, J. D. (2021). Neural Representations of Covert Attention across Saccades: Comparing Pattern Similarity to Shifting and Holding Attention during Fixation. eNeuro, 8(2). https://doi.org/10.1523/ENEURO.0186-20.2021
35. Estfanous, S., Krause, K., Anne, M. N. K., Eltobgy, M., Caution, K., Abu Khweek, A., Hamilton, K., Badr, A., Daily, K., Carafice, C., Baetzhold, D., **Zhang, X**., Li, T., Wen, H., Gavrilin, M. A., Haffez, H., Soror, S., & Amer, A. O. (2021). Gasdermin D restricts Burkholderia cenocepacia infection in vitro and in vivo. Sci Rep, 11(1), 855. https://doi.org/10.1038/s41598-020-79201-5
36. Azari, S., Johnson, L. J., Webb, A., Kozlowski, S. M., **Zhang, X**., Rood, K., Amer, A., & Seveau, S. (2021). Hofbauer Cells Spread Listeria monocytogenes among Placental Cells and Undergo Pro-Inflammatory Reprogramming while Retaining Production of Tolerogenic Factors. mBio, 12(4), e0184921. https://doi.org/10.1128/mBio.01849-21
37. Hamilton, K., Krause, K., Badr, A., Daily, K., Estfanous, S., Eltobgy, M., Khweek, A. A., Anne, M. N. K., Carafice, C., Baetzhold, D., Tonniges, J. R., **Zhang, X**., Gavrilin, M. A., Parinandi, N. L., & Amer, A. O. (2021). Defective immunometabolism pathways in cystic fibrosis macrophages. J Cyst Fibros, 20(4), 664-672. https://doi.org/10.1016/j.jcf.2020.10.006
38. Youssef, Y., Karkhanis, V., Chan, W. K., Jeney, F., Canella, A., **Zhang, X**., Sloan, S., Prouty, A., Helmig-Mason, J., Tsyba, L., Hanel, W., Zheng, X., Zhang, P., Chung, J. H., Lucas, D. M., Kauffman, Z., Larkin, K., Strohecker, A. M., Ozer, H. G.,…Alinari, L. (2021). Transducin beta-like protein 1 controls multiple oncogenic networks in diffuse large B-cell lymphoma. Haematologica, 106(11), 2927-2939. https://doi.org/10.3324/haematol.2020.268235
39. DiVincenzo, M. J., Latchana, N., Abrams, Z., Moufawad, M., Regan-Fendt, K., Courtney, N. B., Howard, J. H., Gru, A. A., **Zhang, X**., Fadda, P., & Carson, W. E. (2020). Tissue microRNA expression profiling in hepatic and pulmonary metastatic melanoma. Melanoma Res, 30(5), 455-464. https://doi.org/10.1097/CMR.0000000000000692
40. *__Zhang, X__., & Pan, Z. (2020). Influence of microbiota on immunity and immunotherapy for gastric and esophageal cancers. Gastroenterol Rep (Oxf), 8(3), 206-214. https://doi.org/10.1093/gastro/goaa014
41. *__Zhang, X__., #Shao, S., & Li, L. (2020). Characterization of Class-3 Semaphorin Receptors, Neuropilins and Plexins, as Therapeutic Targets in a Pan-Cancer Study. Cancers (Basel), 12(7). https://doi.org/10.3390/cancers12071816
42. *__Zhang, X__., #Klamer, B., Li, J., Fernandez, S., & Li, L. (2020). A pan-cancer study of class-3 semaphorins as therapeutic targets in cancer. BMC Med Genomics, 13(Suppl 5), 45. https://doi.org/10.1186/s12920-020-0682-5
43. Alayo, Q. A., Ito, H., Passaro, C., Zdioruk, M., Mahmoud, A. B., Grauwet, K., **Zhang, X**., Lawler, S. E., Reardon, D. A., Goins, W. F., Fernandez, S., Chiocca, E. A., & Nakashima, H. (2020). Glioblastoma infiltration of both tumor- and virus-antigen specific cytotoxic T cells correlates with experimental virotherapy responses. Sci Rep, 10(1), 5095. https://doi.org/10.1038/s41598-020-61736-2
44. Sengupta, D., Cassel, T., Teng, K. Y., Aljuhani, M., Chowdhary, V. K., Hu, P., **Zhang, X**., Fan, T. W., & Ghoshal, K. (2020). Regulation of hepatic glutamine metabolism by miR-122. Mol Metab, 34, 174-186. https://doi.org/10.1016/j.molmet.2020.01.003
45. Misra, S., **Zhang, X**., Wani, N. A., Sizemore, S., & Ray, A. (2020). Both BRCA1-wild type and -mutant triple-negative breast cancers show sensitivity to the NAE inhibitor MLN4924 which is

enhanced upon MLN4924 and cisplatin combination treatment. Oncotarget, 11(8), 784-800. https://doi.org/10.18632/oncotarget.27485
46. Liva, S. G., Tseng, Y. C., Dauki, A. M., Sovic, M. G., Vu, T., Henderson, S. E., Kuo, Y. C., Benedict, J. A., **Zhang, X**., Remaily, B. C., Kulp, S. K., Campbell, M., Bekaii-Saab, T., Phelps, M. A., Chen, C. S., & Coss, C. C. (2020). Overcoming resistance to anabolic SARM therapy in experimental cancer cachexia with an HDAC inhibitor. EMBO Mol Med, 12(2), e9910. https://doi.org/10.15252/emmm.201809910
47. Karkhanis, V., Alinari, L., Ozer, H. G., Chung, J., **Zhang, X**., Sif, S., & Baiocchi, R. A. (2020). Protein arginine methyltransferase 5 represses tumor suppressor miRNAs that down-regulate CYCLIN D1 and c-MYC expression in aggressive B-cell lymphoma. J Biol Chem, 295(5), 1165-1180. https://doi.org/10.1074/jbc.RA119.008742
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COMMENTARIES/EDITORIALS/BOOK REVIEWS

183. ***Zhang, X**., & Yu, J. (2010). Target recognition-induced NK-cell responses. Blood, 115(11), 2119-2120. https://doi.org/10.1182/blood-2010-01-260448

BOOKS CHAPTERS

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POSTER PRESENTATIONS (peer-reviewed) **(Since 2015)**

National

1. Zhan P, **Zhang X***. Serum albumin and derived neutrophil-to-lymphocyte ratio are potential predictive biomarkers for immune checkpoint inhibitors in small cell lung cancer. AACR. 2024. Poster Presentation.
2. **Zhang X***, Zhang J. A gene signature of DNA damage response pathway is predictive of patient clinical outcomes and is associated with the tumor immune microenvironment of lung adenocarcinoma. AACR conference. 2023. Poster presentation.
3. Shao S, Wang Q, Li L, **Zhang X***. Activation of TGFβ1 signaling pathway in ovarian cancer stem cells plays critical role in ovarian cancer tumorigenesis. 2020. American Association of Cancer Research (AACR). **Poster presentation**. Due to COVID-19, the e-poster with audio presentation was presented in June.
4. **Zhang X***, Ghoshal K, Fernandez S, Li L. Identification of a subtype of hepatocellular carcinoma with poor prognosis based on the expression of genes within the glucose metabolic pathway. April 2019. American Association of Cancer Research (AACR). Atlanta, GA. **Poster presentation**.
5. **Zhang X***, Ghoshal K, Fernandez S, Li L. Identification of a subtype of hepatocellular carcinoma with poor prognosis based on the expression of genes within the glucose metabolic pathway. 2019. Statistical Practice in Cancer Conference (SPCC). **Oral and Poster presentation**.
6. **Zhang X***, Fernandez S, Jhiang S, and Ringel M. A pan- cancer analysis of the secreted axon guidance protein class-3 semaphorins as therapeutic targets in cancer. May 2017. The Ohio State University Cancer Center Annual Scientific meeting, Columbus, OH. **Poster Presentation**.
7. **Zhang X***, Jhiang S, Fernandez S, Coombes K. Mir-551 and SEMA3D as potential therapeutic targets for thyroid cancer. Oct 2016. Translational Data Science (TDA) annual conference, The Ohio State University. **Poster presentation**.
8. **Zhang X***, Fernandez S, Jhiang S, Saji M, Ringel M. Mir-551 and SEMA3D as potential therapeutic targets for thyroid cancer. September 2016. 86th Annual meeting of the American Thyroid Association (ATA). Denver, Colorado. **Poster presentation**.

International

9. **Zhang X***, Zhang J. A Comprehensive Analysis of DNA Damage Repair Genes in NSCLC as Therapeutic Targets. 2022. ICGEB: at the intersection of DNA replication and genome maintenance: from mechanisms to therapy. Poster Presentation.

10. **Zhang X***, Ghoshal K. Dysregulated expression of glucose metabolic enzymes is associated with poor prognosis of patients with hepatocellular cancer. August 2018. Joint Statistical Meetings (JSM). Vancouver, Canada.

ORAL PRESENTATIONS

International

1. 08/2023 2023 JSM. Toronto, Canada. “Statistical methods for design, data analysis, and application of spatial transcriptomics experiments”.

2. 01/2018. 2018 Genome Conference. Las Vegas, NV, USA. “A pan-cancer analysis of the secreted axon guidance protein class-3 semaphorins as therapeutic targets in cancer”.

3. 06/2019 International Conference on Intelligent Biology and Medicine (ICIBM), Columbus, OH. “A pan-cancer analysis of the secreted axon guidance protein class-3. semaphorins as therapeutic targets in cancer”.

INVITED PRESENTATIONS

Regional

1. 04/2024 Department of Biomedical informatics (BMI), The Ohio State University (OSU). “Precision Medicine: Identification of Patient Subgroups for Better Treatment Outcomes”.
2. 07/2021 Upward Bound Program for high school students, The Ohio State University. “Statistics in medicine”.
3. 01/2021 BMI, The Ohio State University. Dysregulation of glucose metabolic pathway in hepatocellular carcinoma identified a subtype of patients with poor prognosis.
4. 11/2020 Translational Data Analytics Institute (TDAI), The Ohio State University. “Precision medicine in cancer: dysregulation of glucose metabolic pathway in hepatocellular carcinoma identified a subtype of patients with poor prognosis”.
5. 11/2020 Big Data & Analytics Association (BDAA), an undergraduate organization, OSU. “Bioinformatics in personized medicine”.
6. 2018/2019 Invited lecture for summer interns, BMI, OSU. “Why is statistics important in the medical field?”
7. 07/2017 Invited lecture for summer interns, BMI, OSU. “Introduction of TCGA (The Cancer Genome Atlas) and research use”.
8. 03/2017 Dr. Sissy Jhiang’s group, The Ohio State University, Columbus, OH “Introduction of The Cancer Genome Atlas (TCGA) and how it is used in cancer research”.

9. 10/2016 The Ohio State University, Columbus, OH
The thyroid cancer research group. “Mir-551b and SEMA3D as potential therapeutic targets for thyroid cancer”.

10. 04/2014 The Ohio State University, Columbus, OH
The visiting medical students from China and medical students at OSU medical center. “The importance of statistics in medicine and health care”.

National

11. 01/2024 University of South Florida, College of Nursing, “Unravelling Precision Medicine: The Power of Biostatistics, Bioinformatics, and Machine Learning”.

12. 11/2021 City of Hope, Department of Computational and Quantitative Medicine/Division of Biostatistics. “Cancer biomarker discovery in the development of precision medicine”.

13. 11/2021 Cancer Center, University of Cincinnati. “Using computational biology approaches for cancer biomarker discovery in precision medicine”.

14. 05/2021 Cancer Center, University of Illinois at Chicago. “Using computational biology approaches for cancer biomarker discovery in precision medicine”.

15. 12/2020 National Esophagus Cancer Research Group (NECRG), USA. “Axon guidance molecules calss-3 semaphorins and receptors, neuropilins and plexins, as therapeutic targets in cancer”. Virtual presentation.

16. 10/2019 University of Texas at Arlington, Arlington, TX.
Department of Biology, College of Science, and College of Nursing and Health Innovation. “Biostatistics and Bioinformatics in precision medicine: Identification of a subtype of hepatocellular carcinoma with poor prognosis based on expression of genes within the glucose metabolic pathway”.

International

17. 05/2024 The 20th Annual Congress of IDDST (International Drug Discovery Science and Technology). “Is immunotherapy the solution for liver cancer patients with dysregulated glucose metabolism?” Osaka, Japan.

18. 06/2019 Institute of Health Sciences, OSAKA, Japan. “Identification of a subtype of hepatocellular carcinoma with poor prognosis based on expression of genes within the glucose metabolic pathway”.

19. 07/2019 Air Force Medical University, Xi’an, China. Department of Urology: “Statistics in Clinical Studies”.

20. 07/2019 Air Force Medical University, Xi’an, China.
Department of Statistics: “Introduction of Bioinformatics in medicine and an example: Identification of a subtype of hepatocellular carcinoma with poor prognosis based on expression of genes within the glucose metabolic pathway”.

RESEARCH AND CREATIVE ACHIEVEMENTS

<u>RESEARCH GRANTS</u>

Current Grants

Agency: NIH/NIAID
I.D.# P01AI175399
Title: Role of the non-canonical Inflammasome in SARS-CoV-2-mediated pathology and coagulopathy
Role: Director of the Biostatistics and Bioinformatics Core (MPI: Amer/Cormet-Boyaka/Li, OSU)
Percent effort: 15%
Total award: $472,308
Project period: 04/01/2024-02/28/2029

Agency: NIH/NCI
I.D.# R01CA208353
Title: Elucidation of Human Natural Killer Cell Development
Role: Co-I (PI, Freud, OSU)
Percent effort: 3%
Total award: $53,397
Project period: 05/01/2023 - 04/30/2028

Agency: NIH/NIAID
I.D.# R01AG082113
Title: Targeting specific MicroRNA to alleviate Alzheimer's Disease pathobiology
Role: Co-I (PI, Dr. Amer, OSU)
Percent effort: 5%
Total award: $221,000
Project period: 04/01/2023-03/31/2028

Agency: NIH/NCI
I.D.# R01CA266682
Title: Targeting c-Myc stability in c-Myc overexpressing
Role: CO-I (PI: Alinari, OSU)
Percent effort: 3%
Total award: $28,589
Project period: 04/01/2022-03/31/2027

Agency: NIH/NIAID
I.D.# R01AI157205
Title: Host responses to the pore-forming toxin Listeriolysin O
Role: Co-I (PI: Dr. Seveau, OSU)
Percent effort: 5%
Total award: $111,666
Project period: 04/01/2021-03/31/2026

Agency: NIH/NIAID
I.D.# R01AI159452
Title: The role of the non-canonical inflammasome in innate immunity
Role: Co-I (PI: Dr. Amer/Seveau, OSU)
Percent effort: 6%
Total award: $151,000
Project period: 06/11/2021 - 05/31/2026

Pending Grants

Agency: NIH/NCI
I.D.# R01
Title: Targeting Squalene Epoxidase for Breast Cancer Therapy
Role: Co-investigator (PI: Zhang J, OSU)
Percent effort: 5%
Total award: $111,666
Project period: 07/01/2025-06/30/2030

Agency: NIH/NCI
I.D.# P01
Title: Discovery of Anticancer Agents of Diverse Natural Origin
Role: Director for Biostatistics Core (PI: Kinghorn, OSU)
Percent effort: 15%
Total award: $385,000
Project period: 07/01/2025-06/30/2030

Agency: NIH/NCI
I.D.# R01
Title: Targeting STING Deficient Non-Small Cell Lung Cancer
Role: Co-investigator (PI: Zhang J, OSU)
Percent effort: 5%
Total award: $111,666
Project period: 07/01/2025-06/30/2030

Agency: NIH/NIAID
I.D.# R01AI157205
Title: Role of Placental Macrophages and Listeria monocyt
Role: Co-I (PI: Dr. Seveau, OSU)
Percent effort: 5%
Total award: $111,666
Project period: 07/01/2025-06/30/2030

Completed Grants (62 total)

Extramural Funding

1. P01 CA125066-11A1 (PI: Kinghorn) 05/15/2020-04/30/2025 15% FTE
   NCI/NIH $1,317,638 (total DC, year 11)
   Title: Discovery of Anticancer Agents of Diverse Natural Origin
   The overall goal of this program project is to discover novel chemicals from selected tropical rainforest plants, as well as U.S. lichens and their mycobionts, cyanobacteria and fungi, for development as cancer chemotherapeutic agents, particularly for tumors that cannot be cured by present treatment methods.
   The principal objective of the biostatistics core will be to provide project investigators a centralized resource for statistical expertise. Statistical issues will be addressed at all levels of investigation: from the design of experiments, to the maintenance of data quality, and to the description and inferential statements made from the collected data.
   Role: Biostatistics core director

2. R01CA292020 (PI: Ganju) 07/01/2024 - 06/30/2029 5% FTE
NCI/NIH $469,544/ Yr. 1
Title: Unravel the novel role of S100A7 and its functional partners in metastatic triple negative breast cancer racial disparity
Our proposed research aims to meticulously uncover how S100A7 orchestrates IFNγ responsive genes (PD-L1 and Fas) to generate an immunosuppressive TME in AA TNBC
Role: Co-Investigator (Lead Biostatistician)

3. METAvivor Research and Support Inc.(PI: Cherian) 07/01/2024-6/30/2027 4% FTE
Title: Sulfatase 2 inhibition to intensify chemotherapy and immunotherapy responses in metastatic triple-negative breast cancer
This project aims to determine the potential of a new class of drugs called sulfatase 2 inhibitors to treat metastatic triple-negative breast cancer, prolong patient survival and improve their quality of life.
Role: Co-Investigator

4. R01 CA276374 (PIs: Alinari/Delima/Vasu) 09/01/2023-08/31/2028 7% FTE
NCI/NIH
Title: Trispecific CAR-T cells targeting CD19, CD20, and CD22 to treat B-cell malignancies.
Major goals: to conduct a phase I, first-in-human study evaluating safety and feasibility of in-house manufactured trispecific CAR-Ts targeting CD19/CD20/CD22 in patients with B-cell malignancies, and to identify key mechanisms of efficacy and resistance to trispecific CD19/CD20/CD22 targeting CAR-Ts in B-cell malignancies.
Role: Co-Investigator (Lead Biostatistician)

5. R01 CA270166 (PI: Hong). 03/01/2023-02/28/2028 5%FTE
NCI $2,318,520
Title: Defining the role of CNPY2 in promoting tumor progression through mediation of macrophage
Major Goals: The goal is to test the hypothesis that CNPY2 promotes liver oncogenesis by enhancing ER stress/UPR and inflammation centered on heightened activation of hepatic resident macrophages.
Role: Co-Investigator (Lead Biostatistician)

6. W81XWH2210647(PI: Ringel) 07/01/22-06/30/2026 5% FTE
DOD Total $1,937,341.00
Title: Mechanisms of metastasis suppression and translational applications in thyroid cancer
Role: Co-Investigator

7. U01AI168619 (PI: Abhay). 04/01/22-03/31/27 5% FTE
National Institute of Allergy and Infectious Diseases $ 4,368,650
A multidisciplinary approach to study ecotypes: A multidisciplinary approach to study ecotypes driving transmission and pathogenesis of Visceral Leishmaniasis (VL) and Post kala-azar dermal leishmaniasis (PKDL) in Eastern Africa.
Role: Co-Investigator (Lead Biostatistician)

8. R01 (PI: Mundy-Bosse) 10/01/2021 - 09/30/2026 5% FTE
NCI/NIH $3,104,001
Title: Dysregulation of Innate Lymphoid Immunity in Acute Myeloid Leukemia
Role: Co-Investigator (Lead Biostatistician)

9. RSG-21-150-01-CDP (PI: Oakes) 01/01/2022 - 12/31/2025 5% FTE
   ACS $792,000
   Title: Targeting the Developmental Blockade in Extranodal NK/T cell Lymphoma
   Role: Co-Investigator (Lead Biostatistician

10. R01CA249198-01A1 (PI: Zhang, J) 02/01/2021-01/31/2026 5%FTE
    NIH
    Targeting cholesterol metabolism and replication stress response in cancer therapy
    Squalene epoxidase (SQLE), an enzyme that controls cholesterol biosynthesis, is frequently overexpressed in lung cancer and is associated with poor prognosis. The goal of our application is to develop innovative strategies of combining SQLE and ATR/CHK1 inhibition to treat NSCLC due to its impact in interruption of function of endoplasmic reticulum.
    Role: Co-Investigator (Lead Biostatistician/Bioinformatician)

11. R01 CA240374 (PI: Zhang, J.) 06/01/2020-05/31/2025 5% FTE
    NIH $250,000
    Title: B55 alpha deficiency as a therapeutic target in cancer
    The goal of this application is to explore new approaches to treat B55 α-defective ovarian cancers by studying a new synthetic lethal interaction between B55 α deficiency and cell cycle checkpoint kinases inhibition.
    Role: Co-Investigator (Lead Biostatistician)

12. R01CA240302 (PI: Ringel) 04/01/2020 - 03/31/2025 10% FTE
    NCI $2,872,279
    Title: RCAN 1.4 metastasis suppressor in thyroid cancer
    The goal of this project is to establish the role of RCAN1.4 in mediating the tumorigenic and pro-metastatic immune environment ultimately resulting in thyroid cancer progression.
    Role: Co-Investigator (Lead Biostatistician)

13. R01HL163849 (PI: Garzon) 08/15/22-07/31/2027 (moved) 4% FTE
    National Heart, Lung, and Blood Institute $2,221,324.00
    Title: GR128677 Developing novel therapies to improve blood stem cell transplantation outcomes
    Role: Co-Investigator (Lead Biostatistician)

14. R01CA259182 (PI: Dorrance) 03/04/2022 - 02/28/2027 (moved) 5% FTE
    Title: Crosstalk between leukemic blasts and the BM microenvironment contribute to leukemic transformation.
    Acute Myeloid Leukemia (AML) is a blood cancer that carries poor prognosis. We discovered that a protein called EGFL7 promotes AML. Targeting this protein using an antibody is a promising new way to kill AML cells. We propose to elucidate how EGFL7 facilitates leukemia and to develop novel combination therapies for AML.
    Role: Co-Investigator (Lead Biostatistician)

15. R01CA248027-01A1 (PI: Wang) 05/01/2021 – 04/30/2026 10%FTE
    NIH/NCI
    Role of ALDH in PARP inhibitor resistance in HR-deficient ovarian cancer
    The major goals of this project are to determine the contribution of ALDH1A1 overexpression to PARPi resistance in BRCA1/2-mutated EOC cells, and test the efficacy of targeting this mechanism in preventing and reversing PARPi resistance in these cells.

Role: Co-Investigator (Lead Biostatistician/Bioinformatician)

16. R01CA231857 (PI: Ramaswamy) 04/01/2019 - 03/31/2024 5% FTE
NCI $2,216,521
Title: Addressing cancer disparity through defining the molecular link between breastfeeding and triple negative breast cancer
The goal is to understand whether the disparity between African American and white American on breast-feeding could affect the incidence of triple negative breast cancer and to study the related molecular mechanisms.
Role: Co-Investigator (Lead Biostatistician)

17. P01CA214274 (PI: Chen-Kiang) 09/01/18-06/30/2023 8% FTE
Cornell University (Prime: NCI) $532,289
Title: Mechanism based targeting of mantle cell lymphoma
The goal is to use an integrated, functional genomics approach to discover PRMT5-driven genetic programs altered in MCL that could lead to the identification of new strategies to treat this disease.
The principal objective of the biostatistics core will be to provide project investigators a centralized resource for statistical expertise.
Role: Site PI of the Biostatistics Core of the OSU subcontract

18. E01 W81XWH2110287 (PI: Wang) 05/01/2021 – 04/30/2023 2.5%FTE
Depart of Defense
Targeting translesion synthesis to overcome PARP inhibitor.
The main objective of this proposal is to elucidate a novel mechanism underlying PARPi resistance in BRCA1/2-mutated EOC cells, and determine whether targeting this mechanism can prevent PARPi resistance in these patients.
Role: Co-Investigator (Lead Biostatistician/Bioinformatician)

19. ACS (PI: Dorrance) 02/01/18-12/31/2022 5% FTE
American Cancer Society (ACS)
Title: Elucidating the role of Epithelial Growth Factor Like 7 (EGFL7) in malignant hematopoiesis
The goal is to evaluate the role of EGFL7 in malignant hematopoiesis and as a therapeutic target by using primary AML patient cells and animal models .
Role: Co-Investigator (Lead Biostatistician)

20. R21 (MPI: Amer/Jarjour) 03/18/2021-02/28/2023 5%FTE
NIH
Susceptibility determinants to Legionella pneumoph
The goal of this proposal is to test the hypothesis that cigarette smoke alters the methylation and expression of genes that are essential for restricting Legionella infection in human alveolar macrophages.
Role: Co-Investigator

21. R21 (PI: Amer) 07/01/2020 - 04/30/2022 5% FTE
NIH $408,944
Mechanistic basis of inflammation in Alzheimer's Disease.
This project will test the hypothesis that the excess expression of caspase-11 in the AD brain mediates increased production of IL-1B that promotes more production of APP and provokes cognitive decline.
Role: Co-Investigator (Lead Biostatistician)

22. W81XWH1910088 (PI: Ganju) 05/01/19-04/30/2022 5% FTE
DOD $1,170,000
Title: RAGE: A novel therapeutic target against metastatic and triple negative breast cancer
The goal is to understand how RAGE is involved in TNBC metastasis and to develop therapeutic strategy to target RAGE.
Role: Co-Investigator (Lead Biostatistician)

23. R21AG067755 (PI: Amer) 08/01/2020-04/30/2022 5% FTE
National Institute on Aging
Title: Alzheimer's disease biomarker for diagnosis and prognosis
In this project we will examine the possibility of testing if a new small molecule can inform us with the health state of the brain.
Role: Co-Investigator (Lead Biostatistician)

24. R21CA241242 (PI: Zhang J) 06/01/2020-05/31/2022 5% FTE
NIH/NCI
Title: Interruption of cholesterol metabolism and replication stress response in cancer therapy.
The objective of this application is to develop innovative strategies to target lung cancer cells by inhibition of cholesterol metabolism and cell cycle checkpoint inhibitors.
Role: Co-Investigator (Lead Biostatistician)

25. DOD grant: LC190174 (PI: Zhang, J) 07/01/2020-06/30/2022 5% FTE
Department of Defense
Title: Targeting Lung Cancer with a Defect in PP2A-B55 Alpha
The goal of this application is to determine that PP2A-B55 Alpha is a new biomarker predictive of the response to ATR in treating non-small cell lung cancer.
Role: Co-Investigator (Lead Biostatistician)

26. R01CA208353 (PI: Freud) 02/01/2017 - 01/31/2022 5% FTE
NCI/NIH $1,769,351
Title: Elucidation of human natural killer cell development
The goal is to understand how NK cells develop from stage I to mature functional NK cells and the stage specific biomarkers.
Role: Co-Investigator (Lead Biostatistician)

27. R21CA2245590 (PI: Zhang, J) 12/06/19-11/30/2021 5% FTE
NCI $401,115
Title: Interruption of squalene epoxidase and DNA damage response in cancer therapy
The objective is to test the hypothesis that squalene accumulation and replication stress response inhibition could synergistically suppress the growth of lung cancer.
Role: Co-Investigator (Lead Biostatistician)

28. R01CA211175 NCI (PI: Wang) 12/19/2016 -11/30/2021 5% FTE
NCI /NIH $2,319,991
Title: Averting recurrent and resistant ovarian tumors
The goal is to study whether enhanced expression of Polη in ovarian CSCs contributes to the tumor regrowth, mutagenesis in CSCs, and the development of cisplatin resistance after chronic cisplatin treatment.
Role: Co-Investigator (Lead Biostatistician)

29. P01CA163205 (PI: Fernandez) 09/18/2018 - 08/31/2020 8%FTE
The Brigham and Women’s Hospital (Prime: NIH) $298,802

Title: Circumventing barriers to effective oncolytic virotherapy of malignant gliomas
The goal of this project is to investigate the mechanisms involved in malignancy of gliomas and develop virology related therapeutics to target malignant gliomas.
Role: Co-Investigator (Lead Biostatistician)

30. 9R01CA193244-05A1 NIH/NCI (PI: Ghoshal) 02/01/15-01/31/2020 5%FTE
Role of Micro-RNA 122 in hepatocellular cancer
The major goals of this project are to investigate the role of mir-122 during hepatocellular cancer development.
Role: Co-Investigator

31. R01CA185055 NIH/NCI (PI: Pan) 02/01/15-01/31/2020 5%FTE
Orai1 and Junctophilin Function in Esophageal Cancer
The goal is to investigate the functional importance of Orai1, a channel at plasma membrane that regulates Ca2+ entry, and JP3, a junctophilin that facilitates junctional membrane complex formation, in esophageal squamous cell carcinoma (ESSC) due to their elevated levels in this cancer.
Role: Principle Investigator for the OSU subcontract.

32. DOD: Army Medical Res Acquisition Activity (PI:Ganju) 02/01/17-01/31/2020 5%FTE
CNR2: A novel therapeutic target against aggressive and metastatic breast cancer.
Role: Co-Investigator

33. R01 (60066634) (PI: Guo,Lianwang) 07/01/18-06/30/2019 3%FTE
NCI
Targeting PERK: An endothelium-protective stent-free strategy for mitigation of intimal hyperplasia after vascular surgery
Role: Co-Investigator

34. P01- 2P01CA125066-06A1 NIH/NCI (PI: Kinghorn) 06/06/14-05/31/2019 (renewed in 2013 for a 2nd term)
Discovery of anticancer agents of diverse natural origin
The major goals of this project are to discover anti-cancer agents and define their function on cancer treatment and inhibition.
Role: Co-Investigator (Biostatistics Core leader)

35. R01CA109527 NIH/NCI (PI: Ganju) 08/06/14-07/31/2019 5%FTE
Role of slit in CXCR4-mediated breast cancer metastasis
The major goals of this project are to understand the CXCR4 mediated breast cancer metastasis and identify potential targets for treatment.
Role: Co-Investigator

36. R01HL12765 NIH/NHLBI (PI: Amer) 07/01/15-06/30/2019 5%FTE
The role of microRNA-calibrated autophagy in innate immunity and inflammation
The goal is to target the miR-17~92 cluster to improve autophagy activity in CF lung patients through reducing lung inflammation.
Role: Co-Investigator

37. R01 AI107250-01A1 NIAID/NIH (PI: Seveau) 02/01/14-01/31/2019 5%FTE
Multifaceted activity of listeriolysin O during host cell invasion by Listeria
The major goal of this project is to elucidate fundamental mechanisms used by intracellular

pathogens to enter and thrive within host cells.
Role: Co-Investigator

38. R01 CA068458 NIH/NCI (PI: Caligiuri) 04/01/10-03/30/2020 5%FTE
IL-15 characterization through experimental immunology
The major goals of this project are to investigate the role of IL-15 during NK cell differentiation and maturation.
Role: Co-Investigator

39. 1P01CA165995-01A1 NIH/NCI (PI: Gutteridge) 06/01/13-05/31/2018 10%FTE
Studies of Childhood Sarcomas: SubK Research Institute at Nationwide Children's Hospital
The overall goal of this PPG is to advance our understanding of important signaling pathways involved in the pathogenesis of childhood sarcomas and to translate these finding to better therapies for these diseases.
Role: Co-Investigator

40. SPORE/GRT00025688 NCI/NIH (PI: Ringel) 09/01/13-08/31/2018 10%FTE
The Ohio State University and MD Anderson Cancer center Thyroid Cancer SPORE
The overall goal of this project is to improve the outcomes and quality of life of the patients with thyroid cancer by identifying genetically "at-risk" individuals, which will allow for early diagnosis and prediction of tumor behavior, developing new approaches to minimize side effects of treatments, and introducing better biomarkers and treatment options for progressive metastatic disease.
Role: Co-Investigator

41. P01 CA124570-03 NIH/NCI (PI: Ringel) 03/01/2013-02/28/2018 10%FTE
Genetic and Signaling Pathways in Epithelial Thyroid Cancer
The major goals of this project are 1. To identify genetic pathways. 2. To identify and characterize genes and their functions in Epithelial Thyroid Cancer.
Role: Co-Investigator

42. W81XWH-14-2-0168 (PI: Satoskar) 10/01/14-09/30/2017 5%FTE
Department of Defense (DOD)
Development of Novel Therapeutics for a Neglected Tropical Disease, Leishmaniasis
The overall goal of this project is to develop analogs of two compounds from Pentalinon andrieuxii (6,7-dihydroneridione and pentalinonsterol) for use in topical formulations to treat cutaneous leishmaniasis.
Role: Co-Investigator

43. 5 P01 CA95426-05 NCI (PI: Caligiuri, renewed in 2012) 09/01/07-08/31/2017 10%FTE
Innate immunity: elucidation and modulation for cancer therapy. Core B: Innate immunity: elucidation and modulation for cancer therapy - biostatistics.
The overall goal is to rapidly introduce innovative clinical trials testing laboratory-based hypotheses, while pursuing additional basic investigation of innate immunity for subsequent cancer immunotherapy trials.
Role: Co-Investigator

44. R01 CA153490-01A1 NCI/NIH (PI: Ganju) 09/07/11-02/31/2016 5%FTE
Role of S100A7 in breast cancer progression and metastasis
The major goal of this project is to determine S100A7-mediated mechanisms that modulate tumor growth and metastasis in breast cancer cells.

Role: Co-Investigator

45. R21 GRT60041227 NIH/NCI (PI: Lee) 04/01/14-03/31/2016 5%FTE
Tethered cationic lipoplex nanoparticle assay for liver cancer detection.
The objective of this project is to evaluate and optimize the performance of our recently developed Tethered Cationic Lipoplex Nanoparticle (TCLN) assay for extracellular and intracellular RNA detection of both circulating exosomes and tumor cells (CTCs) from liver cancer patient blood samples.
Role: Co-Investigator

46. 5 P30 CA016058-39 (PI: Caligiuri) 01/01/11-12/30/16 10%FTE
NIH/NCI $2,914,646
OSU Comprehensive Cancer Center Support Grant
The goal is to support the programs, services, research, and administration of the OSU Comprehensive Cancer Center.
Role: Lead biostatistician

47. 7 P50 CA140158-02 (PI: Byrd) 09/01/2009 - 07/31/2014 15%FTE
SPORE NCI
Experimental therapeutics of leukemia. The focus and goal of this application is highly translational research that improves our understanding of leukemia development, risk stratification and therapy.
Role: Co-Investigator

48. R01 CA068458 NIH/NCI (PI: Caligiuri) 04/01/10-03/30/2014 5%FTE
IL-15 characterization through experimental immunology
The major goals of this project are to investigate the role of IL-15 during NK cell differentiation and maturation.
Role: Co-Investigator

49. R01 DK088076 NIH/NCI (PI: Ghoshal) 06/01/10-05/31/2014 5%FTE
Role of Micro-RNA 122 in hepatocellular cancer
The major goals of this project are to investigate the role of mir-122 during hepatocellular cancer development.
Role: Co-Investigator

50. R01 AT004922 NIH/NCI (PI: Best) 07/01/09-04/30/2014 5%FTE
Massage Therapy In Eccentric Exercise Induced Muscle Weakness And Inflammation
The major goals of this project are to test efficacy of massage for modulating muscle inflammation and repair.
Role: Co-Investigator

51. R21 CA163010-01 NIH/NCI (PI: Ganju) 07/01/11-06/30/2013 5%FTE
Synthetic cannabinoids as novel therapeutic strategies against non-small cell lung cancer
The major goal of this project is to study the interaction between cannabinoid receptors CB1/EGFR and CB2/CXCCR4 in NSCLC to open novel therapeutic strategies toward the treatment of NSCLC.
Role: Co-Investigator

52. R21 AI091420-01A1 NIAID/NIH (PI: Ganju) 07/01/11-06/30/2013 5%FTE
Novel approaches to attenuate lipopolysaccharide-induced inflammation

The major goal of this project is to characterize molecular mechanisms of Lipopolysaccharide (LPS)-induced inflammatory chemokines leading to vascular inflammation.
Role: Co-Investigator

53. P01 CA124570-03 NIH/NCI (PI: Ringel) 03/01/08-02/28/2013 10%FTE
Genetic and Signalling Pathways in Epithelial Thyroid Cancer
The major goals of this project are 1. To identify genetic pathways. 2. To identify and characterize genes and their functions in Epithelial Thyroid Cancer.
Role: Co-Investigator

54. P01 CA125066 NIH/NCI (PI: Kinghorn) 12/01/07 -11/30/2012 10%FTE
Discovery of Anti-Cancer Agents of Diverse Natural Origin
The major goals of this project are to discover anti-cancer agents and define their function on cancer treatment and inhibition.
Role: Co-Investigator

55. 5 P01 CA95426 (PI: Caligiuri) 09/01/07-08/31/2012 10%FTE
NCI $12,413,784
Innate immunity: elucidation and modulation for cancer therapy.
The overall goal is to rapidly introduce innovative clinical trials testing laboratory-based hypotheses, while pursuing additional basic investigation of innate immunity for subsequent cancer immunotherapy trials. The principal objective of the biostatistics core will be to provide project investigators a centralized resource for statistical expertise. Statistical issues will be addressed at all levels of investigation: from the design of experiments, to the maintenance of data quality, and to the description and inferential statements made from the collected data.
Role: lead statistician (Core B)

56. 1R21 CA152969 NIH (PI: Ghoshal) 05/01/11-12/30/2012 3%FTE
Therapeutic Delivery of Anti-miR Oligos in liver cancer
The major goal of this project is to use nanoparticle assisted delivery of anti-Mir oligos to treat liver carcinogenesis.
Role: Co-Investigator

57. P01 CA101956-01A2 NIH/NCI (PI: Jacob) 09/27/06-07/31/2011 10%FTE
DNA methylation & chromatin modifications; mechanisms & applications in cancer therapy
The major goals of this project were to investigate the effect of epigenetics such as DNA methylation, acetylation, and post transcription modification on the expression of surrogate biomarkers and the effect on patient treatment/outcomes in chronic lymphoma leukemia
Role: Co-Investigator

58. R21 CA137567 NIH/NCI (PI: Majumda) 07/01/09-06/30/2011 5%FTE
MicroRNA signature of tamoxifen resistance in breast cancer
The major goals of this project are to investigate the role of mir221/222 in tamoxifen resistance breast cancer.
Role: Co-Investigator

59. 1P01CA100730-01 (Mike Lairmore) 4/21/03-3/31/08 10%FTE
NIH/NCI $118,077 (Biostatistics Core A only)
Title: Retrovirus Models of Lymphocyte Transformation/Disease
The major goals of this project are to use retrovirus models to define important mechanisms that determine lymphocyte proliferation and associated disease, as well as to test innovative

modalities to ablate the effects of retroviral carcinogenesis.
Role: lead statistician

Internal Funding

60. CCTS (Center for Clinical Translational Science) Secondary data analysis pilot grant
(MPIs: Zhang and Wang) 11/15/2019-05/31/2021
$15,000
Title: Systems biology analysis of cancer stem cells in ovarian cancer evolution from tumor initiation to drug resistance.
The goal is to understand the role of ovarian cancer stem cells during ovarian cancer tumorigenesis and drug resistance and identify diagnostic and/or therapeutic targets for patients with ovarian cancer.
Role: PI
61. Department of Biomedical Informatics pilot grant, OSU. 05/01/2021-04/31/2024
(PI: Zhang)
$40,000
Title: Developing novel approaches to identify and characterize breast cancer stem cells.
The goal is to develop cutting-edge technologies including live-cell imaging, lineage tracing and single-cell RNA-Seq, and third generation sequencing to study breast cancer stem cell heterogeneity and mechanism in determination of stemness.
Role: PI

62. President's Research Excellence Catalyst Award, OSU. 05/01/2023-04/31/2025
(MPIs: Ramaswamy/ Reategui Pizarro/Zhang/Stover).
$200,000
Title: Biomimetic and microfluidic technologies to identify and target dormant disseminated tumor cells to improve cure rates in invasive lobular breast cancer".
Role: MPI

TEACHING

UNIVERSITY OF SOUTH FLORIDA

GUEST LECTURES:

NGR 7916, grant writing. Lecture: Introduction to experiment design, CON, 10/26/2024

BCH 6886: Fundamentals of Structural Bioinformatics. Lecture: Bioinformatics in precision medicine. Morsani College of Medicine, Department of Molecular Medicine, 11/26/2024

THE OHIO STATE UNIVERSITY

DEPARTMENT OF BIOMEDICAL INFORMATICS (BMI)

CURRICULUM DEVELOPMENT

BMI 8150: Rigor and reproducibility (3 credit doctoral class). Spring 2022; developed ¼ of the content. Department of Biomedical Informatics (BMI), OSU.

Bioinformatics Methods in Biomarker discovery (3 credit doctoral class). Spring 2024; developed half of the syllabus (unfinished due to leaving OSU). BMI, OSU.

GRADUATE COURSES TAUGHT

BMI 7891: weekly department seminar, also a graduate student course. Fall 2022 and Spring 2023. 12 graduate students enrolled, but normally the classroom had around 35 attendees including faculty, staff, and students.

BMI 8150: Rigor and Reproducibility (graduate level course), Spring 2022, 6 graduate students enrolled.

GUEST LECTURES:

Lecture to summer internship students: how to write a conference abstract and make a poster. Summer 2024.

Lecture to summer internship students: how to write a conference abstract and make a poster. Summer 2023.

BMI 5750: Methods in Biomedical Informatics. Lecture in Classification methods in 'Omics Data. Summer 2022. Over 40 students.

Lecture to summer internship students: why statistics is important in biomedical research? Summer 2019.

Lecture to summer internship students: why statistics is important in biomedical research? Summer 2018.

Lecture to summer internship students: Introduction of The Cancer Genome Atlas (TCGA). Summer 2017.

BMI 5750: Methods in Biomedical Informatics. Lecture in Survival analysis using omics data. Spring 2017. Twelve students.

Lecture to Medical students in the College of Medicine: why statistics is important in biomedical research? Summer 2015.

IOWA STATE UNIVERSITY

Instructor: Principal Biochemistry. Spring 2005. Department of Biochemistry, Biophysics, and Molecular Biology (BBMB).

Teaching Assistant (TA): Structure and Reactions in Biochemical process. Fall 2002. Providing individual help sessions to aid students understand class materials and grading homework and exams. BBMB.

INTERNATIONAL CONFERENCES

Half day short course “Introduction to cancer biomarker discovery” was invited to teach at the following conferences:

ICSA (International Chinese Statistics Association) Applied Statistics Symposium, Nashville. Tennessee, June 16-19, 2024

JSM (Joint Statistical Meetings), Portland, Oregan, August 4-10, 2024.

ADVISING AND MENTORING

UNIVERSITY OF SOUTH FLORIDA

College of Nursing

Graduate Students (Statistical Mentor)

2024: Christina Hersh
2024: Sandra Morgan
2024: Eva Okereke-Enechukwu

Junior Faculty Mentorship

2024: Melanie Stearns, Assistant Professor

THE OHIO STATE UNIVERSITY

Advising:

Undergraduate

2024: Jacob Herman, Department of Data Science, BMI summer internship, Advisor

2021: Chloe Kang, Department of Mathematics, Research Assistant, Advisor

Graduate

2023: Zhan Peng Kuang, College of Public Health, BMI summer internship, Advisor

2023: Angel (Xixuan) Ji, Department of Statistics, Columbia University, BMI summer internship, Advisor

2023-2024: Yirui Huang, PhD candidate. Co-mentor of PhD thesis on her experiment design and research strategies.

2019-2021: Shuai Shao, PhD candidate. Project Advisor for his role on the funded CCTS project.

Graduate Student Mentorship as Biostatistics Mentor (OSU)

Chaojie Wang,

Samantha McCarty,
Anisley Valenciaga,
Yu-yu Liu,
Sasha Beyers,
Aparna Lakshmanan,
Brynn Hollingsworth,
Mike Bradant
Tiffany Hughes,
Susan McClory,
Steven Scoville,
Nicholas Zorko,
Luxi Chen
Ansel Nalin,
Matthew Lordo
Kun-yu Teng,
Vivek K. Chowdhary
Jonanthan Lam,
Christopher Phelps,
Sarika Pathak-Sharma
Emilia Mahoney,
Sarah Herman,
Dalia El-Gamal,
Ta-ming Liu,
Bonnie Harrington
Caroline Haas,
Scott Crawford
Kaitlin Hamilton,
Kyle Caution

Staff Biostatistician/Bioinformatician Mentorship (Center for Biostatistics/Department of Biomedical Informatics, OSU)**:**

Sonia Zhao, MS Biostatistician
Eric McLaughlin, MS Biostatistician
Brett Klemer, MS Biostatistician
Demond Handley, MS Biostatistician
Selen Yilmaz, MS Bioinformatician

Steven Patrick, MS Bioinformatician

Peer Faculty/Junior Faculty Mentorship

Wing Chan**,** PhD, Assistant Professor, statistical mentor on his K22 and Ohio Cancer Research seed grant application 2022.
Elsa Pardee Foundation Award: Metabolic control of NK cell functions in brain tumor microenvironment. Awarded 04/2023.

Nathan Denlinger, MD, Assistant Professor, mentor on his **ASH Scholar Career Award "**Early, Risk-Adapted Lenalidomide/Rituximab Post CAR T-cell Therapy for Non-Hodgkin's Lymphoma". Funded in 06/2023.
Mentor on his ASCO Young Investigator (**AYI**) award" Effects of tumor-associated macrophages on intratumoral T cell dysfunction and Anti-CD19 CAR T-cell therapy in B cell lymphoma". 04/2022.

Polina Shindiapina, MD, Assistant Professor, mentor on her DSRP award "Immune reconstitution in HIV-positive hematopoietic stem cell transplant recipients with hematologic malignancies: a comprehensive assessment". 08/2022.

Walter Hanel**,** MD, Assistant Professor, mentor on his application for the American Cancer Society Postdoctoral Fellowship award and ASCO YIA award "Targeting hyper-SUMOylation in mantle cell lymphoma". Since 2022.

Lalit Sehgal, PhD, Assistant Professor, Statistical mentor on his KL2 award "Targeting pro-survival signaling pathway in Relapse/refractory Mantle Cell Lymphoma". 2020.

Lapo Alinari, MD. PhD, Associate Professor, mentor on his K08 award "Targeting transducin β-like protein 1 in mantle cell lymphoma" and David Bremer Award "Improving Immune targeted therapy in aggressive B-cell Non-Hodgkin's lymphoma". 2017/2018.

Student Organizations, Faculty Advisor

2021- 2024 Faith, Hope, and Love OSU Campus Ministry Service

SERVICE

UNIVERSITY OF SOUTH FLORIDA

College of Nursing

2024 Reviewer Mock Study Section Review Committee

THE OHIO STATE UNIVERSITY

Department of Biomedical Informatics (BMI):

2021-2024 Chair Award Committee

2022-2023	Member	Faculty hiring committee
2021-2022	Member	Graduate Studies Coordinating Committee

College of Medicine (COM) and Comprehensive Cancer Center (CCC):

2021-2024	Member	Medical Students Admission committee, COM
2021-2022	Member	Women in Medicine and Science Committee, COM
2016-2024	Member	Intramural Research Program Committee (IRP), CCC
2011-2024	Faculty Judge	10th, 11th, 19th, and 20th Annual Trainee Research Day, COM
2018-2019	Reviewer	Intramural Research Program Pelotonia Pilot Grants, CCC
2016-2018	Reviewer	Center for Clinical and Translational Science (CCTS), COM
2014-2016	Reviewer	Thyroid Cancer SPORE Training grants, COM
2007-2010	Reviewer	Clinical Scientific Review Committee (CSRC), CCC

University:

2021-2024	Member	Faculty Compensation and Benefits Committee/Faculty Council
2017-2024	Faculty Judge	Edward F. Hayes Graduate Research Forum

PROFESSION

2024	Co-organizer	Round Table discussion “How to become an efficient Biostatistics Consultant”. JSM, Portland, OR, USA
2023	Organizer	Topic Contributed Paper Session “Statistical methods for design, data analysis, and application of spatial transcriptomics experiments”. JSM, Toronto, CA
2019	Session Chair	ICIBM (International Conference on Intelligent Biology and Medicine), The Ohio State University, Columbus, OH
2019	Paper Reviewer	ICIBM
2018	Session Chair	Genome conference in Las Vegas, NV
2017-	Abstract Reviewer	AMIA (American Medical Informatics Association) Informatics Summit

INVITED GRANT REVIEWER

11/2024	Department of Defense (DOD), Congressionally Directed Medical Research Programs (CDMRP) Melanoma Research Program (MRP), USA
09/2024	Department of Defense (DOD), CDMRP Ovarian Cancer Research Program (OCRP)
02/2024	NIH/ NCI Special Review Branch.
11/2023	Co-Chair and Panel Reviewer, DOD, CDMRP Melanoma Research Program (MRP)
10/2023	NIH Review panelist, NCI Special Review Branch.
05/2023	NIH Review panelist, NCI Clinical and Translational Exploratory/Developmental Studies.

03/2023	NIH Review panelist, NCI Special Review Branch.
12/2022	Co-Chair and Panel Reviewer, DOD CDMRP Melanoma Research Program (MRP)
10/2022	NIH Review panelist, NCI Special Review Branch.
06/2022	NIH Review panelist, NCI Special Review Branch.
05/2022	President's Research Excellence (PRE) Program, OSU
01/2021	Research Governance & Peer Review Office, Imperial College, London, UK
12/2020	Department of Defense (DOD), Congressionally Directed Medical Research Programs (CDMRP) Melanoma Research Program, USA

INVITED MANUSCRIPT REVIEWER

Cancer Letters
Annals of Medicine
International Journal of Molecular Sciences (IJMS)
Gut
Cancers
Genes
Frontiers in Cancer
Frontiers in immunology
Stroke
Journal of Immunology
BMC Cancers,
World Journal of Surgical Oncology
Technology in cancer research and treatment
The Journal of Clinical Endocrinology & Metabolism (JCEM)
Medical Science Monitor
Transactions on Computational Biology and Bioinformatics(TCBB)
Journal of Biostatistics and Biometrica Application
Evidence-based Complementary and Alternative Medicine (ECAM)
Scientific Reports
International Immunopharmacology

INVITED JOURNAL EDITOR

2021-2023	Annals of Medicine (Statistical Editor)
2021-present	Genes
2020-present	Pulmonary Pharmacology & Therapeutics
2020-present	Recent Patents on Anti-Cancer Drug Discovery

PROFESSIONAL MEMBERSHIPS

2024-	American Association of Immunologist (AAI)
2020-Present	Biostatistics, Epidemiology and Research Design –Special Interest Group (BERD-SIG)
2019	International Conference on Intelligent Biology and Medicine (ICIBM)
2018-present	American Society of Human Genetics (ASHG) (Open)
2018-present	American Association for Cancer Research (AACR) (Open)
2006-present	American Statistical Association (ASA) (Open)

VOLUNTEER SERVICE

2014-2019	Volunteer	Ohio Chinese School