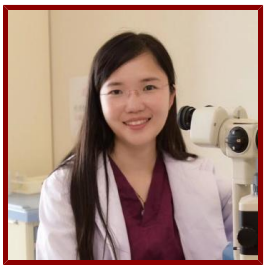
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HONORS AND AWARDS

- Joanne G. Angle Travel Grant, the Association for Research in Vision and Ophthalmology (ARVO) (2021)

Publications

PUBLICATIONS

- **Differential Roles of Endogenous CaMKII Isoforms in Retinal Ganglion Cell Survival at Baselin and Following Optic Nerve Injury**
  Xia, X., Adcook, S., Chang, H. V., Luo, Z. V., Ochoa, J. R., Bian, M., Russano, K., Kapiloff, M., Goldberg, J. L.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Enhancing Optic Nerve Head Axon Guidance of Transplanted Human Stem Cell-Derived Retina Ganglion Cells**
  Luo, Z., Xia, X., Chang, H., Bian, M., Goldberg, J. L.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **Developmental stage and cell purity shape transplant outcomes of retinal organoid-derived RGCs**
  Rao, M., Jung, K., Luo, Z., Goldberg, J. L.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2026
- **3'UTR regulation of axon translation and optic nerve regeneration.** *Molecular neurodegeneration*
  Bian, M., Huie, E. L., Xia, X., Nahmou, M., Maxfield, S. A., Li, L., Liu, L., Luo, Z., Tsien, C., Healzer, K. J., Chang, H. V., Russano, K., Goldberg, et al
  2026
- **119 Vitrectomy and immunosuppression enhance survival and engraftment of human ESC-derived retinal ganglion cells in a porcine model**
  Yu, Z., Li, B., Maxfield, S., Aggarwal, D., Nemani, S., Deboer, C., Xia, X., Luo, Z., Rao, M., Young, B., Goldberg, J.
  CELL PRESS.2026: 216-217
- **Actin depolymerization promotes axon regeneration by restoring axonal mitochondrial transport in mouse models of optic neuropathy.** *Science translational medicine*
  Li, L., Feng, X., Fang, F., Fei, J., Lu, J., Zhang, H., Dujava Ždímalová, M., Yuan, Y., Luo, Z., Huang, H., Liu, D., Huang, F., Liu, et al
  2026; 18 (838): eadw0908
- **Deep learning-guided design of cell type-specific AAV promoters.** *bioRxiv : the preprint server for biology*
  Wang, S. K., Deng, B., Nair, S., Ren, X., Li, J., Tijerina, J., Prakhar, P., Luo, Z., Nnebe, C., Kim, S. H., Zhou, Y., Shah, S. H., Davis, et al
  2026
- **HDAC4 Promotes Neuroprotection of Retinal Ganglion Cells After Optic Nerve Injury.** *Investigative ophthalmology & visual science*
  Zhu, Y., Yan, W., Bian, M., Xia, X., Nahmou, M., Nair, R. V., Li, J., Li, X., Thakur, H. S., Sun, C. B., Russano, K., Luo, Z., Huie, et al

2025; 66 (15): 60

- **HDAC4 Promotes Neuroprotection of Retinal Ganglion Cells After Optic Nerve Injury** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Zhu, Y., Yan, W., Bian, M., Xia, X., Nahmou, M., Nair, R., Li, J., Li, X., Thakur, H., Sun, C. B., Russano, K., Luo, Z., Huie, et al
  2025; 66 (15)
- **The distinct roles of TGF-β signaling in retinal development.** *iScience*
  Chen, C. Y., Liu, C. C., Stavropoulos, D., Liu, P. K., Chen, Y. C., Wang, S., Rao, M., Sun, C., Zhu, Y., Luo, Z., Cameron, E. G., Goldberg, J. L., Chang, et al
  2025; 28 (11): 113737
- **The distinct roles of TGF-βsignaling in retinal development** *ISCIENCE*
  Chen, C., Liu, C., Stavropoulos, D., Liu, P., Chen, Y., Wang, S., Rao, M., Sun, C., Zhu, Y., Luo, Z., Cameron, E. G., Goldberg, J. L., Chang, et al
  2025; 28 (11)
- **Brightening Ocular Cells with Nanoparticles under OCT**
  Chen, F., Jiang, L., Luo, Z., Nahmou, M., Young, B., Maya, J., Myung, D., Goldberg, J.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2025
- **Regulatory mechanism of transforming growth factor signaling in retinal development**
  Chen, C., Liu, P., Stavropoulos, D., Rao, M., Luo, Z., Goldberg, J. L., Chang, K.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2025
- **Tppp3 is a novel molecule for retinal ganglion cell identification and optic nerve regeneration.** *Acta neuropathologica communications*
  Rao, M., Luo, Z., Liu, C. C., Chen, C. Y., Wang, S., Nahmou, M., Tanasa, B., Virmani, A., Byrne, L., Goldberg, J. L., Sahel, J. A., Chang, K. C.
  2024; 12 (1): 204
- **Establishment of a Disease Model Using Patient-Specific Induced Pluripotent Stem Cells-Derived Trabecular Meshwork Cells in a Chinese Primary Open-Angle Glaucoma Mega-Pedigree.** *Discovery medicine*
  Rong, H., Luo, Z., Tang, M., Tang, J., Li, K., Yang, R., Fan, Z., Sun, N., Ge, J.
  2024; 36 (189): 2013-2025
- **Gene regulatory roles of growth and differentiation factors in retinal development.** *iScience*
  Luo, Z., Shah, S., Tanasa, B., Chang, K. C., Goldberg, J. L.
  2024; 27 (6): 110100
- **A potential therapeutic target for optic nerve regeneration**
  Rao, M., Luo, Z., Liu, C., Nahmou, M., Tanasa, B., Virmani, A., Byrne, L., Goldberg, J., Sahel, J., Chang, K.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2024
- **Ca²⁺ /calmodulin-dependent protein kinase II enhances retinal ganglion cell survival but suppresses axon regeneration after optic nerve injury**
  Xia, X., Shi, C., Tsien, C., Sun, C. B., Xie, L., Luo, Z., Bian, M., Russano, K., Thakur, H., Benowitz, L., Goldberg, J., Kapiloff, M.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2024
- **Pre-adhesion promotes human stem cell-derived retinal ganglion cell integration after transplant**
  Luo, Z., Xia, X., Nahmou, M., Tsien, C., Bian, M., Huie, E., Goldberg, J.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2024
- **Cell replacement with stem cell-derived retinal ganglion cells from different protocols** *NEURAL REGENERATION RESEARCH*
  Luo, Z., Chang, K.
  2024; 19 (4): 807-810
- **Cell replacement with stem cell-derived retinal ganglion cells from different protocols.** *Neural regeneration research*
  Luo, Z., Chang, K. C.
  2024; 19 (4): 807-810
- **Ca2+/Calmodulin-Dependent Protein Kinase II Enhances Retinal Ganglion Cell Survival But Suppresses Axon Regeneration after Optic Nerve Injury.** *eNeuro*
  Xia, X., Shi, C., Tsien, C., Sun, C. B., Xie, L., Luo, Z., Bian, M., Russano, K., Thakur, H. S., Benowitz, L. I., Goldberg, J. L., Kapiloff, M. S.

2024; 11 (3)

- **Therapeutic strategies for glaucoma and optic neuropathies.** *Molecular aspects of medicine*
  Lo, J., Mehta, K., Dhillon, A., Huang, Y. K., Luo, Z., Nam, M. H., Al Diri, I., Chang, K. C.
  2023; 94: 101219
- **Retinal ganglion cell repopulation for vision restoration in optic neuropathy: a roadmap from the RReSTORe Consortium.** *Molecular neurodegeneration*
  Soucy, J. R., Aguzzi, E. A., Cho, J., Gilhooley, M. J., Keuthan, C., Luo, Z., Monavarfeshani, A., Saleem, M. A., Wang, X., Wohlschlegel, J., RReSTORe Consortium, Baranov, P., Di Polo, A., et al
  2023; 18 (1): 64
- **Pre-Adhesion Promotes Cell Survival and Axon Regeneration After Stem Cell-Derived RGC Transplant**
  Luo, Z., Xia, X., Nahmou, M., Tsien, C., Goldberg, J.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2023
- **Mitomycin C-loaded PTMC15-F127-PTMC15 hydrogel maintained better bleb function after filtering glaucoma surgery in monkeys with intraocular hypertension.** *RSC advances*
  Tu, S., Luo, Z., Yang, R., Hu, D., Xian, B., Zhao, F., Ge, J.
  2023; 13 (20): 13604-13615
- **Kif5a Regulates Mitochondrial Transport in Developing Retinal Ganglion Cells In Vitro.** *Investigative ophthalmology & visual science*
  Yokota, S., Shah, S. H., Huie, E. L., Wen, R. R., Luo, Z., Goldberg, J. L.
  2023; 64 (3): 4
- **Characterization of Primary Cilia Formation in Human ESC-Derived Retinal Organoids.** *Stem cells international*
  Ning, K., Luo, Z., Kowal, T. J., Tran, M., Majumder, R., Jarin, T. M., Wu, A. Y., Goldberg, J. L., Sun, Y.
  2023; 2023: 6494486
- **Directly induced human retinal ganglion cells mimic fetal RGCs and are neuroprotective after transplantation invivo.** *Stem cell reports*
  Luo, Z., Chang, K., Wu, S., Sun, C., Xia, X., Nahmou, M., Bian, M., Wen, R. R., Zhu, Y., Shah, S., Tanasa, B., Wernig, M., Goldberg, et al
  2022
- **Understanding RGC differentiation and development in retinal organoids by scRNA-seq**
  Luo, Z., Chang, K., Tanasa, B., Goldberg, J. L.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2022
- **Impact of Neurofibromatosis type 1 (NF1) heterozygosity on RGC death after optic nerve injury**
  Xia, X., Sun, C., Luo, Z., Shyamsundar, S., Russano, K., Goldberg, J. L.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2022
- **Distribution Of Primary Cilia In hESC-Derived Retinal Organoid**
  Jarin, T., Ning, K., Luo, Z., Kowal, T., Li, B., Hu, Y., Wu, A. Y., Goldberg, J. L., Sun, Y.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2022
- **Carbon Nanotube Polymer Scaffolds as a Conductive Alternative for the Construction of Retinal Sheet Tissue.** *ACS chemical neuroscience*
  Yang, R., Yang, S., Li, K., Luo, Z., Xian, B., Tang, J., Ye, M., Lu, S., Zhang, H., Ge, J.
  2021
- **Scaffolds Facilitate Epiretinal Transplantation of hiPSC-Derived Retinal Neurons in Nonhuman Primates.** *Acta biomaterialia*
  Luo, Z., Xian, B., Li, K., Li, K., Yang, R., Chen, M., Xu, C., Tang, M., Rong, H., Hu, D., Ye, M., Yang, S., Lu, et al
  2021
- **Rapid protocol for induced retinal ganglion cell differentiation from human stem cells**
  Luo, Z., Chang, K., Tanasa, B., Wernig, M., Goldberg, J. L.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2021
- **Retinal organoid differentiation and transplantatio**
  Chang, K., Luo, Z., Xia, X., Knasel, C., Goldberg, J.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020

- **Islet1 and Brn3 Expression Pattern Study in Human Retina and hiPSC-Derived Retinal Organoid.** *Stem cells international*
  Luo, Z., Xu, C., Li, K., Xian, B., Liu, Y., Li, K., Liu, Y., Rong, H., Tang, M., Hu, D., Yang, S., Ye, M., Zhong, et al
  2019; 2019: 8786396
- **Dexamethasone Provides Effective Immunosuppression for Improved Survival of Retinal Organoids after Epiretinal Transplantation.** *Stem cells international*
  Xian, B. n., Luo, Z. n., Li, K. n., Li, K. n., Tang, M. n., Yang, R. n., Lu, S. n., Zhang, H. n., Ge, J. n.
  2019; 2019: 7148032
- **BAM15 attenuates transportation-induced apoptosis in iPS-differentiated retinal tissue.** *Stem cell research & therapy*
  Tang, M. n., Luo, Z. n., Wu, Y. n., Zhuang, J. n., Li, K. n., Hu, D. n., Rong, H. n., Xian, B. n., Ge, J. n.
  2019; 10 (1): 64
- **Alpha 1-antitrypsin inhibits microglia activation and facilitates the survival of iPSC grafts in hypertension mouse model.** *Cellular immunology*
  Yang, S., Xian, B., Li, K., Luo, Z., Liu, Y., Hu, D., Ge, J.
  2018; 328: 49-57
- **Establishing a Surgical Procedure for Rhesus Epiretinal Scaffold Implantation with HiPSC-Derived Retinal Progenitors.** *Stem cells international*
  Luo, Z. n., Li, K. n., Li, K. n., Xian, B. n., Liu, Y. n., Yang, S. n., Xu, C. n., Fan, Z. n., Lu, S. n., Zhang, H. n., Ge, J. n.
  2018; 2018: 9437041
- **An Optimized System for Effective Derivation of Three-Dimensional Retinal Tissue via Wnt Signaling Regulation.** *Stem cells (Dayton, Ohio)*
  Luo, Z. n., Zhong, X. n., Li, K. n., Xie, B. n., Liu, Y. n., Ye, M. n., Li, K. n., Xu, C. n., Ge, J. n.
  2018; 36 (11): 1709–22
- **HiPSC-derived retinal ganglion cells grow dendritic arbors and functional axons on a tissue-engineered scaffold.** *Acta biomaterialia*
  Li, K., Zhong, X., Yang, S., Luo, Z., Li, K., Liu, Y., Cai, S., Gu, H., Lu, S., Zhang, H., Wei, Y., Zhuang, J., Zhuo, et al
  2017; 54: 117-127