Stanford



Katherine Ferrara

Professor of Radiology (Molecular Imaging Program at Stanford)

Radiology - Rad/Molecular Imaging Program at Stanford

CONTACT INFORMATION

- **Alternate Contact**

  Kathryn Andrews

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Bio

BIO

Katherine Whittaker Ferrara is a Professor of Radiology and the Division Chief for the Molecular Imaging Program at Stanford. She is a member of the National Academy of Engineering and a fellow of the IEEE, American Association for the Advancement of Science, the Biomedical Engineering Society, the World Molecular Imaging Society, the Acoustical Society of America and the American Institute of Medical and Biological Engineering. Dr. Ferrara received her Ph.D. in 1989 from the University of California, Davis. Prior to her PhD, Dr. Ferrara was a project engineer for General Electric Medical Systems, involved in the development of early magnetic resonance imaging and ultrasound systems. Following an appointment as an Associate Professor in the Department of Biomedical Engineering at the University of Virginia, Charlottesville, Dr. Ferrara served as the founding chair of the Department of Biomedical Engineering at UC Davis. Her laboratory is known for work in molecular imaging and drug delivery.

ACADEMIC APPOINTMENTS

- Professor, Radiology - Rad/Molecular Imaging Program at Stanford
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, SPARK at Stanford
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Division Chief, Molecular Imaging Program at Stanford, (2020- present)

HONORS AND AWARDS

- 2020 IEEE Rayleigh Award, IEEE (2020)
- Member, National Academy of Engineering (2014)
- 2021 IEEE Biomedical Engineering Award, IEEE (2021)
- Distinguished Investigator Award, Academy for Radiology & Biomedical Imaging Research (2019)

- Judith Poole Award, Association of Women in Science (2019)
- Gold Medal, World Molecular Imaging Society (2019)
- Fellow, World Molecular Imaging Society (2019)
- Outstanding Leadership in Molecular Imaging Award, WIMIN (2018)
- IEEE Achievement Award, IEEE (2012)
- Fellow, American Association for the Advancement of Science (2010)
- Fellow, Institute of Electrical and Electronic Engineers (2010)
- Fellow, Biomedical Engineering Society (2008)
- Fellow, American Institute Medical and Biological Engineers (2005)
- Fellow, Acoustical Society of America (2004)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Board of Scientific Counselors, NIBIB (2025 - present)

LINKS

- My lab site: https://ferraralab.stanford.edu

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My focus is image-guided drug and gene delivery and I am engaged in the design of imaging devices, molecularly-targeted imaging probes and engineered delivery vehicles, drawing upon my education in biology and imaging physics and more than 20 years of experience with the synthesis and labeling of therapeutic particles. My laboratory has unique resources for and substantial experience in synthetic chemistry and ultrasound, CT, MR and PET imaging.

Teaching

STANFORD ADVISEES

Med Scholar Project Advisor

Charlotte Weixel

Doctoral Dissertation Reader (AC)

Braxton Bell

Postdoctoral Faculty Sponsor

Jongmin An, Marian Awadalla, Shreya Bendre, Yutong Guo, Minho Song, Nisi Zhang

Doctoral Dissertation Advisor (AC)

Josie Fieger

Publications

PUBLICATIONS

- **Improving real-time ultrasound spine imaging with a large-aperture array.** *Science advances*
  Lu, N., Foiret, J., Guo, Y., Yoon, B. C., Ferrara, K. W.
  2025; 11 (30): eadw2601

- **Development of an in situ CAR-T cell protocol through optical and PSMA-targeted PET imaging.** *Proceedings of the National Academy of Sciences of the United States of America*
  Zhang, N., Seo, J. W., Robinson, E., Rivera-Rodriguez, A., Wang, J., Guo, Y., Czerwinski, D. K., Kim, H. R., Tumbale, S. K., Raie, M. N., Jan, B. L., Engudar, G., Sallets, et al
  2025; 122 (24): e2504950122

- **Spatial transcriptomic analysis drives PET imaging of tight junction protein expression in pancreatic cancer theranostics.** *Nature communications*
  Wang, J., Seo, J. W., Kare, A. J., Schneider, M., Pandrala, M., Tumbale, S. K., Raie, M. N., Engudar, G., Zhang, N., Guo, Y., Zhong, X., Ferreira, S., Wu, et al
  2024; 15 (1): 10751

- **Sonogenetic control of multiplexed genome regulation and base editing.** *Nature communications*
  Liu, P., Foiret, J., Situ, Y., Zhang, N., Kare, A. J., Wu, B., Raie, M. N., Ferrara, K. W., Qi, L. S.
  2023; 14 (1): 6575

- **PET imaging of focused-ultrasound enhanced delivery of AAVs into the murine brain.** *Theranostics*
  Ajenjo, J., Seo, J. W., Foiret, J., Wu, B., Raie, M. N., Wang, J., Fite, B. Z., Zhang, N., Malek, R., Beinat, C., Malik, N., Anders, D. A., Ferrara, et al
  2023; 13 (15): 5151-5169

- **Combined near infrared photoacoustic imaging and ultrasound detects vulnerable atherosclerotic plaque.** *Biomaterials*
  Schneider, M. K., Wang, J., Kare, A., Adkar, S. S., Salmi, D., Bell, C. F., Alsaigh, T., Wagh, D., Coller, J., Mayer, A., Snyder, S. J., Borowsky, A. D., Long, et al
  2023; 302: 122314

- **Hardwiring tissue-specific AAV transduction in mice through engineered receptor expression.** *Nature methods*
  Zengel, J., Wang, Y. X., Seo, J. W., Ning, K., Hamilton, J. N., Wu, B., Raie, M., Holbrook, C., Su, S., Clements, D. R., Pillay, S., Puschnik, A. S., Winslow, et al
  2023

- **Fast volumetric ultrasound facilitates high-resolution 3D mapping of tissue compartments.** *Science advances*
  Park, E. Y., Cai, X., Foiret, J., Bendjador, H., Hyun, D., Fite, B. Z., Wodnicki, R., Dahl, J. J., Boutin, R. D., Ferrara, K. W.
  2023; 9 (22): eadg8176

- **Highly Excretable Gold Supraclusters for Translatable In Vivo Raman Imaging of Tumors.** *ACS nano*
  Yu, J. H., Jeong, M. S., Cruz, E. O., Alam, I. S., Tumbale, S. K., Zlitni, A., Lee, S. Y., Park, Y. I., Ferrara, K., Kwon, S., Gambhir, S. S., Rao, J.
  2023

- **Multimodal imaging of capsid and cargo reveals differential brain targeting and liver detargeting of systemically-administered AAVs.** *Biomaterials*
  Seo, J. W., Ajenjo, J., Wu, B., Robinson, E., Raie, M. N., Wang, J., Tumbale, S. K., Buccino, P., Anders, D. A., Shen, B., Habte, F. G., Beinat, C., James, et al
  2022: 121701

- **A theranostic 3D ultrasound imaging system for high resolution image-guided therapy.** *Theranostics*
  Bendjador, H., Foiret, J., Wodnicki, R., Stephens, D. N., Krut, Z., Park, E., Gazit, Z., Gazit, D., Pelled, G., Ferrara, K. W.
  2022; 12 (11): 4949-4964

- **Gold-Nanostar-Chitosan-Mediated Delivery of SARS-CoV-2 DNA Vaccine for Respiratory Mucosal Immunization: Development and Proof-of-Principle.** *ACS nano*
  Kumar, U. S., Afjei, R., Ferrara, K., Massoud, T. F., Paulmurugan, R.
  2021

- **In situ T-cell transfection by anti-CD3-conjugated lipid nanoparticles leads to T-cell activation, migration, and phenotypic shift.** *Biomaterials*
  Kheirolomoom, A., Kare, A. J., Ingham, E. S., Paulmurugan, R., Robinson, E. R., Baikoghli, M., Inayathullah, M., Seo, J. W., Wang, J., Fite, B. Z., Wu, B., Tumbale, S. K., Raie, et al
  2021; 281: 121339

- **Two-way magnetic resonance tuning and enhanced subtraction imaging for non-invasive and quantitative biological imaging.** *Nature nanotechnology*
  Wang, Z., Xue, X., Lu, H., He, Y., Lu, Z., Chen, Z., Yuan, Y., Tang, N., Dreyer, C. A., Quigley, L., Curro, N., Lam, K. S., Walton, et al

2020

- **Positron emission tomography imaging of novel AAV capsids maps rapid brain accumulation.** *Nature communications*
  Seo, J. W., Ingham, E. S., Mahakian, L. n., Tumbale, S. n., Wu, B. n., Aghevlian, S. n., Shams, S. n., Baikoghli, M. n., Jain, P. n., Ding, X. n., Goeden, N. n., Dobreva, T. n., Flytzanis, et al
  2020; 11 (1): 2102

- **Low-frequency ultrasound-mediated cytokine transfection enhances T cell recruitment at local and distant tumor sites.** *Proceedings of the National Academy of Sciences of the United States of America*
  Ilovitsh, T. n., Feng, Y. n., Foiret, J. n., Kheirolomoom, A. n., Zhang, H. n., Ingham, E. S., Ilovitsh, A. n., Tumbale, S. K., Fite, B. Z., Wu, B. n., Raie, M. N., Zhang, N. n., Kare, et al
  2020

- **Immune-mediated ECM depletion improves tumour perfusion and payload delivery.** *EMBO molecular medicine*
  Yeow, Y. L., Kotamraju, V. R., Wang, X., Chopra, M., Azme, N., Wu, J., Schoep, T. D., Delaney, D. S., Feindel, K., Li, J., Kennedy, K. M., Allen, W. M., Kennedy, et al
  2019: e10923

- **Nonviral ultrasound-mediated gene delivery in small and large animal models** *NATURE PROTOCOLS*
  Bez, M., Foiret, J., Shapiro, G., Pelled, G., Ferrara, K. W., Gazit, D.
  2019; 14 (4): 1015–26

- **CD8(+) T-Cell Density Imaging with Cu-64-Labeled Cys-Diabody Informs Immunotherapy Protocols** *CLINICAL CANCER RESEARCH*
  Seo, J., Tavare, R., Mahakian, L. M., Silvestrini, M. T., Tam, S., Ingham, E. S., Salazar, F. B., Borowsky, A. D., Wu, A. M., Ferrara, K. W.
  2018; 24 (20): 4976–87

- **Ultrasound-Mediated Gene Delivery Enhances Tendon Allograft Integration in Mini-Pig Ligament Reconstruction** *MOLECULAR THERAPY*
  Bez, M., Kremen, T. J., Tawackoli, W., Avalos, P., Sheyn, D., Shapiro, G., Giaconi, J. C., Ben David, S., Snedeker, J. G., Gazit, Z., Ferrara, K. W., Gazit, D., Pelled, et al
  2018; 26 (7): 1746–55

- **Distinct immune signatures in directly treated and distant tumors result from TLR adjuvants and focal ablation** *THERANOSTICS*
  Chavez, M., Silvestrini, M. T., Ingham, E. S., Fite, B. Z., Mahakian, L. M., Tam, S. M., Ilovitsh, A., Monjazeb, A. M., Murphy, W. J., Hubbard, N. E., Davis, R. R., Tepper, C. G., Borowsky, et al
  2018; 8 (13): 3611–28

- **In situ bone tissue engineering via ultrasound-mediated gene delivery to endogenous progenitor cells in mini-pigs** *SCIENCE TRANSLATIONAL MEDICINE*
  Bez, M., Sheyn, D., Tawackoli, W., Avalos, P., Shapiro, G., Giaconi, J. C., Da, X., Ben David, S., Gavrity, J., Awad, H. A., Bae, H. W., Ley, E. J., Kremen, et al
  2017; 9 (390)

- **Priming is key to effective incorporation of image-guided thermal ablation into immunotherapy protocols** *JCI INSIGHT*
  Silvestrini, M. T., Ingham, E. S., Mahakian, L. M., Kheirolomoom, A., Liu, Y., Fite, B. Z., Tam, S. M., Tucci, S. T., Watson, K. D., Wong, A. W., Monjazeb, A. M., Hubbard, N. E., Murphy, et al
  2017; 2 (6): e90521

- **Ultrasound ablation enhances drug accumulation and survival in mammary carcinoma models** *JOURNAL OF CLINICAL INVESTIGATION*
  Wong, A. W., Fite, B. Z., Liu, Y., Kheirolomoom, A., Seo, J. W., Watson, K. D., Mahakian, L. M., Tam, S. M., Zhang, H., Foiret, J., Borowsky, A. D., Ferrara, K. W.
  2016; 126 (1): 99–111

- **Multifunctional Nanoparticles Facilitate Molecular Targeting and miRNA Delivery to Inhibit Atherosclerosis in ApoE(-/-) Mice** *ACS NANO*
  Kheirolomoom, A., Kim, C., Seo, J., Kumar, S., Son, D., Gagnon, M. J., Ingham, E. S., Ferrara, K. W., Jo, H.
  2015; 9 (9): 8885–97

- **Dual inhibition of cyclooxygenase-2 and soluble epoxide hydrolase synergistically suppresses primary tumor growth and metastasis** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Zhang, G., Panigrahy, D., Hwang, S., Yang, J., Mahakian, L. M., Wettersten, H. I., Liu, J., Wang, Y., Ingham, E. S., Tam, S., Kieran, M. W., Weiss, R. H., Ferrara, et al
  2014; 111 (30): 11127–32

- **The atypical mechanosensitive microRNA-712 derived from pre-ribosomal RNA induces endothelial inflammation and atherosclerosis** *NATURE COMMUNICATIONS*
  Son, D., Kumar, S., Takabe, W., Kim, C., Ni, C., Alberts-Grill, N., Jang, I., Kim, S., Kim, W., Kang, S., Baker, A. H., Seo, J., Ferrara, et al
  2013; 4: 3000

- **Epoxy metabolites of docosahexaenoic acid (DHA) inhibit angiogenesis, tumor growth, and metastasis** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Zhang, G., Panigrahy, D., Mahakian, L. M., Yang, J., Liu, J., Lee, K., Wettersten, H. I., Ulu, A., Hu, X., Tam, S., Hwang, S., Ingham, E. S., Kieran, et al
  2013; 110 (16): 6530–35

- **Ultrasound Increases Nanoparticle Delivery by Reducing Intratumoral Pressure and Increasing Transport in Epithelial and Epithelial-Mesenchymal Transition Tumors** *CANCER RESEARCH*
  Watson, K. D., Lai, C., Qin, S., Kruse, D. E., Lin, Y., Seo, J., Cardiff, R. D., Mahakian, L. M., Beegle, J., Inghanm, E. S., Curry, F., Reed, R. K., Ferrara, et al
  2012; 72 (6): 1485–93

- **Specific penetration and accumulation of a homing peptide within atherosclerotic plaques of apolipoprotein E-deficient mice** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Hamzah, J., Kotamraju, V. R., Seo, J. W., Agemy, L., Fogal, V., Mahakian, L. M., Peters, D., Roth, L., Gagnon, M. J., Ferrara, K. W., Ruoslahti, E.
  2011; 108 (17): 7154–59

- **Longitudinal Investigation of Permeability and Distribution of Macromolecules in Mouse Malignant Transformation Using PET** *CLINICAL CANCER RESEARCH*
  Rygh, C. B., Qin, S., Seo, J. W., Mahakian, L. M., Zhang, H., Adamson, R., Chen, J. Q., Borowsky, A. D., Cardiff, R. D., Reed, R. K., Curry, F. E., Ferrara, K. W.
  2011; 17 (3): 550–59

- **Lipid-Shelled Vehicles: Engineering for Ultrasound Molecular Imaging and Drug Delivery** *ACCOUNTS OF CHEMICAL RESEARCH*
  Ferrara, K. W., Borden, M. A., Zhang, H.
  2009; 42 (7): 881–92

- **In vivo generation of CAR-T cells using IL-7 functionalized T cell-targeting LNPs**
  Zhang, N., Tumbale, S., Raie, M., Jan, B., Levy, R., Ferrara, K.
  CELL PRESS.2026: 67-69

- **Advancing pancreatic cancer theragnostic through claudin-4-selective radiolabeled peptides: Design, optimization, and preclinical validation.**
  Aziz, M. N., Zhang, N., Pandrala, M., An, J., Guo, Y., Raie, M., Tumbale, S., Jan, B., Ferrara, K. W.
  AMER ASSOC CANCER RESEARCH.2026

- **N/C-terminus modification: enhanced TROP2-targeting cyclic peptide for PET imaging**
  An, J., Zhang, N., Awadalla, M., Tumbale, S., Raie, M., Jan, B., Ferrara, K. W.
  AMER ASSOC CANCER RESEARCH.2026

- **Deep Learning for scaling large-aperture photoacoustic computed tomography : From single fingers to the human hand.** *Ultrasonics*
  Choi, S., Ferrara, K. W.
  2026; 165: 108081

- **From Physical Therapy to Pioneering Molecular Imaging Instrumentation: Christine Mona and Johannes Czernin talk with Katherine Ferrara.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Ferrara, K. W., Mona, C. E., Czernin, J.
  2026

- **Volumetric Ultrasound Imaging Based on 4096-Element Large-Aperture 2D Array.** *IEEE transactions on ultrasonics*
  Liu, B., Wodnicki, R., Foiret, J., Sun, X., Zhang, J., Notard, C., Legros, M., Zhou, Q., Ferrara, K. W.
  2026

- **Volumetric Ultrasound Imaging Based on 4096-Element Large-Aperture 2-D Array** *IEEE TRANSACTIONS ON ULTRASONICS*
  Liu, B., Wodnicki, R., Foiret, J., Sun, X., Zhang, J., Notard, C., Legros, M., Zhou, Q., Ferrara, K. W.
  2026; 73 (3): 284-295

- **Enhancing large-aperture photoacoustic computed tomography with deep learning: from single finger to human hand imaging**
  Choi, S., Ferrara, K. W.
  edited by Oraevsky, A. A., Wang, L. V.
  SPIE-INT SOC OPTICAL ENGINEERING.2026

- **Handheld Large 2-D Array With Azimuthal Planewave and Row-Multiplexed Elevation Beamforming Enabled by Local ASIC Electronics** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
  Wodnicki, R., Foiret, J., Liu, B., Lu, N., Sun, X., Zhang, J., Kang, H., Fu, L., Notard, C., Legros, M., Chang, C., Yen, J. T., Zhou, et al
  2025; 72 (7): 962-978

- **Multimodal imaging-guided sonodynamic therapy for orthotopic liver cancer using a functionalized sonosensitizer** *NANO TODAY*
  Wang, M., Zhang, N., Li, R., Foiret, J., Ferrara, K. W., Yue, X., Dai, Z.
  2025; 61

- **Microbubble-Enhanced Focused Ultrasound-Assisted Delivery of Adeno-Associated Viruses in Brain Tumors with PET Imaging Monitoring**
  Guo, Y., Foiret, J., Seo, J., Zhang, N., Wu, B., Raie, M., Tumbale, S., Ferrara, K.
  CELL PRESS.2024: 606-607

- **PET Imaging of In Situ-Engineered CAR-T Cells in B Cell Lymphoma with ⁶⁸Ga-PSMA-11**
  Zhang, N., Seo, J., Robinson, E., Rivera-Rodriguez, A., Wang, J., Guo, Y., Wu, B., Tumbale, S. K., Raie, M. N., Inayathullah, M., Czerwinski, D. K., Levy, R., Ferrara, et al
  CELL PRESS.2024: 69-70

- **Pyroptosis Induction with Nanosonosensitizer-Augmented Sonodynamic Therapy Combined with PD-L1 Blockade Boosts Efficacy Against Liver Cancer.** *Advanced healthcare materials*
  Zhang, N., Zeng, W., Xu, Y., Li, R., Wang, M., Liu, Y., Qu, S., Ferrara, K. W., Dai, Z.
  2023: e2302606

- **Protocol for in vitro sonoporation validation using non-targeted microbubbles for human studies of ultrasound-mediated gene delivery.** *STAR protocols*
  Zhang, N., Guo, Y., Foiret, J., Tumbale, S. K., Paulmurugan, R., Ferrara, K. W.
  2023; 4 (4): 102723

- **PAM and FUS-assisted local AAV gene delivery into the brain of Alzheimer's disease murine models assessed by quantitative PET reporter gene**
  Ajenjo, J., Seo, J., Foiret, J., Wu, B., Raie, M., Wang, J., Guo, Y., Zhang, N., Tumbale, S., Ferrara, K.
  ELSEVIER SCIENCE INC.2023: S141-S142

- **Assessment of [⁶⁴Cu]Cu-FAP-2286 in immunocompetent mice bearing pancreatic ductal adenocarcinoma (PDAC) tumors**
  Seo, J., Ajenjo, J., Wang, J., Wu, B., Raie, M., Tumbale, S., Ferrara, K.
  ELSEVIER SCIENCE INC.2023: S196

- **OMIP-095: 40-Color spectral flow cytometry delineates all major leukocyte populations in murine lymphoid tissues.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
  Kare, A. J., Nichols, L., Zermeno, R., Raie, M. N., Tumbale, S. K., Ferrara, K. W.
  2023

- **Optical Breast Imaging: A Review of Physical Principles, Technologies, and Clinical Applications.** *Journal of breast imaging*
  Poplack, S. P., Park, E. Y., Ferrara, K. W.
  2023; 5 (5): 520-537

- **Optical Breast Imaging: A Review of Physical Principles, Technologies, and Clinical Applications** *JOURNAL OF BREAST IMAGING*
  Poplack, S. P., Park, E., Ferrara, K. W.
  2023; 5 (5): 520-537

- **Gold-Nanostar-Chitosan-Mediated Delivery of SARS-CoV-2 DNA Vaccine for Respiratory Mucosal Immunization: Development and Proof-of-Principle (vol 15, pg 17582, 2021)** *ACS NANO*
  Kumar, U. S. S., Afjei, R., Ferrara, K., Massoud, T. F. F., Paulmurugan, R.
  2023

- **Large Array Deep Abdominal Imaging in Fundamental and Harmonic Mode.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*
  Ahmed, R., Foiret, J., Ferrara, K., Trahey, G.
  2023; PP

- **Molecular imaging and multi-cancer detection for precision medicine.**
  Ferrara, K.
  AMER ASSOC CANCER RESEARCH.2023: 2-3

- **Electronically Scanned Large Apertures for Interventional and Diagnostic Liver**
  Wodnicki, R., Zhang, J., Zhou, Q., Foiret, J., Notard, C., Ferrara, K. W., IEEE
  IEEE.2023

- **Hardwiring tissue-specific AAV transduction in mice through engineered receptor expression**
  Zengel, J. R., Wang, Y. X., Wseo, J., Hamilton, J. N., Wu, B., Raie, M., Holbrook, C., Su, S., Pillay, S., Puschnik, A. S., Nagamine, C., Ferrara, K., Blau, et al
  MARY ANN LIEBERT, INC.2022: A27

- **Multiomic analysis for optimization of combined focal and immunotherapy protocols in murine pancreatic cancer.** *Theranostics*
  Wang, J., Fite, B. Z., Kare, A. J., Wu, B., Raie, M., Tumbale, S. K., Zhang, N., Davis, R. R., Tepper, C. G., Aviran, S., Newman, A. M., King, D. A., Ferrara, et al
  2022; 12 (18): 7884-7902

- **Improving plane wave ultrasound imaging through real-time beamformation across multiple arrays.** *Scientific reports*
  Foiret, J., Cai, X., Bendjador, H., Park, E., Kamaya, A., Ferrara, K. W.
  2022; 12 (1): 13386

- **CD3 and CD8 targeting of ionizable lipid nanoparticles for in vivo mRNA delivery to T cells.**
  Robinson, E. R., Kare, A. J., Kheirolomoom, A., Inayathullah, M., Tumbale, S. K., Wu, B., Raie, M. N., Seo, J. W., Salazar, F. B., Paulmurugan, R., Wu, A. M., Ferrara, K. W.
  AMER ASSOC CANCER RESEARCH.2022

- **TME subtype impacts response to combined thermal ablation and immunotherapy**
  Wang, J., Fite, B. Z., Kare, A., Wu, B., Raie, M. N., Tumbale, S., Davis, R. R., Tepper, C. G., Ferrara, K.
  AMER ASSOC CANCER RESEARCH.2022

- **TME subtype impacts response to combined thermal ablation and immunotherapy.**
  Wang, J., Fite, B. Z., Kare, A., Wu, B., Raie, M. N., Tumbale, S., Davis, R. R., Tepper, C. G., Ferrara, K.
  AMER ASSOC CANCER RESEARCH.2022

- **CD3 and CD8 targeting of ionizable lipid nanoparticles for in vivo mRNA delivery to T cells**
  Robinson, E. R., Kare, A. J., Kheirolomoom, A., Inayathullah, M., Tumbale, S. K., Wu, B., Raie, M. N., Seo, J. W., Salazar, F. B., Paulmurugan, R., Wu, A. M., Ferrara, K. W.
  AMER ASSOC CANCER RESEARCH.2022

- **A Review of Imaging Methods to Assess Ultrasound-Mediated Ablation.** *BME frontiers*
  Fite, B. Z., Wang, J., Ghanouni, P., Ferrara, K. W.
  2022; 2022

- **Alternative medicine: therapeutic effects on gastric original signet ring carcinoma via ascorbate and combination with sodium alpha lipoate.** *BMC complementary medicine and therapies*
  Chen, W., Xu, L., Chang, E., Gowrishankar, G., Ferrara, K. W., Gambhir, S. S.
  2022; 22 (1): 58

- **A Review of Imaging Methods to Assess Ultrasound-Mediated Ablation** *BMEF: A Science Partner Journal*
  Fite, B. Z., Wang, J., Ghanouni, P., Ferrara, K. W.
  2022

- **Row-Multiplexed 1,024 Element Large Aperture Array for Electronic Scanning in Elevation**
  Wodnicki, R., Bendjador, H., Kang, H., Foiret, J., Notard, C., Zhou, Q., Ferrara, K. W., IEEE

IEEE.2022

- **Highly Integrated Multiplexing and Buffering Electronics for Large Aperture Ultrasonic Arrays** *BMEF: A Science Partner Journal*
  Wodnicki, R., Kang, H., Li, D., Stephens, D. N., Jung, H., Sun, Y., Chen, R., Jiang, L., Cabrera-Munoz, N., Foiret, J., Zhou, Q., Ferrara, K. W.
  2022
- **Optimization of microbubble-based DNA vaccination with low-frequency ultrasound for enhanced cancer immunotherapy.** *Advanced therapeutics*
  Zhang, N., Foiret, J., Kheirolomoom, A., Liu, P., Feng, Y., Tumbale, S., Raie, M., Wu, B., Wang, J., Fite, B. Z., Dai, Z., Ferrara, K. W.
  2021; 4 (9)
- **Synergies between therapeutic ultrasound, gene therapy and immunotherapy in cancer treatment.** *Advanced drug delivery reviews*
  Zhang, N., Wang, J., Foiret, J., Dai, Z., Ferrara, K. W.
  2021: 113906
- **Optimization of Microbubble-Based DNA Vaccination with Low-Frequency Ultrasound for Enhanced Cancer Immunotherapy** *ADVANCED THERAPEUTICS*
  Zhang, N., Foiret, J., Kheirolomoom, A., Liu, P., Feng, Y., Tumbale, S., Raie, M., Wu, B., Wang, J., Fite, B. Z., Dai, Z., Ferrara, K. W.
  2021
- **Pre-clinical evaluation of immunoPET imaging using agonist CD40 monoclonal antibody in pancreatic tumor-bearing mice.** *Nuclear medicine and biology*
  Aghevlian, S., Wu, B., Raie, M. N., Tumbale, S. K., Kare, A. J., Seo, J. W., Ferrara, K. W.
  2021; 98-99: 8–17
- **Estimation of Tissue Attenuation from Ultrasonic B-Mode Images-Spectral-Log-Difference and Method-of-Moments Algorithms Compared** *SENSORS*
  Brandner, D., Cai, X., Foiret, J., Ferrara, K. W., Zagar, B. G.
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