

BIOGRAPHICAL SKETCH

JONATHAN MAMOU		POSITION TITLE	
jmamou@riversideresearch.org		RESEARCH MANAGER	
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Paris, Paris, France	B.S.	2000	Mathematics
Ecole Natle Supérieure des Telecommunications	B.S.E.E.	2000	Electrical Engineering
University of Illinois, Urbana-Champaign, IL	M.S.	2002	Electrical Engineering
University of Illinois, Urbana-Champaign, IL	Ph.D.	2005	Electrical Engineering

Positions and Honors

2010-present Principal Member of the Research Staff, Frederic L. Lizzi Center for Biomedical Engineering, Riverside Research Institute, New York, NY

2005-2010: Member of the Research Staff, Frederic L. Lizzi Center for Biomedical Engineering Riverside Research Institute, New York, NY

2001-2005: Graduate Research Assistant, Bioacoustics Research Lab, University of Illinois, Urbana, IL

2002-2005 Graduate Teaching Assistant, Bioacoustics Research Lab, University of Illinois, Urbana, IL

2003-2004 Graduate Research Assistant, CNRS, Paris, France

Member, Institute of Electrical and Electronics Engineers (IEEE)

Member, IEEE-UFFC (Ultrasonics, Ferroelectrics, and Frequency Control) Society

Member, IEEE-SP (Signal Processing) Society

Member, Acoustical Society of America (ASA)

Robert T. Chien Memorial Award, 2005

Avery Brundage Scholar, 2004-2005; Avery Brundage Scholar, 2003-2004

Selected Recent Publications

Mamou, J., Saegusa-Beecroft, M., Coron, A., Oelze, M., Yamaguchi, T., Machi, J., Hata, M., Yanagihara, E., Laugier, P., Feleppa, E.J., "Three-dimensional quantitative ultrasound to guide pathologists towards metastatic foci in lymph nodes," in *Proc IEEE Eng Med Biol Soc.* 2012, IEEE Piscataway, NJ (in press)

Chitnis, P., Koppolu, S., **Mamou, J.**, Chlon, C., and Ketterling, J., "Influence of shell properties on high-frequency ultrasound imaging and drug delivery using polymer-shelled microbubbles," *IEEE Trans Ultrason Ferroelectr Freq. Control* (in press).

Mamou, J., Coron, A., Saegusa-Beecroft, E., Hata, M., Oelze, M.L., Yanagihara, E., Yamaguchi, T., Laugier, P., Machi J., Feleppa, E.J., Quantification of freshly-excised human lymph node tissue using high-frequency ultrasound, pp. 3881-388, *Proceedings of the Acoustics 2012 Nantes Conference, 2012, (Invited)*.

Coron, A., **Mamou, J.**, Saegusa-Beecroft, E., Oelze, M.L., Yamaguchi, T., Hata, M., Machi, J., Yanagihara, E., Laugier, P., Feleppa, E.J., "A quantitative ultrasound-based method and device for reliably guiding pathologists to metastatic regions of dissected lymph nodes," 2012 IEEE International Symposium on Biomedical Imaging, 1064-1067, 2012.

P.V. Chitnis, O. Aristizábal, E. Filoux, A. Sampathkumar, J. **Mamou**, D.H. Turnbull and J.A. Ketterling, "Combined optoacoustic and high-frequency ultrasound imaging of live mouse embryos," *Photons Plus Ultrasound: Imaging and Sensing 2012, Proc. SPIE 8223-38*, 2012.

Silverman, R.H., Ketterling, J.A., **Mamou, J.**, Lloyd, H.O., Filoux, E., and Coleman, D.J., "Pulse-encoded ultrasound imaging of the vitreous with an annular array," *Ophthalmic Surgery, Lasers & Imaging* **43** 82-86 (2012) PMID: 21902166

Aristizábal, O., Sampathkumar, A., **Mamou**, J., Filoux, E., Turnbull, D.H., Ketterling, J.A., and Chitnis, P.V., "Simultaneous photoacoustic and high-frequency ultrasound imaging of *in vivo* embryonic-mouse vasculature," in *Proc. 2011 IEEE-Int. Ultrasonics Symp.*, pp. 288-291.

Chitnis, P.V., **Mamou**, J., Koppolu, S. and Ketterling, J.A., "Influence of shell parameters on response of polymer-shelled microbubbles to high-frequency ultrasound," in *Proc. 2011 IEEE-Int. Ultrasonics Symp.*, pp. 644-647.

Silverman, R.H., Ketterling, J.A., **Mamou**, J., Lloyd, H.O., Filoux, E. and Coleman, D.J., "Pulse-encoded ultrasound imaging of the vitreous with an annular array," *Ophthalmic Surg. Lasers Imag.*, 43(1):82-86, 2012. PMID: 21902166

Alam, S.K., Mamou, J., **Feleppa**, E.J., Kalisz, A., and Ramachandran, S., "Comparison of template-matching and singular-spectrum-analysis methods for imaging implanted brachytherapy seeds," *IEEE Trans Ultrason Ferroelectr Freq. Control*, 58(11):2484, 2011.

Jafari, S., Diou, O., Tsapis, N., Fattal, E., **Mamou**, J., and Bridal, L.S., "Comparison of the acoustic response of liquid-PFOB and solid-core nanoparticles between 20 and 40 MHz," in *Proc.2011 IEEE-Int. Ultrasonics Symp.*, pp. 656-659.

Mamou, J., Saegusa-Beecroft, M., Coron, A., Oelze, M., Yamaguchi, T., Machi, J., Hata, M., Yanagihara, E., Laugier, P., Feleppa, E.J., "Three-dimensional high-frequency characterization of freshly-excised human lymph nodes, in *Proc.2011 IEEE-Int. Ultrasonics Symp.*, pp. 37-40.

Chitnis, P.V., Lee, P., Dayton, P.A., **Mamou**, J. and Ketterling, J.A., "Characterisation of polymer shelled microbubbles in wall less flow phantom using high frequency ultrasound and video microscopy," *Bubble Science, Engineering and Technology*, 3(2):73-78, 2011.

Filoux, E., **Mamou**, J., Aristizábal, O., Ketterling, J.A., "Characterization of the spatial resolution of different high-frequency imaging systems using a novel anechoic-sphere phantom," *IEEE Trans. Ultras. Ferro. Freq. Cont.*, 58 (5):994-1005, 2011. PMID: PMC3105360

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Chitnis, P.V., Lee, P., **Mamou**, J., Ketterling, J.A., "Influence of shell properties on rupture of polymeric contrast agents in response to overpressure," in *2010 IEEE Ultrasonics Symposium*, pp. 1720-1723.

Yamaguchi, T., Zenbutsu, S., Kamiyama, N., **Mamou**, J., Igarashi, Y., Hachiya, H., "Echo envelope analysis method for quantifying heterogeneity of scatterer distribution for tissue characterization of liver fibrosis," in *2010 IEEE Ultrasonics Symposium*, pp. 1412-1415.

Aristizábal, O., **Mamou**, J., Ketterling, J.A., Turnbull, D.T., "In vivo 3D quantitative analysis of the mouse embryonic brain with a 38 MHz annular array and coded excitation," in *2010 IEEE Ultrasonics Symposium*, pp. 794-797.

Coron, A., **Mamou**, J., Saegusa-Beecroft, E., Hata, M., Lee, P., Machi, J., Yanagihara, E., Laugier, P., Feleppa, E.J., "Assembling 3D histology volumes from sections of cancerous lymph nodes to match 3D high-frequency quantitative ultrasound images," in *2010 IEEE Ultrasonics Symposium*, pp. 2368-2371.

Feleppa, E.J., **Mamou**, J., Porter, C.R., Machi, J., "Quantitative ultrasound in cancer imaging," *Seminars in Oncol.*, 38(1):136-150, 2011. PMID: PMC 3057450

Mamou, J., Coron, Oelze, M., A., Saegusa-Beecroft, E., Hata, M., Lee, P., Machi, J., Yanagihara, E., Laugier, P., and Feleppa, E.J., "Three-dimensional high-frequency backscatter and envelope quantification of cancerous human lymph nodes," *Ultrasound Med. Biol.*, 37(3):345-357, 2011. PMID: PMC3062193

Wolny, W.W., Ketterling, J.A., Levassort, F., Lou-Moeller, R., Filoux, E., **Mamou**, J., Silverman, R.H., and Lethiecq, M., "Pad-printed thick-film transducers for high-frequency and high-power applications," *Proc. SPIE Medical Imaging*, vol. 7968, 2011.

Chitnis, P.V., Lee, P., **Mamou**, J., Allen, J.S., Böhmer, M., Ketterling, J. A., "Rupture threshold characterization of polymer-shelled ultrasound contrast agents subjected to static overpressure," *J. Applied Phys.*, 109, 084906, 2011. PMID: PMC3094458

Hata, M., Machi, J., **Mamou**, J., Yanagihara, E.T., Saegusa-Beecroft, E. Kobayashi, G.K., Wong, C.C., Fung, C., Feleppa, E.J., Sakamoto, K., "Entire-volume serial histological examination for detection of

micrometastases in lymph nodes of colorectal cancers," *Pathol. Oncol. Res.*, 17(4):835-841, 2011. PMID: 21494849

Feleppa, E.J., **Mamou**, J., Machi, J., Hata, M., Coron, A., Yanagihara, E., Laugier, P., "Ultrasonic detection of metastases in dissected lymph nodes of cancer patients," in: *Acoustical Imaging Vol. 30, Part 1*, M. Andre, H. Lee, J. Jones (Eds.), Springer Science+Business Media B.V., Dordrecht, 2011, pp. 17-27.

Filoux, E., **Mamou**, J., Aristizábal, O. and Ketterling, J.A., "Spatial resolution quantification of single element, linear-array and annular-array high frequency systems using a novel anechoic-sphere phantom," *Proc.2010 IEEE-Int. Ultrasonics Symp.*, 2203-2206.

Chitnis, P.V., McLaughlan, J., **Mamou**, J., Murray, T., and Roy, R., "A photoacoustic sensor for monitoring *in situ* temperature during HIFU exposures," *9th International Symposium for Therapeutic Ultrasound*, vol.1215, pp. 267-272, K. Hynynen and J. Souquet (Eds.), Melville, 2010

Mamou, J., Aristizabal, O., Silverman, R.H., and Ketterling, J.A., "A perspective on high-frequency ultrasound for medical applications," *Physics Procedia*, volume 3, Issue 1, 1 January 2010, pages 289-295.

Mamou, J., Coron, A., Hata, M., Machi, J., Yanagihara, E., Laugier, P., Feleppa, E.J., "Three-dimensional high-frequency characterization of cancerous lymph nodes," *Ultrasound Med. Biol.* 36(3):361-375, 2010.

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Chitnis, P.V., McLaughlan, J., **Mamou**, J., Murray, T., and Roy, R., "Photoacoustic thermometry for therapeutic hyperthermia," in *Proceedings of the 2009 IEEE Ultrasonics Symposium*, pp. 1757-1760, M.P. Yuhás (Ed.) IEEE, Piscataway, 2009.

Chitnis, P.V., Lee, P., **Mamou**, J., and Ketterling, J.A., "An investigation of contrast-agent shell-rupture threshold in response to overpressure," in *Proceedings of the 2009 IEEE Ultrasonics Symposium*, 1821-1824.

Yamaguchi, T., Iwashina, T., **Mamou**, J., Kamiyama, N., and Hachiya, H., "Speckle removal from heterogeneous-tissue signals using independent component analysis," in *Proceedings of the 2009 IEEE Ultrasonics Symposium*, 2292-2295.

Aristizábal, O., **Mamou**, J., Turnbull, D.H., and Ketterling, J.A., "Doppler-derived trigger signals for high-frame-rate mouse cardiovascular imaging," in *Proc of the 31st Annual International Conference of the IEEE EMBS*, pp. 1987-1990, 2009. PMID: PMC2805905

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Mamou, J., Aristizabal, O., Silverman, R.H., Ketterling J.A. and Turnbull, D.H., "High-frequency chirp ultrasound imaging with an annular array for ophthalmologic and small-animal imaging," *Ultrasound Med. Biol.*, 35(7):1198-1208, 2009. PMID: PMC2703701

Mamou, J. and Ketterling, J., "Subharmonic analysis using singular-value decomposition of ultrasound contrast agents," *J. Acoust. Soc. Am.*, 125(6):4078-91, 2009. PMID: PMC2719484

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Mamou, J. and Ketterling, J.A., "Singular-value-decomposition investigation of the sub-harmonic response of contrast agent excited at 40 MHz," in *Proceedings of the 2008 IEEE Ultrasonics Symposium*, pp. 1647-1650, K.R. Waters (Ed.), Institute of Electrical and Electronics Engineers, Piscataway, 2008.

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Mamou, J., Ramachandran, S. and Feleppa, E. J., "Angle-dependent ultrasonic detection and imaging of brachytherapy seeds using singular spectrum analysis" *J. Acoust. Soc. Am.*, 123(4):2148-2159, 2008.

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Silverman, R.H., Ketterling, J.A., **Mamou**, J., and Coleman, D.J., "Improved high-resolution ultrasonic imaging of the eye" *Arch. Ophthalmol.*, 126(1):94-97, 2008.