Prepared: September 28, 2018

University at Buffalo, State University of New York
CURRICULUM VITAE

Name: Natesh Parashurama

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EDUCATION

1990-1994	The Massachusetts Institute of Technology (MIT)	B.S. Chem. Eng. w/ Biology
1995-1999	University at Buffalo, School of Medicine and Biomedical Sciences, State Univ. of New York	M.D. Medicine
1999-2001	Boston University	Resident, General Surgery
2001-2004	Rutgers University, the State University of New Jersey	Ph.D.
2004-2007	Harvard Medical School	Predoctoral Fellow
2008-2012	Stanford University	Postdoctoral Fellow
2013-2015	University of California at San Francisco (UCSF)	Fellow

PRINCIPAL POSITIONS HELD

1994 -1995	Massachusetts General Hospital Harvard Medical School Department of Surgery	Research Assistant	Cell Biology
2004-2007	Massachusetts General Hospital Harvard Medical School Department of Surgery	Research Fellow	Stem Cell Engineering
2004-2007	Shriners Burns Hospital Massachusetts General Hospital Harvard Medical School	Scientific Staff	Stem Cell Engineering
2008 - 2012	Stanford University Department of Radiology	Postdoctoral Fellow	Molecular Imaging
2012 - 2015	University of California, San Francisco Department of Obstetrics and Gynecology	Adjunct Instructor	Human Stem Cells

HONORS AND AWARDS

1989 -1990	New York State Regents Scholarship	Smithtown HS West
1989 -1990	Class of ‘90 Valedictorian	Smithtown HS West
1991- 1994	MIT Undergraduate Research Program	MIT
1993	William H. Stewart Award	MIT

1994	MIT Undergraduate Honors Thesis	MIT
1995	Roswell Park Cancer Institute Fellowship	University at Buffalo
1996	Research Foundation Fellowship	University at Buffalo
2001-2002	Best Teaching Assistant Award	Rutgers University
2001-2003	NIH Biotechnology Fellowship	Rutgers University
2004-2007	NIH NIGM T32 Training in Stem Cells	Harvard Medical School
2008	Society for Biological Engineering (SBE), Invited Speaker and Travel Award	Harvard Medical School
2008	Stanford Dean's Fellowship	Stanford University
2009-2011	NIH NIBIB T32 Training in Molecular Imaging	Stanford University
2009	Young Investigator Award, International Society of Cell Therapy (ISCT)	Stanford University
2009	Stanford Dean's Fellowship, 2nd year renewal	Stanford University
2009	Stanford Leadership Matters (Invited)	Stanford University
2012-2015	California Institute of Regenerative Medicine (CIRM) Fellowship	University of California, San Francisco
2017	CSTEP distinguished research mentor	University at Buffalo
2017	2017 Margulis Award-best original scientific article (finalist, 1/6) in *Radiology* from the Radiological Society of North America (RSNA)	University at Buffalo
2018	Buffalo Blue Sky Silver Coin- for proposals submitted 2016-2018	University at Buffalo

STUDENT AWARDS

2016	Saber Meamardoost- Graduate student on NYSTEM (SciRM)training grant, 2-year graduate stipend	University at Buffalo
2017	Mitch Maloy-Graduate student, Presidential Scholar Award	University at Buffalo
2018	Ogechi Ogoke- Western New York Prosperity Graduate Fellowship 3-year graduate stipend	University at Buffalo
2018	Allison Kalinousky (undergraduate) (REU) Research Experiences for Undergrads	Vanderbilt University
2018	Mitch Maloy, Graduate student on NYSTEM (SciRM) training grant, 2-year graduate stipend	University at Buffalo

PUBLICATIONS

IMPACT

Google scholar H-Index- 10, i10-index 10
Research gate RG score- 25.16, 1293 reads
Total Citations 699

PAPERS PRIOR TO DOCTORAL DEGREE

1. Ezzell RM, Goldmann WN, Wang N, **Parashurama N**, Ingber D. Vinculin promotes cell spreading by mechanical coupling of integrins to cytoskeleton. Exp Cell Res. 1997 Feb 25; 231(1): 14-26. **IF: 3.3 (2017)**, **Citations: 266**

2. Hicks Jr. WL, Hall III LA, Hard R, Gardella J, Bright F, **Parashurama N**, Lwebuga-Mukasa J, Sigurdson L. Keratinocyte growth factor and autocrine repair in airway epithelium. Arch Otolaryngol Head Neck Surg. 2004: 130(4): 446-9. **IF: 1.31 (2004)**, **Citations: 10**

PAPERS WITH DOCTORAL ADVISOR

3. Park J, Cho CH, **Parashurama N**, Li Y, Berthiaume F, Toner M, Tilles AW, Yarmush ML. Microfabrication-based modulation of embryonic stem cell differentiation. Lab Chip. 2007 Aug; 7(8): 1018-28. **IF: 5.068 (2004)**, **Citations: 153**

4. Cho CH, **Parashurama N**, Park EY, Suganuma K, Nahmias Y, Park J, Tilles AW, Berthiaume F, Yarmush ML. Homogenous Differentiation of hepatocyte-like cells from embryonic stem cells: Applications for the treatment of liver failure. FASEB. 2008; March; 22(3): 898-909. **IF: 7.049 (2008)**, **Citations: 90**

5. **Parashurama N**, Nahmias Y, Cho CH, Berthiaume F, Tilles AW, Yarmush ML. Activin alters kinetics of (hepatic) endoderm induction in collagen gel cultures of embryonic stem cells. Stem Cells. 2008 Feb; 26(2): 474-84. **IF: 7.74 (2008), Citations: 28**

6. Banerjee I, Spandan M, **Parashurama N**, Yarmush ML. An integer programming formulation to identify the sparse network architecture governing differentiation of embryonic stem cells. Bioinformatics. 2010 May 15; 26(10): 1332-9. **IF: 4.88 (2010), Citations: 8**

PAPERS WITH POSTDOCTORAL ADVISOR

7. O'Sullivan T, Monro E, **Parashurama N**, Conca C, Gambhir SS, Harris JS, Levi O. Implantable semiconductor biosensor for continuous *in vivo* sensing of far-red fluorescent molecules. Opt Express. 2010 Jun 7; 18(12): 12513-25. **IF: 3.75 (2010), Citations: 34**

8. Ito K, Smith BR, **Parashurama N**, Yoon JK, Song SY, Miething C, Mallick P, Lowe SW, Gambhir SS. Unexpected dissemination patterns in lymphoma progression revealed by serial imaging within a murine lymph node. Cancer Res. 2012 Dec 1; 72(23): 6111-8. **IF: 8.65 (2010), Citations: 17**

9. **Parashurama N***, Lobo NA*, Ito K, Mosely A, Habte F, Smith BR, Lam J, Weissman I, Clarke MF, Gambhir SS. Remodeling of endogenous mammary epithelium by breast cancer stem cells. Stem Cells. 2012 Oct; 30(10): 2114-27. (Featured as Cover Article) **IF: 7.71 (2012), Citations: 25**

10. Kotsuma M*, **Parashurama N***, Smith BR, Wo J, Ito K, Gambhir SS. Nondestructive, serial *in vivo* imaging of a tissue flap using a tissue adhesion barrier: Applications for intravital microscopy imaging in the mammary fat pad and lymph node. IntraVital. 2012 July; 1(1): 69-76. (Featured as Cover Article) **IF: none, Citations: 5**

11. **Parashurama N**, O'Sullivan T, De La Zerda A, Levi O, Harris J, Gambhir SS. *In vivo* continuous sensing of the NIR molecular probe RGD-Cy5.5 in tumor explant models with a Vertical Cavity Surface Emitting Laser (VCSEL). J Biomed Opt. 2012 Nov; 17(11): 117004. **IF: 2.75 (2012), Citations: 5**

12. O'Sullivan T*, Heitz R*, **Parashurama N***, Barkin DB, Wooley BA, Gambhir SS, Harris JS, Levi O. Real-time, continuous fluorescence sensing in a freely-moving subject with an implanted hybrid VCSEL/CMOS sensor. Biomed Opt Express. 2013 Jul 15; 4(8): 1332-41. **IF: 3.65 (2012), Citations: 6**

13. Ahn BC*, **Parashurama N***, Ramasamy P, Patel M, Ziv K, Bhaumik S, Yaghoubi SS, Gambhir SS. Noninvasive reporter gene imaging of human Oct4 (pluripotency) dynamics during the differentiation of embryonic stem cells in living subjects. Mol Imaging Biol. 2014 May 21. **IF: 2.77 (2014), Citations: 14**

* Denotes co-first author paper

At University at Buffalo

14. **Parashurama N**, Ahn BC, Ito K, Ikeno F, Ziv K, Swanson J, Merk D, Chung J, Lyons J, Yerushalmi D, Teramoto T, Kosuge H, Dao C, Ray P, Patel M, Chang Ya-fang, Bhaumik S, Yaghoubi S, Willmann J, McConnell M, Dash R, Brinton T, Yang P, Yock P, Robbins RC, Gambhir SS. Molecular imaging of cardiac cell transplantation Part I; Reporter gene design, characterization, and optical *in vivo* imaging. Radiology. 2016 Sep; 280(3):826-36. **IF: 6.87 (2014), Citations: 8**

15. **Parashurama N**, Ahn BC, Ito K, Ikeno F, Ziv K, Swanson J, Merk D, Chung J, Lyons J, Yerushalmi D, Teramoto T, Kosuge H, Dao C, Ray P, Patel M, Chang Ya-fang, Bhaumik S, Yaghoubi S, Willmann J, McConnell M, Dash R, Brinton T, Yang P, Yock P, Robbins RC, Gambhir SS. Molecular imaging of cardiac cell transplantation Part II; *In vivo* large animal imaging with PET-CT and MRI. Radiology. 2016 Sep; 280(3):815-25. **IF: 6.87 (2014), Citations: 8**

16. Denson, KE, Mussell AL, Shen H, Truskinovsky A, Yang N, **Parashurama N**, Chen Y, Frangou C, Yang F, Zhang J. The Hippo Signaling Transducer TAZ Regulates Mammary Gland Morphogenesis and Carcinogen-induced Mammary Tumorigenesis. Sci Rep. 2018; 8: 6449. **IF: 4.12 (2017), Citations: 0**

PAPERS AS CORRESPONDING AUTHOR

At University at Buffalo, *Reviews*

17**.** Momeni A, Neelamegham S, **Parashurama N**. Current challenges for the targeted delivery and molecular imaging of stem cells in animal models. Bioengineered. 2016 Nov 4:1-9 **IF: 1.64 (2017), Citations: 1**

18. Ogechi O., Oluwole J, **Parashurama N**. Bioengineering considerations in liver regenerative medicine. Journal of Biological Engineering. 2017 Nov; 11:46:1-16. **IF: 5.26 (2017), Citations: 6**

19. Ogechi Ogoke, Mitch Maloy, Meamardoost S, **Parashurama N**. Going big is small. Creating (hepatobilliary and pancreatic) organoids for regenerative medicine. Chemical Engineering Progress (CEP), American Institute of Chemical Engineering (AICHE), Translational Medicine Sup., May 2018, pp 2-10. **IF: ?, Citations: 0**

20. Willadsen, M., Chaise M, Yarovy I, Zhang AQ, **Parashurama N**. Molecular imaging and regenerative medicine. Bioengineering and Translational Medicine (American Institute of Chemical Engineering (AICHE) Journal), Review pp 1-24 **in press,** DOI: 10.1002/btm2.10114**.**

SUBMITTED

21. Zhou F., Kroetsch A, Huang X, Nguyen V, Ogoke O, **Parashurama N**, Park S. Engineered circularized peptide for high affinity antibody detection. **Re**-**Submitted 4/26/18**

22**.** Zabala M, Lobo N, Antony J, Lam J, **Parashurama N**, Adorno M, Qian D, Kalinsky T, Sim S, Sanchez K, Dirbas FM, Somlo G, Quake SR, Clarke MF. LEFTY1 inhibits BMP7 signaling to promote long-term mammary epithelial proliferation through SMAD inhibition., Re- **Submitted.**

IN PREPARATION

23. Ogoke O., Maloy M., **Parashurama N**. Engineering hepatobilliary and pancreatic organoids for regenerative medicine. **in preparation**. Review.

24**.** Maloy, **Parashurama N**. In Vivo Differentiation of Human Pancreatic Progenitors to Treat Type 1 Diabetes. **In preparation**. Review.

25. Willadsen M, Yarovoy I, Zhang AQ, Spernyak J, Seshadri M, McGray R, Odunsi K, **Parashurama N**. Optical in vivo and ex vivo distribution of T cell preparation in mice.

26. Ogoke O, Meamardoost S, Maloy M, , Szeglowski A, Mon T, **Parashurama N**. Stem cell engineering of the endoderm. **In preparation.** Review.

27. Ogoke O, Ott, C, Kalinousky A, Mon T, **Parashurama N**. Miniaturized organoid model of early liver development. **In preparation**.

28. Ogoke O, Ott, C, Kalinousky A, Mon T, **Parashurama N**. Hepatic organoids derived from human pluripotent stem cells. **In preparation**.

29. Ogoke O., Maloy M., Mon T, **Parashurama N.** A novel protocol for enhancing endoderm induction from pluripotent stem cells. **In preparation**.

30. Mon T, Ogoke O, **Parashurama N.** Reprogramming cell to endoderm by understanding and re-engineering developmental master regulatory gene circuits (DRGC). **In preparation**.

31. Mon T, Maloy M, Ogoke O, Parashurama N. A new endoderm induction protocol for hepatobiliary and pancreatic differentiation. **In preparation**.

32. Maloy M, Ferrer M, Parashurama N. Pancreatic differentiation of pluripotent stem cells. **In preparation**.

CONFERENCE PROCEEDINGS

O'Sullivan TD, Munro EA, De la Zerda A, **Parashurama N**, Walls Z, Levi O, Gambhir SS, and Harris JS. Implantable optical biosensor for *in vivo* molecular imaging. Proceedings of SPIE. The International Society for Optical Engineering 7173, Optical Fibers and Sensors for Medical Diagnostics and Treatment Applications IX, San Jose CA, 2009; 7173-09. **Citations: 7**

O'Sullivan TD, Munro EA, Conca C, **Parashurama N**, De la Zerda A, Gambhir SS, Harris JS, and Levi O. Near-infrared *in vivo* fluorescence sensor with an integrated dielectric emission filter. CLEO (Conference on Lasers and Electro-Optics)/International Quantum Electronics Conference, OSA (Optical Society of America, 2009) Technical Digest. Baltimore MD, 2009; JWA49. **Citations: 4**

Heitz RT, Barkin RT, O'Sullivan TD, **Parashurama N**, Gambhir SS, Wooley BA. A low noise current readout architecture for fluorescence detection in living subjects. Solid-State Circuits Conference Digest of Technical Papers ISSCC (International Solid State Circuits Conference). San Francisco CA, 2011; 308-310. **Citations: 11**

PROTOCOLS SUBMITTED

IACUC Protocol CCE05027Y "**Stem cell transplantation and in vivo imaging**" Accepted Jan 2018

Clinical complete research protocol HRP 503- "Retrospective Examination of Surgically Treated Ectopic Pregnancies to motivate stem cell research", To be submitted Oct 2018.

PATENTS/ DISCLOSURES

1) A method for generating 3D liver tissue (Disclosure in progress, University at Buffalo)
2) A method for controlling stem cell-derived progenitor cells (University at Buffalo)
3) Composition and method for imaging stem cells US Patent # 20110059439
4) Methods for opening and closure during vascular access for percutaneous procedures Provisional 5/10/10
5) Approaches for diagnosing the etiology of presyncope/ syncope in patients indicated for ambulatory cardiac rhythm monitoring Provisional 3/10/10
6) Approaches for intravascular detection of PET agents Disclosed 1/11
7) Approaches for noninvasive detection of hemodynamics Disclosed 1/11

COMPANY (Start up, May 2018)

Name: *Livandala*- a company that generates three-dimensional (3D) liver tissue from human stem cells for therapeutic and pharmaceutical applications, started May 2018. CEO Natesh Parashurama, CSO Ogechi Ogoke (Graduate Student)

Participation in ZAP! Program- ZAP! Is a program in collaboration with NSF I-Corps program and UB research foundation, in collaboration with UCLA and IN-LA. ZAP introduces participants to the Lean Startup methodology and teaches techniques to conduct customer discovery.

-Attended statewide program in NYC May 10 and May 18th at SUNY Global Center, 116 E 55th Street, New York, NY

-Presented the company, assessed business plans, customer segments, conducted 5 questionnaires for Dr. Parashurama's contacts in the biopharmaceutical industry

-Obtained $1200 in support to conduct work

NSF I-Corps TM Site Program at UB – NSF I-Corps is intended explore the commercial viability of the technology through workshops, homework and customer discovery

-Attended university-side program- Sept 13th, Sep 27th, Oct 11th

-Obtained $1200 to perform customer engagement, for conference in San Francisco in November

-Several meetings with Livandala mentor at the UB tech transfer office

PRESENTATIONS

ORAL PRESENTATIONS

AT UNIVERSITY AT BUFFALO

External/Invited

State University of New York at Albany, Imaging symposium, "Molecular imaging and regenerative medicine," October 2018"

UC Davis Medical Center, Primary Schlerosing Cholangitis Partners Seeking a Cure Conference Meeting, "Current state of liver stem cells/regenerative medicine research: An update and clinical implications," June 2018

Cleveland Clinic, Primary Schlerosing Cholangitis Partners Seeking a Cure Conference Meeting, "Current state of liver stem cells/regenerative medicine research: an update and clinical implications," June 2017

Roswell Park Cancer Institute, Center for Immunotherapies "Concepts and tools for in vivo, noninvasive, multimodality, cell imaging of immunotherapies," September 2016

Roswell Park Cancer Institute Annual Retreat, July 2016, "Molecular imaging tools for in vivo imaging"

External/Invited- Student Presentations

AICHE (American Institute of Chemical Engineering), Pittsburgh PA, "Developmentally inspired hepatic organoids derived from human pluripotent stem cells" Ogechi Ogoke, October 2018,

AICHE, Pittsburgh PA, "A miniaturized organoid model of early liver development" Ogechi Ogoke, October 2018,

AICHE, Pittsburgh PA, "Reprogramming of liver cell lines to definitive endoderm by understanding and re-engineering developmental master regulatory gene circuits (DRGC)" Tala Mon, Thursday, November 1, 2018

AICHE, Pittsburgh PA, "Reprogramming of liver cell lines to definitive endoderm by understanding and re-engineering developmental master regulatory gene circuits (DRGC)" Tala Mon, Thursday, November 1, 2018,

BMES (Biomedical Engineering Society), Atlanta, GA, "Induction of definitive endoderm from human pluripotent stem (hPSC) cells" Tala Mon October 2018

AICHE, Minneapolis, MN, "Engineering the liver diverticulum from human pluripotent stem cells" Ogechi Ogoke, October 2017, Bioengineering and Translational Medicine Conference,

AICHE, Minneapolis, MN, "Quantitative In vivo & ex vivo multimodality cell Imaging of antigen-specific T-cells in murine metastatic ovarian cancer", Matthew Willadsen, October 2017 Bioengineering and Translational Medicine Conference

Internal

University at Buffalo, Transplant biology seminar “Liver/Pancreatic regenerative medicine and molecular imaging” November 2018

University at Buffalo, Department of Oral Biology Seminar, Nov 2017 “Building organs from human stem cells and non-invasive imaging of stem cells in living subjects and patients”

University at Buffalo, School of Engineering and Applied Sciences, Institute for Lasers, Photonics, and Biophotonics, Aug 2017 ““Regenerative medicine and multimodality molecular imaging”

University at Buffalo, Conversations in the Disciplines (CID) Meeting, February 2017.
“3D organoid cultures for differentiation and disease modeling”

University at Buffalo, School of Medicine and Biomedical Sciences, Department of Nuclear Medicine, November 2016
“In vivo cell imaging with state of the art positron emission tomography”

University at Buffalo, School of Medicine and Biomedical Sciences, Department of Pathology and Anatomical Sciences, November 2016, “In vivo molecular imaging, state of the art”

University at Buffalo, School of Medicine and Biomedical Sciences, Department of Endocrinology, Diabetes Center, September, 2016, “3D Organogenesis from Stem Cells”

Clinical Translational Research Center, Department of Medicine, University at Buffalo, Buffalo NY, February 12th, 2016
“Liver Organogenesis from Human Stem Cells “

Clinical Translational Research Center, Department of Medicine, University at Buffalo, Buffalo NY , February 19th, 2016
“Molecular imaging of cell therapy, stem cells, regeneration, and cancer“

PREVIOUS

UCSF Center for Reproductive Sciences (CRS), San Francisco CA, February 2013, Weekly Seminar Series “In vivo imaging of stem cells: approaches and applications”

UCSF Stem Cell Seminar Series, San Francisco CA, February 2013, “In vivo imaging of stem cells: approaches and applications”

Stanford University, Department of Radiology, Canary Center for Early Detection of Cancer, February, 2015
“Nanophotonic devices for single cell, genome-wide, noninvasive assessment of epigenetic states in stem cells and cancer"

AICHE (Amer. Inst. Chem. Engineering) Annual Meeting, Atlanta GA (6cs), November, 2014
Session: Biomaterials Faculty Candidate Session, “Liver regenerative medicine and *in vivo* molecular imaging for the study of *in vivo* liver organogenesis, liver disease, and development of new diagnostics and therapeutics”

AICHE Annual Meeting, Minneapolis MN (150g), November 2011 “Breast cancer CSC display novel *in vivo* imaging features, reminiscent of development, during early tumor progression”

AICHE Annual Meeting, Minneapolis MN (728c), November 2011, “Translating stem cells-molecular imaging of stem cell transplantation in porcine myocardium using clinical MRI and PET-CT”

AICHE Annual Meeting, Minneapolis MN (683a), November 2011, “Noninvasive, optical, continuous, real-time molecular sensing and kinetic modeling using a novel, near-Infrared, implantable, microfabricated VCSEL based-biosensor”

WMIC (World Molecular Imaging Congress) Montreal CA (649999), September 2009, “Molecular imaging of cell transplantation in porcine myocardium using clinical MRI and PET-CT”

WMIC Montreal CA (650038), September 2009, “Imaging of the birth of a tumor from cancer stem cells using intravital microscopy”

SBE (Society of Biological Engineering, AICHE), Coronado CA, January 2008, First International Conference on Stem Cell Engineering, “Activin alters kinetics of endoderm induction in collagen gel cultures of embryonic stem cells”

AICHE (Amer. Inst. Chem. Engineering) Annual Meeting, Salt Lake City UT (219B), October 2007, “Activin alters kinetics of endoderm induction in collagen gel cultures of embryonic stem cells”

POSTER PRESENTATIONS

AT UNIVERSITY AT BUFFALO

AICHE, Minneapolis, MN, “Controlling Endodermal Cell State by Understanding and Re-engineering Developmental Master Regulatory Gene Circuits” October 2017, Saber Meamardoost, Annual AICHE conference

AICHE, Minneapolis, MN, "Engineering the Liver Diverticulum from Human Pluripotent Stem Cells" Ogechi Ogoke, October 2017

AICHE, Minneapolis, MN, "Quantitative In Vivo & Ex Vivo Multimodality Cell Imaging of Antigen-Specific T-Cells in Murine Metastatic Ovarian Cancer", Matthew Willadsen, October 2017 Annual AICHE conference, Minneapolis, Minnesota

New York Stem Cell Foundation (NYSCF) Annual Conference, New York, NY, “Controlling Endodermal Cell State by Understanding and Re-engineering Developmental Master Regulatory Gene Circuits” October 2017, Saber Meamardoost,

NYSCF Annual Conference, New York, NY, "Engineering the Liver Diverticulum from Human Pluripotent Stem Cells" Ogechi Ogoke, October 2017

NYSCF Annual Conference, New York, NY "Quantitative In Vivo & Ex Vivo Multimodality Cell Imaging of Antigen-Specific T-Cells in Murine Metastatic Ovarian Cancer,” Matthew Willadsen, October 2017

International Conference on Stem Cell Engineering, Society for Biological Engineering (SBE) of AICHE “A Novel Noninvasive, Quantitative Molecular Imaging Platform for Assessing Transcriptional States during Endoderm and Hepatocyte Formation from Human Pluripotent Stem Cells,” (# 477391), Saber Meamardoost, October 2016.

WMIC World Molecular Imaging Congress,“A Novel Noninvasive, Quantitative Molecular Imaging Platform for Assessing Transcriptional States during Endoderm and Hepatocyte Formation from Human Pluripotent Stem Cells,” (# 477391), Saber Meamardoost, October 2016.

PREVIOUS

BMES (Biomedical Engineering Society) Annual Meeting, San Antonio TX, November 2014
Faculty Candidate Session

AICHE (American Institute of Chemical Engineering) Annual Meeting, Atlanta GA, October 2014
Faculty Candidate Session

UCSF Center for Reproductive Sciences (CRS), San Francisco CA, May 2013

CIRM (Calif. Institute of Regenerative Medicine) Annual Conference, San Francisco CA, March 2013

WMIC World Molecular Imaging Congress (649957), Montreal CA, September 2009

Stanford Photonics Research Center (SPRC) Annual Symposium, Stanford CA, September 2009

BMES (Biomed. Engineering Society) Annual Meeting, Los Angeles CA, October 2007

Center for Engineering in Medicine, Methods in Bioengineering Conference, Boston MA, June 2007

Harvard Stem Cell Institute Stem Cell Symposium, Boston MA, May 2007

Harvard Stem Cell Institute, Tony & Shelly Malkin Stem Cell Symposium, Boston MA, May 2005

University at Buffalo School of Medicine (State University of New York), Buffalo NY, June 1997

PRE-DOCTORAL RESEARCH EXPERIENCES

Harvard Medical School, Massachusetts General Hospital, Boston MA, 1992-94
Mentor: Mehmet Toner PhD, Professor of Bioengineering

Harvard Medical School, Massachusetts General Hospital, Boston MA, 1995
Mentor: Robert M. Ezzell PhD, Asst. Professor of Cell Biology

Harvard Medical School, Massachusetts General Hospital, Boston MA, 1995
Mentor: Mehmet Toner PhD, Prabhas V. Moghe PhD, Postdoctoral Associate (Currently Professor, Rutgers University)

Roswell Park Cancer Institute(RPCI), Buffalo NY 1995-6
Mentor: Wesley L. Hicks Jr., MD, DDS, RPCI Student Summer Fellowship Program

Roswell Park Cancer Institute, Buffalo NY, 1996-7
Mentor: Wesley L. Hicks Jr., MD, DDS.

TEACHING EXPERIENCE

Course Instructor and Lecturer

CCE 220 Biotechnology for Chemical Engineers (New Core Course) Spring 2017, 2018
Department of Chemical and Biological Engineering

CE 405/505 Bioengineering principles of molecular imaging (New Graduate Course) Spring 2017, 2018
Department of Chemical and Biological Engineering

Department of Biology, San Francisco State University Fall 2013
Course: Stem Cell Biology, Biology 861 (Class size 18 students)

- Combined lecture and journal club discussion class- covering both science and technology (engineering and imaging) articles, several topical lectures in pluripotent, adult, and cancer stem cell research
- Evaluated students based on oral presentations, written analysis, and class discussions

Innovation Lecture Series, Co-Coordinator Fall/Spring 2013
University of California, Berkeley Biomedical Engineering Society (BMES) (Class size 50 students)

- Coordinating innovation lectures (monthly) with the officers at BMES.
- Hosting speakers from life sciences technology companies in Bay Area
- Promoted interest in life science and medical innovation for undergraduate students

Berkeley Engineering Initiative (BEI), co-coordinator Fall 2013
University of California, Berkeley (Class size 30 students)

- Provided medical innovation theme and engineering ideas for medical innovation course, for which students will use throughout course and will use to develop engineering design concepts
- Lecturer, mentor, and judge for final engineering solution

Accepted for Teaching Assistant (competitive search) Spring 2008
Stanford University, Institute of Stem Cells and Regenerative Medicine,
Course: Stem Cell Biology and Reg. Med., DBIO 296 for Graduate and Medical Students

- Forced to decline due to research responsibilities

Graduate Teaching Assistant, Co-organizer Fall 2002
Rutgers University, Department of Biomedical Engineering
Course: Tissue Engineering: Fundamentals and Tools, Part I., 14:125:433 (Class size 25 students)
Professor David Shreiber, Senior Level Elective Course

- Co-designed syllabus for first ever course together with Prof. Shreiber
- Lectured, designed and graded problem-based homework assignments and labs

Graduate Teaching Assistant, Co-organizer Spring 2002
Department of Biomedical Engineering, Rutgers University
Course: Tissue Engineering: Biomedical and Biotechnology Applications, Part II, 14:125:43.
(Class size 25 students)
Professor David Shreiber, Senior Level Elective Course

- Co-designed syllabus for first ever course together with Prof. Shreiber
- Designed unique problem-based experiments, which served as virtual lab
- Designed and graded problem-based homework assignments, weekly TA sessions
- Conducted course lecture

Graduate Teaching Assistant Fall 2001
Department of Chemical and Biochemical Engineering, Rutgers University
Course: Chemical Engineering Thermodynamics,14:155:208 (Class size 50 students, Sophomores and Juniors)
Professor: Prabhas Moghe PhD

- Designed and graded problem-based homework, held weekly TA sessions

Surgical Resident
1999-2001
Department of Surgery, Boston University
Various teaching responsibilities to medical students/junior residents

Medical Student 1995-1999
The State University of New York (SUNY) @ Buffalo School of Medicine, Buffalo NY
Various teaching responsibilities to junior medical students

EDUCATIONAL LECTURES

University of California, San Francisco Spring/Fall 2014
Course: Human Embryonic Stem Cell Training Program (Calif. Inst. Regen. Med)

- "Fundamentals of Pluripotent Stem Cells"
- "Pluripotent Stem Cell Differentiation"

San Francisco State University, Department of Biology Fall 2013
Course: Stem Cell Biology, Biology 861

- "Fundamentals of Pluripotent Stem Cells"
- "Fundamentals of Adult Stem Cells"
- "Fundamentals of Cancer Stem Cells"
- "Fundamentals of Reproductive Stem Cells"

Rutgers University, Department of Biomedical Engineering Fall 2005
Integrative Molecular and Cellular Bioengineering
Graduate Course 125:584: Professor Charlie Roth

- "Fundamentals of Stem Cell Science and Engineering for Engineers"

Rutgers University, Department of Biomedical Engineering Fall 2002
Tissue Engineering: Fundamentals and Tools, Part I., 14:125:433
Professor David Shreiber

- "Clinical Perspectives in Tissue Engineering"

Rutgers University, Department of Biomedical Engineering Spring 2002
Tissue Engineering: Biomedical and Biotechnology Applications, Part II 14:125:433

Professor David Shreiber
- "Cell Proliferation in Tissue Engineering"

Rutgers University, Department of Chemical and Biochemical Engineering, Biotechnology Program Spring 2002
Coordinator: Professor Henrik Pedersen, Chemical Engineering
- "Tissue Microarrays for Cancer Diagnostics"
- "Nuclear Reprogramming and Somatic Cell Plasticity"

Boston University, Department of Surgery Education Course Fall 1999
- "Surgical Management of Pheochromocytoma"

State University of New York @ Buffalo, School of Medicine Fall 1997
- "Surgical Management of Peptic Ulcer Disease"

MENTORING/SUPERVISED STUDENTS

UNIVERSITY AT BUFFALO

Dates	Name	School/	Role	Current Position
Postdoc				
2017	Xiaojun Liu	University at Buffalo	Postdoc	Roswell Park
PhD				
2015 - 2018	Saber Meamardoost	University at Buffalo	Doctoral Mentor	University at Buffalo
2015 - 2016	Zeinab Jamalzadeh	University at Buffalo	Doctoral Mentor	University at Buffalo
2016 -Current	Ogechi Ogoke	University at Buffalo	Doctoral Mentor	University at Buffalo
2016- Current	Mitch Maloy	University at Buffalo	Doctoral Mentor	University at Buffalo
Masters				
2018- Current	Xiaoyang Shu	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2018- Current	Osama Yousef	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2018- Current	Tram H.A,. Nguyen	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2018- Current	Iyan Warren	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2017- Current	Tala Mon	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2017- Current	Zachary Dickman	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2015-2017	Janet Oluwole	University at Buffalo	Master's Thesis Mentor	Research Assistant
2015-2018	Matthew Willadsen	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2017-2018	Iven Yarovoy	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2017-2018	Jillian Annis	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2016-2017	Willam Pratt	University at Buffalo	Master's Thesis Mentor	University at Buffalo
2016-2017	Mitch Maloy	University at Buffalo	Master's Thesis Mentor	University at Buffalo
Medical Students				
2016-Current	Stephanie Griffin	University at Buffalo	Medical Student- Summer Mentor	University at Buffalo
2016-Current	Marc Chaise	University at Buffalo	Medical Student- Summer Mentor	University at Buffalo
2017-Current	Ann Marie McKeon	University at Buffalo	Medical Student- Summer Mentor	University at Buffalo
2017	Joseph Brazzo	University at Buffalo	MD PHD- monthly rotation	University at Buffalo
2017	Kanitha Chadhury	University at Buffalo	MD PHD- monthly rotation	University at Buffalo
Undergrads				
2016-Current	Antono Szeglowski	University at Buffalo	Undergraduate Mentor	University at Buffalo
2017-Current	Matthew Ferrer	University at Buffalo	Undergraduate Mentor	University at Buffalo
2017-Current	Allison Kalinousky	University at Buffalo	Undergraduate Mentor	University at Buffalo
2018-Current	Jonah Bennett	University at Buffalo	Undergraduate Mentor	University at Buffalo
2018-Current	Vibhor Saoji	University at Buffalo	Undergraduate Mentor	University at Buffalo
2018-Current	Claire Shamul	University at Buffalo	Undergraduate Mentor	University at Buffalo

Dates	Name	School/	Role	Current Position
2018-Current	Wayne Lin	University at Buffalo	Undergraduate Mentor	University at Buffalo
2018-Current	Saroja Rao	University at Buffalo	Undergraduate Mentor	University at Buffalo
2018-Current	Shatoni Ross	University at Buffalo	Undergraduate Mentor	University at Buffalo
2016-2018	An Qi Zhang	University at Buffalo	Undergraduate mentor	Northeastern U, M.S.
2016-2017	Jillian Naylor	University at Buffalo	Undergraduate Mentor	NYU Dental School
2016-2017	Meghan O'Leary	University at Buffalo	Undergraduate Mentor	Cornell Univ, PhD
2016-2017	Meghan Capeling	University at Buffalo	Undergraduate Mentor	Univ. of Mich, PhD
2017-2018	Cortney Ott	University at Buffalo	Undergraduate Mntor	University at Buffalo
2017	Riley Smith	University at Buffalo	Undergraduate Mentor	University at Buffalo
2017	Hura Fatima Raza	University at Buffalo	Undergraduate Mentor	University at Buffalo
2015-2017	Trinh Nguyen	University at Buffalo	Undergraduate Mentor	Industry
2016-2017	Matthew Pettucini	University at Buffalo	Undergraduate Mentor	Mill-Max Mfg Co, Process Engineer

PRIOR TO UNIVERSITY AT BUFFALO

Dates	Name	School/	Role	Current Position
2001 - 2008	Eric Wallenstein	Rutgers University	Research and career mentor for graduate student	Merck Co, Bioprocess Eng.
2002 - 2004	Kevin Nikitczuk	Rutgers University	Educational mentor for undergraduate student	Scientist, L'Oreal
2001 - 2004	Salah-Eldi Hamed	Rutgers University	Educational and research mentor for undergraduate and graduate	Postdoc, U. at Buffalo
2001 - 2008	John Paul Gutierrez	Rutgers University	Educational and career mentor for undergraduate student	MBA, Scientist
2001 - 2004	Sheetal Patel	Rutgers University	Educational and career mentor for undergraduate student	JD, Patent Lawyer
2001 - 2004	Ksenia Orlova	Rutgers University	Research and career for undergraduate student	Interventional Rad. University of Penn.
2004 - 2006	Vanessa Lopez	Harvard Medical	Research and career for undergraduate researcher	Healthcare Marketing
2004 - 2008	Noor Ahmad	Harvard Medical School	Research mentor for medical student	Inter. Radiologist,
2008 - 2012	Laura Sasportas	Stanford University	Research and career mentor for graduate student	Google
2008 - 2012	Sunil Bodapti	Stanford University	Research and career mentor for undergraduate student	Stanford University, Palantir
2008- 2012	Robert Teed	Stanford University	Research and career mentor for undergraduate student	Emarald Tx.,Silicon Valley
2012- 2015	Jason Farrell	UCSF	Research and career mentor for medical student candidate	DO medical School
2012 - 2015	Neil Ray	UC Berkeley	Career mentor	U Penn Med
2012 - 2015	Sabrina Levy	UC Berkeley	Career mentor	UCLA
2012 - 2015	Sivan Marcus	UC Berkeley	Career mentor	UCSF
2012 - 2015	Taner K. Dagdelen	UC Berkeley	Career mentor	Genomics Startup

STUDENTS GRADUATED

1) Janet Oluwole M.S. (BME, report) **"**Modelling Early Liver Bud Formation in Vitro"
2) Matthew Willadsen M.S. (BME, Thesis) "Quantitative In Vivo & Ex Vivo Multimodality Cell Imaging of Antigen-specific T cells in Murine Metastatic Ovarian Cancer"
3) Iven Yarovoy, M.S. (CBE, Thesis) "Assessment of Variable-Dose Scheduling Effects on the Kinetics and Homing of Antigen-Specific T Cells in Cancer Via Optical Imaging"
4) Will Pratt, M.S. (Course based)

SERVICE

NATIONAL/INTERNATIONAL

1) Forum for Collaborative Research (http://www.hivforum.org/)
Representative for stem cell research for liver diseases- Participated in national meeting in 2017 and 2018

2) Participated in NIST Biomanufacturing workshop at AICHE 2016 Conference

3) Ad hoc reviewer- *Biotechnology and Bioengineering*, *Annals of Biomedical Engineering*

TO DEPARTMENT/ INSTITUTION

1) Department Safety Committee- University of Buffalo, Department of Chemical and Biological Engineering, Safety Committee 1/17-current. Changed rules for inspections, work with EHS to employ safety measures, institute violation measures, improve CBE safety.

2) Initiation of Biotechnology Minor - Other than developing and teaching the new biotechnology for engineers (CE220) course, I am actively working on development of the Minor in Biotechnology for Chemical and Biological Engineering students with the Undergraduate Committee, Department, School of Engineering, and Department of Biology.

3) Equipment purchase- For over a year, worked with CBE faculty and other engineering faculty, and staff, to gauge interest and obtain highly competitive quotes on in vivo imaging equipment for the biocore. Worked closely with vendor, biocore team, and dean's office to obtain space for equipment.

4) Poster Judge
University at Buffalo, 10th annual CSTEP Research Poster Symposium, Poster Judge 7/16
University at Buffalo, CBE symposium 2016-2018

5) Department Symposium- University at Buffalo, Department of Chemical and Biological Engineering, Graduate Symposium Planning Committee 2016-2018

SciRM (NYSTEM) Training Grant - Active participant on stem cells in regenerative medicine (SciRM) training grant obtained from NY stem cell science by Dr. Andreadis. Faculty participation includes journal club, strategy meetings, annual conference, and pursuing stem cell-related publications.

6) Faculty Search 2016-2018

7) Graduate student committees

2017-2018

PhD Qualifying exam
First qualifying exam: Pihu Mehrotra (Andreadis), Gabrielle Pawloski (Neelamegham), Debanik Choudhury (Andreadis), Dongwon Park (Pfeifer), Girish Swayambhu(Pfeifer) , Na Rong (Andreadis), Nika Rajabian (Andreadis), Bita Nasiri (Andreadis)

Second qualifying exam: Dongwon Park (Pfeifer), Girish Swayambhu(Pfeifer) , Na Rong (Andreadis), Nika Rajabian (Andreadis), Bita Nasiri (Andreadis)

BME qualifying exam: Nanditha Anandakrishnan

Graduate Student Thesis Committee
Annual thesis committee meeting: Arezoo Momeni, Ruiquan Qi, Marie Beitelshees, Aref Sahini

Graduate Student Defenses
Brandon Chin M.S. Advisor: Sheldon Park
Fangyu (Amy) Zhou, M.S., Advisor: Sheldon Park
Xiao Huang M.S., Advisor: Sheldon Park
Vincent Nguyen M.S. Advisor: Sheldon Park
Matthew Willadsen M.S., Advisor: Natesh Parashurama

Iven Yarovoy M.S., Advisor: Natesh Parashurama

8) Commencement 2016

SERVICE PRIOR TO UNIVERSITY AT BUFFALO

Bioengineering Student Society(BESS) New Jersey, Piscataway NJ, 2001-2004 Rutgers, The State University of New Jersey, Biomedical Engineering
Planned and organized grad student and high school recruiting sessions, faculty/student luncheons, industrial site visits, industrial advisory board, laboratory representatives in BESS, and other activities.

Inaugural "City Days" Program, Cambridge MA, 1992-1993
The Massachusetts Institute of Technology (MIT), MIT Public Service Center
Received MIT's William H. Stewart Jr. Award, '93 for contributions
Organized a 3-day university wide-event involving MIT & Cambridge, and a year- long community service program

Premed Association Founder and Board Member, Cambridge MA,

Founded premedical society at MIT

TO COMMUNITY

Served as Site Coordinator, Ozanam Homeless Shelter, Edison NJ
2002-2004
HIPHOP (Health for Indigent and Homeless Outreach Program),
UMDNJ-Robert Wood Johnson, Coordinator: Susan Jiordano,
Health Care Workshops for Homeless, Interview Training for 1st Year Med Students

Youth educational-based Health Fair, Plainfield NJ
June 2004
Organizer and Coordinator "Plainfield Health Fiesta" A preventive medicine workshop-based educational health fair for troubled youth.
UMDNJ and HIPHOP (Health for Indigent and Homeless Outreach Program Plainfield Youth Corps
Coordinator: Susan Jiordano

Conducted a Variety of Preventive Health-Related Workshops, Edison NJ
2002-2004
Ozanam Women and Children's Homeless Shelter, Catholic Charities,
Connie Carlie, Site Coordinator. Performed series of health related workshops for women and children in an interactive format.

Life Skills Training for Troubled Youth, NY/NJ
Developed various teaching programs and worked together with the Sathya Sai Organization
2002-2004
Three Locations: Harlem, NY (Youthbuild), Plainfield NJ (NJ Youth Corps), and Jersey City, NJ

Summer Student Counselor, Hartford CT
2002-2003
Counselor, Sathya Sai Organization, One-Week Summer Camp, Coordinator: Bernie Michel

Young Adult Coordinator, Sathya Sai Organization Mid-Atlantic Region, East Brunswick NJ
2002-2003
Organized, designed, and lead several educational programs for over 200 youth across 5 states

INDUSTRIAL/ WORK EXPERIENCE

MEDICAL INNOVATION AND ENTREPRENEURSHIP

Venture Partner, Life Sciences, "New League" Technology Accelerator, San Francisco CA May-Nov. 2012
Co-founder of technology accelerator startup in San Francisco and Silicon Valley

-Functioned as venture partner, life sciences for assessing all Pharma, Biotech, Medical Device, Health Information Technology (Digital Health Care) startups
-Developed approaches to evaluating needs of all life sciences startup companies
-Obtained funding, and accelerated companies through professional services, consulting, business development, personnel changes

Multimodality Imaging and Biodesign- Identifying imaging Needs, Stanford CA Spring 2010-2011
Stanford Division of Cardiovascular Medicine,
Director: Michael McConnell MD, MS

-A team-organized six month activity in which we performed need finding within the multimodality imaging space, leading to 2 disclosures

Medical Innovation Course, Stanford CA Fall, Spring 2010-2011
BIOE 374A/B: "Biodesign Innovation" Stanford University

-The course was a team-based course in which utilized a systematic approach to medical innovation
-Participated as team member on two different projects, from concept to pitch to venture capitalists

- A better way to diagnose syncope (diagnostic)
- A way to achieve reliable hemostasis in percutaneous vascular procedures requiring large caliber openings

CLINICAL EXPERIENCE

Boston University Medical Center, Boston MA 1999-2001
General Surgery Residency

- Preoperative, Operative, and Postoperative Care of Surgical Patients Over 1000 patients managed, over 200 operations
- Rotations: Gastrointestinal, Breast, Cancer, Transplant, Vascular, Trauma, Cardiothoracic, Neurosurgery, Plastics, Colorectal,
  Endocrine, Complex Wound Care, Surgical Intensive Care, Cardiac Intensive Care, Outpatient
- Management of Medical Devices/Procedures: Ventilator, Intubation, Trachestostomy, Cardiopulmonary Bypass, Hemodialysis,
  Bronchcoscopy, Upper and Lower Endoscopy, Laparascopic Surgery, Intracranial Pressure Monitoring, Intraortic Baloon Pump,
  Swan-Ganz (Pulmonary Artery) Catheterization, Coagulation
- Two-Year Surgical Core Curriculum

PROFESSIONAL ASSOCIATIONS

1997-current AICHE	**American Institute of Chemical Engineering**
2003- current SBE	**Society of Biological Engineering (SBE), AICHE**
2003-current BMES	**Biomedical Engineering Society**
2008-current SNM	**Society of Nuclear Medicine**
2008-current SPIE	**The International Society for Optical Engineering**
2009-current ISCT	**International Society for Cell Therapy**
2012-current ISSCR	**International Society for Stem Cell Research**