Stanford

# Karen Elizabeth Malacon

- MD Student, expected graduation Spring 2027
- Ph.D. Student in Neurosciences, admitted Autumn 2022
- MSTP Student

## Publications

### PUBLICATIONS

- **Neuroligin-3-CSPG4 interaction maintains oligodendrocyte precursor cell progenitor state and promotes glioma proliferation through mechanotransduction.** *Nature neuroscience*
  Kim, Y. S., Gillespie, S. M., Geraghty, A. C., Yalçın, B., Ivec, A. E., Yang, A., Mancusi, R., Hysinger, J., Reed, J., Drexler, R., Quezada, M., Malacon, K., Woo, et al
  2026

- **Targeting immune cells in the aged brain reveals that engineered cytokine IL-10 enhances neurogenesis and improves cognition.** *Immunity*
  Navarro Negredo, P., You, J., Hauptschein, M., Schroer, A. B., Richard, D. J., Abhiraman, G. C., Tsai, A. P., Sun, E. D., Notarangelo, G., Ramirez-Matias, J., Zhou, O. Y., Buckley, M. T., Malacon, et al
  2026

- **Dysregulated Microglial Synaptic Engulfment in Diffuse Midline Glioma.** *bioRxiv : the preprint server for biology*
  Mancusi, R., Tatlock, E., Shamardani, K., Acosta-Alvarez, L., Drexler, R., Trivedi, V., Gavish, A., Niizuma, K., Soni, N., Woo, P., Mulinyawe, S., Jahan, S., Logan, et al
  2025

- **Bone Optimization for Perioperative Spine Patients: A Multidisciplinary Approach at a Single Academic Center.** *Journal of clinical medicine*
  Suarez-Nieto, M. V., Malacon, K., Fox, A., Lopez Isidro, M. C., Wadhwa, H., Hu, S. S., Zygourakis, C. C.
  2025; 14 (24)

- **Assessing the Importance and Availability of Family Planning Policies for Surgical Residency Programs: A Review.** *Annals of surgery*
  Botterbush, K. S., Muzyka, L., Koenig, J. K., Cox, M. F., Shanahan, R. M., Mustroph, M., Kimata, A. R., Malacon, K., Moor, R. S., Weiss, H., Kim, N., Rahman, M., Ben-Haim, et al
  2025

- **Neuroligin-3 interaction with CSPG4 regulates normal and malignant glial precursors through PIEZO1.** *bioRxiv : the preprint server for biology*
  Gillespie, S. M., Seok Kim, Y., Geraghty, A. C., Yalçın, B., Mancusi, R., Hysinger, J., English Ivec, A., Reed, J., Drexler, R., Quezada, M., Malacon, K., Woo, P., Mount, et al
  2025

- **Neurosurgical Resident Skill Development using a Novel Simulator-Based Anterior Cervical Discectomy and Fusion Curriculum.** *World neurosurgery*
  Robertson, F. C., Zygourakis, C. C., Wu, J. Y., Malacon, K. E., Jean-Valery, C. C., Shankar, G. M., Stapleton, C. J., Spena, G., Giussani, C., Nahed, B. V., Nicolosi, F., Menna, G.
  2025: 124257

- **Immunotherapy-related cognitive impairment after CAR T cell therapy in mice.** *Cell*
  Geraghty, A. C., Acosta-Alvarez, L., Rotiroti, M. C., Dutton, S., O'Dea, M. R., Kim, W., Trivedi, V., Mancusi, R., Shamardani, K., Malacon, K., Woo, P. J., Martinez-Velez, N., Pham, et al
  2025

- **Provider's exposure to diversity contributes to socioeconomic disparities in lumbar and cervical fusion outcomes.** *World neurosurgery: X*
  Touponse, G., Malacon, K., Li, G., Yoseph, E., Han, S., Zygourakis, C.

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- **Gender Differences in Electronic Health Record Usage Among Surgeons.** *JAMA network open*
  Malacon, K., Touponse, G., Yoseph, E., Li, G., Wei, P. J., Kicielinski, K., Massie, L., Williamson, T., Han, S., Zygourakis, C.
  2024; 7 (7): e2421717

- **NF1 MUTATION IN OLIGODENDROCYTE PRECURSOR CELLS LEADS TO PRENEOPLASTIC LESION FORMATION IN THE BRAIN**
  Pan, Y., Hysinger, J., Yalcin, B., Lennon, J., Byun, Y., Raghavan, P., Schindler, N., Anastasaki, C., Chatterjee, J., Ni, L., Xu, H., Malacon, K., Jahan, et al
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- **Myelin plasticity in the ventral tegmental area is required for opioid reward.** *Nature*
  Yalçın, B., Pomrenze, M. B., Malacon, K., Drexler, R., Rogers, A. E., Shamardani, K., Chau, I. J., Taylor, K. R., Ni, L., Contreras-Esquivel, D., Malenka, R. C., Monje, M.
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- **Nf1 mutation disrupts activity-dependent oligodendroglial plasticity and motor learning in mice.** *Nature neuroscience*
  Pan, Y., Hysinger, J. D., Yalçın, B., Lennon, J. J., Byun, Y. G., Raghavan, P., Schindler, N. F., Anastasaki, C., Chatterjee, J., Ni, L., Xu, H., Malacon, K., Jahan, et al
  2024

- **Barriers to neurosurgery for medical students: a national study focused on the intersectionality of gender and race.** *Journal of neurosurgery*
  Pugazenthi, S., Malacon, K., Kim, N. C., Stuebe, C. M., Yoh, N., Bhanja, D., Walker, E., Bauman, M. M., Becker, K., Johnson, G. W., Caston, R. M., Lee, H., Strahle, et al
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- **Costs and Outcomes of Total Joint Arthroplasty in Medicare Beneficiaries Are Not Meaningfully Associated with Industry Payments.** *The Journal of bone and joint surgery. American volume*
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- **Trends in Management of Osteoporosis Following Primary Vertebral Compression Fracture.** *Journal of the Endocrine Society*
  Malacon, K., Beach, I., Touponse, G., Rangwalla, T., Lee, J., Zygourakis, C.
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- **Microbial modulation via cross-fostering prevents the effects of pervasive environmental stressors on microglia and social behavior, but not the dopamine system.** *Molecular psychiatry*
  Smith, C. J., Rendina, D. N., Kingsbury, M. A., Malacon, K. E., Nguyen, D. M., Tran, J. J., Devlin, B. A., Raju, R. M., Clark, M. J., Burgett, L., Zhang, J. H., Cetinbas, M., Sadreyev, et al
  2023

- **Trends, Payments, and Costs Associated with BMP Use in Medicare Beneficiaries Undergoing Spinal Fusion.** *The spine journal : official journal of the North American Spine Society*
  Wadhwa, H., Wu, J. Y., Malacon, K., Ames, C., Ratliff, J., Zygourakis, C.
  2023

- **First reported use of machine vision image guided system for unstable thoracolumbar fusion: Technical case report** *INTERDISCIPLINARY NEUROSURGERY-ADVANCED TECHNIQUES AND CASE MANAGEMENT*
  Malacon, K., Fatemi, P., Zygourakis, C. C.
  2022; 30

- **Operative Versus Nonoperative Management of Unstable Spine Fractures in the Elderly: Outcomes and Mortality.** *Spine*
  Malacon, K., Rangwalla, T., Wadhwa, H., Zygourakis, C.
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- **Prenatal opioid exposure inhibits microglial sculpting of the dopamine system selectively in adolescent male offspring.** *Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology*
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- **Prenatal environmental stressors impair postnatal microglia function and adult behavior in males.** *Cell reports*

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- **Mild respiratory COVID can cause multi-lineage neural cell and myelin dysregulation.** *Cell*
  Fernández-Castañeda, A., Lu, P., Geraghty, A. C., Song, E., Lee, M. H., Wood, J., O'Dea, M. R., Dutton, S., Shamardani, K., Nwangwu, K., Mancusi, R., Yalçın, B., Taylor, et al
  2022

- **First reported use of real-time intraoperative computed tomography angiography image registration using the Machine-vision Image Guided Surgery system: illustrative case.** *Journal of neurosurgery. Case lessons*
  Wadhwa, H., Malacon, K., Medress, Z. A., Leung, C., Sklar, M., Zygourakis, C. C.
  2021; 1 (18): CASE2125

- **Internal state configures olfactory behavior and early sensory processing in Drosophila larvae** *SCIENCE ADVANCES*
  Vogt, K., Zimmerman, D. M., Schlichting, M., Hernandez-Nunez, L., Qin, S., Malacon, K., Rosbash, M., Pehlevan, C., Cardona, A., Samuel, A. D. T.
  2021; 7 (1)

- **First reported use of real-time intraoperative computed tomography angiography image registration using the Machine-vision Image Guided Surgery system: illustrative case** *Journal of Neurosurgery: Case Lessons*
  Wadhwa, H., Malacon, K., Medress, Z. A., Leung, C., Sklar, M., Zygourakis, C. C.
  2021

- **Sex differences in microglia as a risk factor for Alzheimer's disease** *Sex and Gender Differences in Alzheimer's disease*
  Delage , C., Rendina , D. N., Malacon , K. E., Tremblay , M., Bilbo , S. D.
  Elsevier Inc..2021; 1: 79-104

- **Neonatal immune challenge induces female-specific changes in social behavior and somatostatin cell number** *BRAIN BEHAVIOR AND IMMUNITY*
  Smith, C. J., Kingsbury, M. A., Dziabis, J. E., Hanamsagar, R., Malacon, K. E., Tran, J. N., Norris, H. A., Gulino, M., Bordt, E. A., Bilbo, S. D.
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