



Katherine Ferrara

Professor of Radiology (Molecular Imaging Program at Stanford)

Radiology - Rad/Molecular Imaging Program at Stanford

Bio

BIO

Katherine Whittaker Ferrara is a Professor of Radiology. 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 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 early work in aspects of ultrasonics and has more recently expanded their focus to broadly investigate molecular imaging and drug delivery.

ACADEMIC APPOINTMENTS

- Professor, Radiology - Rad/Molecular Imaging Program at Stanford
- Member, Bio-X
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Member, National Academy of Engineering (2014)
- 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)

LINKS

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

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Tumor-specific delivery of gemcitabine with activatable liposomes.** *Journal of controlled release : official journal of the Controlled Release Society*
Tucci, S. T., Kheirolomoom, 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*
Kheirolomoom, 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 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-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

- **Delivery of an Artificial Transcription Factor for Angelman Syndrome Using AAV-PHP.B, AAV-PHP.eB and AAV-DJ/8J with Focused Ultrasound**
Beitner, U., Pyles, B., O'Geen, H., Foiret, J., Zhang, H., Fite, B. Z., Ilovitsh, 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., Kheirrolomoom, 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., Kheirrolomoom, A., Liu, Y., Fite, B. Z., Tam, S. M., Tucci, S. T., Watson, K. D., Wong, A. W., Monjabez, 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
 - **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
IEEE.2017
 - **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., Ferrara, K., IEEE
IEEE.2017
 - **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
 - **Intracellular trafficking of a pH-responsive drug metal complex** *JOURNAL OF CONTROLLED RELEASE*
Kheirrolomoom, 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.
2016; 223: 157–64
 - **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
IEEE.2016
 - **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
 - **Ultrasound ablation enhances drug accumulation and survival in mammary carcinoma models** *JOURNAL OF CLINICAL INVESTIGATION*
Wong, A. W., Fite, B. Z., Liu, Y., Kheirrolomoom, 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
 - **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
 - **CpG expedites regression of local and systemic tumors when combined with activatable nanodelivery** *JOURNAL OF CONTROLLED RELEASE*
Kheirrolomoom, 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
- **Advances in thermal strain imaging: 3D motion and tumor validation studies**
Foiret, J., Ferrara, K., IEEE
IEEE.2015
- **10 MHz Catheter-based Annular Array for Thermal Strain Guided Intramural Cardiac Ablations**
Stephens, D. N., Foiret, J., Lucero, S., Ferrara, K. W., Shivkumar, K., Khuri-Yakub, P., IEEE
IEEE.2015
- **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.
2015; 15 (24): 4614–24
- **NEW USES OF OLD DRUGS FOR THE CLINICAL TREATMENT OF BRAIN METASTASES**
Sundstrom, T., Varughese, J., Azuaje, F., Prestegarden, L., Petersen, K., Tepper, C., Ingham, E., Even, L., Johnson, S., Skaftnesmo, K., Lund-Johansen, M., Bjerkgvig, R., Ferrara, et al
OXFORD UNIV PRESS INC.2014
- **Drug repurposing to treat melanoma brain metastases**
Sundstrom, T., Varughese, J. K., Azuaje, F., Petersen, K., Tepper, C. G., Ingham, E., Even, L., Tam, S., Skaftnesmo, K., Lund-Johansen, M., Bjerkgvig, R., Ferrara, K. W., Thorsen, et al
AMER ASSOC CANCER RESEARCH.2014
- **omega-3 Polyunsaturated fatty acids-derived lipid metabolites on angiogenesis, inflammation and cancer** *PROSTAGLANDINS & OTHER LIPID MEDIATORS*
Wang, W., Zhu, J., Lyu, F., Panigrahy, D., Ferrara, K. W., Hammock, B., Zhang, G.
2014; 113: 13–20
- **Effect of Alkyl Length of Peptide-Polymer Amphiphile on Cargo Encapsulation Stability and Pharmacokinetics of 3-Helix Micelles** *BIOMACROMOLECULES*
Dube, N., Seo, J. W., Dong, H., Shu, J. Y., Lund, R., Mahakian, L. M., Ferrara, K. W., Xu, T.

2014; 15 (8): 2963–70

- **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
- **Albumin modulates S1P delivery from red blood cells in perfused microvessels: mechanism of the protein effect (vol 306, pg H1011, 2014)** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
Adamson, R. H., Clark, J. F., Radeva, M., Jiang, Y., Kheiriloom, A., Ferrara, K. W., Curry, F. E.
2014; 307 (1): H120
- **Comparison of PET Imaging with Cu-64-Liposomes and F-18-FDG in the 7,12-Dimethylbenz[a]anthracene (DMBA)-Induced Hamster Buccal Pouch Model of Oral Dysplasia and Squamous Cell Carcinoma** *MOLECULAR IMAGING AND BIOLOGY*
Mahakian, L. M., Farwell, D., Zhang, H., Seo, J., Poirier, B., Tinling, S. P., Afify, A. M., Haynam, E. M., Shaye, D., Ferrara, K. W.
2014; 16 (2): 284–92
- **Albumin modulates S1P delivery from red blood cells in perfused microvessels: mechanism of the protein effect** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
Adamson, R. H., Clark, J. F., Radeva, M., Kheiriloom, A., Ferrara, K. W., Curry, F. E.
2014; 306 (7): H1011–H1017
- **Accumulation, internalization and therapeutic efficacy of neuropilin-1-targeted liposomes** *JOURNAL OF CONTROLLED RELEASE*
Paoli, E. E., Ingham, E. S., Zhang, H., Mahakian, L. M., Fite, B. Z., Gagnon, M., Tam, S., Kheiriloom, A., Cardiff, R. D., Ferrara, K. W.
2014; 178: 108–17
- **Creation and Characterization of an Ultrasound and CT Phantom for Noninvasive Ultrasound Thermometry Calibration** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
Lai, C., Kruse, D. E., Ferrara, K. W., Caskey, C. F.
2014; 61 (2): 502–12
- **A Physiological Perspective on the Use of Imaging to Assess the In Vivo Delivery of Therapeutics** *ANNALS OF BIOMEDICAL ENGINEERING*
Qin, S., Fite, B. Z., Gagnon, M. J., Seo, J. W., Curry, F., Thorsen, F., Ferrara, K. W.
2014; 42 (2): 280–98
- **Cu-64-Labeled LyP-1-Dendrimer for PET-CT Imaging of Atherosclerotic Plaque** *BIOCONJUGATE CHEMISTRY*
Seo, J., Baek, H., Mahakian, L. M., Kusunose, J., Hamzah, J., Ruoslahti, E., Ferrara, K. W.
2014; 25 (2): 231–39
- **Assessing the barriers to image-guided drug delivery** *WILEY INTERDISCIPLINARY REVIEWS-NANOMEDICINE AND NANOBIO TECHNOLOGY*
Lanza, G. M., Moonen, C., Baker, J. R., Chang, E., Cheng, Z., Grodzinski, P., Ferrara, K., Hynynen, K., Kelloff, G., Lee, Y. K., Patri, A. K., Sept, D., Schnitzer, et al
2014; 6 (1): 1-14
- **Spatial and temporal control of hyperthermia using real time thermal strain imaging with motion compensation**
Foiret, J., Ferrara, K. W., IEEE
IEEE.2014: 2133–36
- **Quantitation of nanoparticle accumulation in flow using optimized microfluidic chambers** *JOURNAL OF DRUG TARGETING*
Kusunose, J., Gagnon, M. J., Seo, J. W., Ferrara, K. W.
2014; 22 (1): 48–56
- **Multimodal imaging enables early detection and characterization of changes in tumor permeability of brain metastases** *JOURNAL OF CONTROLLED RELEASE*
Thorsen, F., Fite, B., Mahakian, L. M., Seo, J. W., Qin, S., Harrison, V., Johnson, S., Ingham, E., Caskey, C., Sundstrom, T., Meade, T. J., Harter, P. N., Skafnesmo, et al
2013; 172 (3): 812–22
- **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

- **Complete regression of local cancer using temperature-sensitive liposomes combined with ultrasound-mediated hyperthermia** *JOURNAL OF CONTROLLED RELEASE*
Kheirrolomoom, A., Lai, C., Tam, S. M., Mahakian, L. M., Ingham, E. S., Watson, K. D., Ferrara, K. W.
2013; 172 (1): 266–73
- **Inhibition of Mechanosensitive MicroRNA, mir-712 Decreases Endothelial Dysfunction and Atherosclerosis**
Kumar, S., Son, D. J., Takabe, W., Kim, C., Ni, C. W., Alberts-Grill, N., Kim, S. O., Kim, W., Seo, J., Ferrara, K., Jo, H.
LIPPINCOTT WILLIAMS & WILKINS.2013
- **EARLY TUMOR DETECTION AND CHARACTERIZATION OF CHANGES IN TUMOR PERMEABILITY OF BRAINMETASTASES USING MULTIMODAL IMAGING**
Thorsen, F., Fite, B., Mahakian, L. M., Seo, J. W., Qin, S., Harrison, V., Sundstrom, T., Harter, P. N., Johnson, S., Ingham, E., Caskey, C., Meade, T., Skaftnesmo, et al
OXFORD UNIV PRESS INC.2013: 241
- **BRAIN-SPECIFIC GENE SIGNATURE OF MELANOMA METASTASIS**
Sundstrom, T., Varughese, J. K., Harter, P., Prestegarden, L., Petersen, K., Azuaje, F., Tepper, C., Ingham, E., Even, L., Johnson, S., Skaftnesmo, K., Lund-Johansen, M., Bjerkgvig, et al
OXFORD UNIV PRESS INC.2013: 27
- **Evaluation of Doxorubicin-Loaded 3-Helix Micelles as Nanocarriers** *BIOMACROMOLECULES*
Dube, N., Shu, J. Y., Dong, H., Seo, J. W., Ingham, E., Kheirrolomoom, A., Chen, P., Forsayeth, J., Bankiewicz, K., Ferrara, K. W., Xu, T.
2013; 14 (10): 3697–3705
- **A phantom for visualization of three-dimensional drug release by ultrasound-induced mild hyperthermia** *MEDICAL PHYSICS*
Lai, C., Kruse, D., Seo, J., Kheirrolomoom, A., Ferrara, K. W.
2013; 40 (8): 083301
- **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
- **Cardiac myocyte exosomes: stability, HSP60, and proteomics** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
Malik, Z. A., Kott, K. S., Poe, A. J., Kuo, T., Chen, L., Ferrara, K. W., Knowlton, A. A.
2013; 304 (7): H954–H965
- **Multimodal imaging of blood-brain barrier disruption during brain metastatic progression in a relevant experimental mouse model**
Thorsen, F., Fite, B., Mahakian, L., Harrison, V., Johnson, S., Ingham, E., Qin, S., Soo, J. W., Meade, T., Sundstrom, T., Ferrara, K. W.
AMER ASSOC CANCER RESEARCH.2013
- **A comparison of image contrast with Cu-64-labeled long circulating liposomes and F-18-FDG in a murine model of mammary carcinoma** *AMERICAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING*
Ormsby, A., Zhang, H., Seo, J., Mahakian, L. M., Caskey, C. F., Ferrara, K. W.
2013; 3 (1): 32–43
- **Ultrasound** *MEDICAL IMAGING: PRINCIPLES AND PRACTICES*
Goldberg, R. L., Smith, S. W., Mottley, J. G., Ferrara, K., Analoui, M., Bronzino, J. D., Peterson, D. R.
2013
- **Blood Flow Measurement Using Ultrasound** *MEDICAL IMAGING: PRINCIPLES AND PRACTICES*
Ferrara, K., Analoui, M., Bronzino, J. D., Peterson, D. R.
2013
- **In vivo validation and 3D visualization of broadband ultrasound molecular imaging** *AMERICAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING*
Hu, X., Caskey, C. F., Mahakian, L. M., Kruse, D. E., Beegle, J. R., Declèves, A., Rychak, J. J., Sutcliffe, P. L., Sharma, K., Ferrara, K. W.
2013; 3 (4): 336–49

- **Microfluidic System for Facilitated Quantification of Nanoparticle Accumulation to Cells Under Laminar Flow** *ANNALS OF BIOMEDICAL ENGINEERING*
Kusunose, J., Zhang, H., Gagnon, M. J., Pan, T., Simon, S. I., Ferrara, K. W.
2013; 41 (1): 89–99
- **Ultrasonic enhancement of drug penetration in solid tumors** *FRONTIERS IN ONCOLOGY*
Lai, C., Fite, B. Z., Ferrara, K. W.
2013; 3: 204
- **The cargo of CRPPR-conjugated liposomes crosses the intact murine cardiac endothelium**
Zhang, H., Li, N., Sirish, P., Mahakian, L., Ingham, E., Curry, F., Yamada, S., Chiamvimonvat, N., Ferrara, K. W.
ELSEVIER SCIENCE BV.2012: 10–17
- **Ultrasound Imaging of Oxidative Stress In Vivo with Chemically-Generated Gas Microbubbles** *ANNALS OF BIOMEDICAL ENGINEERING*
Perng, J., Lee, S., Kundu, K., Caskey, C. F., Knight, S. F., Satir, S., Ferrara, K. W., Taylor, W., Degertekin, F., Sorescu, D., Murthy, N.
2012; 40 (9): 2059–68
- **Insonation of Targeted Microbubbles Produces Regions of Reduced Blood Flow Within Tumor Vasculature** *INVESTIGATIVE RADIOLOGY*
Hu, X., Kheiroloom, A., Mahakian, L. M., Beegle, J. R., Kruse, D. E., Lam, K. S., Ferrara, K. W.
2012; 47 (7): 398–405
- **Long-Circulating 15 nm Micelles Based on Amphiphilic 3-Helix Peptide-PEG Conjugates** *ACS NANO*
Dong, H., Dube, N., Shu, J. Y., Seo, J. W., Mahakian, L. M., Ferrara, K. W., Xu, T.
2012; 6 (6): 5320–29
- **Magnetic Resonance Thermometry at 7T for Real-Time Monitoring and Correction of Ultrasound Induced Mild Hyperthermia** *PLOS ONE*
Fite, B. Z., Liu, Y., Kruse, D. E., Caskey, C. F., Walton, J. H., Lai, C., Mahakian, L. M., Larrat, B., Dumont, E., Ferrara, K. W.
2012; 7 (4): e35509
- **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., Ingham, E. S., Curry, F., Reed, R. K., Ferrara, et al
2012; 72 (6): 1485–93
- **Leveraging the power of ultrasound for therapeutic design and optimization** *JOURNAL OF CONTROLLED RELEASE*
Caskey, C. F., Hu, X., Ferrara, K. W.
2011; 156 (3): 297–306
- **An Open Environment CT-US Fusion for Tissue Segmentation during Interventional Guidance** *PLOS ONE*
Caskey, C. F., Hlawitschka, M., Qin, S., Mahakian, L. M., Cardiff, R. D., Boone, J. M., Ferrara, K. W.
2011; 6 (11): e27372
- **Fast Ultrasound Beam Prediction for Linear and Regular Two-Dimensional Arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Hlawitschka, M., McGough, R. J., Ferrara, K. W., Kruse, D. E.
2011; 58 (9): 2001–12
- **Design Aspects of Focal Beams From High-Intensity Arrays** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Stephens, D. N., Kruse, D. E., Qin, S., Ferrara, K. W.
2011; 58 (8): 1590–1602
- **A Radio-Frequency Coupling Network for Heating of Citrate-Coated Gold Nanoparticles for Cancer Therapy: Design and Analysis** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
Kruse, D. E., Stephens, D. N., Lindfors, H. A., Ingham, E. S., Paoli, E. E., Ferrara, K. W.
2011; 58 (7): 2002–12
- **NOVEL ULTRASOUND AND DCE-MRI ANALYSES AFTER ANTIANGIOGENIC TREATMENT WITH A SELECTIVE VEGF RECEPTOR INHIBITOR** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Watson, K. D., Hu, X., Lai, C., Lindfors, H. A., Hu-Lowe, D. D., Tuthill, T. A., Shalinsky, D. R., Ferrara, K. W.
2011; 37 (6): 909–21

- **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
- **PET-guided and ultrasound enhanced nanotherapy**
Ferrara, K. W., Kheirloom, A., Seo, J. W., Qin, S., Zhang, H., Even, L., Rygh, C.
AMER ASSOC CANCER RESEARCH.2011
- **Positron emission tomography imaging of the stability of Cu-64 labeled dipalmitoyl and distearoyl lipids in liposomes** *JOURNAL OF CONTROLLED RELEASE*
Seo, J., Qin, S., Mahakian, L. M., Watson, K. D., Kheirloom, A., Ferrara, K. W.
2011; 151 (1): 28–34
- **Novel Targeted Contrast Agent for Ultrasound Molecular Imaging of alpha v beta 3 Integrin**
Anderson, C. R., Rychak, J. J., Hu, X., Ferrara, K.
FEDERATION AMER SOC EXP BIOL.2011
- **Novel Method to Label Solid Lipid Nanoparticles with Cu-64 for Positron Emission Tomography Imaging** *BIOCONJUGATE CHEMISTRY*
Andreozzi, E., Seo, J., Ferrara, K., Louie, A.
2011; 22 (4): 808–18
- **Ultrasound Molecular Imaging of Tumor Angiogenesis With an Integrin Targeted Microbubble Contrast Agent** *INVESTIGATIVE RADIOLOGY*
Anderson, C. R., Hu, X., Zhang, H., Tlaxca, J., Decleves, A., Houghtaling, R., Sharma, K., Lawrence, M., Ferrara, K. W., Rychak, J. J.
2011; 46 (4): 215–24
- **Triggered complement activation using liposome flip-flop**
Day, J. J., Paoli, E. E., Ferrara, K. W., Meares, C. F.
AMER CHEMICAL SOC.2011
- **Targeting Activin Receptor-Like Kinase 1 Inhibits Angiogenesis and Tumorigenesis through a Mechanism of Action Complementary to Anti-VEGF Therapies** *CANCER RESEARCH*
Hu-Lowe, D. D., Chen, E., Zhang, L., Watson, K. D., Mancuso, P., Lappin, P., Wickman, G., Chen, J. H., Wang, J., Jiang, X., Amundson, K., Simon, R., Erbersdobler, et al
2011; 71 (4): 1362–73
- **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
- **MR-Guided Focused Ultrasound with Spatial and Temporal Temperature Control for Hyperthermia**
Liu, Y., Fite, B. Z., Kruse, D. E., Mahakian, L., Dumont, E., Caskey, C. F., Ferrara, K. W., IEEE
IEEE.2011: 1641–44
- **Reduced blood flow in murine tumors after the destruction of bound, targeted microbubbles**
Hu, X., Kheirloom, A., Mahakian, L. M., Beegle, J. R., Ingham, E. S., Caskey, C. F., Kruse, D. E., Ferrara, K. W., IEEE
IEEE.2011: 955–58
- **A Fast Ultrasound Molecular Imaging Method and its 3D Visualization in vivo**
Hu, X., Mahakian, L., Caskey, C., Beegle, J., Kruse, D., Rychak, J., Sutcliffe, P., Ferrara, K., IEEE
IEEE.2011: 1618–21
- **Noninvasive Thermometry Assisted by a Dual-Function Ultrasound Transducer for Mild Hyperthermia** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Lai, C., Kruse, D. E., Caskey, C. F., Stephens, D. N., Sutcliffe, P. L., Ferrara, K. W.
2010; 57 (12): 2671–84
- **Copper-Doxorubicin as a Nanoparticle Cargo Retains Efficacy with Minimal Toxicity** *MOLECULAR PHARMACEUTICS*
Kheirloom, A., Mahakian, L. M., Lai, C., Lindfors, H. A., Seo, J., Paoli, E. E., Watson, K. D., Haynam, E. M., Ingham, E. S., Xing, L., Cheng, R., Borowsky, A. D., Cardiff, et al

2010; 7 (6): 1948–58

- **A model for the dynamics of ultrasound contrast agents in vivo** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Qin, S., Ferrara, K. W.
2010; 128 (3): 1511–21
- **Liposomal Cu-64 Labeling Method Using Bifunctional Chelators: Poly(ethylene glycol) Spacer and Chelator Effects** *BIOCONJUGATE CHEMISTRY*
Seo, J., Mahakian, L. M., Kheirloom, A., Zhang, H., Meares, C. F., Ferdani, R., Anderson, C. J., Ferrara, K. W.
2010; 21 (7): 1206–15
- **An optical and microPET assessment of thermally-sensitive liposome biodistribution in the Met-1 tumor model: Importance of formulation** *JOURNAL OF CONTROLLED RELEASE*
Paoli, E. E., Kruse, D. E., Seo, J. W., Zhang, H., Kheirloom, A., Watson, K. D., Chiu, P., Stahlberg, H., Ferrara, K. W.
2010; 143 (1): 13–22
- **Longitudinal investigation of permeability and distribution of macromolecules in mouse tumor development and malignant transformation using PET**
Rygh, C. B., Seo, J. W., Qin, S. P., Mahakian, L. M., Zhang, H., Kukis, D. L., Chan, J. Q., Cheng-Liao, J., Reed, R. K., Ferrara, K. W.
FEDERATION AMER SOC EXP BIOL.2010
- **Radiolabeled lipids assess liposomal stability in vitro and in vivo**
Seo, J., Mahakian, L., Kheirloom, A., Ferrara, K. W.
AMER CHEMICAL SOC.2010
- **A Sensitive TLRH Targeted Imaging Technique for Ultrasonic Molecular Imaging** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Hu, X., Zheng, H., Kruse, D. E., Sutcliffe, P., Stephens, D. N., Ferrara, K. W.
2010; 57 (2): 305–16
- **Enhanced in vivo bioluminescence imaging using liposomal luciferin delivery system** *JOURNAL OF CONTROLLED RELEASE*
Kheirloom, A., Kruse, D. E., Qin, S., Watson, K. E., Lai, C., Young, L. T., Cardiff, R. D., Ferrara, K. W.
2010; 141 (2): 128–36
- **An Imaging-Driven Model for Liposomal Stability and Circulation** *MOLECULAR PHARMACEUTICS*
Qin, S., Seo, J., Zhang, H., Qi, J., Curry, F. E., Ferrara, K. W.
2010; 7 (1): 12–21
- **Spatial and Temporal-Controlled Tissue Heating on a Modified Clinical Ultrasound Scanner for Generating Mild Hyperthermia in Tumors** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
Kruse, D. E., Lai, C., Stephens, D. N., Sutcliffe, P., Paoli, E. E., Barnes, S. H., Ferrara, K. W.
2010; 57 (1): 155–66
- **Motion Corrected Cadence CPS Ultrasound for Quantifying Response to Vasoactive Drugs in a Rat Kidney Model** *REPLY UROLOGY*
Pollard, R. E., Ferrara, K. W.
2009; 74 (3): 682
- **Motion Corrected Cadence CPS Ultrasound for Quantifying Response to Vasoactive Drugs in a Rat Kidney Model** *UROLOGY*
Pollard, R. E., Dayton, P. A., Watson, K. D., Hu, X., Guracar, I. M., Ferrara, K. W.
2009; 74 (3): 675–81
- **BIOL 63 - Temperature triggered release of payload covalently bound to liposomes by flip-flop mechanism**
Day, J. J., Paoli, E., Ferrara, K. W., Meares, C. F.
AMER CHEMICAL SOC.2009: 867
- **Ultrasound contrast microbubbles in imaging and therapy: physical principles and engineering (vol 54, pg R27, 2009)** *PHYSICS IN MEDICINE AND BIOLOGY*
Qin, S., Caskey, C. F., Ferrara, K. W.
2009; 54 (14): 4621
- **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

- **Microbubble tunneling in gel phantoms** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Caskey, C. F., Qin, S., Dayton, P. A., Ferrara, K. W.
2009; 125 (5): EL183–EL189
- **Angiogenic Response to Bioactive Glass Promotes Bone Healing in an Irradiated Calvarial Defect** *TISSUE ENGINEERING PART A*
Leu, A., Stieger, S. M., Dayton, P., Ferrara, K. W., Leach, J.
2009; 15 (4): 877–85
- **Ultrasound contrast microbubbles in imaging and therapy: physical principles and engineering** *PHYSICS IN MEDICINE AND BIOLOGY*
Qin, S., Caskey, C. F., Ferrara, K. W.
2009; 54 (6): R27–R57
- **Ultrasound Mediated Drug Delivery: The effect of microbubbles on a gel boundary**
Caskey, C. F., Qin, S., Ferrara, K. W., IEEE
IEEE.2009: 134–+
- **Imaging nanoparticle stability and activation in vivo**
Ferrara, K. W., Seo, J. W., Zhang, H., IEEE
IEEE.2009: 4580–+
- **COPPER-64 LABELING OF LIPOSOMES: POST-LABELING METHOD USING BIFUNCTIONAL LIGAND (BFL)**
Seo, J., Meares, C. F., Ferrara, K. W.
JOHN WILEY & SONS LTD.2009: S100
- **A Novel Method to Label Preformed Liposomes with (CU)-C-64 for Positron Emission Tomography (PET) Imaging** *BIOCONJUGATE CHEMISTRY*
Seo, J., Zhang, H., Kukis, D. L., Meares, C. F., Ferrara, K. W.
2008; 19 (12): 2577–84
- **Short-duration-focused ultrasound stimulation of Hsp70 expression in vivo (vol 53, pg 3641, 2008)** *PHYSICS IN MEDICINE AND BIOLOGY*
Kruse, D. E., Mackanos, M. A., O'Connell-Rodwell, C. E., Contag, C. H., Ferrara, K. W.
2008; 53 (22): 6639
- **Dynamic microPET imaging of ultrasound contrast agents and lipid delivery** *JOURNAL OF CONTROLLED RELEASE*
Tartis, M. S., Kruse, D. E., Zheng, H., Zhang, H., Kheirloom, A., Marik, J., Ferrara, K. W.
2008; 131 (3): 160–66
- **Efficient array design for sonotherapy** *PHYSICS IN MEDICINE AND BIOLOGY*
Stephens, D. N., Kruse, D. E., Ergun, A. S., Barnes, S., Lu, X., Ferrara, K. W.
2008; 53 (14): 3943–69
- **Short-duration-focused ultrasound stimulation of Hsp70 expression in vivo** *PHYSICS IN MEDICINE AND BIOLOGY*
Kruse, D. E., Mackanos, M. A., O'Connell-Rodwell, C. E., Contag, C. H., Ferrara, K. W.
2008; 53 (13): 3641–3660
- **Driving delivery vehicles with ultrasound** *ADVANCED DRUG DELIVERY REVIEWS*
Ferrara, K. W.
2008; 60 (10): 1097–1102
- **Transmitted ultrasound pressure variation in micro blood vessel phantoms** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Qin, S., Kruse, D. E., Ferrara, K. W.
2008; 34 (6): 1014–20
- **Dynamic imaging of arginine-rich heart-targeted vehicles in a mouse model** *BIOMATERIALS*
Zhang, H., Kusunose, J., Kheirloom, A., Seo, J. W., Qi, J., Watson, K. D., Lindfors, H. A., Ruoslahti, E., Sutcliffe, J. L., Ferrara, K. W.
2008; 29 (12): 1976–88
- **A stimulus-responsive contrast agent for ultrasound molecular imaging** *BIOMATERIALS*
Borden, M. A., Zhang, H., Gillies, R. J., Dayton, P. A., Ferrara, K. W.
2008; 29 (5): 597–606

- **Parameter space for microbubble wall interaction estimated from gel phantom**
Caskey, C. F., Qin, S., Dayton, P. A., Ferrara, K. W., IEEE
IEEE.2008: 341-+
- **Thermal Efficiency in Sonotherapy Array Design**
Stephens, D. N., Kruse, D. E., Lai, C., Ergun, A. S., Barnes, S., Ferrara, K. W., IEEE
IEEE.2008: 666-+
- **Imaging of angiogenesis using Cadence (TM) contrast pulse sequencing and targeted contrast agents** *CONTRAST MEDIA & MOLECULAR IMAGING*
Stieger, S. M., Dayton, P. A., Borden, M. A., Caskey, C. F., Griffey, S. M., Wisner, E. R., Ferrara, K. W.
2008; 3 (1): 9-18
- **A Sensitive Ultrasonic Imaging method for Targeted Contrast Microbubble Detection**
Zheng, H., Kruse, D. E., Stephens, D. N., Ferrara, K. W., Sutcliffe, P., Gardner, E., IEEE
IEEE.2008: 5290-+
- **Ultrasound-driven microbubble oscillation and translation within small phantom vessels** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Zheng, H., Dayton, P. A., Caskey, C., Zhao, S., Qin, S., Ferrara, K. W.
2007; 33 (12): 1978-87
- **Cholesterol transport from liposomal delivery vehicles** *BIOMATERIALS*
Kheiriloom, A., Ferrara, K. W.
2007; 28 (29): 4311-4320
- **Molecular imaging update - ultrasound molecular imaging: on the move** *JOURNAL OF NUCLEAR MEDICINE*
Ferrara, K.
2007; 48 (9): 22N
- **DNA and polylysine adsorption and multilayer construction onto cationic lipid-coated microbubbles** *LANGMUIR*
Borden, M. A., Caskey, C. F., Little, E., Gillies, R. J., Ferrara, K. W.
2007; 23 (18): 9401-9408
- **Direct observations of ultrasound microbubble contrast agent interaction with the microvessel wall** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Caskey, C. F., Stieger, S. M., Qin, S., Dayton, P. A., Ferrara, K. W.
2007; 122 (2): 1191-1200
- **The natural frequency of nonlinear oscillation of ultrasound contrast agents in microvessels** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Qin, S., Ferrara, K. W.
2007; 33 (7): 1140-1148
- **Acoustically-active microbubbles conjugated to liposomes: Characterization of a proposed drug delivery vehicle** *JOURNAL OF CONTROLLED RELEASE*
Kheiriloom, A., Dayton, P. A., Lum, A. F., Little, E., Paoli, E. E., Zheng, H., Ferrara, K. W.
2007; 118 (3): 275-284
- **Selective imaging of adherent targeted ultrasound contrast agents** *PHYSICS IN MEDICINE AND BIOLOGY*
Zhao, S., Kruse, D. E., Ferrara, K. W., Dayton, P. A.
2007; 52 (8): 2055-2072
- **Enhancement of vascular permeability with low-frequency contrast-enhanced ultrasound in the chorioallantoic membrane model** *RADIOLOGY*
Stieger, S. M., Caskey, C. F., Adamson, R. H., Qin, S., Curry, F. E., Wisner, E. R., Ferrara, K. W.
2007; 243 (1): 112-121
- **Modulation of ATP/ADP concentration at the endothelial surface by shear stress: Effect of flow recirculation** *ANNALS OF BIOMEDICAL ENGINEERING*
Choi, H. W., Ferrara, K. W., Barakat, A. I.
2007; 35 (4): 505-516
- **Contrast imaging with chirped excitation** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Sun, Y., Kruse, D. E., Ferrara, K. W.
2007; 54 (3): 520-529

- **Long-circulating liposomes radiolabeled with [F-18]fluorodipalmitin ([F-18]FDP) *NUCLEAR MEDICINE AND BIOLOGY***
Marik, J., Tartis, M. S., Zhang, H., Fung, J. Y., Kheiruloomoo, A., Sutcliffe, J. L., Ferrara, K. W.
2007; 34 (2): 165-171
- **Quantitative contrast enhanced ultrasound and CT assessment of tumor response to antiangiogenic therapy in rats *ULTRASOUND IN MEDICINE AND BIOLOGY***
Pollard, R. E., Broumas, A. R., Wisner, E. R., Vekich, S. V., Ferrara, K. W.
2007; 33 (2): 235-245
- **Dynamics of ultrasound contrast agents within rat cecum vessels**
Qin, S., Caskey, C. F., Ferrara, K. W., IEEE
IEEE.2007: 1981-84
- **Ultrasound microbubble contrast agents: Fundamentals and application to gene and drug delivery *ANNUAL REVIEW OF BIOMEDICAL ENGINEERING***
Ferrara, K., Pollard, R., Borden, M.
2007; 9: 415-447
- **Workshop on imaging science development for cancer prevention and preemption. *Cancer biomarkers***
Kelloff, G. J., Sullivan, D. C., Baker, H., Clarke, L. P., Nordstrom, R., Tatum, J. L., Dorfman, G. S., Jacobs, P., Berg, C. D., Pomper, M. G., Birrer, M. J., Tempero, M., Higley, et al
2007; 3 (1): 1-33
- **Pharmacokinetics of encapsulated paclitaxel: Multi-probe analysis with pet**
Tartis, M. S., Marik, J., Kheiruloomoo, A., Pollard, R. E., Zhang, H., Qi, J., Sutcliffe, J. L., Ferrara, K. W., ASME
AMER SOC MECHANICAL ENGINEERS.2007: 113-14
- **Efficient array design for sonotherapy enhanced drug delivery**
Stephens, D. N., Kruse, D. E., Barnes, S., Clary, T., Lu, X., Nock, L., Ferrara, K., IEEE
IEEE.2007: 108-+
- **Spatial and temporal controlled tissue heating on a modified clinical ultrasound scanner for generating mild hyperthermia in tumors**
Kruse, D. E., Stephens, D. N., Paoli, E. E., Barnes, S. H., Ferrara, K. W., IEEE
IEEE.2007: 313-+
- **Microbubble oscillations in get phantom and ex vivo preparation validate proposed mechanisms for contrast-based drug delivery**
Caskey, C. F., Stieger, S. M., Qin, S., Dayton, P. A., Ferrara, K. W., IEEE
IEEE.2007: 769-72
- **A novel sensitive targeted imaging technique for ultrasonic molecular imaging**
Zheng, H., Kruse, D. E., Stephens, D. N., Ferrara, K. W., IEEE
IEEE.2007: 957-60
- **Acoustic response from adherent targeted contrast agents *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA***
Zhao, S., Kruse, D. E., Ferrara, K. W., Dayton, P. A.
2006; 120 (6): EL63-EL69
- **Therapeutic effects of paclitaxel-containing ultrasound contrast agents *ULTRASOUND IN MEDICINE AND BIOLOGY***
Tartis, M. S., McCallan, J., Lum, A. F., LaBell, R., Stieger, S. M., Matsunaga, T. O., Ferrara, K. W.
2006; 32 (11): 1771-1780
- **Acoustic response of compliant microvessels containing ultrasound contrast agents *PHYSICS IN MEDICINE AND BIOLOGY***
Qin, S., Ferrara, K. W.
2006; 51 (20): 5065-5088
- **Application of ultrasound to selectively localize nanodroplets for targeted imaging and therapy *MOLECULAR IMAGING***
Dayton, P. A., Zhao, S., Bloch, S. H., Schumann, P., Penrose, K., Matsunaga, T. O., Zutshi, R., Doinikov, A., Ferrara, K. W.
2006; 5 (3): 160-174
- **Ultrasound radiation force modulates ligand availability on targeted contrast agents *MOLECULAR IMAGING***
Borden, M. A., Sarantos, M. R., Stieger, S. M., Simon, S. I., Ferrara, K. W., Dayton, P. A.

2006; 5 (3): 139-147

- **Observation of contrast agent response to chirp insonation with a simultaneous optical-acoustical system** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Sun, Y., Zhao, S., Dayton, P. A., Ferrara, K. W.
2006; 53 (6): 1130-1137
- **Ultrasound detection and characterization of polycystic kidney disease in a mouse model** *COMPARATIVE MEDICINE*
Pollard, R., Yunis, R., Kultz, D., Martin, P., Griffey, S., Ferrara, K.
2006; 56 (3): 215-221
- **Ultrasound assessment of angiogenesis in a matrigel model in rats** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Stieger, S. M., Bloch, S. H., Foreman, O., Wisner, E. R., Ferrara, K. W., Dayton, P. A.
2006; 32 (5): 673-681
- **Lateral phase separation in lipid-coated microbubbles** *LANGMUIR*
Borden, M. A., Martinez, G. V., Ricker, J., Tsvetkova, N., Longo, M., Gillies, R. J., Dayton, P. A., Ferrara, K. W.
2006; 22 (9): 4291-4297
- **Ultrasound radiation force enables targeted deposition of model drug carriers loaded on microbubbles** *JOURNAL OF CONTROLLED RELEASE*
Lum, A. F., Borden, M. A., Dayton, P. A., Kruse, D. E., Simon, S. I., Ferrara, K. W.
2006; 111 (1-2): 128-134
- **Biomedical imaging graduate curricula and courses: Report from the 2005 Whitaker Biomedical Engineering Educational Summit** *ANNALS OF BIOMEDICAL ENGINEERING*
Louie, A., Izatt, J., Ferrara, K.
2006; 34 (2): 239-247
- **Microbubble oscillation in tubes with diameters of 12, 25, and 195 microns** *APPLIED PHYSICS LETTERS*
Caskey, C. F., Kruse, D. E., Dayton, P. A., Kitano, T. K., Ferrara, K. W.
2006; 88 (3)
- **Detection of Echoes from Adherent Targeted Microbubbles**
Zhao, S., Kruse, D. E., Ferrara, K. W., Dayton, P. A., IEEE
IEEE.2006: 525-28
- **Multi-frequency Array Development for Drug Delivery Therapies**
Stephens, D. N., Lu, X., Proulx, T., Walters, W., Dayton, P., Tartis, M., Kruse, D. E., Lum, A. H., Kitano, T., Stieger, S. M., Ferrara, K., IEEE
IEEE.2006: 66+
- **Ultrasound Radiation Force Enables Targeted Deposition of Molecularly Targeted Nanoparticles Loaded on Microbubbles Under Flow Conditions**
Lum, A. H., Borden, M. A., Dayton, P. A., Peng, L., Kruse, D. E., Simon, S. I., Lam, K. S., Ferrara, K. W., IEEE
IEEE.2006: 108+
- **Contrast Imaging with Chirped Excitation**
Sun, Y., Kruse, D. E., Ferrara, K. W., IEEE
IEEE.2006: 220-23
- **Dynamics of ultrasound contrast agents and microvessels with MHz-frequency ultrasound**
Qin, S., Ferrara, K. W., IEEE
IEEE.2006: 420-23
- **Acoustic localization of sub-micron droplets for targeted imaging and therapy**
Dayton, P. A., Zhao, S., Zheng, H., Zutshi, R., Schumann, P., Penrose, K., Matsunaga, T. O., Ferrara, K. W., IEEE
IEEE.2006: 521+
- **Influence of lipid shell physicochemical properties on ultrasound-induced microbubble destruction** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Borden, M. A., Kruse, D. E., Caskey, C. F., Zhao, S. K., Dayton, P. A., Ferrara, K. W.
2005; 52 (11): 1992-2002

- **High-frequency dynamics of ultrasound contrast agents** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Sun, Y., Kruse, D. E., Dayton, P. A., Ferrara, K. W.
2005; 52 (11): 1981-1991
- **Asymmetric oscillation of adherent targeted ultrasound contrast agents** *APPLIED PHYSICS LETTERS*
Zhao, S. K., Ferrara, K. W., Dayton, P. A.
2005; 87 (13)
- **Phase behavior and transport properties of the lipid-monolayer shell of a microbubble**
Borden, M. A., Pu, G., Longo, M. L., Dayton, P. A., Ferrara, K. W.
AMER CHEMICAL SOC.2005: U1072-U1073
- **A new imaging strategy using wideband transient response of ultrasound contrast agents** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Kruse, D. E., Ferrara, K. W.
2005; 52 (8): 1320-1329
- **Asymmetric oscillation of cavitation bubbles in a microvessel and its implications upon mechanisms of clinical vessel injury in shock-wave lithotripsy** *INTERNATIONAL JOURNAL OF NON-LINEAR MECHANICS*
Hu, Y. T., Qin, S. P., Hu, T., Ferrara, K. W., Jiang, Q.
2005; 40 (2-3): 341-50
- **Contrast-enhanced computed tomography and ultrasound for the evaluation of tumor blood flow** *INVESTIGATIVE RADIOLOGY*
Broumas, A. R., Pollard, R. E., Bloch, S. H., Wisner, E. R., Griffey, S., Ferrara, K. W.
2005; 40 (3): 134-147
- **The effect of size on the acoustic response of polymer-shelled contrast agents** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Bloch, S. H., Short, R. E., Ferrara, K. W., Wisner, E. R.
2005; 31 (3): 439-444
- **Targeted chemotherapy delivery with ultrasound**
Shortencarier, M., Dayton, P., Ferrara, K., Matsunaga, T., LaBell, R., Schumann, P., IEEE
IEEE.2005: 265-68
- **On the oscillations of microbubbles in tubes with diameters as small as 12 microns**
Caskey, C. F., Kruse, D. E., Dayton, P. A., Ferrara, K. W., IEEE
IEEE.2005: 854-57
- **Contrast echo processing for very wideband systems using higher order statistics**
Kruse, D. E., Sun, Y., Ferrara, K. W., IEEE
IEEE.2005: 1695-99
- **High-resolution functional vascular assessment with ultrasound** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
Yeh, C. K., Ferrara, K. W., Kruse, D. E.
2004; 23 (10): 1263-1275
- **Targeted imaging using ultrasound contrast agents. Progress and opportunities for clinical and research applications.** *IEEE engineering in medicine and biology magazine*
Bloch, S. H., Dayton, P. A., Ferrara, K. W.
2004; 23 (5): 18-29
- **Radiation-force assisted targeting facilitates ultrasonic molecular imaging.** *Molecular imaging*
Zhao, S., Borden, M., Bloch, S. H., Kruse, D., Ferrara, K. W., Dayton, P. A.
2004; 3 (3): 135-148
- **A method for radiation-force localized drug delivery using gas-filled lipospheres** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Shortencarier, M. J., Dayton, P. A., Bloch, S. H., Schumann, P. A., Matsunaga, T. O., Ferrara, K. W.
2004; 51 (7): 822-831

- **Quantitative evaluation of perfusion and permeability of peripheral tumors using contrast-enhanced computed tomography** *INVESTIGATIVE RADIOLOGY*
Pollard, R. E., Garcia, T. C., Stieger, S. M., Ferrara, K. W., Sadlowski, A. R., Wisner, E. R.
2004; 39 (6): 340-349
- **Ultrasonic Analysis of Peptide-and Antibody-Targeted Microbubble Contrast Agents for Molecular Imaging of alpha(V)beta(3)-Expressing Cells** *MOLECULAR IMAGING*
Dayton, P. A., Pearson, D., Clark, J., Simon, S., Schumann, P. A., Zutshi, R., Matsunaga, T. O., Ferrara, K. W.
2004; 3 (2): 125-134
- **Acoustic signatures of submicron contrast agents** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Patel, D. N., Bloch, S. H., Dayton, P. A., Ferrara, K. W.
2004; 51 (3): 293-301
- **Optical observation of lipid- and polymer-shelled ultrasound microbubble contrast agents** *APPLIED PHYSICS LETTERS*
Bloch, S. H., Wan, M., Dayton, P. A., Ferrara, K. W.
2004; 84 (4): 631-33
- **Physico-chemical properties of the microbubble lipid shell - Composition, microstructure & properties of targeted ultrasound contrast agents**
Borden, M. A., Dayton, P., Zhao, S. K., Ferrara, K. W., Yuhas, M. P.
IEEE.2004: 20-23
- **High frequency contrast imaging**
Sun, Y., Kruse, D. E., Dayton, P. A., Ferrara, K. W., Yuhas, M. P.
IEEE.2004: 990-93
- **Increasing binding efficiency of ultrasound targeted agents with radiation force**
Zhao, S. K., Borden, M., Bloch, S. H., Kruse, D. E., Ferrara, K. W., Dayton, P. A., Yuhas, M. P.
IEEE.2004: 1114-17
- **Contrast-enhanced US of microcirculation of superficially implanted tumors in rats** *RADIOLOGY*
Chomas, J. E., Pollard, R. E., Sadlowski, A. R., Griffey, S. M., Wisner, E. R., Ferrara, K. W.
2003; 229 (2): 439-446
- **Effect of coupled oscillations on microbubble behavior** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Allen, J. S., Kruse, D. E., Dayton, P. A., Ferrara, K. W.
2003; 114 (3): 1678-1690
- **Ultrasound as a low cost, practical method of functional imaging**
Ferrara, K., Dayton, P., Wisner, E., Pollard, R.
AMER ASSOC PHYSICISTS MEDICINE AMER INST PHYSICS.2003: 1374
- **Sentinel node detection using contrast-enhanced power Doppler ultrasound lymphography** *INVESTIGATIVE RADIOLOGY*
Wisner, E. R., Ferrara, K. W., Short, R. E., Ottoboni, T. B., Gabe, J. D., Patel, D.
2003; 38 (6): 358-365
- **A new imaging strategy utilizing wideband transient response of ultrasound contrast agents**
Kruse, D. E., Yeh, C. K., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.
IEEE.2003: 1081-85
- **Detection of polymer-shelled ultrasound contrast agents using a signal subtraction method**
Bloch, S. H., Patel, D. N., Dayton, P. A., Wan, M., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.
IEEE.2003: 416-19
- **A new imaging strategy utilizing wideband transient response of ultrasound contrast agents**
Kruse, D. E., Yeh, C. K., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.
IEEE.2003: 424-28
- **A new high frequency destruction/reperfusion system**
Yeh, C. K., Kruse, D. E., Lim, M. C., Redline, D. E., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.

IEEE.2003: 433-36

- **Ultrasonic enhancement of alpha(v)beta(3) expressing-cells with targeted contrast agents**
Dayton, P. A., Pearson, D., Clark, J., Simon, S., Schumann, P., Zutshi, R., Matsunaga, T., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.
IEEE.2003: 540-43
- **Estimation of vascular density and blood velocity in tumors**
Sadlowski-Broumas, A., Pollard, R., Taylor, A., Griffey, S., Wisner, E., Ferrara, K., Yuhas, D. E., Schneider, S. C.
IEEE.2003: 645-48
- **Contrast-assisted destruction-replenishment ultrasound for the assessment of tumor microvasculature in a rat model.** *Technology in cancer research & treatment*
Pollard, R. E., Sadlowski, A. R., Bloch, S. H., Murray, L., Wisner, E. R., Griffey, S., Ferrara, K. W.
2002; 1 (6): 459-470
- **Optical and acoustical interrogation of submicron contrast agents** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Patel, D., Dayton, P., Gut, J., Wisner, E., Ferrara, K. W.
2002; 49 (12): 1641-1651
- **A new high resolution color flow system using an eigendecomposition-based adaptive filter for clutter rejection.** *IEEE transactions on ultrasonics, ferroelectrics, and frequency control*
Kruse, D. E., Ferrara, K. W.
2002; 49 (12): 1739-1754
- **Ultrasound measurement of the effect of temperature on microperfusion in the eye** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Silverman, R. H., Ursea, R., Kruse, D., Ferrara, K. W., Rondeau, M. J., Coleman, D. J.
2002; 28 (11-12): 1413-1419
- **The magnitude of radiation force on ultrasound contrast agents** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Dayton, P. A., Allen, J. S., Ferrara, K. W.
2002; 112 (5): 2183-2192
- **Dynamics and fragmentation of thick-shelled microbubbles** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
May, D. J., Allen, J. S., Ferrara, K. W.
2002; 49 (10): 1400-1410
- **Targeted imaging using ultrasound** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Dayton, P. A., Ferrara, K. W.
2002; 16 (4): 362-377
- **A new high resolution color flow system using an eigendecomposition-based adaptive filter for clutter rejection** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Kruse, D. E., Ferrara, K. W.
2002; 49 (10): 1384-1399
- **Contrast enhanced intermittent Power Doppler ultrasound with sub-micron bubbles for sentinel node detection** *ACADEMIC RADIOLOGY*
Wisner, E. R., Ferrara, K., Gabe, J. D., Patel, D., Nyland, T. G., Short, R. E., Ottoboni, T. B.
2002; 9: S389-S391
- **Nondestructive subharmonic imaging** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Chomas, J., Dayton, P., May, D., Ferrara, K.
2002; 49 (7): 883-892
- **Dynamics of therapeutic ultrasound contrast agents** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Allen, J. S., May, D. J., Ferrara, K. W.
2002; 28 (6): 805-816
- **Mean flow rate and integrated perfusion estimates obtained with contrast-assisted ultrasound**
Sadlowski, A., Chomas, J., Pollard, R., Bloch, S., Griffey, S., Wisner, E., Ferrara, K., Yuhas, D. E., Schneider, S. C.
IEEE.2002: 1977-80

- **High frequency ultrasound with an eigen-decomposition filter to assess the effect of laser cyclophotocoagulation treatment on blood flow**
Kruse, D. E., Lim, M. C., Redline, D. E., Eisele, P. H., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.
IEEE.2002: 1485–89
- **Threshold of fragmentation for ultrasonic contrast agents** *JOURNAL OF BIOMEDICAL OPTICS*
Chomas, J. E., Dayton, P., May, D., Ferrara, K.
2001; 6 (2): 141-150
- **Temperature-dependence of blood-flow in the major arterial circle.**
Ursea, R., Silverman, R. H., Kruse, D. E., Ferrara, K. W., Raevski, T., Lloyd, H. O., Coleman, D. J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2001: S525
- **Shell waves and acoustic scattering from ultrasound contrast agents** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Allen, J. S., Kruse, D. E., Ferrara, K. W.
2001; 48 (2): 409-418
- **Optical and acoustical dynamics of microbubble contrast agents inside neutrophils** *BIOPHYSICAL JOURNAL*
Dayton, P. A., Chomas, J. E., Lum, A. F., Allen, J. S., Lindner, J. R., Simon, S. I., Ferrara, K. W.
2001; 80 (3): 1547-1556
- **Optimization of real-time high frequency ultrasound for blood flow imaging in the microcirculation**
Kruse, D. E., Mai, J. J., Silverman, R. H., Insana, M. F., Coleman, D. J., Ferrara, K. W., Insana, M. F., Shung, K. K.
SPIE-INT SOC OPTICAL ENGINEERING.2001: 284–92
- **Mechanisms of contrast agent destruction** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Chomas, J. E., Dayton, P., Allen, J., Morgan, K., Ferrara, K. W.
2001; 48 (1): 232-248
- **Acoustic fragmentation of therapeutic contrast agents designed for localized drug delivery**
May, D., Allen, J., Gut, J., Ferrara, K., Yuhas, D. E., Schneider, S. C.
IEEE.2001: 1385–88
- **A new high resolution color flow system using an eigendecomposition-based adaptive filter for clutter rejection**
Kruse, D. E., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.
IEEE.2001: 1439–43
- **A hand-held, high frequency ultrasound scanner**
Erickson, S., Kruse, D., Ferrara, K., Yuhas, D. E., Schneider, S. C.
IEEE.2001: 1465–68
- **Experimental validation of a theoretical framework to predict radiation force displacement of contrast agents**
Dayton, P. A., Allen, J. S., Kruse, D. E., Ferrara, K. W., Yuhas, D. E., Schneider, S. C.
IEEE.2001: 1687–90
- **Submicron contrast agents for the detection and localization of at risk lymph nodes**
Patel, D., Dayton, P., Gut, J., Wisner, E., Ferrara, K., Yuhas, D. E., Schneider, S. C.
IEEE.2001: 1717–20
- **Subharmonic phase-inversion for tumor perfusion estimation**
Chomas, J. E., Pollard, R., Wisner, E., Ferrara, K., Yuhas, D. E., Schneider, S. C.
IEEE.2001: 1713–16
- **Experimental and theoretical evaluation of microbubble behavior: Effect of transmitted phase and bubble size** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Morgan, K. E., Allen, J. S., Dayton, P. A., Chomas, J. E., Klibanov, A. L., Ferrara, K. W.
2000; 47 (6): 1494–1509
- **Evaluation of tumor angiogenesis with US: Imaging, Doppler, and contrast agents** *ACADEMIC RADIOLOGY*
Ferrara, K. W., Merritt, C. R., Burns, P. N., Foster, F. S., Mattrey, R. F., Wickline, S. A.

2000; 7 (10): 824-839

- **Optical observation of contrast agent destruction** *APPLIED PHYSICS LETTERS*
Chomas, J. E., Dayton, P. A., May, D., Allen, J., Klibanov, A., Ferrara, K.
2000; 77 (7): 1056-58
- **Noninvasive imaging of inflammation by ultrasound detection of phagocytosed microbubbles** *CIRCULATION*
Lindner, J. R., Dayton, P. A., Coggins, M. P., Ley, K., Song, J., Ferrara, K., Kaul, S.
2000; 102 (5): 531-538
- **3aBB4. Ultrasound contrast agents retain acoustic activity post phagocytosis by leukocytes (vol 106, pg 2192(A), 1999)** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Dayton, P., Chomas, J., Ferrara, K., Lindner, J., Coggins, M.
2000; 107 (4): 2298
- **Imaging of the eyelid with very-high frequency ultrasound.**
Ursea, R., Ursea, B. G., Silverman, R. H., Reinstein, D. Z., Kruse, D., Ferrara, K. W., Coleman, D. J.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2000: S124
- **Slow Intensive Home Hemodialysis (SIHD): the University Hospitals of Cleveland experience.** *Nephrology news & issues*
Cacho, C., Ferrara, K., Guthrie, B., Priester, A., Murray, E., Newman, L., Blankschaen, S., Weiss, M.
2000; 14 (4): 36-41
- **Surface wave phenomena on ultrasound contrast agents**
Allen, J., Kruse, D., May, D., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.2000: 1881-84
- **Color flow mapping** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Kruse, D., Ferrara, K.
2000; 26: S16-S18
- **Ultrasound contrast agents used for localized drug delivery**
May, D., Dayton, P., Chomas, J., Allen, J., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.2000: 1429-32
- **Optimization of real-time high frequency ultrasound for blood flow imaging in the microcirculation**
Kruse, D., Silverman, R., Erickson, S., Coleman, D. J., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.2000: 1461-64
- **Acoustical and physical dynamics of phagocytosed microbubble contrast agents**
Dayton, P., Chomas, J., Lum, A., Simon, S., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.2000: 1877-80
- **Wideband sub-forcing harmonic phase inversion imaging**
Morgan, K. E., Allen, J. S., Ferrara, K. W., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.2000: 1889-92
- **Non-destructive subharmonic imaging**
Chomas, J., Dayton, P., May, D., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.2000: 1939-42
- **Effect of ultrasound on microbubbles after leukocyte phagocytosis**
Lindner, Dayton, P. A., Coggins, M. P., Kaul, S., Ferrara, K.
LIPPINCOTT WILLIAMS & WILKINS.1999: 203
- **Acoustic radiation force in vivo: A mechanism to assist targeting of microbubbles** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Dayton, P., Klibanov, A., Brandenburger, G., Ferrara, K.
1999; 25 (8): 1195-1201
- **High-resolution ultrasonic imaging of blood flow in the anterior segment of the eye** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Silverman, R. H., Kruse, D. E., Coleman, D. J., Ferrara, K. W.

1999; 40 (7): 1373-1381

- **Optical and acoustical observations of the effects of ultrasound on contrast agents** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Dayton, P. A., Morgan, K. E., Klibanov, A. L., Brandenburger, G. H., Ferrara, K. W.
1999; 46 (1): 220-32
- **High resolution blood flow mapping in the anterior segment of the eye**
Kruse, D., Silverman, R., Coleman, D. J., Erickson, S., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1999: 1477-80
- **Optimization of microbubble destruction**
Chomas, J., Dayton, P., Morgan, K., Allen, J., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1999: 1689-92
- **Shell resonance responses in ultrasound contrast agents**
Allen, J., Kruse, D., Jones, J., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1999: 1677-79
- **Experimental and theoretical analysis of individual contrast agent behavior**
Morgan, K. E., Allen, J. S., Chomas, J. E., Dayton, P. A., Ferrara, K. W., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1999: 1685-88
- **Ultrasound contrast agents phagocytosed by neutrophils demonstrate acoustic activity**
Dayton, P. A., Lindner, Chomas, J. E., Morgan, K. E., Simon, S., Lum, A., May, D., Coggins, M. P., Ferrara, K. W., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1999: 1705-8
- **Optical and acoustical studies of ultrasound contrast agents**
Allen, J., Dayton, P., Chomas, J., Ferrara, K., Nowak, M. D., Adrezin, R. S., Leone, D. J.
IEEE.1999: 81-82
- **Direct video microscopic observation of the dynamic effects of medical ultrasound on ultrasound contrast microspheres** *INVESTIGATIVE RADIOLOGY*
Klibanov, A. L., Ferrara, K. W., Hughes, M. S., Wible, J. H., Wojdyla, J. K., Dayton, P. A., Morgan, K. E., Brandenburger, G. H.
1998; 33 (12): 863-870
- **Changes in the echoes from ultrasonic contrast agents with imaging parameters** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Morgan, K. E., Dayton, P. A., Kruse, D. E., Klibanov, A. L., Brandenburger, G. H., Ferrara, K. W.
1998; 45 (6): 1537-48
- **A swept-scanning mode for estimation of blood velocity in the microvasculature** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Kruse, D. E., Silverman, R. H., Fornaris, R. J., Coleman, D. J., Ferrara, K. W.
1998; 45 (6): 1437-40
- **Ultrasonic mapping of the microvasculature: Signal alignment** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Zagar, B. G., Fornaris, R. J., Ferrara, K. W.
1998; 24 (6): 809-824
- **The effect of the phase of transmission on contrast agent echoes** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Morgan, K., Averkiou, M., Ferrara, K.
1998; 45 (4): 872-75
- **In response to S.K. Alam and K.J. Parker** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Ferrara, K.
1998; 24 (4): 611-12
- **Correlation analysis of received echoes from contrast agents in-vitro and in-vivo**
Chomas, J. E., Sikes, R. A., Ferrara, K. W., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1998: 1803-6

- **A preliminary evaluation of the effects of primary and secondary radiation forces on acoustic contrast agents** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Dayton, P. A., Morgan, K. E., Klivanov, A. L., Brandenburger, G., Nightingale, K. R., Ferrara, K. W.
1997; 44 (6): 1264–77
- **Simultaneous optical and acoustical observations of contrast agents**
Dayton, P., Morgan, K., Allietta, M., Klivanov, A., Brandenburger, G., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1997: 1583–91
- **Color flow mapping** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Ferrara, K., DeAngelis, G.
1997; 23 (3): 321-345
- **Ultrasonic measurement of breast tissue motion and the implications for velocity estimation** *ULTRASOUND IN MEDICINE AND BIOLOGY*
ElFallah, A. I., Plantec, M. B., Ferrara, K. W.
1997; 23 (7): 1047-1057
- **High resolution 3D flow mapping in tumors**
Kruse, D., Chomas, J., Salerno, M., El-Fallah, A., Ferrara, K., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1997: 1211–14
- **Correlation techniques for ultrasonic signal alignment**
Fornaris, R. J., Ferrara, K. W., Zagar, B. G., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1997: 1215–18
- **Effect of imaging parameters on the echoes from ultrasonic contrast agents**
Morgan, K. E., Dayton, P. A., Kruse, D. E., Klivanov, A. L., Brandenburger, G. H., Ferrara, K. W., Schneider, S. C., Levy, M., McAvoy, B. R.
IEEE.1997: 1593–96
- **3D ultrasonic mapping of the microvasculature**
Stith, A., Zagar, B. G., Fornaris, R., Silverman, R., Ferrara, K., Levy, M., Schneider, S. C., McAvoy, B. R.
IEEE.1996: 1473–76
- **Estimation of blood velocity with high frequency ultrasound** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Ferrara, K. W., Zagar, B. G., SokilMelgar, J. B., Silverman, R. H., Aslanidis, I. M.
1996; 43 (1): 149–57
- **High resolution 3D color flow mapping: Applied to the assessment of breast vasculature** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Ferrara, K. W., Zagar, B., SOKILMELGAR, J., ALGAZI, V. R.
1996; 22 (3): 293-304
- **Properties of contrast agents insonified at frequencies above 10 MHz**
Morgan, K., Dayton, P., Klivanov, S., Brandenburger, G., Kaul, S., Wei, K., Ferrara, K., Levy, M., Schneider, S. C., McAvoy, B. R.
IEEE.1996: 1127–30
- **Action of microbubbles when insonified: Experimental evidence**
Dayton, P., Goode, A., Morgan, K., Klivanov, S., Brandenburger, G., Ferrara, K., Levy, M., Schneider, S. C., McAvoy, B. R.
IEEE.1996: 1131–34
- **EFFECT OF THE BEAM-VESSEL ANGLE ON THE RECEIVED ACOUSTIC-SIGNAL FROM BLOOD** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
FERRARA, K. W.
1995; 42 (3): 416–28
- **50 MHz color flow mapping**
Ferrara, K. W., Zagar, B., Silverman, R., Aggarwal, K., Dayton, P., SokilMelgar, J., Aslanidis, Y., Levy, M., Schneider, S. C., McAvoy, B. R.
IEEE.1995: 1497–1500
- **PARAMETER MAPPING FOR THE DETECTION OF DISTURBED BLOOD-FLOW** *ULTRASOUND IN MEDICINE AND BIOLOGY*
Ferrara, K. W., OSTROMOGILSKY, M., Rosenberg, S., SOKILMELGAR, J.

1995; 21 (4): 517-525

- **High resolution 3D color flow mapping of breast vasculature**
Ferrara, K. W., Zagar, B., Plantec, M., SokilMelgar, J., Levy, M., Schneider, S. C., McAvoy, B. R.
I E E E.1995: 1467-70
- **A STATISTICAL-ANALYSIS OF THE RECEIVED SIGNAL FROM BLOOD DURING LAMINAR-FLOW** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
FERRARA, K. W., ALGAZI, V. R.
1994; 41 (2): 185-98
- **A THEORETICAL AND EXPERIMENTAL-ANALYSIS OF THE RECEIVED SIGNAL FROM DISTURBED BLOOD-FLOW** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
FERRARA, K. W., ALGAZI, V. R.
1994; 41 (2): 172-84
- **AN EXPERIMENTAL EVALUATION OF THE EFFECT OF THE BEAM-VESSEL ANGLE ON THE RECEIVED ACOUSTIC SIGNAL FROM BLOOD**
FERRARA, K. W., KALISZ, A., ZAGAR, B., ALGAZI, V. R., Levy, M., Schneider, S. C., McAvoy, B. R.
I E E E.1994: 1691-95
- **AN EXPERIMENTAL EVALUATION OF THE RECEIVED SIGNAL FROM BLOOD AT 50-MHZ**
FERRARA, K. W., ZAGAR, B., ALGAZI, R., SILVERMAN, R., SOKILMELGAR, J., Levy, M., Schneider, S. C., McAvoy, B. R.
I E E E.1994: 1603-7
- **SIGNAL AND IMAGE PROCESSING STRATEGIES FOR RECONSTRUCTING 3-D COLOR FLOW MAPS FROM ULTRASONIC DATA**
ZAGAR, B. G., ALGAZI, V. R., FERRARA, K. W., Levy, M., Schneider, S. C., McAvoy, B. R.
I E E E.1994: 1649-52
- **EVALUATION OF THE PERFORMANCE OF STRATEGIES FOR THE ESTIMATION OF LOW-VELOCITY BLOOD-FLOW**
FERRARA, K., ALGAZI, V. R., DARROCH, T., RAGHAVENDRA, P., Levy, M., McAvoy, B. R.
I E E E.1993: 1049-53
- **AN EXPERIMENTAL COMPARISON OF THE SIGNAL FROM LAMINAR AND DISTURBED BLOOD-FLOW**
FERRARA, K. W., ALGAZI, V. R., Levy, M., McAvoy, B. R.
I E E E.1993: 1043-47
- **THE EFFECT OF FREQUENCY-DEPENDENT SCATTERING AND ATTENUATION ON THE ESTIMATION OF BLOOD VELOCITY USING ULTRASOUND** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Ferrara, K. W., ALGAZI, V. R., Liu, J. X.
1992; 39 (6): 754-767
- **COMPARISON OF NARROW-BAND AND WIDE-BAND COLOR-FLOW ESTIMATORS IN THE PRESENCE OF INTERVENING TISSUE**
FERRARA, K. W., ALGAZI, V. R., LIU, J., Mcavoy, B. R.
I E E E.1992: 1169-73
- **A NEW WIDE-BAND SPREAD TARGET MAXIMUM-LIKELIHOOD ESTIMATOR FOR BLOOD VELOCITY ESTIMATION .2. EVALUATION OF ESTIMATORS WITH EXPERIMENTAL-DATA** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Ferrara, K. W., ALGAZI, V. R.
1991; 38 (1): 17-26
- **A NEW WIDE-BAND SPREAD TARGET MAXIMUM-LIKELIHOOD ESTIMATOR FOR BLOOD VELOCITY ESTIMATION .1. THEORY** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*
Ferrara, K. W., ALGAZI, V. R.
1991; 38 (1): 1-16
- **IMPROVED COLOR FLOW MAPPING USING THE WIDE-BAND MAXIMUM-LIKELIHOOD ESTIMATOR**
FERRARA, K. W., ALGAZI, V. R., MCAVOY, B. R.
I E E E.1990: 1517-21
- **ESTIMATION OF BLOOD VELOCITY USING THE WIDE-BAND MAXIMUM-LIKELIHOOD ESTIMATOR**

FERRARA, K. W., ALGAZI, V. R., MCAVOY, B. R.
I E E E.1989: 897-901