

**Elsa D. ANGELINI, Ph.D.**

Associate Research Scientist<sup>1</sup>,  
Associate Professor<sup>2</sup>

<sup>1</sup>**Columbia University**, Departments of  
Radiology and Biomedical Engineering,  
Heffner Biomedical Imaging Lab, Columbia  
University  
1210 Amsterdam Avenue  
351 ET, 1210 Amsterdam Ave., Mail Code: 8904  
New York, NY 10027, USA  
Phone: (+1) (212) 854 5996  
Email: [ea179@columbia.edu](mailto:ea179@columbia.edu)

<sup>2</sup>**Telecom ParisTech**, Institut Mines Telecom  
Department of Signal & Image Processing

**Web pages:**

<http://perso.telecom-paristech/~angelini>  
<http://hbil.bme.columbia.edu/>

## Fields of Interest

---

Medical imaging, image processing, applied mathematics, quantitative methods of segmentation, texture analysis, denoising, sparse decomposition, pattern recognition, wavelet and time-frequency analysis tools, computer vision, scientific visualization. Applications related to multi-dimensional medical and biological imaging modalities for denoising, enhancement and segmentation. Quantification of anatomical structures and physiological functions and validation with clinical studies. Anatomical modeling, meshing, and deformation.

## Education

---

- 2011**                    **Habilitation à Diriger des Recherches (HDR), University of Nice Sophia Antipolis.**  
Title of the HDR thesis: "Geometrical models, formulation of constraints, information extraction, for the segmentation of healthy and pathological medical images ».
- 1998–2002**            **PhD Research, Department of Biomedical Engineering, Columbia University, New York, NY, USA.** (Graduate Research Assistant and Teaching Assistant fellowships):
- In charge of a project for denoising and segmentation of real-time 3D cardiac ultrasound with multi-dimensional complex wavelet transforms.
  - Collaboration with ITK Kitware development project. Implemented and tested a hybrid segmentation tool for multidimensional segmentation.
  - Passed the qualifying examination in April 1999. Dissertation proposal passed in December 2000. Dissertation presented and passed in May 2002.
- 1997– 1998**            **Master of Science, Department of Biomedical Engineering, Columbia University, New York, NY, USA.** (Whitaker fellowship):
- In charge of project for knee joint cartilage segmentation from MRI. Developed an algorithm for cartilage surface extraction using statistical shape models (PCA).
- 1993–1996**            **Bachelor of Science, Ecole Centrale de Nantes, France.**  
Major in Signal and Image Processing. Graduated with Honors.

## Work Experience

---

- 2012-current**      **Associate Research Scientist, Heffner Biomedical Imaging Laboratory, Department of Biomedical Engineering and Department of Radiology, Columbia University, USA.**  
Co-director of the Heffner Biomedical Imaging Laboratory. In charge of scientific supervision of 3 projects: (1) quantitative lung analysis on cohort of CT images for COPD patients (Scientific coordinator of a NIH R01 grant since July 2014), (2) comparison of cardiac strain quantification on 3DUS and tagged MRI images for various cardiac pathologies (co-investigator of a NIH R01 grant since 2012), (3) enhancement of PET images via algorithmic solutions for sparsity enhancement with OSEM (collaboration with the Department of Psychiatry).
- 2004-2012**      **Professor, Telecom ParisTech, Paris, France.**  
*On leave since January 2012. Double affiliation remains.*  
- Co-director of the Medical Image Processing Group, at Telecom ParisTech.  
- Co-Chair of the Bioimaging Track of the international Master Program BME-Paris ([www.bme-paris.org](http://www.bme-paris.org)).  
- Teaching basic and advanced signal and image processing methods and medical image technologies (Master-level courses at Telecom ParisTech, University of Paris 6 and Arts et Métiers ParisTech).  
- Research projects on: variational segmentation methods (level sets and deformable models), segmentation and simulation of real-time three-dimensional ultrasound, denoising of medical images with multi-scale analysis functions (wavelet, brushlet), fuzzy image processing of brain MRI, tracking methods for vessel segmentation, anatomical modeling from adult and fetal imaging, biological image processing for microscopy.
- 2010 (Mar.-Aug.)**      **Visiting Scientist, CSIRO-Australian e-Health Research Center. Brisbane, Australia**  
Sabbatical working on two projects: (1) longitudinal detection of anatomical changes on brain MRI for aging population with Alzheimer disease, (2) GPU-based ultrasound image simulation for prostate biopsy from MRI and CT data.
- 2007-2012**      **Visiting Professor of Biomedical Engineering, Columbia University, New York, NY USA.**  
Collaboration with the Heffner Biomedical Imaging Laboratory (A. Laine). Several visiting periods per year. Joint projects and co-supervision of PhD students.
- 2002-2004**      **Post-Doctoral Fellow, Department of Biomedical Engineering, Columbia University, New York, NY, USA.**  
Research projects on modeling of cardiac wall deformations with real-time three dimensional ultrasound, neural network classification of genomic images and protein crystals identification.
- Oct 96–Sept 97**      **Crédit Lyonnais, New York, NY, USA.**  
Consulting in risk management. Validated mathematical models and pricing software tools for derivative products.
- Apr 96-Sept 96**      **Neuromuscular Research Center, Boston University, Boston, MA, USA.**  
Developed a software analysis tool for diagnosis of Carpal Tunnel Syndrome. Set up of clinical experiments, acquired EMG data on volunteers, processed and classified EMG signals with Time-Frequency analysis tools.

## Language & Computer Skills

---

<b>Spoken Languages</b>	French:      Mother tongue. English:     Fluent (lived for 12 years in the United States). Spanish:     Fair knowledge.
<b>Scientific Software</b>	AVS, IDL, Matlab.
<b>Programming Languages</b>	C, C++, Fortran.

## Academic & Professional Honors

---

**2012** Senior Member of the IEEE Society.  
**2001** Region finalist of the student paper competition of the IEEE-EMBS annual meeting.  
**1997-1998** Graduate fellowship from the Whitaker Foundation for first year of graduate studies.

## Professional Activities

---

**2013-2015** Elected Europe representative for the Administrative Committee of the IEEE Engineering in Medicine and Biology (EMB) Society.  
**2010-2014** Chair (2013-14) and EMBS representative member of the steering committee of the IEEE Transactions on Medical Imaging.  
**2011-2016** Member (elected) of the IEEE SPS Bioimaging and Signal processing (BISP) Technical Committee.  
**2013-2015** Chair of the IEEE EMBS Biomedical Imaging and Image Processing (BIIP) Technical Committee.  
**2011-2014** Elected member of the CNRS Scientific Advisory Board for the Computer Science Dpt. (INS2I).  
**2009-2012** Elected representative of the professors and researchers on the ParisTech Adcom.  
**2008-2011** External member of the Evaluation Commission of the INRIA.

### Grant Reviews:

Expert for the European Commission, H2020, PHC11  
Reviewer for the ANR (French equivalent of the NSF)  
Reviewer for the City University of Hong Kong, Research Grant Council.  
Laboratories evaluation committee for the French AERES.

### Journal Editorial:

Associate Editor of the IEEE Transactions on Biomedical Engineering (2008-2012)  
Member of the Editorial Board of Medical Image Analysis (since 2015)

### Journal Reviews:

IEEE Transactions on Image Processing, IEEE Transactions on Medical Imaging, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, Signal, Image and Video Computing (Springer), Medical Image Analysis (Springer), Signal Image and Video Processing (Springer).

### Conference Reviews:

ISBI, MICCAI, ICCV, ICPR, MMBIA, FIMH, ICCASP, ICIP.

### Conference Organization Committees:

**2015** General Chair of the IEEE ISBI conference (Brooklyn, NY, USA)  
**2008** Finance chair of the IEEE ISBI conference (Paris, France),  
**2008** Workshops co-chair of the MICCAI conference (New York, NY, USA)

### Conference Program Committees

**2015** FIMH, EMBC  
**2014** SPIE Medical Imaging, EMBC  
**2013** SPIE Medical Imaging, FIMH  
**2012** SPIE Medical Imaging, MICCAI  
**2011** FIMH, MICCAI, EMBC  
**2009** FIMH, ISVC  
**2008** MICCAI  
**2007** FIMH, MICCAI, MMBIA  
**2006** EMBC

## Patents

---

[1] **“Spatio-Temporal Treatment of Noisy Images Using Brushlets”**, Awarded June 2, 2009. US Patent Number: 7,542,622. ([link](#)). **Inventors:** Elsa D. Angelini (50%), Andrew F. Laine (50%).

**Abstract:** “ Treatment and mitigation or reduction of noise effects in noisy image data and data sets is described. Various aspects include treatment of noisy data with brushlet transforms and thresholding operations along with a favorable sequence of spatial and temporal processing and thresholding. Hard and minimax thresholding operators mitigate the noise in the image data. In medical applications this can be useful in removing noise that impairs diagnosis and treatment of patient conditions. In one application, cardiac function is better studied and understood through improved imaging of the heart and cardiac structures. In an exemplary case, a favorable sequence including spatial filtering using a brushlet filter, spatial thresholding of brushlet coefficients, then temporal filtering (first in the time domain then in the frequency domain) and thresholding of temporal coefficients yields an acceptable denoised image data set.”

[2] **“Method for quantifying the development of pathologies involving changes in the volumes of bodies, notably tumors”**, Awarded in 2010 in Europe, Notified for Allowance in the US on March 2015. Number: US 20120220856 A1 ([link](#)). **Inventors:** Elsa Angelini (70%), Emmanuel Mandonnet (30%), Julie Delon (30%).

**Abstract:** “A method for quantifying the development of pathologies involving changes in volume of a body represented via an imaging technique, including normalizing gray levels by a midway technique for two images I1 and I2 representing the same scene, resulting in two normalized images I'1 and I'2; calculating a map of signed differences between the two normalized images I'1 and I'2; and performing one or more statistical tests based on the assumption of a Gaussian distribution of the gray levels for healthy tissues in the normalized images I'1 and I'2 and/or in the calculated difference map. Advantageously, results of two or more of the tests can be combined for a more specific characterization of the development.”

[3] One algorithm licensed by Columbia University in 2014. **Inventors:** Elsa Angelini (40%), XX (40%), XX (20%). Confidential for the moment.

---

## Publications

### PhD & HDR Thesis

**E. D. Angelini**, "Spatio-Temporal Analysis of Three-Dimensional Real-Time Ultrasound for Quantification of Ventricular Function," Department of Biomedical Engineering, Columbia University, New York, 2002.

**E. D. Angelini**, "Geometrical models, constraints design, information extraction for pathological and healthy medical image", University of Nice Sophia Antipolis, 2011.

### Journal Papers

A. Mikhno, F. Zanderigo, R. T. Ogden, J. J. Mann, **E. D. Angelini**, A. F. Laine, R. V. Parsey, "Toward noninvasive quantification of brain radioligand binding by combining electronic health records and dynamic PET imaging data", IEEE Journal of Biomedical and Health Informatics, Vol. 19, No. 14, pp. 1271-1282, 2015.

S. Dahdouh, **E. D. Angelini**, G. Grange, I. Bloch, "Segmentation of embryonic and fetal 3D ultrasound images based on pixel intensity distributions and shape priors", Medical Image Analysis, Vol. 24, No. 1, pp. 255-268, 2015.

N. Varsier, S. Dahdouh, A. Serrurier, J. P. de la Plata, J. Anquez, **E. Angelini**, I. Bloch, J. Wiart, " Influence of pregnancy stage and fetus position on the whole-body and local exposure of the fetus to RF-EMF", Physics in Medicine and Biology, Vol. 59, pp. 4913–4926, 2014.

S. Dahdouh, N. Varsier, A. Serrurier, J. P. de la Plata, J. Anquez, **E. Angelini**, J. Wiart, I. Bloch, "A comprehensive tool for image-based generation of fetus and pregnant women mesh models for numerical dosimetry studies", Physics in Medicine and Biology, Vol 59, pp. 4583-4602, 2014.

Y. Hame, **E. Angelini**, E. Hoffman, G. Barr, A. Laine, "Adaptive quantification and longitudinal analysis of pulmonary emphysema with a hidden Markov measure field model", IEEE Transactions on Medical Imaging, Vol. 33, No.7, pp. 1527 - 1540, 2014.

S. Audiere, **E. Angelini**, L. Sandrin, M. Charbit, "Maximum Likelihood Estimation of Shear Wave Speed in Transient Elastography", IEEE Transactions on Medical Imaging, Vol. 33, No. 6, pp. 1338 - 1349, 2014.

Y. Le Montagner, **E. Angelini**, J.-C. Olivo Marin, "An unbiased risk estimator for image denoising in the presence of mixed Poisson-Gaussian noise", IEEE Transactions on Image Processing, Vol 23, No. 3, pp. 1255-1268, 2014

V. Israel-Jost, J. Darbon, **E. D. Angelini**, I. Bloch. "Conciliating Syntactic and Semantic Constraints for Multi-Phase and Multi-Channel Region Segmentation", Computer Vision and Image Understanding, vol 117, No 8, pp. 819–826, 2013

P. Schmitt, E. Mandonnet, A. Perdreau, **E. D. Angelini**. "Effects of slice thickness and head rotation when measuring glioma sizes on MRI: In support of volume segmentation versus two largest diameters", Journal of Neuro-oncology, vol. 112, No 2, pp. 165-172, 2013.

J. Anquez, **E. D. Angelini**, G. Grangé, I. Bloch, "Automatic segmentation of ante-natal 3D ultrasound images", IEEE Transactions on Biomedical Engineering , vol. 60, No 5 , pp. 1388-400, 2013.

A. Katouzian, **E. Angelini**, S. G. Carlier, J. S. Suri, N. Navab, A. F. Laine, "A state of the art review on segmentation algorithms in intravascular ultrasound (IVUS) images", IEEE Transactions on Information Technology in BioMedicine, vol. 16, No 5, pp. 823 – 834, 2012.

E. Altendorf, E. Decenciere, D. Jeulin, P. De Sa Peixoto, A. Deniset-Besseau, **E. Angelini**, G. Mosser, M.-C. Schanne-Klein, "Imaging and 3D Morphological Analysis of Collagen Fibrils", Journal of Microscopy, vol. 247, No 2, pp. 161-175, 2012.

- E Angelini**, J. Delon, A. Boubacar Bah, L. Capelle, E. Mandonnet, "Differential MRI Analysis for Quantification of Low Grade Glioma Growth", *Medical Image Analysis*, vol. 12, No 1, pp. 114-126, 2012.
- T. Ius, **E. Angelini**, M. Thiebaut de Schotten, E. Mandonnet, H. Duffau, "Evidence for potentials and limitations of brain plasticity using an atlas of functional resectability of WHO grade II gliomas: towards a "minimal common brain", *Neuroimage*, Vol 56, No 3, pp. 992-1000, 2011.
- M. de Moraes Marim, M. Atlan, **E. Angelini**, J.-C. Olivo-Marin, "Off-axis compressed holographic microscopy in low-light conditions", *Optics Letter*, vol. 36, n°1, pp. 79-81, 2011.
- M. Marim, M. Atlan, **E. Angelini**, J.C. Olivo-Marin, "Compressed Sensing with off-axis, frequency-shifting holography", *Optics Letters*, vol. 35, n°6, pp. 871-873, 2010.
- Q. Duan, **E. Angelini**, A. Laine, "Real-time segmentation by Active Geometric Functions", *Computer Methods and Programs in Biomedicine*, vol. 98, n°3, Pages 223-230, 2010.
- D. Lesage, **E. D. Angelini**, G. Funka-Lea, I. Bloch, "A review of 3D vessel lumen segmentation techniques: Models, features and extraction Schemes", *Medical Image Analysis*, Vol. 13, pp. 819-845, 2009.
- L. Bibin, J. Anquez, **E. D. Angelini**, I. Bloch. "Hybrid 3D pregnant woman and fetus modeling from medical imaging for dosimetry studies". *International Journal of Computer Assisted Radiology and Surgery*, vol. 5, n° 1, pp. 49-56, 2009.
- O. Nempont, J. Atif, **E. Angelini**, I. Bloch, "A new fuzzy connectivity measure for fuzzy sets and associated fuzzy attribute openings, *Journal of Mathematical Imaging and Vision*, vol. 34, pp. 107-136, 2009.
- Q. Duan, **E. D. Angelini**, S. L. Herz, C. M. Ingrassia, K. D. Costa, J. W. Holmes, S. Homma, and A. F. Laine,, "Region-based endocardium tracking on real-time three-dimensional ultrasound", *Ultrasound in Medicine and Biology*, Vol. 35, No. 2, pp. 256–265, 2009.
- A. Moreno, S. Chambon, A. Santhanam, J. Rolland, **E. Angelini** and I. Bloch, "Combining a breathing model and tumor-specific rigidity constraints for registration of CT-TEP thoracic data", *Computer Assisted Surgery*, Vol. 13, No. 5, pp 281-298, 2008.
- J. Puentes, B. Batrancourt, J. Atif, L. Lecornu, **E. Angelini**, I. Bloch, C. Roux, "Integrated Multimedia Electronic Patient Record and Graph-Based Image Information for Cerebral Tumors", *Computers in Biology and Medicine*, Vol. 38, pp 425-437, 2008.
- E. D. Angelini**, O. Clatz, E. Mandonnet, E. Konukoglu, L. Capelle and H. Duffau, "Glioma dynamics and computational models: A review of segmentation, registration and in silico growth algorithms and their clinical validations", *Current Medical Imaging Review*, Vol. 3, No. 4, pp:262-276, 2007.
- E. Angelini**, T. Song, B. Mensh, and A. Laine, "Brain MRI Segmentation with Multiphase Minimal Partitioning: A Comparative Study", *International Journal of Biomedical Imaging*, Vol. 2007, Article ID 10526, 15 pages, 2007.
- E. Angelini**, S. Homma, G. Pearson, J. Holmes, A. Laine "Segmentation of Real-time three-dimensional ultrasound for quantification of ventricular function: a clinical study on right and left ventricles," *Ultrasound in Medicine and Biology*, vol. 31, issue 9, pp 1143-1158, 2005.
- P.-H. G. Chao, Z. Tang, **E. Angelini**, A. C. West, K. D. Costa and C. T. Hung, " Dynamic osmotic loading of chondrocytes using a novel microfluidic device " *Journal of Biomechanics* 38(6), 1273-1281, 2005.
- E. Angelini**, E. Ciaccio, "Optimized region finding and edge detection of knee cartilage surfaces from magnetic resonance images", *Annals of Biomedical Engineering*, vol. 31, issue 3, pp 336-345, 2003.
- E. D. Angelini**, A. Laine, S. Takuma, J. Holmes, and S. Homma, "LV volume quantification via spatio-temporal analysis of real-time 3D echocardiography," *IEEE Transactions on Medical Imaging*, vol.20, issue 6, pp 457-469, 2001.

## Book Chapters

- A. Katouzian, **E. Angelini**, B. Sturm, E. Konofagou, S. Carlier, A. Laine, "Applications of Multiscale Overcomplete Wavelet-based Representations in Intravascular Ultrasound (IVUS) Images", in *Ultrasound Imaging (Advances and Applications)*, Eds. J. M. Sanches, A. F. Laine, J. S. Suri, Springer, pp. 313-336, 2012.
- Q. Duan, **E. Angelini**, A. F. Laine, J. S. Suri, "Real-Time 4D Cardiac Segmentation by Active Geometric Functions", in *Ultrasound Imaging (Advances and Applications)*, Eds. J. M. Sanches, A. F. Laine, J. S. Suri, Springer, pp. 225-253, 2012. [link](#) to erratum specifying correct list of authors.
- Q. Duan, **E. Angelini**, O. Gerard, K. D. Costa, J. W. Holmes, S. Homma and A. Laine, "Cardiac Motion Analysis Based on Optical-Flow of Real-Time 3-D Ultrasound Data", Chapter 9 in *Advances in Diagnostic and Therapeutic Ultrasound Imaging*, Eds. J. S. Suri, C. Kathuria, R.-F. Chang, F. Molinari, A. Fenster, Artech House, pp. 227-246, 2008.
- C. Cavaro-Menard, A. Nait-Ali, J-Y Tanguy, **E. Angelini**, C. Le Bozec, J-J Le Jeune, "Specificities of Physiological Signals and Medical Images", *Compression of Biomedical Images and Signals*, Wiley, pp. 43-74, 2008.
- Q. Duan, **E. Angelini**, S. Homma and A. Laine, "Tracking Endocardium using Optical Flow along Isovalue Curve", Chapter 14 in *Principles and Advanced Methods in Medical Imaging and Image Analysis*, Eds. A. P. Dhawan, H. K. Huang, D.-S. Kim, World Scientific Publishing, Singapore, pp. 337-360, 2008.
- E. Angelini**, Y. Jin, and A. Laine, "State-of-the-Art of Level set Methods in Segmentation and Registration of Medical Imaging Modalities," in *Handbook of Biomedical Image Analysis- Registration Models*, Ed.: D. L. W. Jasjit Suri, Swamy Laximinarayan, Kluwer Academic/ Plenum Publishers, pp. 47-102, 2005.
- Y. Jin, **E. Angelini**, and A. Laine, "Wavelets in Medical Image Processing: Denoising, Segmentation, and Registration," in *Handbook of Biomedical Image Analysis Vol 1- Segmentation Models - Part a*, Ed.: D. L. W. Jasjit Suri, Swamy Laximinarayan Kluwer Academic/ Plenum Publishers, pp. 305-358, 2005..
- E. D. Angelini** and A. Laine, "Spatio-temporal directional analysis of real-time three dimensional cardiac ultrasound," in *Wavelets in Signal and Image Analysis*, F. Meyer and A. Petrosian, Eds.: Kluwer Academic Publishers, 2001.

## Full-Length Conference Papers

- E. Roccia, A. Mikhno, F. Zanderigo, **E. Angelini**, T. Ogden, J. J. Mann, R. Parsey, A. F. Laine, "Non-invasive quantification of brain [18F]-FDG uptake by combining medical health records and dynamic PET imaging data", *International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Milano, Italy, 2015.
- W. Meiniel, **E. Angelini**, J.-C. Olivo-Marin, "Image denoising by adaptive Compressed Sensing reconstructions and fusions", *Proc. SPIE 9597, Wavelets and Sparsity XVI*, San Diego, CA, 2015.
- Y. Gan, **E. Angelini**, A. F. Laine, and C. Hendon, "BM3D-based ultrasound image denoising via brushlet thresholding", *IEEE International Symposium on Biomedical Imaging (ISBI)*, Brooklyn, NY, pp. 667-670, 2015.
- Y. Hame, **E. Angelini**, R.G. Barr, and A.F. Laine, "Equating emphysema scores and segmentations across CT reconstructions: A comparison study", *IEEE International Symposium on Biomedical Imaging (ISBI)*, Brooklyn, NY, pp. 629-632, 2015.
- Y. Hame, **E. Angelini**, M. Parikh, B. M. Smith, E. Hoffman, R. G. Barr, and A. F. Laine, "Sparse sampling and unsupervised learning of lung texture patterns in pulmonary emphysema: MESA COPD study", *IEEE International Symposium on Biomedical Imaging (ISBI)*, Brooklyn, NY, pp. 109-113, 2015.
- W. Meiniel, Y. L. Montagner, **E. Angelini**, and J.-C. Olivo-Marin, "Image denoising by multiple compressed sensing reconstructions", *IEEE International Symposium on Biomedical Imaging (ISBI)*, Brooklyn, NY, pp. 1232-1235, 2015.
- V. Israel-Jost, J. Darbon, **E. D. Angelini**, I. Bloch, "On the implementation of the multi-phase region segmentation, solving the hidden phase problem", *IEEE International Conference on Image Processing (ICIP)*, Paris, France, pp. 4338-4342, 2014.

- V. Gamarnik, C. Russo, **E. Angelini**, A. F. Laine, "Toward Diagnostic Criteria for Left Ventricular Systolic Dysfunction From Myocardial Deformation", IEEE-EMBS International Conferences on Biomedical and Health Informatics", Valencia, Spain, pp. 688 – 692, 2014.
- A. Mikhno, **E. Angelini**, A. F. Laine, "Locally weighted total variation denoising for PSF modeling artifact suppression in PET reconstruction", IEEE International Symposium on Biomedical Imaging (ISBI), Beijing, China, pp. 971-974, 2014.
- Y. Le Montagner, **E. Angelini**, J. C. Olivo-Marin: 'Biological video reconstruction using linear or non-linear Fourier measurements'. Proc. SPIE 8858, Wavelets and Sparsity XV, San Diego, CA, 2013.
- M. Gargouri, J. Tierny, E. Jolivet, P. Petit, **E. D. Angelini**, "Accurate and robust shape descriptors for the identification of rib cage structures in CT-images with Random Forests", IEEE International Symposium on Biomedical Imaging (ISBI), San Francisco, CA, USA, pp. 65-68, 2013.
- A. Mikhno, **E. Angelini**, A. F. Laine, B. Bai, "Locally weighted Total Variation denoising for ringing artifact suppression in PET reconstruction using PSF modeling", IEEE International Symposium on Biomedical Imaging (ISBI), San Francisco, CA, USA, pp. 1252-1255, 2013.
- Y. Hame, **E. Angelini**, E. Hoffman, G Barr, A. F. Laine, "Robust quantification of pulmonary emphysema with a hidden Markov measure field model", IEEE International Symposium on Biomedical Imaging (ISBI), San Francisco, CA, USA, pp. 382-385, 2013.
- Y. Le Montagner, **E. Angelini**, J.-C. Olivo-Marin, "Phase retrieval with sparsity priors and application to microscopy video reconstruction", IEEE International Symposium on Biomedical Imaging (ISBI), San Francisco, CA, USA, pp. 604-607, 2013.
- S. Dahdouh, A. Serrurier, G. Grangé, **E. Angelini**, I. Bloch, "Segmentation of fetal envelope from 3D Ultrasound images based on pixel intensity statistical distribution and shape priors", IEEE International Symposium on Biomedical Imaging (ISBI), San Francisco, CA, USA, pp. 1026-1029, 2013.
- A. Lorsakul, Q. Duan, C. Russo, **E. Angelini**, S. Homma, A. Laine, "Impact of temporal resolution on the LV myocardial strain assessment on real-time 3D ultrasound", IEEE EMBC, San Diego, CA, pp. 4075-4078, 2012.
- Y. Le Montagner, **E. Angelini**, J.-C. Olivo-Marin, " Video reconstruction using compressed sensing measurements and 3D Total Variation regularization for bio-imaging applications", IEEE International Conference on Image Processing (ICIP), Orlando, FL, USA, pp. 917-920, 2012.
- G. Pizaine, R. Prevost, **E. Angelini**, I. Bloch, S. Makram-Ebeid, "Segmentation-free and multiscale-gree extraction of medial information using gradient vector flow- Application to vascular structures". IEEE International Symposium on Biomedical Imaging (ISBI), Barcelona, Spain, pp. 1421-1424, 2012.
- M. Charbit, **E. D. Angelini**, S. Audiere, "Maximum-likelihood estimation of Young's modulus in transient elastography with unknown line-of-sight orientation", IEEE International Symposium on Biomedical Imaging (ISBI), Barcelona, Spain, pp. 1108-1111, 2012.
- A. Katouzian, **E. Angelini**, B. Sturm, A. Laine, "Brushlet segmetnation for automatic detection of lumen borders in IVUS images: a comparison study", IEEE International Symposium on Biomedical Imaging (ISBI), Barcelona, Spain, pp. 242-245, 2012.
- S. Audiere, **E. D. Angelini**, M. Charbit, V. Miette "Evaluation of In vivo liver tissue characterization with spectral RF analysis versus elasticity", MICCAI, Toronto, Canada, LNCS 6891, pp. 387-395, 2011.
- A. Lorsakul, Q. Duan, M. J. Po, **E. Angelini**, S. Homma, A. F. Laine, "Parameterization of real-time 3D speckle tracking framework for cardiac strain assessment", IEEE EMBC conference, Boston, USA, pp. 2654-2657, 2011.
- Y. Le Montagner, M. Marim, **E. Angelini**, J.-C. Olivo-Marin, "Numerical evaluation of sampling bounds for near-optimal reconstruction in Compressed Sensing", International Conference on Image Processing (ICIP), Brussels, Belgium, pp. 3073-3076, 2011.
- Y. Le Montagner, M. Marim, **E. D. Angelini**, J.-C. Olivo-Marin, " Numerical evaluation of subsampling effects on image reconstruction in Compressed-Sensing microscopy", SPIE Wavelet XIII, Vol. 8138 / Applications of Sparse Representations in Bioimaging, San Diego, CA, USA, 2011.
- J. P. De La Plata, J. Anquez, L. Bibin, T. Boubekour, **E. Angelini**, I. Bloch, "FEMONUM: A Framework for Whole Body Pregnant Woman Modeling from Ante-Natal Imaging Data", Eurographics, 2011. Honorable mention of the Dirk Bartz Prize for Visual Computing in Medicine 2011



Y. Le Montagner, **E. Angelini**, J.-C. Olivo-Marin, "Comparison of reconstruction algorithms in Compressed Sensing applied to biomedical imaging", IEEE International Symposium on Biomedical Imaging (ISBI), Chicago, USA, pp. 105-108, 2011.

G. Pizaine, **E. Angelini**, I. Bloch, S. Makram-Ebeid, "Vessel geometry modeling and segmentation using convolution surfaces and an implicit medial axis", IEEE International Symposium on Biomedical Imaging (ISBI), Chicago, USA, pp. 1421-1424, 2011.

G. Pizaine, **E. D. Angelini**, I. Bloch, S. Makram-Ebeid, "Implicit medial representation for vessel segmentation", SPIE Medical Imaging, Vol 7962, Orlando, FL, USA, 2011

J.P. de la Plata Alcalde, L. Bibin, J. Anquez, Tamy Boubekeur, **E. D. Angelini**, I. Bloch, "Physics-based Modeling of the Pregnant Woman", International Symposium on Biomedical Simulation (ISBMS), Phoenix, USA, Jan. 2010.

M. Marim, **E. D. Angelini**, and J.-C. Olivo-Marin, "Compressed Sensing in microscopy with random projections in the Fourier domain", IEEE Intern. Conf. on Image Processing, (ICIP), Cairo, Egypt, Nov. 2009.

J. Anquez, T. Boubekeur, L. Bibin, **E. D. Angelini**, I. Bloch. "Utero-fetal unit and pregnant woman modeling using a computer graphics approach for dosimetry studies", MICCAI, London, UK, pp. 1025-1032, Sept. 2009.

D. Lesage, **E. D. Angelini**, G. Funka-Lea, I. Bloch, "Bayesian maximal paths for coronary artery segmentation from 3D CT angiograms", MICCAI, London, UK, pp. 222-229, Sept. 2009.

A. Katouzian, **E. D. Angelini**, A. F. Laine, "Classification of blood regions in IVUS images using three dimensional brushlet expansions ", International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Minneapolis, USA, Sept. 2009

S. Audiere, M. Yassine, M. Charbit, **E. D. Angelini**, V. Miette, L. Sandrin, "Ultrasound-based tool for vibration-controlled transient elastography real-time assistance: automatic liver localization and skin capsule distance measurement", IEEE International Ultrasonics Symposium, Roma, Italy, Sept. 2009.

M. Marim, **E. D. Angelini**, and J.-C. Olivo-Marin, "Compressed sensing in biological microscopy", SPIE International Symposium, Wavelets XIII, conf 7446, San Diego, Aug. 2009.

M. Marim, **E. Angelini** and J.-C. Olivo-Marin, " A compressed sensing approach for biological microscopic image processing", IEEE International Symposium on Biomedical Imaging (ISBI), Boston, USA, pp. 1374-1377, July 2009.

J. Anquez, **E. Angelini** and I. Bloch, " Automatic segmentation of head structures on fetal MRI", IEEE International Symposium on Biomedical Imaging (ISBI), Boston, USA, pp. 109-112, July 2009.

D. Lesage, **E. Angelini**, I. Bloch and G. Funka-Lea, "Design and study of flux-based features for 3D vascular tracking", IEEE International Symposium on Biomedical Imaging (ISBI), Boston, USA, pp. 286-289, July 2009.

Q. Duan, K. Parker, A. Lorsakul, **E. Angelini**, E. Hyodo, S. Homma, J. Holmes, A. Laine, "Quantitative Validation of optical flow based myocardial strain measures using sonomicrometry", IEEE International Symposium on Biomedical Imaging (ISBI), Boston, USA, pp. 454-457, July 2009.

L. Bibin, J. Anquez, **E. Angelini**, I. Bloch, "Hybrid 3D modeling of mother and fetus from medical imaging for dosimetry studies, Computer Assisted Radiology and Surgery (CARS), Berlin,Germany, pp. 378-379, June 2009.

A. Katouzian, **E. D. Angelini**, A. Lorsakul, B. Sturm, A. F. Laine, "Lumen border detection of intravascular ultrasound via denoising of directional wavelet representations", Functional Imaging and Modeling of the Heart (FIMH), Nice, France, vol. 1, pp. 104-113, June 2009.

Q. Duan, **E. D. Angelini**, A. Lorsakul, S. Homma, J. Holmes, A. F. Laine, "Coronary occlusion detection with 4D optical flow ", Functional Imaging and Modeling of the Heart (FIMH), Nice, France, vol. 1, pp. 211-219, June 2009.

O. Nempont, J. Atif, **E. Angelini**, I. Bloch, "Structure segmentation and recognition in images guided by structural constraint propagation", European Conference on Artificial Intelligence (ECAI), Patras, Greece, pp. 621-625, July 2008.

O. Nempont, J. Atif, **E. Angelini**, I. Bloch, "Fuzzy attribute openings based on a new fuzzy connectivity class. Application to structural recognition in images", IPMU, Malaga, Spain, pp. 652-659, June 2008.

Q. Duan, **E. D. Angelini**, S. Homma, A. F. Laine, "Real-time segmentation of 4D ultrasound by active geometric functions", IEEE International Symposium on Biomedical Imaging (ISBI), Paris, France, pp. 233-236, May 2008.

D. Lesage, **E. Angelini**, I. Bloch, G. Funka-Lea, "Medial-based Bayesian tracking for vascular segmentation: Application to coronary arteries in 3D CT angiography", IEEE International Symposium on Biomedical Imaging (ISBI), Paris, France, pp. 268-271, May 2008.

- V. Israel-Jost, E. Breton, **E. Angelini**, P. Choquet, I. Bloch, "Vectorial multi-phase mouse brain tumor segmentation in T1-T2 MRI", IEEE International Symposium on Biomedical Imaging (ISBI), Paris, France, pp. 5-8, May 2008.
- J. Anquez, **E. Angelini**, I. Bloch, "Segmentation of fetal 3D ultrasound images based on statistical prior and deformable model", IEEE International Symposium on Biomedical Imaging (ISBI), Paris, France, pp. 17-20, May 2008.
- O. Nempont, J. Atif, **E. Angelini**, I. Bloch, "A new fuzzy connectivity class. Application to structural recognition in images.", IAPR International Conference on Discrete Geometry for Computer Imagery (DGCI), Lyon, France, vol. LNCS 4992, pp. 446-457, Apr. 2008.
- A. Moreno, S. Chambon, A. P. Santhanam, R. Brocardo, P. Kupelian, J. P. Rolland, **E. Angelini**, I. Bloch, "Thoracic CT-PET registration using a 3D breathing model", International Conference on Medical Image Computing and Computerized Medical Imaging (MICCAI), LNCS, Brisbane, Australia, pp.626-633, Oct. 2007.
- A. Moreno, S. Chambon, A. Santhanam, J. Rolland, **E. Angelini** and I. Bloch, "CT-PET landmark-based registration using a dynamic lung model", International Conference on Image Analysis and Processing (ICIAP), Modena, Italy, pp. 691-696, Sept. 2007.
- R. El Berbari, I. Bloch, A. Redheuil, **E. Angelini**, E. Mousseaux, F. Frouin and A. Herment, "An automated myocardial segmentation in cardiac MRI", Engineering in Medicine and Biology Conference, IEEE EMBS Annual International Conference (EMBC), Lyon, France, Aug. 2007.
- J. Anquez, **E. Angelini**, I. Bloch, V. Merzoug, A. E. Bellaiche-Millischer and C. Adamsbaum, "Interest of the steady state free precession (SSFP) sequence for 3D modeling of the whole fetus", IEEE EMBS Annual International Conference (EMBC) , Lyon, France, Aug. 2007.
- O. Nempont, J. Atif, **E. Angelini**, I. Bloch. "Combining radiometric and spatial structural information in a new metric for minimal surface segmentation", International Conference on Information Processing in Medical Imaging (IPMI), LNCS 4584, Kerkrade, The Netherlands, pp. 283-295, July 2007.
- Q. Duan, P. Moireau, **E. D. Angelini**, D. Chapelle, A. Laine, "Simulation of 3D ultrasound with a realistic electro-mechanical model of the heart", International Workshop on Functional Imaging and Modeling of the Heart (FIMH), Springer LNCS 4466, Salt Lake City, USA, pp. 463-473, June 2007.
- R. El Berbari, I. Bloch, A. Redheuil, **E. Angelini**, E. Mousseaux, F. Frouin, A. Herment, "Automated segmentation of the left ventricle including papillary muscles in cardiac magnetic resonance images", International Workshop on Functional Imaging and Modeling of the Heart (FIMH), Springer LNCS 4466, Salt Lake City, USA, pp. 453-462, June 2007.
- H. Khotanlou, J. Atif, **E. Angelini**, H. Duffau and I. Bloch, "Adaptive segmentation of internal brain structures in pathological MR images depending on tumor types", International Symposium on Biomedical Imaging (ISBI), Arlington, VA, USA, pp: 588-591, Apr. 2007.
- J. Atif, C. Hudelot, O. Nempont, N. Richard, B. Batrancourt, **E. Angelini** and I. Bloch, "GRAFIP: A framework for the representation of healthy and pathological cerebral information", International Symposium on Biomedical Imaging (ISBI), Arlington, VA, USA, pp: 205-208, Apr. 2007.
- Q. Duan; **E. Angelini**, S. Homma, A. Laine, "Validation of optical-flow for quantification of myocardial deformations on simulated RT3D ultrasound", International Symposium on Biomedical Imaging (ISBI), Arlington, VA, USA, pp. pp. 944 – 947, Apr. 2007.
- E. Angelini**, J. Atif, J. Delon, E. Mandonnet, H. Duffau and L. Capelle, "Detection of glioma evolution on longitudinal MRI studies International Symposium on Biomedical Imaging (ISBI), Arlington USA, pp. 49-52, Apr. 2007.
- J. Atif, C. Hudelot, G. Fouquier, I. Bloch and **E. Angelini** "From generic knowledge to specific reasoning for medical image interpretation using graph-based representations", International Joint Conference on Artificial Intelligence (IJCAI), Hyderabad, India, pp. 224-229, 2007.
- Q. Duan, **E. Angelini**, S. Homma, A. Laine, "Tracking the endocardium using optical flow along iso-value curves", IEEE EMBS Annual International Conference (EMBC), New York, NY, USA, pp. 707-710, 2006.
- E. Angelini**, O. Gerard, "Review of myocardial motion estimation methods from optical flow tracking on ultrasound data", IEEE EMBS Annual International Conference (EMBC), New York, NY, USA, pp.1537-1540, 2006.
- J. Atif, O. Nempont, O. Colliot, **E. Angelini**, I. Bloch, "Level set deformable models constrained by fuzzy spatial relation," Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU), Paris, France, pp. 1534-1541, 2006.

- J. Puentes, B. Batrancourt, L. Lecornu, J. Atif, G. Coatrieux, **E. Angelini**, I. Bloch, C. Roux, "Enhancing electronic patient record functionality through information extraction from images," IEEE International Conference On Information & Communication Technologies, Damascus, Syria, vol.1, pp. 978-983, 2006.
- Q. Duan, **E. Angelini**, O. Gerard, S. Homma, and A. Laine, "Comparing optical-flow based methods for quantification of myocardial deformations on RT3D ultrasound," IEEE International Symposium on Biomedical Imaging (ISBI), Arlington, VA, USA, pp. 173-176, 2006.
- E. Angelini**, T. Song, and A. Laine, "Homogeneity measures for multiphase level set segmentation of brain MRI," IEEE International Symposium on Biomedical Imaging (ISBI), Arlington, VA, USA, pp. 746-749, 2006.
- P. Soler, G. Delso, N. Villain, **E. Angelini**, and I. Bloch, "Superresolution spatial compounding techniques, with application to 3D breast ultrasound imaging," SPIE Conference on Medical Imaging, San Diego, CA, USA, Vol. 6147, 2006.
- B. Vallet, **E. Angelini**, and A. Laine, "Variational segmentation framework in prolate spheroidal coordinates for 3D real-time echocardiography," SPIE Conference on Medical Imaging, San Diego, CA, USA, Vol. 6144, 2006.
- B. Batrancourt, J. Atif, O. Nempont, **E. Angelini**, I. Bloch, "Integrating information from pathological brain MRI into an anatomic-functional model," IASTED International conference on Biomedical Engineering, Innsbruck, Austria, 2006.
- P. Soler, O. Gérard, P. Allain, E. Saloux, **E. Angelini**, I Bloch "Comparison of fusion techniques for 3D+T echocardiography acquisitions from different acoustic windows", Computers in Cardiology, Lyon, France, pp. 141-144, 2005.
- Q. Duan, **E. Angelini**, S. Herz, C. Ingrassia, O. Gerard, K. Costa, J. Holmes, A. Laine, "Dynamic cardiac information from optical flow using four-dimensional ultrasound", IEEE EMBS conference, Shanghai, China, pp. 4465 - 4468, 2005.
- Q. Duan, **E. Angelini**, S. Herz, O. Gerard, P. Allain, C. Ingrassia, K. Costa, J. Holmes, A. Laine, "Tracking of LV endocardial surface on real-time three-dimensional ultrasound with optical flow", Workshop on Functional Imaging and Modeling of the Heart (FIMH), Barcelona, Spain, LNCS 3504, Springer, pp. 434-445, 2005.
- P. Soler, N. Villain, I. Bloch and **E. D. Angelini**, "Volume Reconstruction of Breast Echography from Anisotropically Degraded Scans", IASTED International Conference on Biomedical Engineering, Innsbruck, Austria, vol. 9, pp. 349-355, 2005.
- Q. Duan, **E. Angelini**, S. Herz, C. Ingrassia, O. Gerard, K. Costa, J. Holmes, A. Laine, "Evaluation of optical flow algorithms for tracking endocardial surfaces on three-dimensional ultrasound data", SPIE Symposium on Medical Imaging, San Diego, CA, USA, vol. 5750, pp.159-169, 2005.
- E. D. Angelini**, T. Song, B. D. Mensh, A. Laine, "Multi-phase three-dimensional level set segmentation of brain MRI," International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), Saint-Malo, France, vol. 1, pp. 318-326, 2004.
- T. Song, **E. D. Angelini**, B. D. Mensh, A. Laine, "Comparison Study of Clinical 3D MRI Brain Segmentation Evaluation," International Conference IEEE Engineering in Medicine and Biology Society (EMBS), San Francisco, CA, USA, pp. 1671-1674, 2004.
- E. D. Angelini**, Y. Wang, A. Laine, "Classification of Micro Array Genomic Images with Laplacian Pyramidal Filters and Neural Networks", Workshop on Genomic Signal Processing and Statistics (GENSIPS), Baltimore, Maryland, USA, May 26-27, 2004.
- E. Angelini**, R. Otsuka, S. Homma, and A. Laine, "Comparison of ventricular geometry for two real time 3D ultrasound machines with three dimensional level set," IEEE International Symposium on Biomedical Imaging (ISBI), Arlington, VA, USA, pp. 1323-1326, 2004.
- E. Angelini**, Y. Jin, P. Esser, R. V. Heertum, and A. Laine, "Fusion of brushlet and wavelet denoising methods for nuclear images," IEEE International Symposium on Biomedical Imaging (ISBI), Arlington, VA, USA, pp. 1187-1191, 2004.
- Q. Duan, **E. D. Angelini**, and A. Laine, "Assessment of fast anisotropic diffusion and scan conversion of real-time three-dimensional spherical ultrasound data for visual quality and spatial accuracy," SPIE International Symposium Medical Imaging, San Diego, CA, USA, vol. 5370, pp. 526-537, 2004.
- E. Angelini**, T. Song, B. D. Mensh, and A. Laine, "Segmentation and quantitative evaluation of brain MRI data with a multiphase three-dimensional implicit deformable model," SPIE International Symposium Medical Imaging, San Diego, CA, USA, 2004.
- Y. Jin, **E. Angelini**, P. Esser, and A. Laine, "De-noising SPECT/PET images using cross-scale regularization," MICCAI, Montreal, Canada, vol. 2879, pp. 32-40 2003.

- Y. Jin, **E. Angelini**, S. Mangla, I. S. Choi, R. Kemkers, J. Timmer, and A. Laine, "Multiscale denoising and enhancement of 3D rotational X-ray imaging for percutaneous vertebroplasty," International Conference IEEE Engineering in Medicine and Biology Society (EMBC), Cancun, Mexico, vol. 1, pp. 782-785, 2003.
- Q. Duan, **E. Angelini**, T. Song, and A. Laine, "Fast interpolation algorithms for three-dimensional real-time cardiac ultrasound," 25th Annual International Conference of the IEEE EMBS, Cancun, Mexico, vol. 2, pp. 1192-1195 2003.
- E. D. Angelini**, J. Holmes, A. Laine, S. Homma, "Segmentation of RT3D ultrasound with implicit deformable models without gradients", 3rd International Symposium on Image and Signal Processing and Analysis, Rome, Italy, 2003.
- E. D. Angelini**, D. Hamming, J. Holmes, S. Homma, A. Laine, "Comparison of segmentation methods for analysis of endocardial wall motion with real-time three-dimensional ultrasound", Proceedings of Computers in Cardiology, Memphis TN, USA, pp. 609-612, 2002.
- E. D. Angelini**, J. Kalifa, A. F. Laine, "Harmonic multiresolution estimators for denoising and regularization of SPECT-PET data", Proceedings of the first International Symposium on Biomedical Imaging, Washington D.C., USA, pp. 697-700, 2002.
- E. Angelini**, C. Imielinska, Y. Jin, and A. Laine, "Improving statistics for hybrid segmentation of high-resolution multichannel images," Proceedings of SPIE Annual meeting on Medical Imaging, San Diego CA, pp. 401-411, 2002.
- E. D. Angelini**, A. F. Laine, J. Donis, D. Gersony, and S. Homma, "Quantification of right and left ventricular function with real-time three-dimensional ultrasound," Proceedings of 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, Turkey, pp. 2587-2590, 2001.
- E. Angelini**, S. Takuma, A. Laine, and S. Homma, "Spatio-temporal directional analysis of 4D echocardiography," Proceedings of SPIE- 45th Annual Meeting, San Diego CA, pp. 605-614, 2000.
- E. Angelini**, S. Takuma, A. Laine, and S. Homma, "Quantification of LV volumes with 4D real-time echocardiography," Proceedings of World Congress on Medical Physics and Biomedical Engineering, Chicago IL, 2000.
- E. Angelini**, A. Laine, S. Takuma, and S. Homma, "Directional representations of 4D echocardiography for temporal quantification of LV volumes," Proceedings of Medical Imaging and Computer-Assisted Intervention - MICCAI'99, Cambridge, England, pp. 430-440, 1999.

### Conference Abstracts

- J. Wiart, S. Watanabe, I. Bloch, J. Anquez, J.P. de la Plata Alcalde, **E. D. Angelini**, T. Boubekeur, N. Faraj, "Exposure to fetus to RF. Preliminary results assessed with different realistic 3D numerical models", 33rd Annual Meeting of the Bioelectromagnetics Society, Halifax, Canada, 2011.
- L. Bibin, J. Anquez, A. Hadjem, **E. D. Angelini**, J. Wiart, I. Bloch. " Dosimetry studies on a fetus model combining medical image information and synthetic woman body". 11th World Congress on Medical Physics and Biomedical Engineering, Munich, Germany, pp. 378-379, Sept. 2009.
- M. Marim, **E. Angelini** and J.C. Olivo-Marin, "A compressed sensing approach for biological microscopic image denoising", Workshop SPARS, St Malo, France, Apr 2009.
- B. Batrancourt, D. Hasboun, J. Atif, C. Hudelot, **E. Angelini** , I. Bloch, "A clustering view of the human brain mapping literature and an anatomico-functional cerebral model", Human Brain Mapping, Florence, Italy, June 2006.
- C. Hudelot, J. Atif, O. Nempont, B. Batrancourt, **E. Angelini**, I. Bloch, "GRAFIP: a framework for the representation of healthy and pathological anatomical and functional cerebral information", Human Brain Mapping, Florence, Italy, June 2006.
- E. D. Angelini**, T. Song, A. Laine, "Segmentation and quantitative evaluation of brain MRI data with multiphase three-dimensional implicit deformable models", SIAM Conference on Imaging Science, Minneapolis, MA, USA, May 15-17 2006.
- P. Chao, **E. Angelini**, Z. Tang, W. Chang, J. Bulinski, A. West, and C. Hung, "Novel application of microfluidic channels in studying cell migration and reorientation in response to direct current electric fields," to be presented at the ASME International Mechanical Engineering Congress, New Orleans, LA, USA, Nov. 2002.
- E. D. Angelini**, C. Imielinska, Y. Jin, D. Metaxas, and J. Udupa, "Combining signal information and statistics for high resolution segmentation of radiological images," Proceedings of First SIAM Conference on Imaging Science, Boston, MA, 2002.
- D. R. Gersony, **E. D. Angelini**, J. Donis, C. Dimayuga, R. J. Barst, R. Saouaf, M. D. Tullio, A. Laine, and S. Homma, "Denoising with brushlet analysis improves real-time three-dimensional calculation of right ventricular function in

pulmonary hypertension patients,” proceedings of the Scientific Session of the American College of Cardiology, Atlanta, GA, USA, 2002.

J. Donis, **E. Angelini**, S. Takuma, A. Laine, and S. Homma, “Use of brushlet analysis for denoising of real-time three dimensional echocardiographic data for quantification of left ventricular volumes and ejection fraction,” Proceedings of 12th Annual Scientific Session of the American Society of Echocardiography, Seattle, WA, 2001.

S. Takuma, C. Dimayuga, **E. Angelini**, T. Hozumi, A. Fard, A. Laine, M. R. D. Tullio, and S. Homma, “Comparison of 3 different 3 dimensional echo methods for volumes determination,” *American Society of Echocardiography*, vol. 13, pp. 490, 2000.

S. Takuma, **E. Angelini**, K. Yoshiara, R. Liu, M. Kazanowski, C. Dimayuga, K. Makita, M. R. D. Tullio, J. W. Holmes, A. F. Laine, and S. Homma, “Fully automated 3D boundary detection in real-time 3D echocardiography,” *Journal of American College of Cardiology*, vol. 35, pp. 469A, 2000.

S. Takuma, **E. Angelini**, A. Laine, S. Homma, T. Ota, and J. Yoshikawa, “Full automatic 3D boundary detection of real-time 3D echocardiography,” *Journal of Cardiology*, vol. 34, pp. 420, 1999.