

**CURRICULUM VITAE  
OF  
WEI-CHIANG LIN**

**EDUCATION** (List most recent degree first)

<b>Degree</b>	<b>Institution</b>	<b>Field</b>	<b>Dates</b>
PhD	University of Texas at Austin	Biomedical Engineering	1997
MS	University of Texas at Austin	Biomedical Engineering	1994
BS	Chung-Yuan Christian University	Biomedical Engineering	1989

**FULL-TIME ACADEMIC EXPERIENCE** (List most recent first)

<b>Institution</b>	<b>Rank</b>	<b>Field</b>	<b>Dates</b>
Miami Children's Hospital	FIU Assistant Professor of Neuro-Engineering	Neuroengineering	8/2004 - Now
Florida International University	MCH Assistant Professor of Neuro-Engineering	Biomedical Engineering	8/2004 - Now
Vanderbilt University	Research Assistant Professor	Biomedical Engineering	1/2001-7/2004
Vanderbilt University	Research Associate	Biomedical Engineering	7/1997-1/2001
The University of Texas Medical Branch at Galveston	Research Associate	Biomedical Engineering	1/1997 – 6/1997

**NON-ACADEMIC EXPERIENCE**

<b>Place of Employment</b>	<b>Title</b>	<b>Dates</b>
Industrial Technology Research Institute	Assistant Engineer	8/1989 - 7/1991

## PUBLICATIONS IN DISCIPLINE

### Books (Give full bibliographical references)

NA

### Papers in Professional Journals (Give full bibliographical references)

1. Y Ti, WC Lin, “Effects of probe contact pressure on *in vivo* optical spectroscopy,” *Optics Express*, accepted for publication.
2. SK Majumder, S Gebhart, MD Johnson, R Thompson, **WC Lin**, A Mahadevan-Jansen, “A probability-based spectroscopic diagnostic algorithm for simultaneous discrimination of brain tumor and tumor margins from normal brain tissue,” *Applied Spectroscopy*, 2007 May; 61(5):548-57.
3. DJ Parekh, **WC Lin**, SD Herrell, “*In vivo* assessment of radio frequency induced thermal damage of kidney using optical spectroscopy,” *Journal of Urology*, 2006 Oct;176(4):1626-1630.
4. S Gebhart, **WC Lin**, A Mahadevan-Jansen, “Normal and neoplastic brain tissue optical properties using inverse adding-doubling,” *Physics in Medicine and Biology*, 2006 Apr 21;51(8):2011-27.
5. SA Toms, P Konrad, **WC Lin**, RJ Weil, “Neuro-oncological applications of optical spectroscopy”, *Technology in Cancer Research and Treatment* 5: 231 – 238.
6. DJ Parekh, **WC Lin**, SD Herrell, “Optical spectroscopy characteristics can differentiate benign and malignant renal tissues: A potentially useful modality,” *Journal of Urology*, 2005 Nov;174(5):1754-8.
7. SA Toms, **WC Lin**, RJ Weil, MD Johnson, ED Jansen, A Mahadevan-Jansen, “Intraoperative Optical spectroscopy identifies infiltrating glioma margins with high sensitivity,” *Neurosurgery*, 2005 Oct;57(4 Suppl):382-91; discussion 382-91.
8. **WC Lin**, M Johnson, RJ Weil, A Mahadevan-Jansen, SA Toms, “*In vivo* optical spectroscopic detection of radiation injury in brain tissue,” *Neurosurgery*, 2005 Sep;57(3):518-25; discussion 518-25.
9. S Gebhart, A Mahadevan-Jansen, **WC Lin**, “Experimental and simulated angular profiles of fluorescence and diffuse reflectance emission from turbid media,” *Applied Optics*, 2005 Aug 10; 44(23):4884-901.
10. CD Anderson, **WC Lin**, JT Beckham, A Mahadevan-Jansen, CR Buttemere, MK Washington, DJ Phillips, J Pierce, IB Nicoud, CW Pinson, RS Chari, “Fluorescence spectroscopy accurately detects irreversible cell damage during hepatic radiofrequency ablation,” *Surgery*, 2004; 136; 524-531.
11. CD Anderson, **WC Lin**, CR Buttemere, MK Washington, A Mahadevan-Jansen, J Pierce, IB Nicoud, CW Pinson, and RS Chari, “Real-time spectroscopic assessment of thermal damage: implications for radiofrequency ablation,” *Journal of Gastrointestinal Surgery*, 2004; 8: 660-669.

12. CR Buttemere, RS Chari, CD Anderson, MK Washington, A Mahadevan-Jansen, **WC Lin**, “*In vivo* assessment of thermal damage in the liver using optical spectroscopy,” *Journal of Biomedical Optics*, Vol. 9, No.5, p. 1018-1027, 2004.
13. **WC Lin**, CR Buttemere, A Mahadevan-Jansen, “Effects of thermal damage on the *in vitro* optical and fluorescence characteristics of liver tissues,” *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 9, No.2, p. 162-170, 2003.
14. PD O'Neal, GL Cote, M Motamedi, J Chen, **WC Lin**, “Feasibility study using surface-enhanced Raman spectroscopy for the quantitative detection of excitatory amino acids,” *Journal of Biomedical Optics*, Vol. 8 No. 1. p. 33-39, 2003.
15. **WC Lin**, SA Toms, ED Jansen, A Mahadevan-Jansen, “Intraoperative application of optical spectroscopy in the presence of blood,” *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 7, No. 6, p. 996-1003, 2001.
16. **WC Lin**, SA Toms, M Johnson, ED Jansen, A Mahadevan-Jansen, “*In vivo* brain tumor demarcation using optical spectroscopy,” *Photochemistry and Photobiology*, Vol. 73, No, 4, p. 396-402, 2001.
17. **WC Lin**, SA Toms, M Motamedi, ED Jansen, A Mahadevan-Jansen, “Brain tumor demarcation using optical spectroscopy; an *in vitro* study,” *Journal of Biomedical Optics*, Vol. 5, No. 2, p. 214-220, 2000.
18. **WC Lin**, M Motamedi, AJ Welch, “Dynamics of tissue optics during laser heating of turbid media,” *Applied Optics*, Vol. 35, No. 19, p. 3413-3420, 1996.
19. **WC Lin**, M Motamedi, AJ Welch, “Nonlinear optical behavior of ocular tissue during laser irradiation,” *Applied Optics*, Vol. 34, No. 34, p. 7979-7985, 1995.

**Proceedings** (Give full bibliographical references)

1. Y Ti, WC Lin, “Optical characterization of myocardial infarction: an *in vivo* study,” BIOMED Topical Meeting (Optical Society of American), 2008 (submitted).
2. Y Ti, WC Lin, “Probe contact pressure effects on *in vivo* diffuse reflectance and fluorescence spectroscopy,” BIOMED Topical Meeting (Optical Society of American), 2008 (submitted).
3. SK Majumder, S Gebhart, R Thompson, KD Weaver, MD Johnson, WC Lin, and A Mahadevan-Jansen, “*In-vivo* optical detection of brain tumor and tumor margin: a combined auto-fluorescence and diffuse reflectance spectroscopic study,” Proc. SPIE 6430, 64300F (2007).
4. WC Lin, J Ragheb, S Bhatia, M Johnson, D Sandberg, A Fernandez, G Morrison, M Duchowny, and P Jayakar, “*In vivo* optical characterization of pediatric epileptogenic lesions”, Proc. SPIE 6424, 642427 (2007).
5. SA Toms, O Muhammad, H Jackson, and WC Lin, “Decline in NAD(P)H autofluorescence precedes apoptotic cell death from chemotherapy,” SPIE Proc. 6009, 60090Q (2005).

6. WC Lin, JT Beckham, DJ Parekh, S Duke Herrell, CR Anderson, RS Chari, A Mahadevan-Jansen, "Optical spectroscopy for guiding thermotherapies of tumors," 2004 Biomedical Optics Conference (Optical Society of American), 2004.
7. CD Anderson, WC Lin, CR Buttemere, A Mahadevan-Jansen, DJ Phillips, J Pierce, I Nicoud, RS Chari, "Differentiation of normal and radio frequency ablated liver tissue using an optical based feedback system," *American Hepato-Pancreato-Biliary Association's 4th Congress*, Miami, Florida, 2003.
8. S Gebhart, WC Lin, A Mahadevan-Jansen, "Characterization of a spectral imaging system," Proc. SPIE 4959, 34 (2003).
9. CR Buttemere, RS Chari, CD Anderson, A Mahadevan-Jansen, WC Lin, "Feedback control of liver thermotherapy using optical spectroscopy," Proc. SPIE 4958, 201 (2003).
10. WC Lin, SA Toms, M Johnson, RJ Weil, A Mahadevan-Jansen, "Detection of radiation injured brain tissue using optical spectroscopy," *Biomedical Topical Meetings, OSA Technical Digest* (Optical Society of America), 491, 2002.
11. ED Jansen, A Mahadevan-Jansen, WC Lin, SP Brophy, MA Mackanos, "Development and implementation of an interactive instructional module for light distribution in tissue," *2001 ASEE Annual Conference Proceedings*, 2001.
12. A Mahadevan-Jansen, JD Mongin, ED Jansen, D Pedrotty, WC Lin, "Brain tissue characterization using spectral imaging: a potential clinical tool," Proc. SPIE 4259, 85 (2001).
13. WC Lin, A Mahadevan-Jansen, ED Jansen, "Intraoperative guidance of brain tumor resection: reduction of blood contamination effects on tissue optical spectra," Proc. SPIE 4254, 181 (2001).
14. WC Lin, SA Toms, ED Jansen, A Mahadevan-Jansen, "Spectroscopic-guided brain tumor resection," Proc. SPIE 3911, 130 (2000).
15. WC Lin, SA Toms, ED Jansen, A Mahadevan-Jansen, "Optical spectroscopy for intraoperative guidance of brain tumor resection," *Biomedical Topical Meetings, OSA Technical Digest* (Optical Society of America), p. 52-55, 2000.
16. WC Lin, JP Wicksted, AJ Welch, M Motamedi, "Thermally induced refractive nonlinearity in scattering media," Proc. SPIE 2975, 76 (1997).
17. WC Lin, M Motamedi, AJ Welch, "Dynamics of tissue reflectance and transmittance during laser irradiation," Proc. SPIE 2134, 296 (1994).

**Chapters in Books** (Give full bibliographical references)

1. AJ Welch, **WC Lin**, IF Cilesiz, ED Jansen, M Frenz, M Motamedi, "Dynamics of optical properties," in *Biomedical Optical Instrumentation and Laser-Assisted Biotechnology*, NATO ASI Series, Kluwer Academic Publishers, Dordrecht, p. 33-41, 1996.

## PRESENTED PAPERS, LECTURES, EXHIBITIONS, AND PERFORMANCES

### Conference Presentations

1. Y Ti, WC Lin, “Optical characterization of myocardial infarction: an *in vivo* study,” BIOMED Topical Meeting, Optical Society of American, St. Petersburg, Florida, 2008 (Poster Presentation).
2. Y Ti, WC Lin, “Probe contact pressure effects on *in vivo* diffuse reflectance and fluorescence spectroscopy,” BIOMED Topical Meeting, Optical Society of American, St. Petersburg, Florida, 2008 (Poster Presentation).
3. S Oh, J Ragheb, S Bhatia, D Sandberg, B Fernald, WC Lin, “Time-dependent diffuse reflectance spectroscopy for *in vivo* pediatric brain characterization,” The SPIE International Symposium on Biomedical Optics (BiOS) 2008, San Jose, California January 18-23, 2008.
4. B Fernald, S Oh, WC Lin, “Time-dependent diffuse reflectance spectroscopy for *in vivo* pediatric brain characterization,” The SPIE International Symposium on Biomedical Optics (BiOS) 2008, San Jose, California January 18-23, 2008.
5. S Bhatia, J Ragheb, S Oh, B Fernald, DI Sandberg G Morrison, P Jayakar, WC Lin, ‘Fluorescence and diffuse reflectance spectroscopy for intraoperative guidance of pediatric brain surgery,’ Miami 2007 AANS/CNS Section on Pediatric Neurological Surgery 2007 Annual Meeting, Miami, Florida, November 26 - December 1, 2007.
6. WC Lin, S Oh, B Fernald, S Bhatia, J Ragheb, M Johnson, DI Sandberg, M Duchowny, G. Morrison, P Jayakar, “Intraoperative demarcation of pediatric epileptogenic lesions using optical spectroscopy,” American Epilepsy Society, 61<sup>st</sup> Annual Meeting, Philadelphia, PA, November 20 – December 4, 2007 (Poster Presentation).
7. S Bhatia, J Ragheb, DI Sandberg G Morrison, P Jayakar, M Duchowny, A Fernandez, S Oh, WC Lin, “*In vivo* characterization of pediatric epileptogenic lesions,” The American Association of Neurological Surgeons and Congress of Neurological Surgeons Annual Meeting, March 7-10, 2007.
8. WC Lin, A Fernandez, D Sandberg, G Morrison, S Bhatia, J Ragheb, MS Duchowny, P Jayakar, “*In vivo* optical characterization of pediatric epileptogenic lesions,” The SPIE International Symposium on Biomedical Optics (BiOS) 2007, San Jose, California January 19-24, 2007.
9. WC Lin, A Fernandez, M Cifuentes, Y Ti, R Oliver-Viduad, A McGoron, “*In vivo* characterization of myocardial infarction using optical spectroscopy,” BioFlorida’s 8<sup>th</sup> Annual Conference, Delray Beach, Florida, February 21-22, 2006.
10. WC Lin, A Fernandez, D Sandberg, G Morrison, S Bhatia, G Olavarria, J Ragheb, MS Duchowny, P Jayakar, “Optical characterization of pediatric brain tumors and epileptogenic lesions,” BioFlorida’s 8<sup>th</sup> Annual Conference, Delray Beach, Florida, February 21-22, 2006 (Poster Presentation).

11. WC Lin, Y Ti, R Oliver-Viduad, A McGoron, "In vivo characterization of myocardial infarction using optical spectroscopy," The SPIE International Symposium on Biomedical Optics (BiOS) 2006, San Jose, California January 20-25, 2006.
12. WC Lin, A Fernandez, D Sandberg, G Morrison, S Bhatia, G Olavarria, J Ragheb, MS Duchowny, P Jayakar, "Optical characterization of pediatric brain tumors and epileptogenic lesions," The SPIE International Symposium on Biomedical Optics (BiOS) 2006, San Jose, California, January 20-25, 2006.
13. WC Lin, "Fluorescence and Diffuse Reflectance Spectroscopy: A potential tool for guiding thermotherapies of renal and liver Tumors," BioTech 2005, Miami, Florida, March 10, 2005 (Poster Presentation).
14. WC Lin, A Mahadevan-Jansen, JT Beckham, DJ Parekh, S Duke Herrell, "Fluorescence and diffuse reflectance spectroscopy: a potential tool for guiding thermotherapies of renal tumors," The SPIE International Symposium on Biomedical Optics (BiOS) 2005, San Jose, California Jan 22-27, 2005.
15. WC Lin, JT Beckham, DJ Parekh, S Duke Herrell, CR Anderson, RS Chari, A Mahadevan-Jansen, "Optical spectroscopy for guiding thermotherapies of tumors," 2004 Biomedical Optics Conference, OSA, Miami Beach, Florida 2004.
16. DJ Parekh, WC Lin, S Duke Herrell, "Optical spectroscopy in differentiating benign and malignant renal tissues," American Urological Association, San Francisco, CA, May, 2004.
17. DJ Parekh, WC Lin, JT Beckham, S Duke Herrell, "Detection of radiofrequency induced thermal damage using optical spectroscopy," American Urological Association, San Francisco, CA, May, 2004.
18. CD Anderson, WC Lin, A Mahadevan-Jansen, J Pierce, IB Nicoud, CW Pinson, RS Chari, "Fluorescence spectroscopy accurately predicts irreversible tissue death following radio frequency ablation," The Society of University Surgeons, St Louis, MO, Feb 11-14 2004.
19. D Parekh, WC Lin, S Duke Herrell, "Optical Spectroscopy in differentiating benign and malignant renal tissues: A potentially useful modality," Podium Presentation, Young Urologic Oncologists Forum, The 4th Annual SUO Meeting; Urologic Oncology: Extraordinary Opportunities in Discovery, National Institutes of Health, Bethesda, Maryland, Dec 5-6, 2003
20. D Parekh, WC Lin, JT Beckham, S Duke Herrell, "Detection of RF-induced renal thermal damage using optical spectroscopy," Podium Presentation, The 4th Annual SUO Meeting; Urologic Oncology: Extraordinary Opportunities in Discovery, National Institutes of Health, Bethesda, Maryland, Dec 5-6, 2003
21. CD Anderson, WC Lin, CR Buttemere, DJ Phillips, J Pierce, I Nicoud, RS Chari, "Differentiation of normal and radio frequency ablated liver tissue using an optical based feedback system," *American Hepato-Pancreato-Biliary Association's 4th Congress*, 2003.

22. S Gebhart, WC Lin, A Mahadevan-Jansen, "Comparison of three bench-top spectral imaging modalities for brain tissue diagnosis," *BiOS 2003 Biomedical Optics*, Photonics West, San Jose CA 2003.
23. WC Lin, PE Konrad, CR Buttemere, A Mahadevan-Jansen, "Optical spectroscopic guidance for deep brain stimulation," *BiOS 2003 Biomedical Optics*, Photonics West, San Jose CA 2003.
24. CR Buttemere, RS Chari, CD Anderson, A Mahadevan-Jansen, WC Lin, "Feedback control of liver thermotherapy using optical spectroscopy," *BiOS 2003 Biomedical Optics*, Photonics West, San Jose CA 2003.
25. WC Lin, SA Toms, M Johnson, RJ Weil, A Mahadevan-Jansen, "Detection of radiation injured brain tissue using optical spectroscopy," *OSA Biomedical Topical Meetings*, April 7-10, 2002.
26. WC Lin, PJ Phillips, "*In vitro* tissue differentiation using dynamics of tissue mechanical properties," *American Physical Society March Meeting*, March 18 – 22, 2002.
27. WC Lin, SA Toms, M Johnson, RJ Weil, A Mahadevan-Jansen, "Guided brain tumor biopsy using optical spectroscopy: optical spectral characteristics of radiated brain tissue," *BiOS 2002 Biomedical Optics*, Photonics West, San Jose, CA, Jan. 21 - 26, 2002.
28. SA Toms, A Mahadevan-Jansen, M Johnson, RJ Weil, WC Lin, "*In vivo* optical spectroscopy distinguishes radiation necrosis from recurrent tumor," *Society of NeuroOncology*, 2001, poster presentation.
29. ED Jansen, A Mahadevan-Jansen, WC Lin, SP Brophy, MA Mackanos, "Development and implementation of an interactive instructional module for light distribution in tissue," *Annual Conference of the American Society of Engineering Education*, 2001.
30. WC Lin, SA Toms, M Johnson, ED Jansen, A Mahadevan-Jansen, "Intraoperative spectroscopic-guided brain tumor resection," *BiOS 2001 Biomedical Optics*, Photonics West, San Jose, CA, Jan. 21 - 26, 2001.
31. WC Lin, ED Jansen, SA Toms, A Mahadevan-Jansen, "Combined fluorescence and diffuse reflectance spectroscopy for *in vivo* guidance of brain tumor resection," poster presentation, *Gordon Conference on Lasers in medicine and biology*, New London, CT, June 19 - 24, 2000.
32. WC Lin, SA Toms, ED Jansen, A Mahadevan-Jansen, "Optical spectroscopy for intra-operative guidance of brain tumor resection, an *in vivo* study," *2000 AANS Annual Meeting*, San Francisco, CA, April 8 - 13, 2000.
33. WC Lin, SA Toms, ED Jansen, A Mahadevan-Jansen, "Optical spectroscopy for intra-operative guidance of brain tumor resection," *OSA Biomedical Topical Meetings*, Miami, Florida, April 2 - 5, 2000.
34. WC Lin, SA Toms, ED Jansen, A Mahadevan-Jansen, "Intraoperative spectroscopic-guided brain tumor resection," *BiOS 2000 Biomedical Optics*, Photonics West, San Jose, CA, Jan. 23 - 28, 2000.

35. WC Lin, SA Toms, ED Jansen, A Mahadevan-Jansen, "Potential of optical spectroscopy in the margin detection of brain tumors," poster presentation, *Annual Meeting of The Society for Neuro-Oncology*, Nov. 17 - 21, 1999.
36. WC Lin, SA Toms, ED Jansen, A Mahadevan-Jansen, "Optical spectroscopy may aid in the margin detection of brain tumors," poster presentation, *Congress of Neurosurgeons*, Boston, MA, Oct. 30 - Nov. 4, 1999.
37. JD Mongin, ED Jansen, D Pedrotty, WC Lin, A Mahadevan-Jansen, "Brain tissue characterization using spectral imaging: a potential clinical tool," *BiOS 2001 Biomedical Optics*, Photonics West, San Jose, CA, Jan. 21 - 26, 2001.
38. A Mahadevan-Jansen, WC Lin, C. Lieber, Robert Macuinas, M Copeland, "Detection of cranial tumor margins using fluorescence spectroscopy," poster presentation, *1998 Gordon Research Conference on Lasers and Medicine*, Meriden, New Hampshire, June 14 - 19, 1998.
39. WC Lin, M Motamedi, M Copeland, A Mahadevan-Jansen, ED Jansen, "Spectroscopic-guided free-electron laser (FEL) ablation of brain tissue," poster presentation, *1998 Gordon Research Conference on Lasers and Medicine*, Meriden, New Hampshire, June 14 - 19, 1998.
40. WC Lin, M Motamedi, M Copeland, A Mahadevan-Jansen, ED Jansen, "Spectroscopic-guided free-electron laser (FEL) ablation of brain tissue," *MFEL Contractors Meeting 1998*, Natick, Massachusetts, June 13 - 14, 1998.
41. C Lieber, WC Lin, and A Mahadevan-Jansen, "Detection of cranial tumors using laser-induced autofluorescence spectroscopy," *First Tennessee Conference on Biomedical Engineering*, Memphis, Tennessee, April 4 - 5, 1998.
42. WC Lin, JP Wicksted, AJ Welch, and M Motamedi, "Thermally induced refractive nonlinearity in scattering media," *BiOS 1997 Biomedical Optics*, San Jose, California, February 1997.
43. WC Lin, M Motamedi, AJ Welch, "Infrared fiber sensor for rapid temperature measurement during laser heating of tissue", *Twelfth Annual Houston Conference on Biomedical Engineering Research*, February 1994.
44. WC Lin, M Motamedi, AJ Welch, "Nonlinear optical behavior of ocular tissue during laser irradiation," *Thirteen Annual Houston Conference on Biomedical Engineering Research*, February 1995.
45. WC Lin, M Motamedi, AJ Welch, "Dynamics of tissue reflectance and transmittance during CW and pulsed laser irradiation", *OE/LASE 1994, Biomedical Optics*, Los Angeles, California, January 1994.

### **Invited Talks**

1. WC Lin, "In vivo characterization of pediatric epileptogenic lesion," China Medical University, Jan 29, 2007

2. WC Lin, "Optical diagnosis and surgical guidance," October Meeting of the MCH Research Group, Oct 20, 2004.
3. WC Lin, "Clinical utility of optical spectroscopy," September Meeting of the Research Committee of the Miami Children's Hospital, Miami Children's Hospital, Sep 22, 2004.
4. WC Lin, "Surgical and therapeutic guidance using tissue optical properties," Department of Biomedical Engineering, Florida International University, May 13, 2004.
5. WC Lin, "Surgical and therapeutic guidance using tissue intrinsic properties," Department of Biomedical Engineering, Texas A&M University, May 10, 2004.
6. WC Lin, "Optical spectroscopy for intraoperative brain tumor demarcation," Neuro-Oncology 2004: Current Concepts, Lake Buena Vista, Florida, January 31 to February 2, 2004.
7. WC Lin, SA Toms, M Johnson, ED Jansen, A Mahadevan-Jansen, "An optical spectroscopy based intraoperative guiding system for brain tumor resection," Third Johnson&Johnson CORD Medical Optics Subcommittee Symposium, Cincinnati, OH, September 20-21, 2000
8. WC Lin, SA Toms, M Motamedi, ED Jansen, A Mahadevan-Jansen, "Fluorescence and reflectance spectroscopy in brain tumor margin detection," Laser Medicine and Biophysics '99, La Jolla, California, April 19 -21, 1999
9. WC Lin, SA Toms, M Motamedi, ED Jansen, A Mahadevan-Jansen, "Optical spectroscopy for brain tumor margin detection," 1999 Tennessee Biomedical Engineering Conference, Nashville, Tennessee, April 9 -11, 1999

## **WORKS IN PROGRESS**

### **Papers submitted to journals for consideration**

1. **WC Lin**, SA Toms, A Mahadevan-Jansen, F Haselton, "Optical prediction of tissue death," *Journal of Biomedical Optics*, in revision.
2. **WC Lin**, DI Sandberg, S Bhatia, M Johnson, G. Morrison, J Ragheb, "Optical spectroscopy for in vitro differentiation of pediatric neoplastic and epileptogenic brain lesions," *Journal of Biomedical Optics*, in review.

### **Research in Progress**

*In vivo* pathophysiological characterization of pediatric neoplastic and epileptogenic lesions (MCH)

*In vivo* differentiation of normal, stunned, hibernating, and scarred myocardium using optical spectroscopy (FIU)

## FUNDED RESEARCH

‘Spectroscopic-guided FEL ablation of tissue using hollow waveguides’

PI: Wei-Chiang Lin

Mentors: E. Duco Jansen, Michael Copeland, Massoud Motamedi

Office of Naval Research (ONR) – FEL Laser Fellowship

Period: 10/97 – 10/98

Project Budget: \$ 45,000

‘Spectroscopic-guided FEL ablation of tissue using hollow waveguides’

PI: Wei-Chiang Lin

Mentors: E. Duco Jansen, Massoud Motamedi, Anita Mahadevan-Jansen, Steven Toms

Office of Naval Research (ONR) – FEL Laser Fellowship (renewal)

Period: 10/98 – 9/99

Project Budget: \$ 45,000

‘Spectroscopic-guided FEL ablation of tissue using hollow waveguides ’

PI: Wei-Chiang Lin

Mentors: E. Duco Jansen, Massoud Motamedi, Anita Mahadevan-Jansen, Steven Toms

ONR/FEL Laser Fellowship (extension)

Period: 10/99 – 4/00

Project Budget: \$ 20,000

‘Skin cancer detection using optical spectroscopy and imaging’

PI: Wei-Chiang Lin

Vanderbilt *In Vivo* Imaging Center Research Funds

Period: 12/00 - 11/02

Project Budget: \$ 25,000

‘Brain tumor and tumor margin identification using optical spectroscopy’

PI: Anita Mahadevan-Jansen

Investigators: Wei-Chiang Lin, Steven A Toms, Mahlon Johnson

NIH/NCI (CA085989-01A1)

Period: 1/01 – 12/05

Project Budget: \$1,361,925

‘Retinal blood barrier permeability using optical tracers’

PI: Frederick Haselton

Investigator: Wei-Chiang Lin, Ming Chen

NIH/NEI

Period: 1/02 – 12/4

Project Budget: \$657,562

‘Novel optical modality for *in vivo* tissue vitality assessment’

PI: Wei-Chiang Lin

Investigators: Dan Tobati, David Sandberg, Michael S Duchowny

Miami Children’s Hospital, Seed Grant

Period: 7/2005 – 6/2007

‘Intraoperative surgical guidance for brain lesion removal’

PI: Wei-Chiang Lin

Mentor: Anita Mahadevan-Jansen

Investigators: David Sandberg, Prasanna Jayakar

FIU RCMI Collaborative Project

Period: 2005 – 2011

Project Budget: \$ 20,000

‘Traumatic brain injury: multimodal biomarker screening and field applications for the military’

Grant #: 05098002

PI: Prasanna Jayakar, M.D., Ph.D.

Co-PIs: Byron Bernal, Santiago Medina, Nolan Altman, Bertriz Govante, Wei-Chiang Lin, John Ragheb, Michael Duchowny

Department of Defense

Period: 8/2006 – 7/2009

Project Budget: \$ 2,685,000

‘*In vivo* differentiation of normal, stunned, hibernating, and scarred myocardium using optical spectroscopy’

PI: Wei-Chiang Lin

Investigators: Michael Brown, Anthony McGoron, Eric Crumpler

American Heart Association, Grant-In-Aid, Florida/Puerto Rico Affiliate

Period: 7/2006 – 6/2009

Project Budget: \$ 261,000

‘Optimizing pediatric brain tumor surgery through optical spectroscopy to enhance survival and quality of life’

PI: Wei-Chiang Lin

Co-PIs: David Sandberg and John Ragheb

Agency: Thrasher Research Fund

Period: 7/1/2007 – 6/30/2010

Project Budget: \$299,789 direct

## **PATENT DISCLOSURES, APPLICATIONS, AND AWARDS**

1. Tumor Demarcation Using Optical Spectroscopy  
WC Lin, A Mahadevan-Jansen, ED Jansen, SA Toms - US Patent 6,377,841, 2002.
2. Medical Imaging Using Quantum Dots  
S Toms, WC Lin - WO Patent WO/2006/042,233, 2006
3. Optical Guidance System For In Vivo Differentiation of Normal, Stunned, Hibernating, and Scarred Myocardium  
WC Lin, M Brown – IDF filed to the Office of Intellectual Property Management at FIU, 2005.

## **PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS**

American Heart Association Florida/Puerto Rico Affiliate Robert J. Boucek, M.D. Research Award (2006).

Winner of the graduate student/post-doc poster competition, 2000 Gordon Research Conference on Lasers in Medicine and Biology (2000)

FEL laser fellowship (renewal), the W. M. Keck Foundation FEL Center, Vanderbilt University, Nashville, TN (1998)

Winner of the graduate student/post-doc poster competition, 1998 Gordon Research Conference on Lasers in Medicine and Biology (1998)

FEL laser fellowship, the W. M. Keck Foundation FEL Center, Vanderbilt University, Nashville, TN (1997)

## EDUCATION ACTIVITIES

### Courses Taught at FIU

Course Number	Course Title	Term	Evaluation
BME 3710	Data Evaluation Principle	Spring 2005	4.8/5
BME 4580/5560	Biomedical Engineering Optics	Fall 2005	5/5(G) and 4.4/5(U)
BME 6563	Optical Spectroscopy	Spring 2006	4.8/5
BME 4580/5560	Biomedical Engineering Optics	Fall 2006	4.5/5(G) and 3.9/5(U)
BME 3710	Data Evaluation Principle	Spring 2007	4.1/5
BME 3710	Data Evaluation Principle	Fall 2007	

### UNIVERSITY SERVICE

FIU IRB representative for the School of Engineering and Computing (2004 – Current)

Secretary of the Faculty Council on Government of the School of Engineering and Computing (2006-2007)

Member of the search committee for the instructor of the Department of Biomedical Engineering (2005)

Member of the search committee for the chair of the Department of Biomedical Engineering (2007)

## Student Supervision

### *Postdoc and Graduate Students at Florida International University*

#### Primary Adviser

Sanghoon Oh	Postdoc	2006-current
Funding Source: Thrasher Research Grant		
Yalin Ti	Ph.D. Dissertation	2005-current
Funding Source: AHA Grant		
Poching Chen	Ph.D. Dissertation	2006-current
Funding Source: AHA Grant		
Jianguo Li	Ph.D. Dissertation	2007-current
Funding Source: Departmental Scholarship		
Alejandro Fernandez	Master Thesis	2004-current
Funding Source: Faculty Research Award		
Bradly Fernald	Master Thesis	2006-current
Funding Source: AHA Grant		
Rafael Oliver-Vidaud	Master Report	2005-2006
Funding Source: NA		

#### Dissertation/Thesis Committee Member

Ying Gao (Barreto)	Ph.D. Dissertation	2007-current
Brtenda Luna (Roy)	Ph.D. Dissertation	2007-current
Zhiqi Zhang (Tsoukias)	Ph.D. Dissertation	2007-current
Jijia Ge (Godavarty)	Ph.D. Dissertation	2006-current
Jiali Wang (McGoron)	Ph.D. Dissertation	2006-current
Thomas E Claiborne (McGoron)	Master Thesis	2006-current
Zhicong Huang (Adjuadi)	Master Thesis	2006-2007
Sara Nofalah (Tsoukias)	Master Thesis	2006-2007
Bhavani Jayachandran (Godavarty)	Master Thesis	2005-2006
Rohit Chawca (Tsoukias)	Master Thesis	2005-2006

Melissa Hoo (Crumpler)	Master Thesis	2004-2005
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*Students at Vanderbilt University*

Steve C Gebhart (AMJ)	Ph.D. Dissertation	2003-2006
Saiful A Adanan	VUSRFP Fellowship	Summer 2004
Brett C Byram	Undergraduate Research	2003-2004
Jerrod Colpo	Undergraduate Summer Research (TGT)	Summer 2003
Lauren Parker	Undergraduate Summer Research (TGT)	Summer 2003
Clay Buttemere (AMJ)	Master Thesis	2002-2003
Darci Phillips	Undergraduate Research	2002-2003
Candice Bookwal	Undergraduate Summer Research (TGT)	Summer 2000
Chee Xiong	Undergraduate Summer Research (TGT)	Summer 1999
Glen Henbest	Undergraduate Research Fellowship	Summer 1998

## **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE**

### **Memberships**

American Heart Association

Optical Society of American

The International Society for Optical Engineering

### **Manuscript Reviewership**

“Lasers in Surgery and Medicine”

“IEEE Transactions of Biomedical Engineering”

“IEEE Journal of Selected Topics in Quantum Electronics”

“Journal of Biomedical Optics”

“Applied Optics”

“Photochemistry and Photobiology”

“Medical & Biological Engineering & Computing”

“Journal of Physiology”

“Annals of Biomedical Engineering”

“Laser in Medical Science”

### **University Service**

IRB representative for the School of Engineering and Computing (2004-Now)

Secretary of the Faculty Council on Government of the School of Engineering and Computing (2006-2007)

Faculty Council on Government of the School of Engineering and Computing (2007-Now)

Search Committee for the Instructor of the Department of Biomedical Engineering (2005)

Search Committee for the Chair of the Department of Biomedical Engineering (2007)

### **Outside Service**

Program committee member of the OSA topical meeting on Biomedical Optical Spectroscopy and Diagnostics, 2002