Aichi Chien

UCLA Interventional Neuroradiology
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EDUCATION

2006-2009 Postdoctoral Fellow in Interventional Neuroradiology
David Geffen School of Medicine at UCLA

2001-2006 University of California, Los Angeles, CA

2000-2001 Cornell University, Ithaca, NY

1994-1999 National Taiwan University, Taipei, Taiwan

PATENT

1. Lead inventor of *Volumetric Analysis of Multi-dimensional Images;* USA patent Ser.No.61/089,501; UC patent UC08-681-1
2. Lead inventor of *Volumetric Analysis of Multi-dimensional Images;* USA patent Ser.No.61/233,194; UC patent UC08-681-2
3. Lead inventor of *Apparatus and Methods for Surface Capturing and Volumetric Analysis of Multi-dimensional Images;* USA patent Ser.No.12/854,860; UC08-681-3
4. Lead inventor of *Apparatus and Methods for Surface Capturing and Volumetric Analysis of Multi-dimensional Images;* USA Patent No.8,472,685
5. Lead inventor of *Automated Comparison of 3D images* USA Patent Ser.No.62/040,137; UC2015-024-1-LA

HONORS AND SCHOLARSHIPS

2014	SIR Dr. Ernest J. Ring Academic Development Award	*Society of Interventional Radiology*
2014	Cerebrovascular Research Award	*The Aneurysm and AVM Foundation*
2014	Radiology Exploratory Research Award	*University of California, Los Angeles*
2012	Radiology Exploratory Research Award	*University of California, Los Angeles*
2006	Kiichi Sagawa Young Investigator Award (4th place)	*Cardiovascular System Dynamics Society*
2006	Nico Westerhof Young Investigator Award Finalist	*Cardiovascular System Dynamics Society*
2006	ASLMS Travel Grant	*American Society for Laser Medicine and Surgery*
2004	AHA Cardiovascular Outreach Award	*American Heart Association*
2004	Heart Failure Society of America	*Heart Failure Society of America*
2001-2006	Graduate Student Fellowship	*University of California, Los Angeles*
1995	Presidential Award	*National Taiwan University, Taiwan*

PROFESSIONAL ACTIVITIES

Committee, Emerging Information and Technology Association
Member, American Heart Association/American Stroke Association
Member, Radiological Society of North America
Member, American Society of Neuroradiology
Member, Society of Interventional Radiology

Reviewer, American Heart Association/ American Stroke Association
Reviewer, American Journal of Neuroradiology
Reviewer, IEEE Transactions on Biomedical Engineering
Reviewer, Journal of Neuroscience Methods
Reviewer, Journal of Medical & Biological Engineering & Computing
Reviewer, Neurosurgery
Reviewer, Stroke

RESEARCH EXPERIENCE AND EMPLOYMENT

2014- Present Joint Research Institute (JRI) in Science and Engineering
University of California, Los Angeles, CA

2011– Present Faculty in UCLA Center for Domain Specific Computing
UCLA Henry Samueli School of Engineering and Applied Science

2010– Present Faculty in Cross-disciplinary Scholars in Science and Technology (CSST)
University of California, Los Angeles, CA

2009– Present Faculty in Biomedical Physics IDP Graduate Program
David Geffen School of Medicine at UCLA

2009– Present Faculty in Medical School Short Term Training Program (STTP)
David Geffen School of Medicine at UCLA

2009– Present Assistant Professor
Division of Interventional Neuroradiology, Ronald Reagan UCLA Medical Center

2009– Present Assistant Professor
Department of Radiological Sciences, David Geffen School of Medicine at UCLA, CA

2006-2009 Postdoctoral Fellow
Division of Interventional Neuroradiology, Dept. of Radiology, UCLA, CA

2001-2006 Graduate Student Researcher
Dept. of Biomedical Engineering, UCLA, CA

2000-2001 Graduate Student Researcher
Dept. of Mechanical and Aerospace Engineering, Cornell University, NY

1999-2000 Mechanical structural designer and optimization specialist
Himount Industrial Co., Ltd., Taipei, Taiwan, R.O.C.

PEER-REVIEWED PUBLICATIONS

1. V Lau, J Sayre,T Qi, **A Chien**, “Ruptured Aneurysms Tend to Have Prominent Blood Flow Changes at Aneurysm Neck”, *Stroke,* 2015. (in press)
2. **A Chien**, Q Yu, D Zosso, “Quantitative Analysis of the Blood Flow Reduction in Brain Aneurysms Treated by Flow Diverter Stents”, *Stroke*, 2015. (in press)
3. Q Yu,,X Yang, T Cheng, F Liang, **A Chien** “Measurement of Intracranial Aneurysm Growth”, *Stroke*, 2015. (in press)
4. M Castro, N Peloc, **A Chien**, E Goldberg, CM. Putman, JR Cebral, “Aneurysm flow characteristics in realistic carotid artery aneurysm models induced by proximal virtual stenotic plaques: a computational hemodynamics study”. *Proc. SPIE,* 9417-81, Feb 2015. (in press)
5. **A Chien**, Q Yi, D Zosso, “Effectiveness of Flow Reduction is Related to Aneurysm Geometry based on Quantitative DSA Flow Analysis in 13 Flow Diverter-treated Aneurysms”, *Journal of Vascular and Interventional Radiology (JVIR),* Feb 2015. (in press)
6. W Chang, M Huang, **A Chien**, “Emerging Techniques for Evaluation of the Hemodynamics of Intracranial Vascular Pathology”, *The Neuroradiology Journal*. (in press)
7. **A Chien**, G Duckwiler, F Vinuela, “Blood Flow Characteristics Changes Induced by Flow Diverting Stent in a Large Wide-neck Intracranial Aneurysm”, *Journal of Vascular and Interventional Radiology (JVIR),* Jan 2015
8. X Yang, T Cheng, **A Chien**, **“**Accurate Vessel Segmentation with Progressive Contrast Enhancement and Canny Refinement”, *Proc. of ACCV,* P2-07, 2014.
9. **A Chien**, J Sayre, “Morphologic and Hemodynamic Risk Factors in Ruptured Aneurysms Imaged Before and After Rupture" *American Journal of Neuroradiology,* 2014.

10. X Yang , KT Cheng, **A Chien**, **"**Geodesic Active Contours with Adaptive Configuration for Cerebral Vessel and Aneurysm Segmentation", *IEEE Pattern Recognition ICPR*, 2014.
11. S Patel, **A Chien**, "A 30 Year Simulation of the Natural History of Intracranial Aneurysms", *Open Journal of Radiology*, Vol.4 No.2, 2014.
12. B Dimapasoc, **A Chien**, "Parent Artery Curvature May Help Determine the Effectiveness of Flow Diverter Treatment", *Stroke*, Vol. 45:76, 2014.
13. S Patel, **A Chien**, "Natural History Simulation Models", *Stroke*, Vol. 45:76, 2014.
14. J Patti, F Vinuela, **A Chien**, "Distinct Trends of Pulsatility Found at the Necks of Ruptured and Unruptured Aneurysms", *J Neurointerv Surg*, Vol.6(2), pp.103-107, 2014. (Journal cover)
15. **A Chien**, F Liang, J Sayre, N Salamon, P Villablanca, F Viñuela, "The Enlargement of Small, Asymptomatic, Unruptured Intracranial Aneurysms with no History of SAH - Different Factors May Relate to the Growth of Single and Multiple Aneurysms", *Journal of Neurosurgery*, Vol.119:1, pp.190-197, 2013.
16. **A Chien**, F Vinuela, "IS FlowMap, A Novel Tool to Examine Blood Flow Changes Induced by Flow Diverter Stent Treatment —Initial Experiences with Pipeline Cases", *J Neurointerv Surg*, Vol.5:3, pp.43-47 2013.
17. **A Chien**, J Sayre, F Viñuela, "Quantitative Comparison of the Dynamic Flow Waveform Changes in 12 Ruptured and 29 Unruptured ICA-Ophthalmic Artery Aneurysms", *Neuroradiology*. Vol.55(3), pp313-20, 2013.
18. S Patel, **A Chien**, "Identifying Aneurysm Growth based on Imaging-a Minimal 0.8 mm Size Increase is the Optimal Threshold to Classify Growth", *Stroke*, Vol.44:78, 2013.
19. **A Chien**, F Liang, J Sayre, N Salamon, P Villablanca, F Vinuela, "The Growth of Small, Asymptomatic, Unruptured Intracranial Aneurysms with no History of SAH", *Stroke*, Vol.44:82, 2013.
20. **A Chien**, F Liang, N Salamon, F Vinuela, "Follow-up of Large Intracranial Aneurysms Indicates Growth Frequency Varies According to Location and Size", *Stroke*, Vol. 44(28), 2013.
21. **A Chien**, J Sayre, F Vinuela, "Hemodynamic Differences Found in Ruptured and Unruptured Aneurysms - Quantitative Comparison of Cases from a Single Location", *Stroke*, Vol.44: 89, 2013.
22. **A Chien**, J Sayre, F Viñuela," Comparative Morphological Analysis of the Geometry of Ruptured and Unruptured Aneurysms ", *Neurosurgery,* Vol.69(2), pp349-356, 2011.
23. **A Chien**, J Sayre, B Dong, J Ye, F Viñuela, "3D Quantitative Evaluation of Atherosclerotic Plaque based on Rotational Angiography", *American Journal of Neuroradiology*, Vol.32(7), 1249-54, 2011.
24. C Lederman, L Vese, **A Chien,** "Registration for 3D Morphological Comparison of Brain Aneurysm Growth", *Lecture Notes in Computer Science"*, Vol.6938(1), pp.396-403, 2011.
25. W Ma, J-M Morel, S Osher, **A Chien**, "An L1-based variational model for Retinex theory and its application to medical images", *IEEE Computer Vision Pattern Recognition*, pp153-160, 2011.
26. S Loo, F Viñuela, **A Chien**, "Computational hemodynamic analysis for brain aneurysms to investigate the mechanism of rupture for aneurysms in different size categories", *IEEE Proc Computational Biology and Bioinformatics*, pp.21642-6, 2011.
27. B Dong, **A Chien**, Z Shen, "Frame Based Segmentation for Medical Images", *Communications in Mathematical Sciences*, Vol.9 (2), pp 551-559, 2011.
28. S Tateshima, **A Chien**, J Sayre, J Cebral, F Viñuela, "The Effect of Aneurysm Geometry On the Intra-aneurysmal Flow Condition", *Neuroradiology*, Vol 52(12); pp.1135-41, 2010.
29. F Mut, R Löhner, **A Chien**, S Tateshima, F Viñuela, C Putman, J Cebral, "Computational Hemodynamics Framework for the Analysis of Cerebral Aneurysms", *International Journal for Numerical Methods in Biomedical Engineering*, Vol.27:822-839, 2010.

30. J Lee**,** G Duckwiler, **A Chien**, "Hemodynamic Analysis of Small Middle Cerebral and Basilar Artery Aneurysms", *Journal of Investigative Medicine*, Vol.58(1), pp 153, 2010.

31. B Dong, **A Chien**, Y Mao, J Ye, S Osher, " Level Set based Brain Aneurysm Capturing in 3D", *Inverse Problem and Imaging in Medical Image Analysis,* Vol.4(2), pp.241-255, 2010.

32. B Dong, **A Chien**, Z Shen, S Osher, "A New Multi-scale Representation for Shapes and its Application to blood vessel Recovery", *SIAM Journal on Scientific Computing,* Vol.32(4), pp1724-1739, 2010.

33. **A Chien**, M Castro, S Tateshima, J Sayre, J Cebral, F Viñuela, "Quantitative Hemodynamic Analysis for Brian Aneurysms at Different Locations", *American Journal of Neuroradiology*, Vol.30, No.8, pp.1507-1512, 2009.

34. **A Chien**, S Tateshima, J Sayre, M Castro, J Cebral, F Viñuela, "Patient-specific Hemodynamic Analysis of Small ICA-Ophthalmic aneurysms", *Surgical Neurology*, Vol.72:444-50, 2009.

35. **A Chien**, S Tateshima, M Castro, J Sayre, J Cebral, F Viñuela, "Patient-specific Flow Analysis of Brain aneurysms at a Single Location: Comparison of Hemodynamic Characteristics in Small Aneurysms", *Medical & Biological Engineering & Computing*, Vol.46, pp. 1113-1120, 2008.

36. J Yi, J Schmidt, **A Chien**, C Montemagno, "Engineering Artificial Amoeba Propelled by Nanoparticle-triggered Actin Polymerization", *Nanotechnology*, Vol.20(8), pp.85101, 2009.

37. B Dong, **A Chien**, Y Mao, J Ye, S Osher, " Level Set Based Surface Capturing in 3D Medical Images", *Lecture Notes in Computer Science*, Vol.5241, pp. 162- 169, 2008.

38. A Buades, **A Chien**, J-M Morel, S Osher, "Topology Preserving Linear Filtering Applied to Medical Imaging", *SIAM Journal on Imaging Sciences*, Vol.1, pp. 26-50 2008.

39. **A Chien**, RM Shoucri, A Mal, C Montemagno, "Human Cardiac Wall Stress Analysis with Patient-specific Myocardial Material Properties", *WIT Transactions on Biomedicine and Health*, Vol.12, pp. 33-42, 2007.

40. **A Chien,** C Montemagno, "Optimal Density and Locations of Laser Channels can be Predicted for Transmyocardial Laser Revascularization by a 3D Ventricular Simulation Model", *Lasers in Surgery and Medicine*, Vol.38, No.S18, pp. 53, 2006.

41. **A Chien**, JP Finn, N Boyle, C Montemagno, "Non-invasive Evaluation of 3-Dimensional Ventricular Wall Stress Changes throughout the Cardiac Cycle", *The International Journal of Cardiovascular Imaging*, Vol.21, No. 6, pp. 675-676, 2005.

42. **A Chien**, H Dinh, J Finn, C Montemagno, "Human Dynamic *in vivo* Myocardial Wall Stress based on tagged MRI", *The International Journal of Cardiovascular Imaging*, Vol. 21, No. 6, pp. 685, 2005.

43. **A Chien**, N Boyle, C Montemagno, "Nonuniform Increases in Regional Wall Stress Encircle Infarcted Myocardium: Left Ventricular Simulation", *Journal of Cardiac Failure*, Vol.10, No.4, pp. S32, 2004.

44. **A Chien**, J Finn, CD Montemagno, "Non-invasive Derivation of 3D Systolic Nonlinear Wall Stress in a Biventricular Model from tagged MRI", *Lecture Notes in Computer Science*, Vol.3217, pp.1067- 1068, 2004.

CONFERENCE PROCEEDINGS

45. "Quantitative Analysis of Flow Diverter Induced Blood Flow Reduction in Brain Aneurysm Treatment", The 27th International Symposium on Endovascular Therapy, Hollywood, Florida, Feb 2015.

46. "Ruptured Aneurysm Neck Shape and Size Relates to High Risk Aneurysmal Blood Flow*", Proc. International Symposium on Endovascular Therapy*, Hollywood, Florida, Feb 2015.

47. **A Chien**, "Blood Flow Improvement by Stents with Biocompatible Material" , *Proc. EITA- New Materials,* Tainan, Taiwan, November, 2014.

48. **A Chien**, **"**Prevention and Monitoring of Stroke based on Multi-modality Medical Images"", Workshop 3:Integrating Modalities and Scales in Life Science Imaging, NSF Mathematical Biosciences Institute, , Columbus, Ohio, March 2014

49. **A Chien,** "Prevention of Hemorrhagic Stroke", *The 3rd Young Investigator Conference, EITA-EITC Emerging Information & Technology Conference,* ,MIT, Cambridge, Massachusetts, August 2013.

50. **A Chien,** F Viñuela, "Aneurysms Exhibit Morphological and Hemodynamic Changes in Progression towards Rupture", *Proc. 49th American Society of Neuroradiology Annual Meeting*, San Diego, California, May 2013

51. H Takao, S Tateshima, M Kadokura, **A Chien,** Y Murayama, F Vinuela" Cerebral Aneurysm Hemodynamic Alterations after Placement of Flow Diverter". *Proc. 49th American Society of Neuroradiology Annual Meeting*, San Diego, California, May 2013.

52. H Takao, T Suzuki, S Tateshima, **A Chien,** Y Murayama." Hemodynamic Difference in Cerebral Aneurysm with or without Pipeline Stent", *Proc. 9th International IntraCranial Stent Meeting*, Madison, Wisconsin, October 2012.

53. M Fujimoto, Y Shobayashi, S Tateshima, **A Chien**. "Simulated Biomechanical Responses at a Curved Arterial Segment After Wingspan Stent Deployment in Swine", *Proc. 9th International IntraCranial Stent Meeting*, Madison, Wisconsin, October 2012

54. M Yan, Y Zou, W Hsu, **A Chien**, L Vese, D Aberle, A Bui, J Cong, "Accelerating Medical Image Reconstruction and Analysis Using Domain Specific Computing", *Proc. 97th Scientific Annual Meeting of Radiological Society of North America*, Chicago, IL, Nov 2011.

55. C Kuo, SC Huang, G Reinman, **A Chien,** " Arterial Hemodynamic Flow Pipeline", *Proc. Annual Review of Center for Domain specific Computing*, UCLA, Los Angeles, CA, Oct 2011.

56. T Khoo, S Loo, **A Chien**, "Three-Dimensional Automatic Detection of Brain Aneurysm Growth", *Annual School of Medicine Josianh Brown Poster Fair*, UCLA, Los Angeles, CA, July 2011.

57. **A Chien**, S Loo, F Vinuela, "Hemodynamic Force Dyssynchrony Found in Cerebral Aneurysms—A Quantitative Patient-Specific Aneurysm Flow Analysis at Single Location*", Proc. American Society of Neuroradiology 49th Annual Meeting*, Seattle, Washington, June 2011.

58. J Lee**, A Chien**, G Duckwiler, "Hemodynamic Analysis of Small Middle Cerebral and Basilar Artery Aneurysms", *Western Student Mecial Research Forum Annual Meeting,* Monterey, CA, January 2010.

59. B Dong, **A Chien**, Y Mao, J Ye, S Osher, "Level Set Based Surface Capturing in Medical Images", UCLA day, UCLA, Los Angeles, CA, August 2009.

60. J Lee**, A Chien**, G Duckwiler, "Hemodynamic Analysis of Small Middle Cerebral and Basilar Artery Aneurysms", *Annual School of Medicine Josianh Brown Poster Fair*, UCLA, Los Angeles, CA, July 2009.

61. S Tateshima, **A Chien**, J Sayre, J Cebral, F Viñuela. "Quantitative hemodynamic analysis of brain aneurysms at different sizes and locations", *Proc. 24th Annual Meeting of Japanese Society of Neuro-endovascular Therapy*, Nagoya, Japan, Nov 2008.

62. **A Chien**, S Tateshima, M Castro, J Cebral, F Viñuela, "Quantitative Hemodynamic Analyses for Brain Aneurysms at Different Locations"**,** *Proc. 5th Annual Meeting of Society of NeuroInterventional Surgery,* Lake Tahoe, California, August 2008.

63. Si Tateshima, **A Chien**, J Cebral, F Viñuela, "Computational Flow Analysis in Large Ophthalmic Artery Aneurysms", *Proc. 5th Annual Meeting of Society of NeuroInterventional Surgery,* Lake Tahoe, California, August 2008.

64. B Dong, **A Chien**, Y Mao, J Ye, S Osher, " Level Set Based Surface Capturing in 3D Medical Images" Mathematical Imaging and Digital Media, Institute for Mathematical Sciences, National University of Singapore, June 2008

65. **A Chien**, S Tateshima, J Cebral, M Castro,F Viñuela, "Lower Wall Shear Stress Distribution was Found in Unruptured Cerebral Aneurysms using Patient-Specific Computational Flow Analysis", *Proc. 4th Annual Meeting of American Society of Interventional & Therapeutic Neuroradiology*, Dana Point, California, July 30-August 2007.

66. **A Chien**, S Tateshima, J Cebral, M Castro, F Viñuela, "Patient-Specific Computational Flow Analysis of Cerebral Aneurysms at Single Location: Differences in Wall Shear Stress Distribution Found in Ruptured and Un-ruptured Cases", *Proc. 2nd Symposium on Biomechanics in Cardiovascular Disease: Shear stress in Vascular Biology*, Rotterdam, the Netherlands, pp.31, April 2007.
67. **A Chien**, A Mal, C Montemagno, "Human Cardiac Dynamic Deformation Analysis with *in vivo* Determination of Individualized Myocardial Material Properties", *Proc. 17th Congress of the Cardiovascular System Dynamics Society*, Vaals, the Netherlands, September 2006.
68. **A Chien**, A Mal, C Montemagno, "Non-invasive Determination of Human Myocardial Wall Stress with *in vivo* Physiological Parameters", *Proc. 15th US National Congress on Theoretical and Applied Mechanics*, Boulder, Colorado, June 2006.
69. **A Chien**, A Mal, C Montemagno, "Non-invasive Determination of Human Myocardial Wall Stress with *in vivo* Physiological Parameters", *Proc. Heart Modeling: Image Acquisition. Segmentation, Modeling and Analysis*, *Institute for Pure and Applied Mathematics*, Los Angeles, California, February 2006. (http://www.ipam.ucla.edu/programs/hm2006)
70. V Nistor, **A Chien** "Self-powered Pacing Device for Cardiovascular Implants", *4th Annual Southern California Biomedical Engineering Student Symposium*, Los Angeles, California, January 2005.

LECTURES AND PRESENTATIONS

1. "Effectiveness of Flow Reduction is Related to Aneurysm Geometry based on Quantitative DSA Flow Analysis in 13 Flow Diverter-treated Aneurysms", SIR 40th Annual Scientific Meeting, Atlanta, Georgia. Feb 2015. (Invited lecture)
2. "Blood Flow Characteristics Changes Induced by Flow Diverting Stent in a Large Wide-neck Intracranial Aneurysm", *The 27th International Symposium on Endovascular Therapy*, Hollywood, Florida, Jan 2015. (Invited lecture)
3. "Quantitative Analysis of Flow Diverter Induced Blood Flow Reduction in Brain Aneurysm Treatment", *The 27th International Symposium on Endovascular Therapy*, Hollywood, Florida, Jan 2015. (Invited lecture)
4. "Ruptured Aneurysm Neck Shape and Size Relates to High Risk Aneurysmal Blood Flow", *The 27th International Symposium on Endovascular Therapy*, Hollywood, Florida, Jan 2015. (Invited lecture)
5. "Ruptured Aneurysms Tend to Have Prominent Blood Flow Changes at Aneurysm Neck", *2015 International Stroke Conference*, Nashville Tennessee, Feb 2015.
6. "Quantitative Analysis of the Blood Flow Reduction in Brain Aneurysms Treated by Flow Diverter Stents", *2015 International Stroke Conference*, Nashville Tennessee, Feb 2015.
7. "Measurement of Intracranial Aneurysm Growth", *2015 International Stroke Conference*, Nashville Tennessee, Feb 2015. (Moderate poster)
8. "Aneurysm and Vascular Disease Analysis Tools", Division of interventional Neuroradiology, Ronald Reagan UCLA Medical Center, Los Angeles, December 2014. (Lecture)
9. "Identifying Aneurysm Rupture Risks- High Risk Flow and Morphology Factors Visible before Rupture", Division of interventional Neuroradiology, Ronald Reagan UCLA Medical Center, Los Angeles, December 2014. (Lecture)
10. "Hemodynamic Analysis for longitudinally followed Aneurysms" Dept. of Medical Imaging, Far Eastern Memorial Hospital, New Taipei City, Taiwan, August 2014. (Invited lecture)
11. "Blood Flow Improvement by Stents with Biocompatible Material" *The Emerging Information and Technology Association- New Materials*, Tainan, Taiwan, November, 2014, (Invited lecture)
12. "Characterization of Blood Vessel Tissue Properties", Dept. of Neurosurgery, the First Affiliated Hospital of Sun Yat-Sen University, Guangzhou, China, July 2014. (Invited lecture)

13. " 2D Angiogram Blood Flow Analysis for Real-time Assessment of Flow Changes", Dept. of Neurosurgery, The First Affiliated Hospital of Sun Yat-Sen University, Guangzhou, China, July 2014. (Invited lecture)
14. "Image-based Flow Analysis to Assess Brain Aneurysm Rupture Risk and Stroke", Dept. of Medical Imaging, Far Eastern Memorial Hospital, New Taipei City, Taiwan, August 2014. (Invited lecture)
15. "Blood Flow Analysis for Cerebral Vascular Disease" Dept. of Radiology, Taipei Veterans General Hospital, Taipei, Taiwan, August 2014. (Invited lecture)
16. " Blood Flow Changes due to Flow Diverting Stents", INTAI Technology Corp. Taizon, Taiwan, August 2014. (Invited lecture)
17. Image-based Analysis for Stroke Patients", Dept. of Radiology, Keck School of Medicine of USC, Los Angeles, July, 2014.
18. Computer Models for Disease Analysis", Institute for Computer Vision and Imaging Biomarkers, University of California, Los Angeles, June 6, 2014. (Invited lecture)
19. **"**Prevention and Monitoring of Stroke based on Multi-modality Medical Images"", *Workshop 3:Integrating Modalities and Scales in Life Science Imaging*, NSF Mathematical Biosciences Institute, Columbus, Ohio, March 2014. (Invited lecture)
20. "Parent Artery Curvature May Help Determine the Effectiveness of Flow Diverter Treatment", *2014 International Stroke Conference*, San Diego, California, February 2014.
21. "Natural History Simulation Models: Aneurysms Larger Than 9.5 mm and Aneurysms Growing Faster Than 0.36 mm/year Require Intense Clinical Care", *2014 International Stroke Conference*, CA, San Diego, California, February 2014.
22. "Prevention of Hemorrhagic Stroke—the Role of Science and Engineering", *The 3rd Young Investigator Conference, Emerging Information & Technology Conference —Leadership, Innovation, Growth*, Massachusetts Institute of Technology, Cambridge, Massachusetts, August 2013. (Invited lecture)
23. "Automatic Detection of Vascular Lesion Changes", University of California, Santa Barbra, Dept. of Electrical Computer Engineering, June 2013. (Invited lecture)
24. "Aneurysms Exhibit Morphological and Hemodynamic Changes in Progression towards Rupture", *American Society of Neuroradiology 51th Annual Meeting*, San Diego, California, May 2013. (Oral presentation)
25. "Follow-up of Large Intracranial Aneurysms Indicates Growth Frequency Varies According to Location and Size", *2013 International Stroke Conference*, Honolulu, Hawaii, February 2013. (Moderated Poster)
26. "Identifying Aneurysm Growth based on Imaging-a Minimal 0.8 mm Size Increase is the Optimal Threshold to Classify Growth", *2013 International Stroke Conference*, Honolulu, Hawaii, February 2013.
27. "Hemodynamic Differences Found in Ruptured and Unruptured Aneurysms - Quantitative Comparison of Cases from a Single Location", *2013 International Stroke Conference*, Honolulu, Hawaii, February 2013.
28. "The Growth of Small, Asymptomatic, Unruptured Intracranial Aneurysms with no History of SAH -Different Risk Factors Associated with Single and Multiple Aneurysms", *2013 International Stroke Conference*, Honolulu, Hawaii, February 2013.
29. "Image Diagnosis of Brain Aneurysm Growth in Different Patient Population", Biomedical Physics IDP, David Geffen School of Medicine at UCLA, Los Angeles, February 2013. (Invited lecture)
30. "Hemodynamic Analysis to Assess Brain Aneurysms Risk Factor", UCLA Medical Imaging Informatics, Los Angeles, June 2012. (Invited lecture)
31. "Computational Medicine for Cardiovascular Disease and Device Treatment", Department of Bio-Industrial Mechatronics Engineering, National Taiwan University, Taipei, Taiwan, January 2012. (Invited lecture)

32. "Computational hemodynamic analysis for brain aneurysms to investigate the mechanism of rupture for aneurysms in different size categories", *International Conference on Computational Biology and Bioinformatics*, Shanghai, China, October 2011.
33. "Hemodynamic Force Dyssynchrony Found in Cerebral Aneurysms—A Quantitative Patient-Specific Aneurysm Flow Analysis at Single Location", *American Society of Neuroradiology 49th Annual Meeting*, Seattle, Washington, June 2011. (Oral presentation)
34. "Computational Hemodynamic Analysis of Flow-Diverting Stents", Division of interventional Neuroradiology, Ronald Reagan UCLA Medical Center, Los Angeles, April 2011. (Lecture)
35. "Domain Specific Computing for Brain Aneurysm Hemodynamic Analysis", Center of Domain Specific Computing, Dept. of Computer Science, University of California, Los Angeles, March 2011. (Invited lecture)
36. "Innovation in Computational Technology for Medicine", The Business of Science Center, Dept. of Molecular & Medical Pharmacology, University of California, Los Angeles, March 2011. (Invited lecture)
37. "Patient-Specific Hemodynamic Analysis for Brain Aneurysms", Medical Imaging Informatics, Dept. of Radiological Sciences, October, 2010. (Invited lecture)
38. "Bio-fluid Mechanics in Human Disease", Biomedical Physics IDP, David Geffen School of Medicine at UCLA, Los Angeles, January 2010. (Invited lecture)
39. "Medical applications of image analysis", Dept. of Mathematics, University of California, Los Angeles, Nov 2009. (Invited lecture)
40. "Volumetric Analysis for Lesions", Dept. of Biomedical Physics, Thoracic Imaging Research, UCLA, Los Angeles, October 2009. (Invited lecture)
41. "Clinical Aneurysm Hemodynamic Analysis", Division of interventional Neuroradiology, Ronald Reagan UCLA Medical Center, Los Angeles, July 2009. (Lecture)
42. "Flow Analysis for Brain Aneurysms", Applied Mechanics, Department of Mechanical Engineering, Waseda University, Tokyo, Japan, April 2009. (Invited lecture)
43. "Computational Flow Analysis in Cerebral Vascular Diseases", Institute of Advanced Biomedical Sciences, Waseda University, Tokyo, Japan, April 2009. (Invited lecture)
44. "The Role of Computer Simulation for Understanding the Mechanism of Brain Aneurysm Rupture", Dept. of Neurosurgery, Jikei University School of Medicine, Tokyo, Japan, April 2009. (Invited lecture)
45. "Human Cardiac Wall Stress Analysis with Patient-specific Myocardial Material Properties", *7th International Conference on Modeling in Medicine and Biology*, New Forest, United Kingdom, September 2007. (Oral presentation)
46. "Lower Wall Shear Stress Distribution was Found in Unruptured Cerebral Aneurysms using Patient-Specific Computational Flow Analysis", *4th Annual Meeting of American Society of Interventional & Therapeutic Neuroradiology*, California, USA, August 2007. (Oral presentation)
47. "Patient-Specific Computational Flow Analysis of Cerebral Aneurysms at Single Location: Differences in Wall Shear Stress Distribution Found in Ruptured and Un-ruptured Cases", *2nd Symposium on Biomechanics in Cardiovascular Disease: Shear stress in Vascular Biology*, Rotterdam, the Netherlands, April 2007. (Oral presentation)
48. "Patient-specific Cardiac Dynamic Simulation", Division of Cardiovascular Diseases, University of Cincinnati, Cincinnati, Ohio, USA, October 2006. (Invited lecture)
49. "Human Cardiac Dynamic Deformation Analysis with *in vivo* Determination of Individualized Myocardial Material Properties", *17th Congress of the Cardiovascular System Dynamics Society*, Vaals, the Netherlands, September 2006. (Oral presentation *—Kiichi Sagawa Young Investigator Award 4th place)*

50. "Human Cardiac Dynamic Deformation Analysis with *in vivo* Determination of Individualized Myocardial Material Properties", *17th Congress of the Cardiovascular System Dynamics Society*, Vaals, the Netherlands, September 2006. (*Nico Westerhof Young Investigator Award Finalist)*

51. "Non-invasive Determination of Human Myocardial Wall Stress with *in vivo* Physiological Parameters", *15th US National Congress on Theoretical and Applied Mechanics*, Boulder, Colorado, USA, June 2006. (Oral presentation)

52. "Dynamic Simulation for Human Cardiovascular System", Yale University, Department of Anesthesiology, New Haven, Connecticut, USA, June 2006. (Invited lecture)

53. "Optimal Density and Locations of Laser Channels Predicted for Transmyocardial Laser Revascularization by a Three-dimensional Ventricular Simulation Model", *26thAnnual Meeting of the American Society for Laser Medicine and Surgery*, Boston, Massachusetts, USA, April 2006. (Oral presentation, selected as a Hot Topic)

54. "Human Cardiac Modeling", University of California, Irvine, Department of Biomedical Engineering, USA, March 2006. (Invited lecture)

55. "Cardiac Mechanics: *in vivo* Analysis for Healthy and Diseased Hearts" Cedars-Sinai Medical Center, Department of Cardiology, Los Angeles, California, USA, February 2006. (Invited lecture)

56. "Non-invasive Determination of Human Myocardial Wall Stress with *in vivo* Physiological Parameters", *Heart Modeling: Image Acquisition. Segmentation, Modeling and Analysis*, Institute for Pure and Applied Mathematics, University of California, Los Angeles, USA, February 2006. (Invited lecture)

57. "Human Dynamic *in vivo* Myocardial Wall Stress based on tagged Magnetic Resonance Imaging", *33rd Annual Meeting & Scientific Sessions of the North American Society for Cardiac Imaging*, Amelia Island, Florida, USA, October 2005. (Oral presentation)

58. "Non-invasive Evaluation of 3-Dimensional Ventricular Wall Stress Changes throughout the Cardiac Cycle", *33rd Annual Meeting & Scientific Sessions of the North American Society for Cardiac Imaging*, Amelia Island, Florida, USA, October 2005. (Oral presentation)

59. "Cardiovascular Modeling from electrophysiology to dynamic simulation" UCLA Dept. of Radiology— Diagnostic Cardiovascular Radiology Lecture Series, California, USA September 2005. (Invited lecture)

60. "Self-powered Pacing Device for Cardiovascular Implants", *4th Annual Southern California Biomedical Engineering Student Symposium*, Los Angeles, California, USA, January 2005.

61. "Non-invasive Derivation of 3D Systolic Nonlinear Wall Stress in a Biventricular Model from tagged MRI", *7th International Conference on Medical Imaging Computing and Computer-Assisted Intervention*, Saint-Malo, France, September 2004.

62. "Nonuniform Increases in Regional Wall Stress Encircle Infarcted Myocardium: A Derivation Using Left Ventricular Simulation", *8th Annual Scientific Meeting of the Heart Failure Society of America*, Canada, September 2004.

63. "Micro/Nano Technology in Cardiology", Institute of Physics, Academa Sinica, Taipei, Taiwan, April 2004. (Invited lecture)