JAVIER A. JO, Ph.D.
CURRICULUM VITAE

CONTACT INFORMATION

School of Electrical and Computer Engineering
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PERSONAL DATA

Date and place of birth: October 12, 1973; Lima, PERU
Citizenship: Peruvian; U.S. Permanent Resident
Ethnicity: Hispanics

RESEARCH STATEMENT

The ***overall goal*** of my research program is to develop optical sensing and imaging technologies that will impact how we: (1) study pathophysiological mechanisms underlying major human diseases; and (2) clinically manage patients suffering from these diseases. While most academic labs in the field of biomedical optics focus on either instrumentation development or computational imaging science, I lead a very ***unique research program*** dedicated to address major unmet needs in both biomedical research and clinical practice through the design, development, and validation of ***both*** optical spectroscopy/imaging instrumentation ***and*** computational tools and methods for the nondestructive, non or minimally invasive morphological, molecular and physiological characterization of biological and engineered tissues across multiple spatial and temporal scales. Cardiovascular diseases and cancer are the number one and two killers in the United States and in most parts of the world. Novel medical imaging technologies capable of quantifying relevant biomarkers nondestructively and in situ could assist in every stage of the clinical management of these diseases. The ***current focus*** of my research program is to develop and clinically validate quantitative optical image-guided clinical tools to enable precision medicine and ultimately improve the clinical management of cardiovascular and cancer patients.

EDUCATION

1998 –2002	Ph.D. Biomedical Engineering, University of Southern California, Los Angeles
1998 –2000	M.S. Electrical Engineering, University of Southern California, Los Angeles
1996 –1997	Professional Dipl. Electrical Engineering, Universidad Catolica del Peru, Lima-Peru
1991 –1996	B.S. Electrical Engineering, Universidad Catolica del Peru, Lima-Peru

PROFESSIONAL EXPERIENCE

2019-Present	Professor, School of Electrical and Computer Engineering, University of Oklahoma at Norman
2012-2018	Associate Professor, Department of Biomedical Engineering, Texas A&M University
2006-2012	Assistant Professor, Department of Biomedical Engineering, Texas A&M University
2005-2006	Project Scientist, Department of Biomedical Engineering, University of California at Davis
2004-2005	Research Scientist, Department of Surgery, Cedars-Sinai Medical Center, Los Angeles, CA
2002-2004	Postdoctoral Fellow, Department of Surgery, Cedars-Sinai Medical Center, Los Angeles, CA
1998-2002	Research Assistant, Department of Biomedical Engineering, University of Southern California
1997-1998	Instructor, Dept. of Electrical Engineering, Universidad Nacional Mayor de San Marcos, Lima-Peru
1996-1997	Research Assistance, Dept. of Electrical Engineering, Universidad Catolica del Peru, Lima-Peru

PROFESSIONAL MEMBERSHIP

International Society for Optical Engineering (SPIE), Senior Member
Optical Society of America (OSA), Member
Institute of Electrical and Electronics Engineers (IEEE), Member
Biomedical Engineering Society (BMES), Member
American Heart Association (AHA), Member

PROFESSIONAL EXPERIENCE

Editorial Board Membership

2018-Present ***Topical Editor***, Optics Letters
2016-Present Ad-hoc Editor, Journal of Biomedical Optics
2008-Present Associate Editor, Biomedical Signal and System Analysis Track, IEEE-EMBC
2008-Present Associate Editor, Biomedical Image Processing Track, IEEE-EMBC

Selected Conference Organization and Committee Membership

2016-Present Full Member, EMBS Technical Committee: Biomedical Imaging and Image Processing
2016-Present Program Committee Member, Iberoamerican Congress on Pattern Recognition
2015-Present Program Committee Member, International Work Conference on Bioinspired Intelligence
2015 Session Chair, Optical Imaging II: Oncology Applications. BMES Annual Meeting 2015
2015 Session Chair, Optical Imaging I: Biomedical Imaging and Optics. BMES Annual Meeting 2015
2015 Committee Member and Organizer, Topical Review - Advances in Molecular Imaging. CLEO 2015
2015 Vice-Chair, OSA Technical Group: Microscopy and Optical Coherence Tomography
2014 Session Chair, Optical Imaging I: Biomedical Imaging and Optics. BMES Annual Meeting 2014
2013 Committee Member, OSA Topical Meeting: Optical Molecular Probes, Imaging and Drug Delivery
2012 Session Chair, Point-Of-Care Diagnosis and Clinical Laboratory Measurements. EMBC 2012

Selected Peer Review Activities – Conference Papers and Abstracts

2016-Present IEEE International Symposium on Biomedical Imaging (ISBI)
2014-Present BMES Annual Meeting
2008-Present IEEE International Engineering in Medicine and Biology Conference (EMBC)

Selected Peer Review Activities – Journals

- IEEE Transactions on Biomedical Engineering
- Journal of Microscopy
- American Journal of Physiology
- Journal of Applied Physiology
- Annals of Biomedical Engineering
- Journal of Biomechanical Engineering
- IEEE Journal of Selected Topics in Quantum Electronics
- Journal of Biomedical Optics
- Optics Letter
- Computer Methods and Programs in Biomedicine
- Journal of Cell Science & Therapy
- Laser in Surgery and Medicine
- Optics Express
- Biomedical Optics Express
- Journal of Biophotonics
- Journal of Molecular Structure
- Theranostics
- Sensors & Actuators (B. Chemical)
- Photonics Research
- Applied Optics
- Journal of Laboratory Automation
- PLOS ONE
- Gastroenterology, and others

Selected Peer Review Activities – Funding Agencies and Programs

2019 Grant Reviewer, NIH Study Section: Mobile Health: Technology and Outcomes in Low and Middle Income Countries (ZRG1 HDM-A (55) R)
2018-Present ***Standing Member***, NIH Study Section: Clinical Translational Imaging Science (CTIS)
2017-Present Reviewer for CONCYTEC (Peruvian NSF), Research Proposals
2017 Grant Reviewer, NIH Study Section: Small Business: Instrumentation, Environmental, and

	Occupational Safety (IMST-B (12))
2017	Grant Reviewer, NWO Netherlands Organization for Scientific Research
2017	Grant Reviewer, Canadian Institutes of Health Research (CIHR)
2016	Grant Reviewer, NIH NCI Special Emphasis Panel, Provocative Questions Review – PQ7
2015-Present	Reviewer for CONCYTEC (Peruvian NSF), Master of Engineering Program Proposals
2014	Grant Reviewer, NIH Study Section: Biomedical Imaging Technology A (BMIT-A)
2013	Grant Reviewer, NIH Study Section: Biomedical Imaging Technology B (BMIT-B)
2013	Grant Reviewer, German Research Foundation (DFG)
2012-Present	Grant Reviewer, Research Program, Universidad Nacional Mayor de San Marcos, Lima-Peru
2012-Present	Grant Reviewer, Research Program, Pontificia Universidad Catolica del Peru

HONORS AND AWARDS

2018	TAMU/TEES Engineering Genesis Award for Multidisciplinary Research
2015	The Association of Former Students of Texas A&M University, College Level Teaching Award
2013	Best Technical Poster Award. Optics in Cardiology, Rotterdam, the Netherland6.
2011	BMES TAMU Student Chapter, Faculty of the Year Award
2001	Annual Grodins Graduate Award (for overall academic excellence and outstanding original research). Department of Biomedical Engineering, University of Southern California.

DEPARTMENT AND UNIVERSITY SERVICE ACTIVITIES (Texas A&M University)

2017	Nominated Dr. Vanderlei Bagnato (University of Sao Paulo, NAS Member) as a 2018 Hagler Institute Faculty Fellows. The nomination was **recommended**, and Dr. Bagnato **accepted** it.
2017-Present	Member, BME Department Graduate Program Committee
2017-Present	Member, BME Department Graduate Fee Oversight Committee
2015-Present	BME Department Coordinator, TAMU Engineering Honors Program
2015	Member, BME Department Head Search Committee
2015	Nominated Dr. Katherine Ferrara (UC Davis, NAE Member) to the 2016 TIAS Faculty Fellowship Program
2010-2015	Member, BME Department IT Committee
2014	Faculty Advisor, BMES TAMU Student Chapter
2012-Present	Grant Reviewer, TAMU-CONACYT Collaborative Research Grant Program
2010-Present	TAMU Graduate Diversity Fellowship
2010-Present	TAMU Graduate Merit Fellowship
2008-Present	BME Department Library Liaison
2008-Present	Graduate Degree Committee Member for >50 TAMU engineering graduate students

COURSES DEVELOPED AND DELIVERED (Texas A&M University)

I have taught **three undergraduate courses** and **one graduate course** in biomedical instrumentation and electronics, biomedical signal processing, biostatistics, and biomedical optics. In all four courses, I apply **teaching strategies** I have developed over the years, which consist of: providing a set of comprehensive lecture notes prior to class, solving plenty of examples and problems during lectures, and designing assignments that not only assess the student understanding of concepts covered in class, but also the ability to apply them to solve real world problems. In addition, I always make sure to post all course material in a timely matter. Course material include: comprehensive lecture notes that I developed for each course, full solutions of class and homework problems, and multiple examples of MATLAB codes.

Optical Diagnostic and Monitoring Principles. Although this graduate course was not new, I completely redesigned it in the Fall of 2007 to be highly interactive. The first halve of the semester covered the basics on light and matter interaction and an overview of main optical spectroscopy methods. During the second halve of the semester, students were asked: to review scientific papers on optical spectroscopy applications in biomedical sensing and diagnosis, to discuss them during class, to give topic lectures, and to work on a term project. The term project was defined so that students were asked to write a short research proposal on a topic related to the optical spectroscopy/imaging methods covered in class. Finally, a computational project on Monte Carlo simulation of photon propagation in tissue was also added, which constitutes a very powerful tool in the field of biomedical optics. *Other instructors currently teaching this course are keeping this course format and using the teaching material I developed for this course.*

Biosignal Analysis. Although this required undergraduate course is not new, I taught it for the first time in Spring of 2008. In addition, since I was not satisfied with the original course content and did not find the previous course format compatible with my teaching style, I significantly modified both the course content and format, as summarized here. *Course Content:* The course content was refocused on the practical application of linear signal and system analysis to medicine and biology, rather than on their theoretical details. *Lecture format:* Comprehensive class notes are provided prior to each lecture, so students could focus on class discussion and participation. Each lecture begins with an interactive explanation of the lecture-topic theoretical concepts, with emphasis on their practical applications. Examples/problems are then worked out on the board, followed by computational examples solved using Matlab. Pop quizzes are also given to encourage attendance and participation. *Homework:* Homework, consisting on a combination of problem solving on paper and/or using Matlab, was given after every lecture. *Matlab training:* Interactive Matlab exercises are continuously conducted during most of the lecture, which help student to further develop their Matlab programming skills and prepare them for the project assignments. *Quizzes and Exams:* Few but relevant problems are designed for quizzes and exams, and review lectures are conducted before each quiz and exam. *Computational Projects:* Few but relevant application problems are designed for the projects. Discussion sessions are conducted before the project due-dates to address general questions the student might have about the projects. *Other instructors currently teaching this course are keeping this course format and using the teaching material I developed for this course.*

Statistics for Biomedical Engineering. In Fall of 2010, I suggested creating a course in biostatistics. This suggestion was well received by our faculty, and I developed a new undergraduate course in biostatistics, which was offered for the first time in Summer 2011. In this course, I review the main statistical methods being used in biomedical research and industry. Moreover, the creation of this course addresses one main concern raised by the last ABET evaluating committee, which pointed out the need to offer a course in statistics for biomedical engineers. This course became a new required undergraduate course in Fall 2013. *Other instructors currently teaching this course are keeping this course format and using the teaching material I developed for this course.*

Biomedical Electronics: Although this required undergraduate course is not new, I taught it for the first time in Fall of 2013. In addition, since I was not satisfied with the original course content and did not find the previous course format compatible with my teaching style, I significantly modified both the course content and format. I believe that the new syllabus is more organized, and it focuses on the understanding and design of practical circuits for signal amplification, conditioning, and filtering, as well as transducers that are relevant to biomedical engineering. Following the course format that I have successfully applied to the Biosignal Analysis course for the last several years, I developed a set of comprehensive lecture notes, homework problems and projects, which have helped students to understand and appreciate better the importance of electronic circuits in biomedical engineering.

MENTORING ACTIVITIES

Graduated Ph.D. Students (Texas A&M University):

2008-2014, Primary Ph.D. Advisor for *Paritosh Pande*
Research areas: Image processing, machine learning, fluorescence lifetime imaging, optical coherence tomography
Journal papers published under my supervision: 12
Current position: Scientist, Pacific Northwest National Laboratory

2009-2014, Primary Ph.D. Advisor for *Shuna Cheng*
Research areas: Optical imaging instrumentation, endoscopy system design, fluorescence lifetime imaging
Journal papers published under my supervision: 11
Current position: Postdoctoral Fellow, Rice University

2009-2014, Ph.D. Co-Advisor for *Joey Jabbour*
Research areas: Optical imaging instrumentation, endoscopy system design, reflectance confocal microscopy
Journal papers published under my supervision: 7
Current position: R&D Engineer, NinePoint Medical Inc.

2008-2015, Ph.D. Co-Advisor for *Sebina Shrestha*
Research areas: Optical imaging instrumentation, fluorescence lifetime imaging, optical coherence tomography
Journal papers published under my supervision: 8
Current position: R&D Engineer, NinePoint Medical Inc.

2010-2016, Ph.D. Co-Advisor for *Wihan Kim*
Research areas: Optical imaging instrumentation, optical coherence tomography
Journal papers published under my supervision: 2
Current position: Research Scientist, Texas A&M University

2010-2016, Primary Ph.D. Advisor for *Jose Rico Jimenez*
Research areas: Image processing, machine learning, fluorescence lifetime imaging, optical coherence tomography
Journal papers published under my supervision: 5
Current position: Postdoctoral Fellow, Texas A&M University at Qatar

2012-2017, Primary Ph.D. Advisor for *Rodrigo Cuenca*
Research areas: Optical imaging instrumentation, image processing, machine learning, fluorescence lifetime imaging
Journal papers published under my supervision: 6
Current position: Postdoctoral Fellow, Texas A&M University at Qatar

2012-2017, Ph.D. Co-Advisor for *Cory Olsovsky*
Research areas: Optical imaging instrumentation, endoscopy system design, reflectance confocal microscopy
Journal papers published under my supervision: 4
Current position: Optical Engineer, Leidos

2014-2018, Ph.D. Co-Advisor for *Taylor Hinsdale*
Research areas: Optical imaging instrumentation, structural illumination, fluorescence lifetime imaging
Journal papers published under my supervision: 3
Current position: Postdoctoral Fellow, University of Amsterdam

Graduated M.S. Students (Texas A&M University):

2007-2009, Primary M.S. Advisor for *Chintan Trivedi*
Research areas: Optical spectroscopy instrumentation, time-resolved fluorescence spectroscopy
Journal papers published under my supervision: 2
Current position: Research Associate, University College London

2007-2009, Primary M.S. Advisor for *Aditi Dabir*
Research areas: Signal processing, time-resolved fluorescence spectroscopy
Journal papers published under my supervision: 1
Current position: Research Associate, Indiana University

2008-2010, Primary M.S. Advisor for *Patrick Thomas*
Research areas: Image processing, fluorescence lifetime imaging
Journal papers published under my supervision: 1
Current position: Lab Technician, UT Southwest

2011-2014, Primary M.S. Advisor for *Mohammed Khatkhatay*
Research areas: Image processing, fluorescence lifetime imaging
Current position: Staff, St. Joseph Hospital Cardiac Rehab

2012-2014, Primary M.S. Advisor for *Joohyung Lee*
Research areas: Image processing, machine learning, fluorescence lifetime imaging
Journal papers published under my supervision: 1
Current position: National Cancer Center, South Korea

2014-2016, Primary M.S. Advisor for *Dae Yon Hwang*
Research areas: Image processing, machine learning, fluorescence lifetime imaging
Journal papers published under my supervision: 1
Current position: Engineer, Hyundai Mobis, Korea

Current Graduate Students (Texas A&M University):

2012 – Present, Principal Ph.D. Advisor for *Michael Serafino*
Research areas: Optical imaging instrumentation, fluorescence lifetime imaging, optical coherence tomography

2012 – Present, Ph.D. Co-Advisor for *Xi Chen*
Research areas: flexible endoscope design, fluorescence lifetime imaging, optical coherence tomography

2014 – Present, Principal Ph.D. Advisor for *Jorge Palma*
Research areas: Optical coherence tomography, molecular optical contrast agents

2015 – Present, Principal Ph.D. Advisor for *Elvis Duran*
Research areas: Image processing, machine learning, fluorescence lifetime imaging

2016 – Present, Principal Ph.D. Advisor for *Ronald Juarez*
Research areas: Image processing, machine learning, optical coherence tomography

2017 – Present, Principal Ph.D. Advisor for *Priyanka Vasanthakumari*
Research areas: Image processing, machine learning, fluorescence lifetime imaging

2018 – Present, Principal Ph.D. Advisor for *Oscar Benavides*
Research areas: Optical imaging instrumentation, fluorescence lifetime imaging, optical coherence tomography

Current Post-Doctoral Research Associates (Texas A&M University):

July 2017 – Present, Principal Advisor for *Dr. Rodrigo Cuenca*
Research areas: Image processing, machine learning, fluorescence lifetime imaging

July 2018 – Present, Principal Advisor for *Dr. Jose Rico-Jimenez*
Research areas: Image processing, machine learning, fluorescence lifetime imaging

Previous Post-Doctoral Research Associates (Texas A&M University):

2008 – 2009, Co-Advisor for *Dr. Xudong Xiao*
Research areas: Optical imaging instrumentation, fluorescence lifetime imaging, optical coherence tomography
Current position: Unknown

2009 – 2012, Co-Advisor for *Dr. Jesung Park*
Research areas: Optical imaging instrumentation, fluorescence lifetime imaging, optical coherence tomography
Current position: Research Scientist, Physical Sciences, Inc.

2009 – 2012, Co-Advisor for *Dr. Bilal Malik*
Research areas: Optical imaging instrumentation, fluorescence lifetime imaging, reflectance confocal microscopy
Current position: Research Scientist, QT Ultrasound Labs

2016 – 2017, Principal Advisor for *Dr. Shuna Cheng*
Research areas: Optical imaging instrumentation, fluorescence lifetime imaging
Current position: Postdoctoral Fellow, Rice University

Undergraduate Students (Texas A&M University)
(Female: ~40%; Hispanic: ~40%; Female+Hispanic: ~25%):

1. Abhor Vshist, BMEN
2. Reyes Toledo, BMEN (Hispanic)
3. Ryan Kuehnle, BMEN
4. Andres Machado, BMEN (Hispanic)
5. Daniel Coronel, BMEN (Hispanic)

6. Jose Bracho, BMEN (Hispanic)
7. Amran Kang, BMEN
8. Kiam Hong, BMEN (Female/Hispanic)
9. Cole Nipper, BMEN
10. Jarred Kendziorski, ECE
11. Zack Westenhaver, BMEN
12. Nolan Rizo, BMEN
13. Marco Bueso, BMEN
14. Edith Valle, BMEN (Female/Hispanic)
15. Kelly Henry, BMEN (Female)
16. Tristan Barrera, BMEN (Hispanic)
17. Erin Zeborwski, BMEN (Female)
18. Hazel Lopez, BMEN (Female/Hispanic)
19. Jayachandrika Jayavasudevan, BMEN (Female)
20. Yan Tong, BMEN
21. Nadine Nguib, BMEN (Female)
22. Edwin Xiao Cao, BMEN (Hispanic)
23. Huy Nguyen, BMEN UT Arlington (USRG)
24. Sarah Chaudhri, BMEN (Female)
25. Deidre Higareda, BMEN (Female/Hispanic)
26. Kaitlyn Aragon, BMEN (Female/Hispanic)
27. Rock Rickel, BMEN
28. Travis Bishop, ECEN
29. Boang Liu, BMEN
30. Claudina Garcia, BMEN (Female/Hispanic)
31. Ana Chang, BMEN (Female/Hispanic)
32. Arick Sagel, BMEN
33. Maria Berdegue, BMEN (Female/Hispanic)
34. Quentin Smith, BMEN UT Austin (USRG)
35. Michael Serafino, BMEN
36. Ron Newton, BMEN
37. Elsie Ponce, BMEN (Female/Hispanic)
38. Chris Klein, BMEN (USRG)

International Mentoring:

2015-2018	Ramon Gabriel, PhD student in Physics, University of Sao Paulo, Sao Paulo, Brazil
2011-2014	Omar Gutierrez-Navarro, PhD student in ECEN, Universidad Autonoma de San Luis Potosi, Mexico
2014-2015	Miguel Velazquez, PhD student in ECEN, Universidad Autonoma de San Luis Potosi, Mexico
2016	Enrique Macias, ECEN UG intern, Universidad Peruana de Ciencias, Lima, Peru
2016	Diego Brito, ECEN UG intern, Universidad Peruana de Ciencias, Lima, Peru
2014	Elvis Duran, BME UG intern, Universidad Anahuac Mayab, Merida-Yucatan, Mexico
2012	Luis de la O, BME UG intern, Universidad Iberoamericana, Mexico City
2009	Alejandra Sancho, BME UG intern, Universidad Iberoamericana, Mexico City
2009	David Zorrilla, BME UG intern, Universidad Iberoamericana, Mexico City
2008	Francisco Cazares, BME UG intern, Universidad Iberoamericana, Mexico City
2007	Daniel Avila, BME UG intern, Universidad Iberoamericana, Mexico City

RESEARCH FUNDING HISTORY

Active Research Projects:

Principal Investigator, CPRIT RP180588, 03/01/2018-02/28/2021, $897,394. *Novel computer aided diagnosis system for early detection of oral cancer based on quantitative autofluorescence imaging.*

Principal Investigator, NIH 1R01CA218739, 02/01/2018-01/31/2023, $2,523,823. *Endogenous fluorescence lifetime endoscopy for early detection of oral cancer and dysplasia.*

Co-Investigator (PI: P. Charoenphol, TAMU), AHA 17SDG33660894, 07/01/2017-06/30/2020, $231,000. *Engineering a multistage delivery system for intravascular administration of contrast agents in cardiovascular diseases.*

Principal Investigator, Qatar National Research Fund NPRP8-1606-3-322, 03/01/2016-12/31/2019, $809,465. *Fluorescence lifetime imaging endoscope for early detection of oral cancer.*

Co-Principal Investigator (Co-PI: B. Applegate, TAMU), NIH 1R01HL111361, 04/01/2012-03/31/2019, $1,744,385. *Morphological and molecular imaging system for in vivo atherosclerosis research.*

Completed Research Projects:

Co-Principal Investigator (Co-PI: B. Malik, TAMU), NIH 1R03 CA191860, 12/02/2014-06/30/2018, $138,220. *Structured illumination multispectral fluorescence lifetime imaging of oral premalignancies.*

Co-Principal Investigator (Co-PI: K. Maitland, TAMU), NIH 1R01CA138653, 08/01/2010-07/31/2017, $1,533,823. *Multiresolution FLIM and reflectance confocal microscopy to detect dysplasia.*

Co-Principal Investigator (Co-PI: B. Applegate, TAMU), TAMU-CTEHR Pilot Project Grant, 06/15/2013-06/15/2015, $50,000. *Towards in-vivo imaging of electronegative LDL in atherosclerotic plaques.*

Principal Investigator (Co-PI: B. Applegate, TAMU), NIH 1R21CA132433, 05/01/2008-04/30/2010, $623,233. *Combined OCT/FLIM biochemical and anatomical imaging for early cancer diagnosis.*

Principal Investigator, AHA 0765102, 07/01/2007-06/30/2010, $130,000. *Biochemical assessment of vulnerable atherosclerotic plaque by intravascular fluorescence lifetime imaging microscopy.*

Funding for International Collaboration:

Co-Principal Investigator (Co-PI: D. Campos, UASLP-Mexico), TAMU-CONACYT Collaborative Research Grant, 06/01/2016-12/31/2017, $24,000. *Advanced computational methods for detection of high-risk coronary atherosclerotic plaques based on optical coherence tomography and fluorescence lifetime imaging.*

Co-Principal Investigator (Co-PI: P. Milon, UPC-Peru), INNOVATE PERU Bolsa Pesquisador Visitante Especial, 04/01/2016-03/31/2017, $20,000. *Time-resolved fluorescence spectroscopy of ribosomal conformation changes.*

Co-Principal Investigator (Co-PI: C. Kurachi, USP-Brazil), CNPQ Bolsa Pesquisador Visitante Especial, 01/01/2015-12/31/2017, $120,000. *Fluorescence lifetime imaging endoscope for epithelial cancer diagnosis.*

Co-Principal Investigator (Co-PI: D. Campos, UASLP-Mexico), TAMU-CONACYT Collaborative Research Grant, 01/14/2013-12/31/2013, $24,000. *Novel algorithms for quantitative molecular imaging with multispectral FLIM.*

ORIGINAL PEER – REVIEWED JOURNAL ARTICLES (h-index: 27; i10-index: 37)

Students (past or present) are highlighted in bold.

J1. J. V. Thompson, B. H. Hokr, **W. Kim,** C. W. Ballmann, B. E. Applegate, J. A. Jo, A. Yamilov, H. Cao, M. O. Scully, V. V. Yakovlev . Enhanced coupling of light into a turbid medium through microscopic interface engineering. PNAS 2017: 1705612114v1-201705612, 2017.

J2. **C. Olsovsky, T. Hinsdale, R. Cuenca, Y.S. Cheng,** J. M. Wright, T. D. Rees, J. A. Jo, K. C. Maitland. Handheld tunable focus confocal microscope utilizing a double-clad fiber coupler for in vivo imaging of oral epithelium. J. Biomed. Opt. 22(5), 056008 (2017), doi: 10.1117/1.JBO.22.5.056008, 2017.

J3. **T. Hinsdale, C. Olsovsky, J. Rico-Jimenez**, K. Maitland, J. Jo, B. Malik. Optically sectioned wide-field fluorescence lifetime imaging microscopy enabled by structured illumination. Biomedical Optics Express 8(3): 1455-1465, 2017.

J4. **J.J. Rico-Jimenez,** D.U. Campos-Delgado, M. Villiger, K. Otsuka, B.E. Bouma, J.A. Jo. Automatic classification of atherosclerotic plaques imaged with intravascular OCT. Biomedical Optics Express 7(10): 4069-4085, 2016.

J5. **S. Shrestha, M.J. Serafino, J. Rico-Jimenez,** J. Park, **X. Chen,** S. Zhaorigetu, B.L. Walton, J.A. Jo, B.E. Applegate. Multimodal optical coherence tomography and fluorescence lifetime imaging with interleaved excitation sources for simultaneous endogenous and exogenous fluorescence. Biomedical Optics Express, 7(9): 3184-3197, 2016.

J6. B.H. Malik, **J. Lee, S. Cheng, R. Cuenca, J.M. Jabbour,** Y.S. Cheng, J. Wright, B. Ahmed, K.C. Maitland, and J.A. Jo. Objective detection of oral carcinoma with multispectral fluorescence lifetime imaging in vivo. Photochemistry and Photobiology, 92(5): 694-701, 2016.

J7. **P. Pande, S. Shrestha,** J. Park, I. Gimenez-Conti, J. Brandon, B.E. Applegate, J.A. Jo. Automated analysis of multimodal fluorescence lifetime imaging and optical coherence tomography data for the diagnosis of oral cancer in the hamster cheek pouch model. Biomedical Optics Express, 7(5): 2000-2015, 2016.

J8. **W. Kim, X. Chen**, J.A. Jo, B.E. Applegate. Lensless, ultra wideband fiber optic rotary joint for biomedical applications. Optics Letters, 41(9): 1973-1976, 2016.

J9. B.H. Malik, **J.M. Jabbour, S. Cheng, R. Cuenca,** Y.S. Cheng, J. Wright, J.A. Jo, K.C. Maitland. A novel multimodal optical imaging system for early detection of oral cancer. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology; 121(3): 290-300, 2016.

J10. **O. Gutierrez-Navarro,** D.U. Campos-Delgado, E.R. Arce-Santana, J.A. Jo. Quadratic blind linear unmixing: A graphical user interface for tissue characterization. Comput Methods Programs Biomed. November 2015. doi: 10.1016/j.cmpb.2015.10.016.

J11. **T. Hinsdale,** B. Malik, K. Maitland, J. Jo, **C. Olsovsky**. Volumetric structured Illumination microscopy enabled by a tunable focus lens. Opt Lett. 40(21):4943-6. doi: 10.1364/OL.40.004943, 2015*

J12. Z. Meng, G.I. Petrov, **S. Cheng,** J.A. Jo, K.K. Lehmann, V.V. Yakovlev, M.O. Scully. Lightweight Raman Spectroscope Using Time-correlated Photon-counting Detection. PNSA 112(40): 12315-12320, 2015.

J13. D.U. Campos-Delgado, **O. Gutierrez-Navarro**, E.R. Arce-Santana, A.J. Walsh, M.C. Skala, J.A. Jo. Deconvolution of fluorescence lifetime imaging microscopy by a library of exponentials. Optics Express, 23(18): 23748-23767, 2015.

J14. D.U. Campos-Delgado, **O. Gutierrez-Navarro**, E.R. Arce-Santana, M.C. Skala, A.J. Walsh, J.A. Jo. Blind Deconvolution Estimation of Fluorescence Measurements Through Quadratic Programming. Journal of Biomedical Optics, 20(7): 75010, 2015.

J15. D.U. Campos-Delgado, **O. Gutierrez-Navarro**, E.R. Arce-Santana, J.A. Jo. Extended output phasor representation of multi-spectral fluorescence lifetime imaging microscopy. Biomedical Optics Express, 6(6): 2088-2105, 2015.

J16. J.A. Jo, J. Park, **P. Pande, S. Shrestha, M.J. Serafino, J.J. Rico Jimenez**, F. Clubb, B. Walton; L.M. Buja, J.E. Phipps, M.D. Feldman, J. Adame, B.E. Applegate. Simultaneous Morphologic and Biochemical Endogenous Optical Imaging of Atherosclerosis. European Heart Journal – Cardiovascular Imaging, 2015. http://dx.doi.org/10.1093/ehjci/jev018

J17. **J.M. Jabbour**, J.L. Bentley, B.H. Malik, J. Nemechek, J. Warda, **R. Cuenca, S. Cheng**, J.A. Jo, and K.C. Maitland. Reflectance confocal endomicroscope with optical axial scanning for *in vivo* imaging of the oral mucosa. Biomedical Optics Express, 5(11): 3781-3791, 2014.

J18. **P. Pande, S. Shrestha**, J. Park, **M.J. Serafino**, I.B. Gimenez-Conti, J.L. Brandon, Y.S. Cheng, B.E. Applegate, J.A. Jo. Automated classification of optical coherence tomography images for the diagnosis of oral malignancy in the hamster cheek pouch. Journal of Biomedical Optics, 19(8): 086022, 2014.

J19. **O. Gutierrez-Navarro**, D.U. Campos-Delgado, E.R. Arce-Santana, K. Maitland, S. Cheng, J. Jabbour, B. Malik, R. Cuenca, J.A. Jo. Estimation of the number of fluorescent end-members for quantitative analysis of multispectral FLIM data. Optics Express, 22(10): 12255-12272, 2014.

J20. **S. Cheng, R. Cuenca, B. Liu,** B.H. Malik, **J. Jabbour**, K. Maitland, J.A. Jo. Handheld multispectral fluorescence lifetime imaging system for *in vivo* applications. Biomedical Optics Express, Vol. 5, No. 3, 921-931, 2014.

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A34. **S. Shrestha,** B.E. Applegate, J.A. Jo, B.L. Walton, S. Zhaorigetu. A combined swept source optical coherence tomography and fluorescence lifetime imaging system for morphological and biochemical investigations of atherosclerosis. SPIE Photonics West, February 2015.

A35. **S. Cheng, R. Cuenca,** B.H. Malik, **J.M. Jabbour,** Y.C. Cheng, J. Wright, **R. Rickel,** B.E. Applegate, K.C. Maitland, J.A. Jo. Compact handheld multispectral fluorescence lifetime imaging (FLIM) system for in vivo imaging of the oral mucosa. SPIE Photonics West, February 2015.

A36. B.H. Malik, **J. Lee, S. Cheng, R. Cuenca, J.M. Jabbour,** Y.C. Cheng, J. Wright, K.C. Maitland, J.A. Jo. Characterization of oral cancer with multispectral fluorescence lifetime imaging in the hamster model of oral carcinogenesis in vivo. SPIE Photonics West, February 2015.

A37. B.H. Malik**, J. Lee, S. Cheng, R. Cuenca, J.M. Jabbour,** Y.C. Cheng, J. Wright, K.C. Maitland, J.A. Jo. Detection of oral precancer with fluorescence lifetime imaging and reflectance confocal microscopy. SPIE Photonics West, February 2015.

A38. **S. Cheng, R. Cuenca, B. Liu,** B.H. Malik, **J. Jabbour,** K. Maitland, J.A. Jo. Handheld fluorescence lifetime imaging (FLIM) system with real-time image processing. SPIE Photonics West, February 2014.

A39. **P. Pande, S. Shrestha,** J. Park, **M.J. Serafino,** I. Gimenez-Conti, J.L. Brandon, B.E. Applegate, J.A. Jo. Multimodal optical imaging approach for in vivo diagnosis of oral cancer. SPIE Photonics West, February 2014.

A40. **O. Gutierrez-Navarro, P. Pande,** D.U. Campos-Delgado, E. Arce-Santana, M.O. Mendez, J.A. Jo. Joint end-member and spatial hypothesis testing for estimating the number of components in multispectral FLIM data. SPIE Photonics West, February 2014.

A41. **J. M. Jabbour, S. Cheng,** B.H. Malik, **R. Cuenca,** J.A. Jo, J. Wright, Y.L. Cheng, K.C. Maitland. Reflectance confocal microscopy of oral epithelial tissue using an electrically tunable lens. SPIE Photonics West, February 2014.

A42. **P. Pande, S. Shrestha,** J. Park, I. Gimenez-Conti, J. Brandon, B. Applegate, J.A. Jo. Multimodal Optical Imaging Approach for In-Vivo Diagnosis of Oral Cancer. OSA Optics in Life Sciences, April 2013.

A43. **P. Pande,** J.A. Jo. Application of Non-negative Matrix Factorization to Multispectral FLIM Data Analysis. SPIE Photonics West, February 2013.

A44. **P. Pande, S. Shrestha,** J. Park, F. Clubb, B. Applegate, J.A. Jo. Simultaneous High-Resolution Morphological And Biochemical Optical Imaging Of Atherosclerosis. SPIE Photonics West, February 2013.

A45. J.A. Jo **(Invited)**, **P. Pande, S. Shrestha,** B.E. Applegate. Nondestructive Morphological and Biochemical Optical Characterization of Biological Tissue for the Clinical Diagnosis of Oral Cancer. SHPE, November 2012.

A46. **P. Pande,** J.A. Jo. A Novel Molecular Imaging Approach of Fluorescence Lifetime Imaging Microscopy (FLIM) Based On Nonnegative Matrix Factorization Methods. WMIC, September 2012.

A47. J. Park, **P. Pande, S. Shrestha,** B.E. Applegate, F. Clubb, J.A. Jo. Biochemical Characterization of Coronary Atherosclerosis Based on Autofluorescence Imaging. SPIE Photonics West, January 2012.

A48. **P. Pande, S. Shrestha,** J. Park, F. Clubb, B. Applegate, J.A. Jo. Simultaneous High-Resolution Morphological And Biochemical Optical Imaging Of Atherosclerosis. SPIE Photonics West, January 2012.

A49. **S. Cheng, J. Jabbour,** K.C. Maitland, J.A. Jo. Novel Compact Endoscope Design for Simultaneous Wide-field Multispectral Fluorescence Lifetime Imaging. SPIE Photonics West, January 2012.

A50. **S. Shrestha, J. Park,** B.E. Applegate, **P. Pande,** J.A. Jo. MEMS-based hand-held imaging probe for multispectral fluorescence lifetime imaging. SPIE Photonics West, January 2012.

A51. **P. Pande,** J.A. Jo. Chemometric Analysis of Multispectral FLIM Data Based on Nonnegative Matrix Factorization Methods. SPIE Photonics West, January 2012.

A52. **J. Jabbour, S. Cheng,** J.A. Jo, K.C. Maitland. Combined macroscopic FLIM and microscopic reflectance confocal microscopy for epithelial imaging. SPIE Photonics West, January 2012.

A53. E. Seibel, J.A. Jo, Melville, Johnston, Naumann, and Saunders. Image-guided intervention in the human bile duct using scanning fiber endoscope system SPIE Photonics West, January 2012.

A54. **S. Shrestha,** J. Park, B.E. Applegate, **P. Pande,** J.A. Jo. A dual-modality imaging approach to early diagnosis of oral cancer. SPIE Photonics West, January 2012.

A55. **P. Pande, S. Shrestha,** J. Park, B. Applegate, J.A. Jo. In Vivo Detection of Oral Cancer Based on OCT-Derived Morphological and FLIM-Derived Biochemical Features of the Oral Mucosa. SBEC, April 2011

A56. J. Park, **P. Pande, S. Shrestha,** B.E. Applegate, F. Clubb, J.A. Jo. Multimodal Optical Imaging for Simultaneous High-Resolution Morphological and Biochemical Characterization of Coronary Atherosclerotic Plaque. SBEC, April 2011

A57. **S. Cheng, J. Jabbour,** K.C. Maitland, J.A. Jo. Novel Compact Endoscope Design for Simultaneous Wide-field Multispectral Fluorescence Lifetime Imaging. SBEC, April 2011

A58. **P. Pande,** J.A. Jo. Application of Nonnegative Matrix Factorization to Global Analysis of FLIM Data. SBEC, April 2011

A59. J.A. Jo, B.E. Applegate, J. Park, **P. Pande, S. Shrestha,** F. Clubb. Simultaneous High-Resolution Morphological And Biochemical Optical Imaging Of Atherosclerosis. AHA-ATVB, April 2011

A60. J. Park, **P. Pande, S. Shrestha,** B.E. Applegate, J.A. Jo. Simultaneous co-registered morphological and biochemical imaging of coronary atherosclerotic plaques using a dual-modal optical system combining OCT and FLIM. SPIE Photonics West, January 2011.

A61. **P. Pande, S. Shrestha,** J. Park, B.E. Applegate, J.A. Jo. In vivo detection of oral cancer based on OCT-derived morphological and FLIM-derived biochemical features of the oral mucosa. SPIE Photonics West, January 2011.

A62. **P. Pande, S. Shrestha,** J. Park, B.E. Applegate, J.A. Jo. In Vivo Detection of Oral Cancer Based on OCT-derived Morphological and FLIM-derived Biochemical Features of the Oral Mucosa. BMES, Oct 2010.

A63. **P. Pande, S. Shrestha,** J. Park, B.E. Applegate, J.A. Jo. In Vivo Detection of Oral Cancer Based on OCT-derived Morphological and FLIM-derived Biochemical Features of the Oral Mucosa. BMES, Oct 2010.

A64. **S. Shrestha,** J. Park, B.E. Applegate, **P. Pande,** J.A. Jo. Multimodal Optical Coherence Tomography and Fluorescence Lifetime Imaging combined system for diagnosis of oral cancer. BMES, Oct 2010.

A65. J. Park, B.E. Applegate, **S. Shrestha, P. Pande,** J.A. Jo. Simultaneous Co-registered Morphological and Biochemical Imaging of Coronary Atherosclerotic Plaques Using a Dualmodal Optical System Combining OCT and FLIM. BMES, Oct 2010.

A66. **S. Cheng, J. Jabbour,** K. Maitland, J.A. Jo. Novel Compact Flexible Endoscope Design for Simultaneous Wide-field Multispectral Fluorescence Lifetime Imaging Microscopy (FLIM). BMES, Oct 2010.

A67. J. Park, J.A. Jo, **S. Shrestha, P. Pande,** B.E. Applegate. Design and Development of an Integrated OCT and FLIM Catheter for Percutaneous Investigation of Atherosclerotic Plaques. BMES, Oct 2010.

A68. **S. Shrestha,** J.A. Jo, J. Park, **P. Pande,** B.E. Applegate. Design of a dual-modality imaging system using Optical Coherence Tomography and Fluorescence Lifetime Imaging Microscopy for anatomical and biochemical diagnosis of tissue. SPIE Photonics West, January 2010.

A69. **S. Shrestha,** J. Park, **P. Pande,** B.E. Applegate, J.A. Jo. Multimodality optical imaging combining Optical Coherence Tomography and Fluorescence Lifetime Imaging for morphological and biochemical tissue characterization. SPIE Photonics West, January 2010.

A70. J.A. Jo, B.E. Applegate, **S. Shrestha, X. Xiao, P. Pande**. Multimodality optical imaging combining Optical Coherence Tomography and Fluorescence Lifetime Imaging for morphological and biochemical tissue characterization. BMES Annual Meeting, October 2009.

A71. **P. Pande,** J.A. Jo. A Bayesian approach to deconvolution of time resolved fluorescence spectroscopy. BMES Annual Meeting, October 2009.

A72. J.A. Jo, B.E. Applegate, **S. Shrestha, X. Xiao, P. Pande.** Multimodality optical imaging combining Optical Coherence Tomography (OCT) and Fluorescence Lifetime Imaging (FLIM) for morphological and biochemical tissue characterization. NIH Workshop, Optical Diagnostic and Biophotonic Methods from Bench to Beside, October 2009.

A73. **P. Pande,** J.A. Jo. Online Analysis of Fluorescence Lifetime Imaging Microscopy (FLIM) Data Based on a Fully Automated Laguerre Deconvolution Method. ECI Conference on Advances in Optics for Biotechnology, Medicine and Surgery XI, July 2009.

A74. D. Jacob, R. Shelton, C. Huang, B.E. Applegate, **C.A Trivedi,** F. Clubb, B. Keller, J. Adame, J.A. Jo. Morphological and Biochemical Imaging of Coronary Atherosclerotic Plaques using Optical Coherence Tomography and Fluorescence Lifetime Imaging. Cardiovascular Research Technologies, March 2009.

A75. **Dabir, J.A.** Jo, **C. Trivedi, Y. Ryu.** Time-resolved fluorescence spectroscopy: on-line analysis using automated Laguerre deconvolution. HSEMB 2009, March 2009.

A76. X. Xiao, Q. Wan, **S. Shrestha,** J. A. Jo, B.E. Applegate. Development of a novel optical multimodality imaging system for simultaneous micro-anatomical and biochemical imaging of tissue in-vivo. HSEMB 2009, March 2009.

A77. **C. Trivedi,** J.A. Jo, P. Decuzzi. Towards Molecular Imaging of Atherosclerotic Plaques. HSEMB 2009, March 2009.

A78. **P. Pande,** J.A. Jo. Online analysis of fluorescence lifetime imaging microscopy (FLIM) data based on a fully automated laguerre deconvolution method. HSEMB 2009, March 2009.

A79. **P. Thomas**, J.A. Jo. Spatial classification of regions in fluorescence lifetime images of arterial walls. HSEMB 2009, March 2009.

A80. **C.A. Trivedi, C. Huang, Y. Ryu,** F. Clubb, B. Keller, J. Adame, J.A. Jo. Biochemical Imaging of Atherosclerosis by Fluorescence Lifetime Imaging (FLIM). SPIE Photonics West, January 2009.

A81. **C. Huang, C.A. Trivedi, Y. Ryu,** B.E. Applegate, D. Jacob, R. Shelton, F. Clubb, B. Keller, J. Adame, J.A. Jo. Morphological-biochemical imaging of atherosclerotic plaque by OCT and fluorescence lifetime imaging. BMES Annual Meeting, September 2008.

A82. **Huang, C.A. Trivedi, Y. Ryu**, F. Clubb, B. Keller, J. Adame, J.A. Jo. Characterizing atherosclerotic plaque biochemical composition by fluorescence lifetime imaging. BMES Annual Meeting, September 2008.

A83. **C.A. Trivedi,** J.A. Jo. Molecular imaging of atherosclerosis using conjugated microparticles and fluorescence spectroscopy. BMES Annual Meeting, September 2008.

A84. J.A. Jo, V.K. Ramanujan, B.E. Herman. Novel Fast Global Analysis for Fluorescence Lifetime Imaging Microscopy (FLIM) based on the Laguerre Expansion Technique: Method and Validation. SPIE Photonics West, January 2008.

A85. Y. Sun, J. Park, D.N. Stephens, J.A. Jo, L. Sun, J.M. Cannata, Q. Zhou, K.K. Shung, L. Marcu. Tissue diagnostic system combining time-resolved fluorescence spectroscopy and ultrasound imaging for localization and characterization of atherosclerotic plaques. SPIE Photonics West, January 2008.

A86. Y. Sun, R. Liu, D.S. Elson, C. Hollars, J.A. Jo, J. Park, Y. Sun, L. Marcu. Simultaneous time and wavelength resolved spectroscopy aiming to the real-time tissue diagnosis. SPIE Photonics West, January 2008.

A87. P. Butte, A.N. Mamelak, S. Bannykh, J.A. Jo, K. Black, L. Marcu. Intra-operative delineation of primary brain tumors by time-resolved fluorescence spectroscopy. SPIE Photonics West, January 2008.

A88. J.A. Jo, **K. Klein**, L. Marcu. Optimal emission bands for time-resolved fluorescence spectroscopy detection of vulnerable plaques. BMES Annual Meeting, September 2007.

A89. J.A. Jo, E. Kuwana, G. Vargas, M. Motamedi. Novel fast time-domain Fluorescence Lifetime Imaging (FLIM) deconvolution method: towards real-time FLIM applications. SPIE Photonics East, September 2007.

A90. D.Elson, J.A. Jo, C.W. Hollars, L. Marcu. Miniaturized side-viewing imaging probe for fluorescence lifetime imaging (FLIM): validation with fluorescence dyes, tissue structural proteins and cardiovascular tissue. SPIE-Photonics West, Jan. 2007.

A91. L. Marcu, J.A. Jo, Q. Fang, T. Papaioannou, J. Qiao, M. C. Fishbein, A. Dorafshar, T. Reil, D. Baker, J. Freischlag, L. Marcu. Detection of High-Risk Atherosclerotic Plaques by Time-Resolved Laser Induced Fluorescence Spectroscopy. American Heart Association, Scientific Session, Nov. 2005.

A92. J.A. Jo, Q. Fang, T. Papaioannou, J. Qiao, M. C. Fishbein, A. Dorafshar, T. Reil, D. Baker, J. Freischlag, L. Marcu. High-Risk Atherosclerotic Plaques Detection by Time-Resolved Laser Induced Fluorescence Spectroscopy. American Heart Association, Young Investigators Forum, Sep. 2005.

A93. J. A. Jo, Q. Fang, T. Papaioannou, L. Marcu. Laguerre nonparametric deconvolution technique of time-resolved fluorescence data: application to the prediction of concentrations in a mixture of biochemical components. Photonics West-BIOS, January 2004.

A94. Q. Fang, T. Papaioannou, J. A. Jo, R. Vaitha, A. Dorafshar, R. Reil, J. Qiao, M. C. Fishbein, J. A. Freischlag, L. Marcu. Validation of a time-resolved fluorescence spectroscopy apparatus in a rabbit atherosclerotic model. Photonics West-BIOS, January, 2004.

A95. T. Papaioannou, Q. Fang, J. A. Jo, R. Vaitha, A. Dorafshar, R. Reil, J. Qiao, M. C. Fishbein, J. A. Freischlag, L. Marcu. Time-resolved fluorescence spectroscopy and photobleaching of rabbit aortic wall: in-vivo vs. ex-vivo. Photonics West-BIOS, January, 2004.

A96. L. Marcu, P. Butte, J.A. Jo, T. Papaioannou, Q. Fang, B.K. Pikul, R.C Thompson, W.H. Yong, K.L. Black. Time-resolved fluorescence spectroscopy as tool for neurological surgery. Diagnostic Optical Spectroscopy, The European Conference on Biomedical Optics. June 2003.

A97. A. Blasi, J. A. Jo, E. Valladares, R. Juarez, A. Baydur, M.C.K. Khoo. Abnormal cardiovascular responses to non-respiratory arousals in obstructive sleep apnea syndrome. APSS 2003,. June 2003.

A98. Q. Fang, T. Papaioannou, J.A. Jo, K. Sharstry, R. Vaithe, L. Marcu. Compact and mobile time-resolved laser-induced fluorescence spectroscopy system for clinical investigation. Lasers Surg Med, S15: 53, 2003.

A99. J.A. Jo, A. Blasi, E. Valladares, R. Juarez, A. Baydur, L. Tsang, M.C.K. Khoo. Determinants of heart-rate variability in Obstructive Sleep Apnea Syndrome (OSAS) during wakefulness and sleep. BMES, October 2001.

A100. J.A. Jo, A. Blasi, E. Valladares, R. Juarez, A. Baydur, M.C.K. Khoo. Model-based assessment of autonomic control in Obstructive Sleep Apnea Syndrome (OSAS) during sleep. American Thoracic Society 97th International Conference, California. May 2001.

BOOK CHAPTERS

B1. L. Marcu, J.A. Jo, P. Butte, Fluorescence Lifetime Spectroscopy in Cardio and Neuroimaging. In Advances in Optical Imaging for Clinical Medicine, N. Iftimia, W. Brugge, D. Hammer (Wiley). 2011.

B2. V.K. Ramanujan, J.A. Jo, R. Ranjan, B.A. Herman, FLIM Microscopy With a Streak Camera: Monitoring Metabolic Processes in Living Cells and Tissues. In FLIM in Biology and Medicine, A. Periasamy and R.M. Clegg (Taylor & Francis-CRC Groups). 2010.

PATENTS

P1. US Patent 7890157. Method for fluorescence lifetime imaging microscopy and spectroscopy, J. A. Jo, Q. Fang, T. Papaioannou, L. Marcu. (Issued in 2011).

P2. US Patent 8089625. Time and Wavelength Multiplexed Temporal Spectroscopy Apparatus for the Characterization of Biological Materials, L. Marcu, J. A. Jo, D. Elsom. (Issued in 2012).

SELECTED INVITED LECTURES AND SEMINAR TALKS

International:

1. Novel Technologies for Quantitative Optical Image Guided Precision Medicine. Universidad Nacional Mayor de San Marcos, Lima, Peru, November 2018.
2. Novel Technologies for Quantitative Optical Image Guided Precision Medicine. Keynote Speaker, Professional Conference. Universidad Anáhuac Mayab, Merida, Mexico, May 2018.
3. Novel Technologies for Quantitative Optical Image Guided Precision Medicine. Keynote Speaker, Professional Conference. Instituto de Investigación en Comunicación Óptica, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico, May 2018.
4. Novel Fluorescence Lifetime Imaging Endoscopes For Early Detection Of Oral Cancer. Invited Speaker, Professional Conference. Opto-Andina, Lima, Peru, November 2017.
5. Novel Endoscopic Tools for Early Detection Of Oral Cancer. Invited Speaker, Professional Conference. CONIMERA, Lima, Peru, October 2017.
6. Autofluorescence Lifetime Imaging Endoscopy For Early Detection Of Oral Cancer. Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico, July 2017.
7. Early Detection of Oral Epithelial Cancer with Endogenous Fluorescence Lifetime Endoscopy. Invited Speaker, Professional Conference. OSA Latin America Optics and Photonics Conference, Medellin, Colombia, August 2016.
8. Clinical and Pre-Clinical Applications of Fluorescence Lifetime Imaging (FLIM) Endoscopy. Pontificia Universidad Catolica del Peru, Lima, Peru, July 2016
9. Optical Imaging Technologies for Clinical and Pre-Clinical Applications. Universidade de Sao Paulo, Sao Paulo, Brazil, December 2015.

10. Optical Imaging Technologies for Clinical and Pre-Clinical Applications. Universidad Catolica del Peru, Lima, Peru, July 2015.
11. Optical Imaging Technologies for Clinical and Pre-Clinical Applications. Universidad Nacional Mayor de San Marcos, Lima, Peru, July 2015.
12. Optical Imaging Technologies for Clinical and Pre-Clinical Applications. Universidad Nacional Mayor de San Marcos, Lima, Peru, July 2015.
13. Biomedical Engineering: Challenges and Opportunities. Universidad Peruana de Ciencias, Lima, Peru, July 2015.
14. Multimodal Optical Imaging Approaches for Early Detection of Oral Epithelial Cancer. Invited Speaker, Professional Conference. OSA Optics in the Life Sciences Congress, Vancouver, Canada, April, 2015.
15. Multimodal Optical Imaging for Pre-Clinical and Clinical Applications. Universidade de Sao Paulo, Sao Paulo, Brazil, May 2014.
16. Multimodal Optical Imaging for Pre-Clinical and Clinical Applications. Universidad de Costa Rica, San Jose de Costa Rica, August 2013.
17. Optical Imaging Tools for Improving Early Diagnosis of Oral Cancer. Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico, April 2013.
18. Biochemical Mapping of Atherosclerosis by Autofluorescence Imaging. Invited Speaker, Professional Conference. Optics in Cardiology, Rotterdam, the Netherlands, March 2013.
19. Simultaneous High-Resolution Morphological And Biochemical Optical Imaging for Pre-Clinical and Clinical Applications. Keynote Speaker, Professional Conference. Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico, October 2012.
20. Optical Imaging Tools for Improving Early Clinical Diagnosis. Keynote Speaker, Professional Conference. Universidad Anáhuac Mayab, Merida, Mexico, March 2012.

National:

1. Novel Technologies for Quantitative Optical Image Guided Precision Medicine. University of Oklahoma, Norman, OK, June 2018.
2. Novel Technologies for Quantitative Optical Image Guided Precision Medicine. Weekly research seminar in biomedical engineering. Texas A&M University, College Station, TX, February 2018.
3. Label-Free Fluorescence Lifetime Imaging Endoscopy for Early Detection Of Oral Cancer. Weekly research seminar in electrical and computer engineering. Texas A&M University, College Station, TX, April 2017.
4. Towards early detection of oral epithelial cancer with endogenous fluorescence lifetime endoscopy. Invited Speaker, Professional Conference. SWRM American Chemical Society, Galveston, Texas, November 2016.
5. Fluorescence Lifetime Imaging for Clinical and Pre-Clinical Applications. Weekly research seminar. Florida International University, April 2016.
6. In Vivo Detection of Oral Epithelial Pre-Cancer and Cancer by Endogenous Fluorescence Lifetime Imaging (FLIM) Endoscopy. Invited Speaker, Professional Conference. OSA BIOMED, April 2016.
7. Multimodal Optical Imaging for Pre-Clinical and Clinical Applications. Weekly research seminar. UT Arlington, November 2014.
8. Multimodal Optical Imaging for Pre-Clinical and Clinical Applications. Wright State University, Dayton, Ohio, July 2013.
9. Biochemical Mapping Of Collagen And Lipid Content Of Atherosclerotic Plaques With Endogenous Fluorescence Lifetime Imaging. Weekly research seminar. Texas Heart Institute, September 2012.
10. Nondestructive Morphological and Biochemical Optical Characterization of Biological Tissue for the Clinical Diagnosis of Oral Cancer. Invited Speaker, Professional Conference. SHPE, November 2012.

INTERNATIONAL SERVICES AND DIVERSITY INITIATIVES

As a member of the underrepresented community in science and engineering, I have been focused on developing different academic and research collaborative efforts with different countries in **Latin America**.

Mexico: Since 2007, I have established an internship program with the Department of Biomedical Engineering at the Universidad Iberoamericana in Mexico City. Through this program, senior students from that university have the opportunity to spend six months in my lab working under my supervision on their senior research projects. Five students have already completed their internship at TAMU and successfully graduated from the Universidad Iberoamericana. Since 2012, I have also established a research collaboration with the recently created Program in Biomedical Engineering at the Universidad Autonoma de San Luis Potosi, in Mexico. As part of this collaboration, I am co-advising graduate students from that institution and have published 7 journal articles with my colleagues in Mexico. In addition, seed funding from the TAMU-CONACYT program has been secured twice (for a total of ~$50K) to continue expanding this collaboration.

Brazil: Since 2014, I have established a research collaboration with the University of Sao Paulo (Sao Paulo, Brazil). As part of this collaboration, I have secured the equivalent of ~$120K from the State of Sao Paulo, to develop optical instrumentation that will be evaluated for different clinical applications. We are also coordinating a number of multicenter studies with different hospitals in the State of Sao Paulo, to further validate some of our optical imaging technologies for different pre-clinical and clinical applications in atherosclerosis and cancer.

Peru: Starting in 2016 and with seed funding ($20K) from the Government of Peru, I will establish a research partnership with the Univerisad Peruana de Ciencias (UPC) and the Pontificia Universidad Catolica del Peru (PUCP) in Lima-Peru. This partnership will allow exchanging both undergraduate and graduate students between TAMU and UPC, as well as exploring collaborative research and funding opportunities between these two academic institutions.

Others:

- Co-advisor of engineering Ph.D. students from the Universidad Autonoma de San Luis Potosi, Mexico
- Co-advisor of physics Ph.D. students from the University of Sao Paulo, Brazil
- Co-advisor of engineering senior students from the Univerisad Peruana de Ciencias, Lima-Peru
- Reviewer for CONCYTEC (Peruvian NSF) research proposals
- Reviewer for CONCYTEC (Peruvian NSF) Master of Engineering program proposals
- Reviewer for research proposals of the Pontificia Universidad Catolica del Peru research program