Curriculum Vitae

Siamak Ardekani; MD, PhD

Institute for Computational Medicine and
Center for Imaging Science
Johns Hopkins University
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Baltimore, MD 21218
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Education:

September 2000 – March 2006.	***University of California,*** *Los Angeles, California.* Biomedical Engineering IDP, Doctor of Philosophy,
September 1997 – August 2000.	***Drexel University,*** *Philadelphia, Pennsylvania.* School of Biomedical Engineering, Science and Health Systems, Masters of Science Degree in Biomedical Engineering,
January 1993	***Shiraz University of Medical Sciences,*** *Shiraz, Iran.* Diploma of Medicine.

Professional Experiences:

Research:

July 2014 – present	Assistant Research Professor: Department of biomedical engineering, Johns Hopkins University
January 2010 – June 2014	Assistant Research Scientist: Johns Hopkins University, Baltimore, MD

i. Image-based (multi-detector CT and MR) shape and motion analysis of cardiac disease using mathematical models.

ii. Analyzing effect of radiation therapy on brain development in late childhood using diffusion MRI and deformation based morphometry.

April 2006 – January 2010 — Postdoctoral Research Fellow: Johns Hopkins University, Baltimore, MD

i. Image-based (multi-detector CT and MR) shape and motion analysis of cardiac disease using mathematical models.

ii. Analyzing effect of radiation therapy on brain brain development in late childhood using diffusion MRI and deformation based morphometry.

August 2000 – March 2006 — Research Assistant: University of California at Los Angeles, Los Angeles, CA

i. Developing algorithms to correct geometric distortion in echo-planar based diffusion tensor images (DTI).

ii. Constructing population-based atlas of diffusion based MR parameters.

iii. Analyzing normal aging process in brain using diffusion MRI.

January 1998 – August 2000 — Research Assistant: Drexel University, Philadelphia, PA

i. Developing high resolution histology-based neuro-anatomical rat brain atlas.

Clinical:

April 1993 – October 1995. — ***General Practitioner:*** Firoozabad Health Care System, *Firoozabad, Iran*.

September 1991 – November 1992. — ***Medical Internship:*** Shiraz University of Medical Sciences hospitals, *Shiraz, Iran.*

Teaching:

Teaching Assistant

- Anatomy and physiology for engineers.

- Introduction to medical imaging lab.

Taught lectures in

- Human Anatomy & Physiology for Informatics
- Physics & Informatics of Medical Imaging (basics of MRI).

Awards:

2009	International Society for Magnetic Resonance in Medicine educational student stipend award
2006	UCLA Biomedical Engineering Outstanding PhD Student
2006	International Society for Magnetic Resonance in Medicine educational student stipend award
2003	UCLA Biomedical Engineering Society student paper competition award winner (title: Non-linear warping integrating intensity matching for geometric distortion correction in DW-MRI)
2002	UCLA Biomedical Engineering Society student paper competition award winner (title: Region based fuzzy clustering for automated brain segmentation)

Funding:

- R21HL109968 (National Institute of Health): $275,000 09/05/2011- 04-30/2014
  - Computational tools to describe cardiac post-MI structure and function remodeling. (Role: PI)

- R24 HL085343 (National Institute of Health): Raimond Winslow (PI) 10/18/2005-11/30/2015
  - The Cardiovascular Research Grid (Role: Investigator)

- 0725357U (American Herat Association): $70,000 07/01/07-06/30/09
  - Algorithms for detecting changes in heart shape and motion that are indicative of disease state and arrhythmia risk (Role: PI)

Journal Review:

Magnetic Resonance in Medicine, Journal of Magnetic Resonance Imaging, Neuroimage, Artificial Intelligence in Medicine, Neurobiology of Aging, Acta, Psychiatrica Scandinavica, Computerized Medical Imaging and Graphics.

Conference Review:

MICCAI (Medical Image Computing and Computer Assisted Intervention)

Grant Review:

NIH scientific review committee panelist (Special Emphasis Panel [ZRG1-SBIB-Q (80)])

Publications:

Journal:

1. Alena Horská, Anna Nidecker; Jarunee Intrapiromkul; Firouzeh Tannazi; **Siamak Ardekani**; Larry J. Brant, Moody Wharam Jr; E. Mark Mahone; "Diffusion Tensor Imaging of Deep Gray Matter in Children Treated for Brain Malignancies", *Childs Nerv Syst. 2013 Nov 22.*

2. Steinert-Threlkeld, Shane; **Ardekani, Siamak**; Mejino, Jose L.V.; Detwiler, Landon T.; Brinkley, James F.; Halle, Michael; Kikinis, Ron; Winslow, Raimond L.; Miller, Michael I.; Ratnanather, J. Tilak; "Ontological Labels for Automated Location of Left Ventricular Remodeling", *J Biomed Inform*. Jun;45(3):522-7, 2012.

3. Tameem, H. Z., **Ardekani S,**. Seeger L, Tompson P., and Sinha U. "Initial Results on Development and Application of Statistical Atlas of Femoral Cartilage in Osteoarthritis to Determine Sex Differences in Structure: Data from the Osteoarthritis Initiative", *Journal of Magnetic Resonance Imaging* Aug; 34(2):372-83, 2011.

4. **Siamak Ardekani**, Robert G. Weiss, Albrt C. Lardo, Richard T. George, Joao A. C. Lima, Katherine C. Wu, Michael I. Miller, Raimond L. Winslow, and. L. Younes. "Computational Method for Identifying and Quantifying Shape Features of Human Left Ventricular Remodeling", *Annals of Biomedical Engineering*, Vol. 37(6): 1043-1054, 2009 ***(with the cover figure)***.

5. **Ardekani S.,** Kumar A, Bartzokis G, Sinha U. " Exploratory voxel based analysis of diffusion indices and hemispheric asymmetry in normal aging", *Magnetic Resonance Imaging*, vol. 25(2): 154-67, 2007.

6. Bui A. T. ; Morioka C ; Dionisio N. ; Johnson B. ; Sinha U ; **Ardekani S**; El-Saden S ; Taira K. ; Aberle D ; Kangarloo H; "openSourcePACS: An Extensible Infrastructure for Medical Image Management", *IEEE Transactions on Information Technology in Biomedicine*, vol. 11(1):94-109, 2007.

7. **Ardekani S,** Selva L, Sayre J , Sinha U. "Quantitative Metrics for Evaluating Parallel Acquisition Techniques in Diffusion Tensor Imaging at 3.0 Tesla", *Investigative Radiology*, vol. 41(11), pp. 806-814, 2006.

8. **Ardekani S** and Sinha U. "Statistical Representation of Mean Diffusivity and Fractional Anisotropy Brain Maps of Normal Subjects", *Journal of Magnetic Resonance Imaging*, vol. 24(6):1243-51, 2006.

9. **Ardekani S.** and Sinha U. "Geometric distortion correction of high-resolution 3 Tesla diffusion tensor brain images", *Magnetic resonance in medicine*, vol. 54(5), pp. 1163-71, 2005.

Conference short papers:

1. Siamak Ardekani, Geoffrey Gunter, Saurabh Jain, Robert G. Weiss, Michael I. Miller, Laurent Younes. "Estimating Dense Cardiac 3D Motion Using Sparse 2D Tagged MRI Cross-Sections". *36th Annual International IEEE EMBS Conference. August 26-30, 2014, Sheraton Hotel & Towers, Chicago, Illinois, USA.*

2. **Siamak Ardekani,** Aastha Jain, Saurabh Jain, Theodore P. Abraham, Maria R. Abraham, Stefan Zimmerman, Raimond L. Winslow, Michael I. Miller, and Laurent Younes. "Matching Sparse Sets of Cardiac Image Cross-sections Using Large Deformation Diffeomorphic Metric Mapping Algorithm". *Second International Workshop, STACOM 2011, Held in Conjunction with MICCAI 2011, Toronto, Canada, September 22, 2011, Series: Lecture Notes in Computer Science, Vol. 7085, Camara, O.; Konukoglu, E.; Pop, M.; Rhode, K.; Sermesant, M.; Young, A. (Eds.), 2012, XIV, 286 p.*

3. Steinert-Threlkeld, Shane; **Ardekani, Siamak**; Mejino, Jose L.V.; Detwiler, Landon T.; Brinkley, James F.; Halle, Michael; Kikinis, Ron; Winslow, Raimond L.; Miller, Michael I.; Ratnanather, J. Tilak; "Ontological Labels for Automated Location of Left Ventricular Remodeling". *Semantic Computing (ICSC), 2011 Fifth IEEE International Conference on.2011, pp.572-3.*

4. **Siamak Ardekani**, Robert G. Weiss, Albrt C. Lardo, Richard T. George, Joao A. C. Lima, Katherine C. Wu, Michael I. Miller, Raimond L. Winslow, and. L. Younes. "Cardiac Motion Analysis in Ischemic and Non-ischemic

cardiomyopathy using parallel transport", in *2009 IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Boston, MA., June 2009.*

5. **S. Ardekani**, R.G. Weiss, A. Lardo, L. Younes, M.I. Miller and R. W Winslow. "Novel shape analysis methods for differentiation between ischemic and nonischemic cardiomyopathy". *BMES 2007 Fall Meeting.*

6. Sinha U., **Ardekani S.** "Parametric brain MR atlases: standardization for imaging informatics," in *Medinfo,* 2004;11(pt 2),pp. 1374-8.

7. **Ardekani S.** and Sinha U. "Quantitative assessment of parallel acquisition techniques in diffusion tensor imaging at 3.0 Tesla," in *the 26th Annual International Conference of the IEEE engineering in Medicine and Biology Society; San Francisco,* vol. 1, pp. 1072-1075, 2004.

8. **Ardekani S.** and Sinha U. "Constrained Free Form Deformation Based Algorithm for Geometric Distortion Correction of Echo Planar Diffusion Tensor Images," in *2004 IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Arlington, VA.*, vol. 1, pp. 340-343, April 2004.

9. Sinha U, El-Saden S, Duckwiler G, Thompson L**, Ardekani S**, Kangarloo H., "A Customizable MR Brain Imaging Atlas of Structure and Function for Decision Support**,"** *Proc AMIA Symp*. pp. 604-8, 2003.

10. **Ardekani S.**, Kangarloo H., Sinha U., "Region based fuzzy clustering for automated brain segmentation" in *Engineering in Medicine and Biology, 2002. 24th Annual Conference and the Annual Fall Meeting of the Biomedical Engineering Society, EMBS/BMES Conference. Proceedings of the Second Joint*, Vol: 2, Oct. 2002, pp. 1041 – 1042.

Conference abstracts:

11. **S Ardekani**, M Bowers; J G Hennessey; S Jain; G Gunter; A Kolasny; T Ratnanather; Raimond L. Winslow, Michael I. Miller, Laurent Younes, "Cardiac Computational Anatomy Works (CAWorks): An Integrated Software Tool to Perform Cardiac Shape Analysis," *in annual meeting of RSNA, Chicago, 2013*.

12. A. Nidecker, J. Intrapiromkul, F. Tannazi, T. McNutt, **S. Ardekani**, R. Martin, M. D.Wharam, E. M. Mahone, Alena Horska "Developmental Differences in Deep Gray Matter Nuclei Tissue Integrity and Neuropsychological Performance in Healthy Children and Patients Treated

with Brain Radiation." in *the 19th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Honolulu, May 2011. (poster)*

13. **Siamak Ardekani**, Firouzeh Tannazi, Alena Horska. "Voxel Based Analysis of Diffusion Indices and deformation based volumetric alterations in Late Childhood and Adolescence" in *the 17th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Honolulu, April 2009. (Oral).*

14. Firouzeh Tannazi, Todd McNutt, **Siamak Ardekani**, Moody Wharam, Susumu Mori, Alena Horska. "White Matter Maturation in Healthy Children and Patients Treated with Brain Radiation: A Longitudinal DTI Study" in *the 17th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Honolulu, April 2009. (Oral)*

15. Anna E Nidecker, Firouzeh Tannazi, **Siamak Ardekani**, Moody D., Jr.Wharam, Mark Mahone, Alena Horska "Diffusion Tensor Imaging of Deep Gray Matter in Children Receiving Brain Radiation Therapy." in *the 17th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Honolulu, April 2009. (electronic poster)*

16. Firouzeh Tannazi, Todd McNutt, **Siamak Ardekani**, D Lin, Ori Shokek, Moody , Kenneth Cohen, Moody Wharam, Susumu Mori, Alena Horska. "Effects of Brain Radiation on Normal Apperaing White Matter in Children: A Diffusion Tensor Imaging Study," in *the 50th American Society for Therapeutic Radiology and Oncology Annual Meeting, Boston, September 2008. (Poster).*

17. Firouzeh Tannazi, Todd McNutt, **Siamak Ardekani**, D Lin, Ori Shokek, Moody Wharam, Peter Barker, Susumu Mori, Alena Horska. "Serial Diffusion Tensor Imaging Study in Children Receiving Cranial Radiation," in *the 16th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Toronto, May 2008. (Poster).*

18. Hussain Z. Tameem, **Siamak Ardekani**, Usha Sinha. "MR Bone Atlases for Shape Characterization**,"** in *the 15th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Berlin, May 2007. (Poster)*

19. Firouzeh Tannazi, Todd McNutt, **Siamak Ardekani**, Larry J. Brant, David Bonekamp, Ori Shokek, Kenneth Cohen, Moody Wharam, Susumu Mori, Alena Horska. "Acute Effects of Brain Radiation in Children Evaluated by Diffusion Tensor Imaging," in *the 15th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Berlin, May 2007. (Poster)*

20. **Ardekani S.** and Sinha U. "Voxel Based Analysis of ADC, FA and Hemispheric Asymmetry in Normal Aging," in *the 14th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Seattle, May 2006 (**nominated for the best poster award**).*

21. **Ardekani S.** and Sinha U. "Diffusion MRI Brain Atlas at 3 Tesla," in *the 13th scientific meeting and exhibition of International Society for Magnetic Resonance in Medicine, Miami, May 2005.*

22. **Ardekani S.** and Sinha U. "Non-linear warping integrating intensity matching for geometric distortion correction in DW-MRI," in *BMES 2003 Fall Meeting.*

23. Sinha U., Thompson L., El-Sadan S., **Ardekani S.**,. Dionisio J.D, Kangarloo H., "Automated MR Brain Image Study Summarization," in *infoRAD exhibit at annual meeting of RSNA, Chicago, 2003.*

24. **Ardekani S.** and Sinha U., "Diffusion Model Based Non-linear Warping for Distortion Corrections in Diffusion Tensor Images," in *Proc. Intl. Soc. Mag. Reson. Med. 11,* p. 2570, 2003. *(Poster)*