



Katherine Ferrara

Professor of Radiology (Molecular Imaging Program at Stanford)

Radiology - Rad/Molecular Imaging Program at Stanford

 NIH Biosketch available Online

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, 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 (2019 - 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

Postdoctoral Faculty Sponsor

Javier Ajenjo Barcenas, Hanna Bendjador, Pei Liu, Eunyeong Park, Anthony Podkowa, Angelie Rivera Rodriguez, Elise Robinson, Martin Schneider, Wei Lun Tang, James Wang

Doctoral Dissertation Advisor (AC)

Aris Kare

Publications

PUBLICATIONS

- **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
- **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
- **Optimization of microbubble-based DNA vaccination with low-frequency ultrasound for enhanced cancer immunotherapy.** *Advanced therapeutics*
Zhang, N., Foiret, J., Kheirulomoom, 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., Kheirulomoom, 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 immunPET 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.
2021; 21 (7)
- **Immune modulation resulting from MR-guided high intensity focused ultrasound in a model of murine breast cancer.** *Scientific reports*
Fite, B. Z., Wang, J., Kare, A. J., Ilovitsh, A., Chavez, M., Ilovitsh, T., Zhang, N., Chen, W., Robinson, E., Zhang, H., Kheiruloom, A., Silvestrini, M. T., Ingham, et al
2021; 11 (1): 927
- **Systemic Immunotherapy with Micellar Resiquimod-Polymer Conjugates Triggers a Robust Antitumor Response in a Breast Cancer Model.** *Advanced healthcare materials*
Kakwere, H. n., Zhang, H. n., Ingham, E. S., Nura-Raie, M. n., Tumbale, S. K., Allen, R. n., Tam, S. M., Wu, B. n., Liu, C. n., Kheiruloom, A. n., Fite, B. Z., Ilovitsh, A. n., Lewis, et al
2021: e2100008
- **Minicircles for a two-step blood biomarker and PET imaging early cancer detection strategy.** *Journal of controlled release : official journal of the Controlled Release Society*
Robinson, E. R., Gowrishankar, G., D'Souza, A., Kheiruloom, A., Haywood, T., Hori, S. S., Chuang, H. Y., Zeng, Y., Tumbale, S., Aalipour, A., Beinat, C., Alam, I. S., Sathirachinda, et al
2021
- **In situ T-cell transfection by anti-CD3-conjugated lipid nanoparticles leads to T-cell activation, migration, and phenotypic shift.** *Biomaterials*
Kheiruloom, 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
- **Gemcitabine-retinoid prodrug loaded nanoparticles display in vitro antitumor efficacy towards drug-resilient human PANC-1 pancreatic cancer cells.** *Materials science & engineering. C, Materials for biological applications*
Kakwere, H., Ingham, E. S., Tumbale, S. K., Ferrara, K. W.
2020; 117: 111251
- **Development of thermosensitive resiquimod-loaded liposomes for enhanced cancer immunotherapy.** *Journal of controlled release : official journal of the Controlled Release Society*
Zhang, H., Tang, W., Kheiruloom, A., Fite, B. Z., Wu, B., Lau, K., Baikoghli, M., Raie, M. N., Tumbale, S. K., Foiret, J., Ingham, E. S., Mahakian, L. M., Tam, et al
2020
- **The effective coupling coefficient for a completed PIN-PMN-PT array.** *Ultrasonics*
Stephens, D. N., Wodnicki, R., Chen, R., Liang, L., Zhou, Q., Morrison, K., Ferrara, K. W.
2020; 109: 106258
- **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., Dobrova, T. n., Flytzanis, et al
2020; 11 (1): 2102
- **Large Area 1.75D Array for Liver Cancer by Tiling of Multi-Generation ASIC Array Modules**
Wodnicki, R., Sun, Y., Li, R., Stephens, D. N., Kang, H., Chen, R., Foiret, J., Zhou, Q., Ferrara, K. W., IEEE
IEEE.2020
- **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., Kheirulomoom, 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
- **Engineering personalized peptide-based cancer nanovaccines**
Kakwere, H., Zhang, H., Kheirulomoom, A., Ferrara, K.
AMER CHEMICAL SOC.2019
- **Tumor-specific delivery of gemcitabine with activatable liposomes.** *Journal of controlled release : official journal of the Controlled Release Society*
Tucci, S. T., Kheirulomoom, A., Ingham, E. S., Mahakian, L. M., Tam, S. M., Foiret, J., Hubbard, N. E., Borowsky, A. D., Baikoghli, M., Cheng, R. H., Ferrara, K. W.
2019
- **Combining activatable nanodelivery with immunotherapy in a murine breast cancer model** *JOURNAL OF CONTROLLED RELEASE*
Kheirulomoom, A., Silvestrini, M. T., Ingham, E. S., Mahakian, L. M., Tam, S. M., Tumbale, S. K., Foiret, J., Hubbard, N. E., Borowsky, A. D., Ferrara, K. W.
2019; 303: 42–54
- **Carson-Zagzebski Distinguished Lectureship On Medical Ultrasound**
Diederich, C., Liu, T., Ferrara, K.
WILEY.2019: E349
- **Polymeric perfluorocarbon nanoemulsions are ultrasound-activated wireless drug infusion catheters** *BIOMATERIALS*
Zhong, Q., Yoon, B. C., Aryal, M., Wang, J. B., Ilovitsh, T., Baikoghli, M. A., Hosseini-Nassab, N., Karthik, A., Cheng, R. H., Ferrara, K. W., Airan, R. D.
2019; 206: 73–86
- **Acoustic radiation force imaging using a single-shot spiral readout** *PHYSICS IN MEDICINE AND BIOLOGY*
Ilovitsh, A., Fite, B. Z., Ilovitsh, T., Ferrara, K. W.
2019; 64 (12)
- **Positron emission tomography imaging of adeno-associated virus serotype 9-tetracystein (AAV9-TC) labeled with a multichelator**
Seo, J., Mahakian, L., Ingham, E., Tumbale, S., Shams, S., Silva, E., Ferrara, K.
WILEY.2019: S40–S41
- **Inhibition of mitochondrial respiration prevents BRAF-mutant melanoma brain metastasis** *ACTA NEUROPATHOLOGICA COMMUNICATIONS*
Sundstrom, T., Prestegarden, L., Azuaje, F., Aasen, S., Rosland, G., Varughese, J. K., Bahador, M., Bernatz, S., Braun, Y., Harter, P. N., Skaftnesmo, K., Ingham, E. S., Mahakian, et al
2019; 7
- **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
- **Simultaneous Axial Multifocal Imaging Using a Single Acoustical Transmission: A Practical Implementation** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Ilovitsh, A., Ilovitsh, T., Foiret, J., Stephens, D. N., Ferrara, K. W.
2019; 66 (2): 273–84
- **Enhanced delivery of AAV-like nanoparticles after blood-brain barrier disruption in a mouse model**
Foiret, J., Seo, J., Zhang, H., Kakwere, H., Mahakian, L. M., Tam, S., Ferrara, K. W., IEEE
IEEE.2019: 884–87
- **Co-integrated PIN-PMN-PT 2D Array and Transceiver Electronics by Direct-Assembly Using a 3D Printed Interposer Grid Frame.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*
Wodnicki, R. n., Kang, H. n., Chen, R. n., Cabrera-Munoz, N. E., Jong, H. n., Jiang, L. n., Foiret, J. n., Liu, Y. n., Chiu, V. n., Stephens, D. N., Zhou, Q. n., Ferrara, K. W.
2019

- **Multiplexed ultrasound beam summation for side lobe reduction.** *Scientific reports*
Ilovitsh, A. n., Ilovitsh, T. n., Ferrara, K. W.
2019; 9 (1): 13961
- **3D monitoring and control of microbubble cavitation for gene delivery**
Cai, X., Foiret, J., Roth, J., Gazit, Z., Pelled, G., Gazit, D., Ferrara, K. W., IEEE
IEEE.2019: 888–90
- **Tiled Large Element 1.75D Aperture with Dual Array Modules by Adjacent Integration of PIN-PMN-PT Transducers and Custom High Voltage Switching ASICs**
Wodnicki, R., Kang, H., Li, D., Sun, Y., Jiang, L., Chen, R., Chen, Z., Jong, H., Foiret, J., Liu, Y., Chiu, V., Stephens, D. N., Zhou, et al
IEEE.2019: 1955–58
- **Enhanced microbubble contrast agent oscillation following 250kHz insonation.** *Scientific reports*
Ilovitsh, T., Ilovitsh, A., Foiret, J., Caskey, C. F., Kusunose, J., Fite, B. Z., Zhang, H., Mahakian, L. M., Tam, S., Butts-Pauly, K., Qin, S., Ferrara, K. W.
2018; 8 (1): 16347
- **Unimicellar hyperstars as multi-antigen cancer nanovaccines displaying clustered epitopes of immunostimulating peptides** *BIOMATERIALS SCIENCE*
Kakwere, H., Ingham, E. S., Allen, R., Mahakian, L. M., Tam, S. M., Zhang, H., Silvestrini, M. T., Lewis, J. S., Ferrara, K. W.
2018; 6 (11): 2850–58
- **CD8(+) T-Cell Density Imaging with Cu-64-Labeled Cys-Diobody 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
- **Delivery of an Artificial Transcription Factor for Angelman Syndrome Using AAV-PHP.B, AAV-PHP.eB and AAV-DJ/8J with Focused Ultrasound**
Beitnere, U., Pyles, B., O'Geen, H., Foiret, J., Zhang, H., Fite, B. Z., Ilovitch, T., Mahakian, L., Tam, S., Ferrara, K. W., Segal, D. J.
CELL PRESS.2018: 140
- **Imaging beyond ultrasonically-impenetrable objects** *SCIENTIFIC REPORTS*
Ilovitsh, T., Ilovitsh, A., Foiret, J., Ferrara, K. W.
2018; 8: 5759
- **Acoustical structured illumination for super-resolution ultrasound imaging.** *Communications biology*
Ilovitsh, T., Ilovitsh, A., Foiret, J., Fite, B. Z., Ferrara, K. W.
2018; 1
- **Assessment of Electromechanical Coupling Coefficient for a Completed PIN-PMN-PT Array**
Stephens, D. N., Wodnicki, R., Chen, R., Liang, L., Zhou, Q., Morrison, K., Ferrara, K. W., IEEE
IEEE.2018
- **A Scalable Method for Squalenylation and Assembly of Multifunctional 64Cu-Labeled Squalenoylated Gemcitabine Nanoparticles.** *Nanotheranostics*
Tucci, S. T., Seo, J. W., Kakwere, H., Kheirrolomoom, A., Ingham, E. S., Mahakian, L. M., Tam, S., Tumbale, S., Baikoghli, M., Cheng, R. H., Ferrara, K. W.
2018; 2 (4): 387–402
- **Modular fabrication and assembly of large 2D arrays with interface ASICs, PIN-PMN-PT composite, and 3D printed backing**
Wodnicki, R., Kang, H., Adhikari, J., Jung, H., Chen, R., Chen, Z., Jiang, L., Cabrera-Munoz, N., Zhang, R., Liu, Y., Chiu, V., Foiret, J., Stephens, et al
IEEE.2018
- **Acoustical structured illumination for super-resolution ultrasound imaging** *COMMUNICATIONS BIOLOGY*
Ilovitsh, T., Ilovitsh, A., Foiret, J., Fite, B. Z., Ferrara, K. W.
2018; 1
- **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
- **Toward Personalized Peptide-Based Cancer Nanovaccines: A Facile and Versatile Synthetic Approach** *BIOCONJUGATE CHEMISTRY*
Kakwere, H., Ingham, E. S., Allen, R., Mahakian, L. M., Tam, S. M., Zhang, H., Silvestrini, M. T., Lewis, J. S., Ferrara, K. W.
2017; 28 (11): 2756–71
 - **Ultrasound localization microscopy to image and assess microvasculature in a rat kidney** *SCIENTIFIC REPORTS*
Foiret, J., Zhang, H., Ilovitsh, T., Mahakian, L., Tam, S., Ferrara, K. W.
2017; 7: 13662
 - **Dynamic contrast enhanced MRI detects changes in vascular transport rate constants following treatment with thermally-sensitive liposomal doxorubicin** *JOURNAL OF CONTROLLED RELEASE*
Fite, B. Z., Kheirroloom, A., Foiret, J. L., Seo, J. W., Mahakian, L. M., Ingham, E. S., Tam, S. M., Borowsky, A. D., Curry, F. E., Ferrara, K. W.
2017; 256: 203–13
 - **Supersonic transient magnetic resonance elastography for quantitative assessment of tissue elasticity** *PHYSICS IN MEDICINE AND BIOLOGY*
Liu, Y., Liu, J., Fite, B. Z., Foiret, J., Ilovitsh, A., Leach, J., Dumont, E., Caskey, C. F., Ferrara, K. W.
2017; 62 (10): 4083–4106
 - **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., Gavriity, J., Awad, H. A., Bae, H. W., Ley, E. J., Kremen, et al
2017; 9 (390)
 - **Anatomical image-guided fluorescence molecular tomography reconstruction using kernel method** *JOURNAL OF BIOMEDICAL OPTICS*
Baikjiang, R., Zhao, Y., Fite, B. Z., Ferrara, K. W., Li, C.
2017; 22 (5): 55001
 - **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., Kheirroloom, 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
 - **In vitro characterization and in vivo ultrasound molecular imaging of nucleolin-targeted microbubbles** *BIOMATERIALS*
Zhang, H., Ingham, E. S., Gagnon, M. J., Mahakian, L. M., Liu, J., Foiret, J. L., Willmann, J. K., Ferrara, K. W.
2017; 118: 63–73
 - **Feasibility of quantitative contrast ultrasound imaging of bladder tumors in dogs** *CANADIAN VETERINARY JOURNAL-REVUE VETERINAIRE CANADIENNE*
Pollard, R. E., Watson, K. D., Hu, X., Ingham, E., Ferrara, K. W.
2017; 58 (1): 70–72
 - **PIN-PMN-PT single crystal composite and 3D printed interposer backing for ASIC integration of large aperture 2D array**
Wodnicki, R., Kang, H., Zhang, R., Chen, R., Cabrera-Munoz, N., Adhikari, J., Neher, C., Chiu, C., Liu, Y., Stephens, D. N., Zhou, Q., Ferrera, K., IEEE
IEEE.2017
 - **Blood-brain barrier disruption for the delivery of noninfectious viral vectors and proteins, preliminary study**
Foiret, J., Zhang, H., Fite, B. Z., Ilovitsh, T., Mahakian, L. M., Tam, S., Beitnere, U., Pyles, B., Segal, D. J., Ferrara, K. W., IEEE
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 - **Intracellular trafficking of a pH-responsive drug metal complex** *JOURNAL OF CONTROLLED RELEASE*
Kheirroloom, A., Ingham, E. S., Commisso, J., Abushaban, N., Ferrara, K. W.
2016; 243: 232–42
 - **Novel theranostic nanoporphyryns for photodynamic diagnosis and trimodal therapy for bladder cancer** *BIOMATERIALS*
Lin, T., Li, Y., Liu, Q., Chen, J., Zhang, H., Lac, D., Zhang, H., Ferrara, K. W., Wachsmann-Hogiu, S., Li, T., Airhart, S., White, R., Lam, et al
2016; 104: 339–51
 - **Development of a spherically focused phased array transducer for ultrasonic image-guided hyperthermia** *PHYSICS IN MEDICINE AND BIOLOGY*
Liu, J., Foiret, J., Stephens, D. N., Le Baron, O., Ferrara, K. W.

2016; 61 (14): 5275–96

- **Multiparameter evaluation of in vivo gene delivery using ultrasound-guided, microbubble-enhanced sonoporation** *JOURNAL OF CONTROLLED RELEASE*
Shapiro, G., Wong, A. W., Bez, M., Yang, F., Tam, S., Even, L., Sheyn, D., Ben-David, S., Tawackoli, W., Pelled, G., Ferrara, K. W., Gazit, D.
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- **Ultrasound ablation enhances drug accumulation and survival in mammary carcinoma models** *JOURNAL OF CLINICAL INVESTIGATION*
Wong, A. W., Fite, B. Z., Liu, Y., Kheirulomoom, 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
- **HIFU Power Network Optimization for Catheter Based Cardiac Interventions**
Stephens, D. N., Foiret, J., Lucero, S., Ferrara, K. W., Shivkumar, K., Khuri-Yakub, P., IEEE
IEEE.2016
- **Super-localization of contrast agents in moving organs, first experiments in a rat kidney**
Foiret, J., Zhang, H., Mahakian, L., Tam, S., Ferrara, K. W., IEEE
IEEE.2016
- **Quantitative MR-guided transient shear wave imaging for tissue elasticity assessment**
Liu, Y., Liu, J., Fite, B. Z., Foiret, J., Leach, J., Ferrara, K. W., IEEE
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- **CpG expedites regression of local and systemic tumors when combined with activatable nanodelivery** *JOURNAL OF CONTROLLED RELEASE*
Kheirulomoom, A., Ingham, E. S., Mahakian, L. M., Tam, S. M., Silvestrini, M. T., Tumbale, S. K., Foiret, J., Hubbard, N. E., Borowsky, A. D., Murphy, W. J., Ferrara, K. W.
2015; 220: 253–64
- **Self-assembled 20-nm Cu-64-micelles enhance accumulation in rat glioblastoma** *JOURNAL OF CONTROLLED RELEASE*
Seo, J., Ang, J., Mahakian, L. M., Tam, S., Fite, B., Ingham, E. S., Beyer, J., Forsayeth, J., Bankiewicz, K. S., Xu, T., Ferrara, K. W.
2015; 220: 51–60
- **Concurrent Visualization of Acoustic Radiation Force Displacement and Shear Wave Propagation with 7T MRI** *PLOS ONE*
Liu, Y., Fite, B. Z., Mahakian, L. M., Johnson, S. M., Larrat, B., Dumont, E., Ferrara, K. W.
2015; 10 (10): e0139667
- **Multifunctional Nanoparticles Facilitate Molecular Targeting and miRNA Delivery to Inhibit Atherosclerosis in ApoE(-/-) Mice** *ACS NANO*
Kheirulomoom, 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
- **Spatial and Temporal Control of Hyperthermia Using Real Time Ultrasonic Thermal Strain Imaging with Motion Compensation, Phantom Study** *PLOS ONE*
Foiret, J., Ferrara, K. W.
2015; 10 (8): e0134938
- **Ultrasound molecular imaging of tumor angiogenesis with a neuropilin-1-targeted microbubble** *BIOMATERIALS*
Zhang, H., Tam, S., Ingham, E. S., Mahakian, L. M., Lai, C., Tumbale, S. K., Teesalu, T., Hubbard, N. E., Borowsky, A. D., Ferrara, K. W.
2015; 56: 104–13
- **Therapeutic Strategies and Image Guidance**
Ferrara, K., Chopra, R., Konofagou, E., Farahani, K.
AMER ASSOC PHYSICISTS MEDICINE AMER INST PHYSICS.2015: 3624–25
- **Magnetic Resonance Imaging Assessment of Effective Ablated Volume following High Intensity Focused Ultrasound** *PLOS ONE*
Fite, B. Z., Wong, A., Liu, Y., Mahakian, L. M., Tam, S. M., Aina, O., Hubbard, N. E., Borowsky, A., Cardiff, R. D., Dumont, E., Ferrara, K. W.
2015; 10 (3): e0120037
- **The pharmacokinetics of Zr-89 labeled liposomes over extended periods in a murine tumor model** *NUCLEAR MEDICINE AND BIOLOGY*
Seo, J., Mahakian, L. M., Tam, S., Qin, S., Ingham, E. S., Meares, C. F., Ferrara, K. W.
2015; 42 (2): 155–63

- **Microfluidic co-cultures with hydrogel-based ligand trap to study paracrine signals giving rise to cancer drug resistance** *LAB ON A CHIP*
Patel, D., Gao, Y., Son, K., Siltanen, C., Neve, R. M., Ferrara, K., Revzin, A.
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