

**CURRICULUM VITAE**  
**PAUL Y. LIU, M.D.**

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**EDUCATION**

9/77-6/81     B.A.    Mathematics, The Colorado College, Magna Cum Laude

**Awards and Activities**

Boettcher Foundation Scholar (full scholarship for college) - 1977  
National Forensics League Double Ruby (highest honors) - 1977  
Principal clarinetist “Top of the Nation” Honor Band - 1977  
Alpha Lambda Delta National Honorary Fraternity - 1978  
Violinist, Colorado Springs Symphony Orchestra - 1979-1981  
Blue Key, The Colorado College - 1981  
Associate Editor, The Catalyst -1981  
Phi Beta Kappa, Beta of Colorado Chapter- 1981  
Finalist, Rhodes Scholar Competition – 1981  
Marshall Scholar -1981

9/81-6/83     M.A.    University College  
                  Philosophy & Physiology Oxford University, England

9/83-6/87     M.D.    Medicine Harvard Medical School

2012            Program for Chairs of Clinical Services, Harvard School of Public Health

**POST-GRADUATE TRAINING**

7/87-6/88            Surgical Intern, Brigham and Women’s Hospital

7/88-6/94            Resident in Surgery, Brigham and Women’s Hospital

7/94-6/96            Senior/Chief Resident in Plastic Surgery, Brigham and Women’s Hospital

7/89-6/91            National Institutes of Health Training Grant #5T32CA 095350-5  
(Salary support PGY3-4) Research Fellowship during surgical residency

## **POST GRADUATE HONORS AND AWARDS**

1983-84	Varsity Blue Ice Hockey, Oxford University
1984	Joseph Collins Foundation Scholarship, Harvard Medical School
1989	Junior Resident Teaching Award, Brigham and Women's Hospital
1994	Francis D. Moore Senior Resident Teaching Award, Brigham and Women's Hospital
1996	Rotary International of Cartagena, Colombia Certificate of Appreciation
1999	Gordon Fellowship, Lahey Clinic, Burlington, MA
2002	"Outstanding Mentor in Plastic Surgery," Lahey Clinic Residents and Faculty
2004-2007	Board of Trustees, Roger Williams Medical Center
2006	Election to American Association of Plastic Surgeons
2007-2008	Pathways to Leadership, American Society of Plastic Surgeons
2009	Rhode Island Monthly "Top Docs" designation
2009-2010	Castle-Connolly "Who's Who in America"
2010	Castle-Connolly "Best Doctors in America"
2011	Patient's Choice Award
2011	Compassionate Doctor Award
2012	Award of Excellence in Translational Regenerative Science, Wound Healing Society
2013	Rhode Island Monthly, "Top Docs" designation
2013	Founders Award for Best Scientific Paper by a Member, New England Society of Plastic and Reconstructive Surgeons
2014	Dean's Council, Harvard Medical School (Philanthropy)
2014	Distinction in Scholarship by American Physiology Society
2015	Honorary Master of Arts, <i>ad eundum</i> , Brown University
2017	Dean's Excellence in Teaching Award, Alpert Medical School of Brown University
2018	Louis Benezet Alumnus Award, The Colorado College
2019	Marquis Who's Who Lifetime Achievement Award

## **PROFESSIONAL LICENSES AND BOARD CERTIFICATION**

1988	National Board of Medical Examiners
1989	#71037 Commonwealth of Massachusetts
1996	American Board of Surgery, Board Certifications
2000	American Board of Plastic Surgery, Board Certification
2002	#10928 State of Rhode Island
2009	Maintenance of Certification 2000 American Board of Plastic Surgery Board Certification, American Board of Plastic Surgery
2019	Maintenance of Certification 2000 American Board of Plastic Surgery Board Certification, American Board of Plastic Surgery

## **ACADEMIC APPOINTMENTS**

1987	Lecturer, Department of Social Medicine, (Moral Philosophy and Medicine) Harvard Medical School
1987-1996	Clinical Fellow in Surgery, Harvard Medical School
1996-1998	Assistant Professor of Surgery, Division of Plastic Surgery, University of Miami Medical School
1998-2002	Assistant Professor of Surgery (Clinical), Tufts University School of Medicine
2003-4/2011	Associate Professor of Surgery, Boston University School of Medicine
4/2011-5/2014	Professor of Surgery (Clinical), Warren Alpert School of Medicine at Brown University
6/2014 -	Professor of Surgery, Teaching Scholar Track, Warren Alpert School of Medicine at Brown University

## **HOSPITAL APPOINTMENTS**

7/96-6/98	Attending Physician, Division of Burn Surgery Ryder Trauma Center/Jackson Memorial Hospital
7/97-6/98	Chief of Plastic Surgery, Miami VA Hospital
7/97-6/98	Director of Research, Division of Plastic Surgery, University of Miami
7/98-6/02	Senior Staff Surgeon, Lahey Clinic, Burlington, MA
7/02-3/11	Attending Surgeon, Chairman of Surgery, Roger Williams Medical Center, Providence, RI
10/03-6/04	Interim Chairman of Emergency Medicine Department, Roger Williams Medical Center, Providence, RI
2/03-present	Attending Surgeon, Rhode Island Hospital, Providence, RI
6/03-present	Attending Surgeon, Women and Infant's Hospital, Providence, RI
1/09-3/11	Attending Surgeon, Brigham and Women's Hospital, Boston, MA
4/11-present	Chairman of Plastic Surgery, Rhode Island Hospital, Providence, RI

## **OTHER APPOINTMENTS**

2004-present	Ad Hoc Reviewer, Wound Repair & Regeneration
2006-present	Ad Hoc Reviewer, Annals of Plastic Surgery
2007-present	Ad Hoc Reviewer, Molecular Medicine
2006-present	Ad Hoc Reviewer, Archives of Internal Medicine
2007-2012	Section editor, ePlasty Journal
2008-2012	Section editor, Annual Year Book for Wound Healing Society, "Medical Devices" Section
2010-present	Ad Hoc Reviewer, Dermatologic Surgery

2011-present	Ad Hoc Reviewer, Journal of Investigative Dermatology
2013-present	Ad Hoc Reviewer, PLOS one
2014-present	Ad Hoc Reviewer, Journal of Surgical Research
2017	Ad Hoc Promotions Committee, Harvard Medical School (Beth Israel)

## **GRANT REVIEW ACTIVITIES**

2008	Reviewer, 3M Corporation Wound Healing Grant Review Panel for Wound Healing Society
2008-2009	Reviewer, Plastic Surgery Education Foundation
2009	Reviewer, Challenge Grant Panel #23 for National Institutes of Health
2013-present	Reviewer, Wound Healing Foundation Grant Review Panel

## **OTHER PROFESSIONAL POSITIONS**

1990-1995	Consultant, Genzyme Corporation
1996-2001	Editorial Board/Wound Healing Newsletter, University of Miami
1998-2002	Wound Care Consultant/Ortho-MacNeil
2002-2003	Tissue Engineering Consulting Network, Novartis 2002 Wound Care Consultant, Hydrocision
2002-2008	Consultant, Speakers' Bureau, KCI (VAC Therapy)
2006-2007	Consultant, Speakers' Bureau, Smith and Nephew
2008-2009	Board of Directors, ex officio, Wound Healing Society
2009-2011	Board of Directors, elected, Wound Healing Society
2012-2014	Board of Directors, New England Society of Plastic and Reconstructive Surgeons
2014-2018	Consultant Medline Industries
2015-2017	Consultant Stemnion
2015-Present	Scientific Advisor, Remedor Inc. (Nazareth, Israel)
2016-Present	Guest Editor, Special Issue on Wound Care, Rhode Island Medical Journal
2018-	Founder and Executive Chairman PAX Therapeutics (biotech startup to commercialize gene therapy for tendon and ligament healing)

## **MAJOR ADMINISTRATIVE LEADERSHIP POSITIONS**

1997-1998	Director of Research, Plastic Surgery, University of Miami Medical School
1997-1998	Chief of Plastic Surgery, Miami VA Hospital
2002-2011	Chairman, Department of Surgery, Roger Williams Medical Center
2002-2011	Chairperson, OR Committee, Roger Williams Medical Center

2002-2011	Joint Policy Committee, Roger Williams Medical Center
2004-2007	Board of Trustees, Roger Williams Medical Center
2008-present	Co-Chair, Wound Healing Society Scientific Meeting
2008-present	Chairman, Publications Committee Wound Healing Society
2010-2016	Member, Board of Directors, Wound Healing Society
2010-present	Member, Board of Directors, Wound Healing Foundation
2011-2013	Vice President, elected, Wound Healing Society
2011-present	Ambulatory Medical Directors, Rhode Island Hospital
2011-2014	Medical Executive Committee, Rhode Island Hospital
2012-present	Surgical Faculty Promotions and Appointments Committee, Rhode Island Hospital
2012-2016	Program Director, Integrated Plastic Surgery Residency Program, Rhode Island Hospital/Alpert Medical School of Brown University
2012-2016	Program Director, Combined Plastic Surgery Residency Program, Rhode Island Hospital/Alpert Medical School of Brown University
2013-2014	President, Wound Healing Society
2014-2016	Chair of Task Force for Wound Healing Society, "The Big Picture"
2014-present	Secretary, Wound Healing Foundation
2019-present	Board of Directors Wound Healing Society

## **HOSPITAL COMMITTEES**

1997-1999	Admissions Committee	Six Year Combined BA/MD Program University of Miami
1997-2002	Internal Review Board Alternate	Lahey Clinic
1998-2002	Coding and Documentation	Dept. of Plastic Surgery Lahey Clinic
2002-2005	Critical Care Committee	Roger Williams Medical Center
2002-2005	Institutional Biosafety Committee	Roger Williams Medical Center
2002-2005	Institutional Review Board	Roger Williams Medical Center
2002-2005	Nursing Advisory Committee	Roger Williams Medical Center
2002-2006	Cancer Committee	Roger Williams Medical Center
2002-2007	Quality & Credential Committee	Roger Williams Medical Center
2002-2008	Finance Committee	University Medical Group
2002-2011	Board of Governors	University Medical Group
2002-2011	Medical Executive Committee	Roger Williams Medical Center
2002-2011	Executive Committee	University Medical Group
2002-2011	Graduate Medical Education Committee	Roger Williams Medical Center
2002-2011	Chair, Operating Room Committee	Roger Williams Medical Center
2002-2011	Strategic Planning Committee	Roger Williams Medical Center
2002-2011	Surgical Infection Prevention Committee	Roger Williams Medical Center
2002-2011	VP/Chairs Committee	Roger Williams Medical Center
2003-2006	Emergency Department Management Committee	Roger Williams Medical Center

2003-2011	Clinical Events Variance Committee	Roger Williams Medical Center
2004-2007	Investment & Retirement Sub-Committee	Roger Williams Medical Center
2009-2011	Day Surgery Unit Oversight Committee	Brigham and Womens' Hospital Foxboro
2011-present	Ambulatory Care Physicians Leadership Committee	Rhode Island Hospital
2012-2013	Search Committee for Chairman of Dermatology	Rhode Island Hospital/Alpert Medical School of Brown University
2012-2014	Medical Executive Committee	Rhode Island Hospital
2012-present	Lifespan Health Advisory	Rhode Island Hospital
2014-2015	Search Committee for Chairman of Neurosurgery	Rhode Island Hospital/Alpert Medical School of Brown University
2015-2016	Search Committee for Chairman of Anesthesia	Rhode Island Hospital/ Alpert Medical School of Brown University
2015-2016	Search Committee for Chairman Of Orthopedics	Rhode Island Hospital/ Alpert Medical School of Brown University
2015-present	Lifespan Physicians Group Board of Trustees	Lifespan Hospitals
2018-present	LPG Nominating and Governance Committee	
2019-present	Physician Advisory Council	

### **Regional Committees**

2007-2008	Program Committee, New England Society of Plastic/Reconstructive Surgeons
2008-2013	Nominating Committee, New England Society of Plastic/Reconstructive Surgeons
2012-2014	Counselor, New England Society of Plastic/Reconstructive Surgeons
2015-2016	Program Committee, Plastic Surgery Research Council
2015	Program Chairman- 1 <sup>st</sup> Annual Brown Symposium on Advanced Wound Care " Scalpels to Stem Cells"
2016-2019	Tufts Health Plan Plastic Surgery Advisory Committee
2018	Program Chairman-Combined Harvard/Brown Wound Care Symposium

### **National Committees**

2003-2010	Payment Policy Committee American Society of Plastic Surgeons
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2005-2009	Program Committee, Wound Healing Society
2009-2014	Program Committee, Plastic Surgery Research Council
2010-2013	Tissue Engineering Committee, American Society of Gene and Cell Therapy
2011-2016	Program Committee, American Society of Gene and Cell Therapy

### **International Committees**

2010-present	Program Committee, World Association of Plastic Surgeons of Chinese Descent
2015-present	Symposium for Advanced Wound Care Int'l Committee on Guidelines

### **MEMBERSHIP IN SOCIETIES**

1983-present	Christian Medical and Dental Society
1987-present	Aesculapian Society, Harvard Medical School
1989-present	Wound Healing Society
1996-2000	Heal the Children-Northeast (International Mission Trip Organization)
1996-present	American Society of Plastic Surgeons
1997-2001	American Burn Association
1998-present	Fellow, American College of Surgeons
2001-present	New England Society of Plastic and Reconstructive Surgery
2001-present	Plastic Surgery Research Council
2002-present	American Society of Cell and Gene Therapy
2002-2006	Molecular Medicine Society
2003-present	New England Surgical Society
2007-present	American Association of Plastic Surgeons
2008-present	Rhode Island Medical Society
2009-present	World Association of Plastic Surgeons of Chinese Descent
2012-present	American Council of Academic Plastic Surgeons
2014-present	Northeastern Society of Plastic Surgeons
2014-present	Ezekiel Hersey Society, Harvard Medical School

### **ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS**

1. Krueger, J., and **Liu, P.Y.** Evidence for two forms of Factor S in human urine. Federal American Societies for Experimental Biology Letters 40: 220, 1981.
2. Levy, R.J., Schoen, F.J., Sherman, F.S., Hawley, M.A., Lund, S.A., and **Liu, P.Y.** Inhibition of calcification of porcine bioprosthetic heart valves implanted subcutaneously in rats. Circulation 71: 349-357, 1985.
3. . Zamcheck, N., **Liu, P.Y.**, Thomas, P., and Steele, G. Search for useful biomarkers of pre- or early malignant colonic tumors. Prog ClinBio Res 279: 251-75, 1988.

4. **Liu, P.Y.**, Breuing, K.H., Eriksson, E.O., and Miller, D.R. Incisional wound healing in a fluid environment. Surgical Forum 49: 623-626, 1990.
5. Eriksson, E., **Liu, P.Y.**, Zeckel, Y., Binder, T., Breuing, K.H., and Miller, D.R. In vivo cell culture accelerates re-epithelialization. Surgical Forum 50: 670-673, 1991.
6. Breuing, K., Marikovsky, M., Klagsbrun, M., **Liu, P.Y.**, Binder, Ti., Miller, D.R., and Eriksson, E., EFG-like growth factor present in porcine wound fluid. Surgical Forum 50: 623-625, 1991.
7. **Liu, P.Y.**, Binder, T., Zeckel, Y., Breuing, K., and Eriksson, E. Evaluation of exogenous hyaluronic acid on fluid-phase porcine wound healing. Journal of Investigative Dermatology 98: 622, 1992.
8. Breuing, K.H., Eriksson, E., **Liu, P.Y.**, and Miller, D.R. Healing of partial thickness porcine skin wounds in a liquid environment. Journal of Surgical Research 52: 50-58, 1992.
9. Marikovsky, M., Breuing, K., **Liu, P.Y.**, Eriksson, E., Higashiyami, S., Farber, P., Abraham, J., and Klagsbrun, M. Appearance of heparin-binding EGF-like growth factor in wound fluid as a response to injury. Proceedures of the National Academy of Sciences USA, 90 (9): 3889-93, 1993.
10. Eriksson, E., Vogt P.M., Breuing, K., **Liu, P.Y.**, Andree C., Hatzis, D. Wound healing in a wet environment. Scars and Stripes, Vol. 3, 1993.
11. Vogt, P.M., Thompson, S., Andree, C., **Liu, P.Y.**, Breuing, K., Hatzis, D., Brown, H., Mulligan, R., and Eriksson, E. Genetically modified keratinocytes transplanted to wounds reconstitute the epidermis. Proceedures of the National Academy of Sciences USA 91 (9): 9307-9311, 1994.
12. Vogt, P., Andree., Breuing, K., **Liu, P.Y.**, Slama, J., Helo, G., and Eriksson, E. Dry, moist, and wet skin wound repair. Annals of Plastic Surgery, 34 (9): 493-500, 1995.
13. Orgill, D.P., **Liu, P.Y.**, Ritterbush, S.M., Skrabut, E.M., Samuels, J.A., Shames, S.L. Debridement of porcine burn wounds using a highly purified, ananain-based cysteine protease preparation. Journal of Burn Care and Rehabilitation, 17 (4): 311-322, 1996.
14. Breuing, K.H., Andree, C., Helo, G., **Liu, P.Y.**, and Eriksson, E. Topical growth factors in partial thickness porcine wound healing. Plastic Reconstructive Surgery, 100 (3): 657-665, 1997.
15. Alexandrides, I.J., **Liu, P.Y.**, Marshall, D.M., Nery, J.R., Tzakeis, A.G., Thaller, S.R. Abdominal wall closure after intestinal transplantation. Plastic Reconstructive Surgery 106 (4): 805-812, 2000.



16. Badiavas, E., **Liu, P.Y.**, Falanga, V., Transduction of Graftskin with a modified Herpes vector. J Invest Dermatol, 117: 530, 2001.
17. Breuing, K., Kaplan, S., **Liu, P.Y.**, Onderdonk A.B., Eriksson, El, wound fluid bacterial levels exceed tissue bacterial counts in controlled porcine partial-thickness burn infections. Plastic Reconstructive Surgery, Feb; 111(2): 781-8, 2003.
18. **Liu, P.Y.**, Tong, W., Liu, K., Han, S.H., Wang, X.T., Badiavas, E., Reger-Christ, K., and Summerhayes, I. Liposome-mediated transfer of VEGF cDNA augments survival of random-pattern skin flaps in the rat. Wound Repair Regeneration: 12:80-85, 2004.
19. Wang, S.T., **Liu, P.Y.**, Tang, J.B. Tendon healing in vitro: genetic modification of tenocytes with exogenous PDGF gene and promotion of collagen gene expression; Journal of Hand Surgery (Am): 29: 485-490, 2004.
20. Wang, X.T., **Liu, P.Y.**, Tang, J.B. Tendon healing in vitro: modification of tenocytes with exogenous VEGF gen increases expression of TGF? – but minimally affects expression of collagen genes. Journal of Hand Surgery (Am); 30:221-229, 2005.
21. **Liu, P.Y.**, Wang, X., Badiavas, E.V., Rieger-Christ, K., Tang, J.B., Summerhayes, I. Enhancement of ischemic flap survival by prefabrication with transfer of exogenous PDGF gene. Journal of Reconstructive Microsurgery, Vol. 24, 4:273-9, May 2005.
22. Wang, X.T., **Liu, P.Y.**, Tang, J.B., Tendon healing in vitro: modification of tenocytes with exogenous vascular endothelial growth factor gene increases expression of transforming growth factor beta but minimally affects expression of collagen genes, Journal of Hand Surgery (Am), 30 (2): 222-229, 2005.
23. Wang, X. T., **Liu, P.Y.**, Xin, K., Tang, J.B., Tendon healing in vitro : bFGF gene transfer to tenocytes by adeno-associated viral vectors promotes expression of collagen genes, Journal of Hand Surgery (Am) Vol. 30, 1255-1261, 2005.
24. **Liu, P.Y.**, Liu, K., Wang, X.T., Badiavas, E., Reiger-Christ, K.M., Tang, J.B., Summerhayes, I.C., Efficacy of combination gene therapy with multiple growth factor cDNAs to enhance skin flap survival in a rat model, DNA and Cell Biology, Vol. 24, 11:761-767, 2005.
25. Reusch, U., Sundaram, M, Davol, P.A., Olson, S.D., Davis, J.B., Demel, K., Nisim, J., Rathor, R., **Liu, P.Y.**, Lum, L.G., Anti-CD3 x Anti-EGFR Biospecific Antibody Redirects T Cell Cytolytic Activity to EGFR-Positive Cancers In Vitro and in an Animal Mode, Clinical Cancer Research, Vol. 1, 12 (1): 183-90, January 2006.
26. Wang, X.T., **Liu, P.Y.**, Tang, J.B., PDGF gene therapy enhances expression of VEGF and bFGF genes and activates the NF-kB gene in signal pathways in ischemic flaps. Plastic and reconstructive Surgery, Vol. 117, 1: 129-137, January 2006.

27. Wang, X.T., **Liu, P.Y.**, Tang, J.B., Mizukami, H., Xin, K.Q., Ozawa, K., Ushijima, H. Tendon healing in vitro: adeno-associated virus-2 effectively transduces intrasynovial tenocytes with persistent expression of the transgene, but other serotypes do not. Plastic and Reconstructive Surgery, Vol. 117, 1: 129-137, January 2006.
  
28. Badiavas, E.V., Ford, D., **Liu, P.Y.**, Kouttab, N., Morgan, J., Richards, A., Maizel, A. Long-term bone marrow culture and its clinical potential in chronic wound healing, Wound Repair Regeneration, 15(6): 856-65, Nov-Dec 2007.
  
29. Tang, J.B., Cao, Y., Zhu, B., Xin, K.Q., Wang X.T., **Liu, P.Y.**, Adeno-associated virus-2-mediated bFGF gene transfer to digital flexor tendons significantly increases healing strength, an in vivo study. Journal of Bone and Joint Surgery (Am), 90: 1078-1089, 2008.
  
30. **Liu, P.Y.**, Wang X.T., Xin K.Q., Chen CH, Rieger-Christ, K., Summerhayes I.C., Wu, Y.F., Tang, J.B. Application of AAV2-bFGF-mediated bFGF gene therapy on survival of ischemic flaps: effects of timing of gene therapy. Annals of Plastic Surgery, 2009 Jan; 62 (1): 87-91.
  
31. Ferretti, M., **Liu, P.Y.**, Tangential Hydrosurgery – A New Tool for Wound Debridement. Wound Healing Society. Advances in Wound Care, Annual Yearbook, Volume 1, 2010, March.
  
32. Zhang, L.X, Zhao, Y., Cheng, G., Guo, T.L., Chin, E.Y., **Liu, P.Y.**, Zhao, T.C. Targeted deletion of NF-kb p50 diminishes the cardioprotection of histone deacetylase inhibition. American Journal of Physiology Heart and Circulatory Physiology. 2010 Jun; 298 (6): H2154-63. Epub 2010 Apr 9.
  
33. Martins-Green M., Vodovots, Y., **Liu, P.Y.**, Systems Biology Applied to Wound Healing. Wound Repair Regen. 2010 Jan-Feb; 18 (1): 1-2.
  
34. Wang, X.T., Avanesian, B., Ma, Q., Durfee, H., Tan, Y., **Liu, P.Y.**, Enhancement of Flap Survival and Changes in Angiogenic Gene Expression after AAV2-Mediated VEGF Gene Transfer to Rat Ischemic Flaps. Wound Repair Regen. 2011 Jul; 19(4): 498-54.
  
35. Chen H.P., Denicola, M., Qin, X., Zhao, Y., Zhang, L., Long, X.L., Zhuang, S., **Liu, P.Y.**, Zhao, T.C. HDAC inhibition promotes cardiogenesis and the survival of embryonic stem cells through proteasome-dependent pathway. Cell Biochem. 2011 Nov; 112(11): 3246-55.
  
36. Wu Y.F., Zhou, Y.L., Mao, W.F., Avanesian, B., **Liu, P.Y.**, A Tang, J.B. Cellular Apoptosis and Proliferation in the Middle and Late Intrasynovial Tendon Healing Periods. J Hand Surg Am. 2011 December, 37: 209-216.
  
37. Zhang, L., Xin, Q., Zhao, Y., Fast, L., Zhuang S, **Liu, P.Y.**, Cheng, G., Zhao, T.C. Inhibition of histone deacetylases, preserves myocardial performance and prevents cardiac remodeling

- through stimulation of endogenous angiomyogenesis. *J Pharmacol Exp Ther.* 2012 Jan 23. [Epub ahead of print].
38. Chen, H.P., Denicola, M., Qin, X., Zhao, Y., Zhang, L., Long X.L., Zhuang, S., **Liu, P.Y.**, Zhao, T.C., HDAC inhibition promotes cardiogenesis and the survival of embryonic stem cells through proteasome-dependent pathway. *J Cell Biochem.* 2011 Nov; 112(11): 3246-55. doi:10.1002/jcb 23251. PubMed PMID: 21751234.
  39. Wang, X.T., Avanesian, B., Ma, Q., Durfee, H., Tang, Y.Q., **Liu, P.Y.**, Enhancement of flap survival and changes in angiogenic gene expression after AAV2-mediated VEGF gene transfer to rat ischemic flaps. *Wound Repair Regen.* 2011 Jul-Aug; 19(4): 498-504. doi: 10.1111/j. 1524-475X.2011.00705.x. Epub 2011 Jun 7. PubMed PMID: 21649787.
  40. Wu YF, Zhou, Y.L., Mao, W.F., Avanesian, B., **Liu, P.Y.**, Tang, J.B. Cellular apoptosis and proliferation in the middle and late intrasynovial tendon healing periods. *J Hand Surg Am.* 2012 Feb; 37(2): 209-16. Epub 2011 Dec 29. PubMed PMID: 22209211.
  41. Zhao, T.C., Du, J., Zhuang, S., **Liu, P.Y.**, Shang, L.X., (2013) HDAC Inhibition Elicits Myocardial Protective Effect through Modulation of MKK3/Akt-1. 2013 (pending) *PLoS ONE* ((6): e65474.
  42. Tang, J.B., Chen, C.H., Zhou, Y.L., McKeever, C., **Liu, P.Y.**, Regulatory effects of introduction of an exogenous FGF2 gene on other growth factor genes in a healing tendon. *Wound Repair Regen.* 2014 Jan-Feb; 22(1):111-8. doi: 10.1111/wrr.12129. PubMed PMID: 24393159.
  43. Zhang, L.X., DeNicola, M., Qin, X., Du, J., Ma, J., Zhao, T.Y., Zhuang, S., **Liu, P.Y.**, Wei, L., Qin, G., Tang, Y., Zhao, T.C. Specific Inhibition of HDAC4 in Cardiac Progenitor Cells Enhances Myocardial Repairs. *Am J Physiol Cell Physiol.* 2014 Jun 18. pii:ajpcell.00187.213. PubMed PMID: 24944198.
  44. Bowden, L.G., Maini, P.K., Moulton, D.E., Tang, J.B., Wang, X.T., **Liu P.Y.** Byrne, H.M. An ordinary differential equation model for full thickness wounds and the effects of diabetes. *J Theor Biol.* 2014 July 10; 361C:87-100.doi:101016/j.jtbi.2014.07.001. PubMed OMID: 25017724.
  45. Tang JB, Wu YF, Cao Y, Chen CH, Zhou YL, Avanesian B, Shimada M, Wang XT, **Liu PY.** Basic FGF or VEGF gene therapy corrects insufficiency in the intrinsic healing capacity of tendons. *Sci Rep.* 2016;6:20643.

46. **Liu P**, Singh M, Eriksson E. Academic Status of Plastic Surgery in the United States and the Relevance of Independence. *Handchir Mikročir Plast Chir*. 2016 Apr;48(2):65-8. doi: 10.1055/s-0042-104373. Epub 2016 Apr 20.
47. Tang JB, Zhou YL, Wu YF, **Liu PY**, Wang XT. Gene therapy strategies to improve strength and quality of flexor tendon healing. *Expert Opin Biol Ther*. 2016;16(3):291-301
48. Wu YF, Mao WF, Zhou YL, Wang XT, **Liu PY**, Tang JB. Adeno-associated virus-2-mediated TGF- $\beta$ 1 microRNA transfection inhibits adhesion formation after digital flexor tendon injury. *Gene Ther*. 2016;23(2):167-75.
49. Johnston BR, Ha AY, Brea B, **Liu PY**. The Mechanism of Hyperbaric Oxygen Therapy in the Treatment of Chronic Wounds and Diabetic Foot Ulcers. *R I Med J* (2013). 2016 Feb 1;99(2):24-7.PMID:26827082
50. Mehrzad R, Brea BA, Johnston BR, Vezeridis M, **Liu PY**. State of Wound Care in Rhode Island *R I Med J* (2013). 2016 Feb 1;99(2):16-9. No abstract available. PMID:26827080
51. Du J, Zhang L, Wang Z, Yano N, Zhao YT, Wei L, Dubielecka-Szczerba P, **Liu PY**, Zhuang S, Qin G, Zhao TC. Exendin-4 induces myocardial protection through MKK3 and Akt-1 in infarcted hearts. *Am J Physiol Cell Physiol*. 2016 Feb 15;310(4):C270-83. doi: 10.1152/ajpcell.00194.2015. Epub 2016 Jan 6.PMID:26739490
52. Tandon VJ, Drolet BC, Sargent R, Loor K, Schmidt ST, **Liu PY**. Uncaptured Billable Services: Recognizing Additional Revenue Streams in Plastic Surgery Programs. *Plast Reconstr Surg*. 2015 Oct;136(4 Suppl):57. doi: 10.1097/01.prs.0000472349.18974.4e. No abstract available. PMID:26397558
53. Drolet BC, Brower J, Lifchez SD, Janis J, **Liu PY**. Away Rotations and Matching in Integrated Plastic Surgery Residency – Applicant and Program Director Perspectives. *Plastic and Reconstructive Surgery*. 2016;137(4):1337-1343. PMID: 27018690
54. Mao WF, Wu YF, Yang QQ, Zhou YL, Wang XT, **Liu PY**, Tang JB. Modulation of digital flexor tendon healing by vascular endothelial growth factor gene transfection in a chicken model. *Gene Ther*. 2017 Mar 23. [Epub ahead of print]
55. Gargano F, Edstrom L, Szymanski K, Schmidt S, Bevivino J, Zienowicz R, Stark J, Taylor HO, Podda S, **Liu P**. Improving Pressure Ulcer Reconstruction: Our Protocol and the COP (Cone of Pressure) Flap. *Plast Reconstr Surg Glob Open*. 2017 Mar 30;5(3):e1234. doi: 10.1097/GOX.0000000000001234. eCollection 2017 Mar.

56. Hamed S, Ullmann Y, Egozi D, Keren A, Daod E, Anis O, Kabha H, Belokopytov M, Ashkar M, Shofti R, Zaretsky A, Schlesinger M, Teot L and **Liu PY**. Topical Erythropoietin Treatment Accelerates the Healing of Cutaneous Burn Wounds in Diabetic Pigs Through an Aquaporin-3-Dependent Mechanism. *Diabetes* 2017 May; db161205. <https://doi.org/10.2337/db16-1205>
57. Zhao YT, Wang JG, Yano N, Zhang LX, Wang H, Zhuang SG, Qin GJ, Dubielecka PM, Zhang SY, **Liu PY**, Chin YE, Zhao TC, Irisin promotes cardiac progenitor cell-induced myocardial repair and functional improvement in infarcted heart. *J Cell Physiol* 2019;234(2):1671-1681
58. Wang XT, McKeever CC, Vonu P, Patterson C, **Liu PY**. Dynamic Histological Events and Molecular Changes in Excisional Wound Healing of Diabetic Mice. *J Surg Res.* 2019; 238:186-197
59. Zhao YT, Du J, Yano N, Wang H, Wang J, Dubielecka PM, Zhang LX, Qin G, Zhuang S, **Liu PY**, Chin YE, Zhao TC. p38-Regulated/activated protein kinase plays a pivotal role in protecting heart against ischemia-reperfusion injury and preserving cardiac performance. *Am J Physiol Cell Physiol.* 2019;317(3):C525-C533.

## **NON-PEER REVIEWED PUBLICATIONS**

1. **Liu, P.Y.**, Eriksson, E., and Mustoe, T.A. Wound Healing: Practical Aspects. In *Plastic Surgery Education Foundation Instructional Courses, Vol. 4*. Ed. Robert C. Russell. Moseby Yearbook, St. Louis, 1991. Pp.247-258.
2. Vogt, P.M., Breuing, K.H., **Liu, P.Y.**, Binder, T., and Eriksson, E. Both wet and moist wound environments accelerate epithelialization, in: Altmeyer, et al., *Wound Healing and Skin Physiology*, Ed. Springer, 1993.

## **PATENTS**

Patent pending : : U. S. Patent Application No. 16/603,98 (Based on International Application No. PCT/US18/27495) Title: VEGF GENE THERAPY FOR TENDON AND LIGAMENT INJURIES

## **PEER REVIEWED PUBLICATION UNDER REVIEW**

1. Kawar, N.M., Dizon, D.S., Michaud, P, Doyle, A., **Liu, P.Y.**, Gass, J., Tsiapali, E.V.

Feels good, Looks Better: What Factors Influence Completion of All Stage of Breast Reconstruction after Mastectomy for Breast Cancer Treatments or Prophylaxis?

2. Wang XT, McKeever CC, Vonu P, Patterson C, **Liu PY**. Implications of dynamic changes of different histological events in Excisional Wound Healing and associated molecular changes in Diabetic Mice. Wound Repair Regen. Under submission (revised).
3. Wang XT, Wu YF, Zhou YL, Tang JB, **Liu PY**. Mechanism Study of Increased Healing Tendon Strength after bFGF or VEGF Gene Therapy via AAV2 Vectors. Mol Ther. In revision.
4. Naohiro Yano, Dennis Wei, Dubielecka PM, Shougang Zhuang, Gangjian Qin, Yu Eugene Chin, **PY Liu**, Ting C Zhao. Irisin counteract the high glucose and fatty acid induced 16 cytotoxicity by preserving AMP insulin receptor signaling axis in C2C12 myoblast. Cell Death and Disease, 2019 (reference number: CDDIS-19-0089, Minor revision)

## **BOOKS AND CHAPTERS**

1. Mehrzad R. Wang XT, Zhou YL, Wu YF, **Liu PY**. (2017). Gene therapy of the Tendons. In Springer (Ed.), Gene Therapy in Reconstructive and Regenerative Surgery. Cham: Springer International Publishing AG.
2. Mehrzad R, **Liu PY**.. (2017). Developing a Gene Therapy Clinical Trial: Tips and Tricks. In Springer (Ed.), Gene Therapy in Reconstructive and Regenerative Surgery. Cham: Springer International Publishing AG.
3. Mehrzad R, **Liu PY**.. (2017). A Comprehensive Review of Wound Healing. In DP Orgill (Ed.), Scientific American Plastic Surgery [online] (In press). Hamilton: Decker Intellectual Properties.
4. Mehrzad R, Kwan D, Schmidt S, **Liu P**.. (2017). Local and regional Flaps. In Dennis P. Orgill (Ed.), Interventional Treatment of Wounds: A Modern Approach for Better Outcomes. New York: Springer.

## **ABSTRACTS**

### **International**

- 2004 Abstract Presentation, **Liu, P.Y.**, “PDGF gene therapy antagonizes the synergy seen with FGF-2 and VEGF gene therapy in a rat skin flap model,” Northeastern Surgical Society Montreal, Canada.
- 2004 Abstract Presentation, **Liu, P.Y.**, “Efficacy of combination gene therapy with multiple growth factor cDNAs enhances skin flap survival in a rat model,” New England Surgical Society Annual Meeting, Montreal, Canada.
- 2007 Abstract Presentation, **Liu, P.Y.**, Tissue reactions of adenoviral, adeno-associated viral, and liposome-plasmid vectors in tendons and comparison with early stage healing responses of injured flexor tendons. Presented at The 10<sup>th</sup> Congress of International Federation of Societies for Surgery of the Hand, Sydney, Australia.
- 2013 Podium Presentation, Gargano F, Edstrom LE, **Liu, P.Y.**, Improving wound healing in pressure sore reconstruction: our protocol and the C.O.P.(Cone of Pressure) flap. New England Society of Plastic Surgery Meeting Newport, RI(June 2013) and European Pressure Ulcer Advisory Panel Meeting, Vienna, Austria (August 2013)
- 2014 Abstract Presentation, **Liu, P.Y.**, “Nrf2 and other Gene Expression Profile of Responders vs. Non-responders to Hyperbaric Oxygen Therapy(HBOT)” ETRS Scientific Meeting, Edinburgh, Scotland.
- 2015 Abstract Presentation, **Liu, P.Y.**, “AAV-VEGF in tendon healing-from Bench to Bedside” ETRS Scientific Meeting, Copenhagen, Denmark.

## **National**

- 1990 Abstract Presentation, **Liu, P.Y.**, “Burn wound healing in a fluid environment,” American Burn Association Annual Meeting, Las Vegas, NV.
- 1990 Abstract Presentation, **Liu, P.Y.**, “Incisional wound healing in a fluid environment.” American College of Surgeons’ Surgical Forum, San Francisco, CA.
- 1990 Abstract Presentation, **Liu, P.Y.**, “EGF, PDGF, and FGF, but not IGF accelerates wound healing in a partial thickness porcine wound model, “Plastic Surgery Research Council, Charlottesville, VA.

- 1990 Abstract Presentation, **Liu, P.Y.**, “In vivo cell culture accelerates wound re-epithelialization,” American College of Surgeon’s Surgical Forum, Chicago, IL.
- 1991 Abstract Presentation, **Liu, P.Y.**, “EGF-like growth factor present in porcine wound fluid,” American College of Surgeon’s Surgical Forum, Chicago, IL.
- 1992 Abstract Presentation, **Liu, P.Y.**, “Exgenously applied hyaluronic acid enhances collagen deposition in a partial thickness porcine wound healing model,” Society of Investigative Dermatology, Baltimore, MD.
- 1993 Abstract Presentation, **Liu, P.Y.**, “Topical growth factors accelerate burn wound healing in a pig model,” American Burn Association Annual Meeting, San Francisco, CA.
- 1995 Abstract Presentation, **Liu, P.Y.**, “Enzymatic debridement of burn wounds in the pig using ananain/comosain,” American Burn Association Annual Meeting Albuquerque, NM.
- 1998 Abstract Presentation, **Liu, P.Y.**, “Gene transfer of VEGF augments random-pattern skin flap survival in the rat,” Plastic Surgery Research Council Annual Meeting Loma Linda, CA.
- 2000 Abstract Presentation, **Liu, P.Y.**, “Gene transfer of VEGF enhances flap survival,” American Association of Plastic Surgeons Annual Scientific Meeting, Laguna Beach, CA.
- 2001 Abstract Presentation, **Liu, P.Y.**, “ Gene transfer of VEFG and BFGF synergistically augments skin flap survival in the rat,” Wound Healing Society Annual Meeting, Albuquerque, NM.
- 2002 Abstract Presentation, **Liu, P.Y.**, “Genetic modification of a bilaminar skin construct,” Wound Healing Society Annual Meeting, Baltimore, MD.
- 2003 Abstract Presentation, **Liu, P.Y.**, “Multiple gene therapy yields differing results in rat skin flap survival,” Plastic Surgery Research Council, Las Vegas, NV.
- 2003 Abstract Presentation, **Liu, P.Y.**, “Stem cells seeded into artificie al dermis persist and expand in vitro,” Wound Healing Society Annual Meeting, Atlanta, GA.
- 2005 Abstract Presentation, **Liu, P.Y.**, “Combination gene therapy enhances



flap survival in a rat model,” American Society of Reconstructive Microsurgery Annual Scientific Meetings. Fajardo, Puerto Rico.

- 2005 Abstract Presentation, **Liu, P.Y.**, “Therapeutic Angiogenesis for Prefabrication of Ischemic Flaps with Multiple Growth Factor Gene Transfers: A Study in a Rat Model,” American Society of Gene & Cell Therapy, Annual Meeting, St. Louis, MO.
- 2006 Abstract Presentation, **Liu, P.Y.**, “PDGF Gene Therapy Enhances Expression of VEGF and BFGF and Activates NP-KB Gene in Signal Pathways in Ischemic Flaps,” Wound Healing Society, Annual Meeting, Scottsdale, AZ.
- 2006 Abstract Presentation, **Liu, P.Y.**, “Tendon Healing in Vitro: Adeno-Associated Virus-2 but not Other Serotypes Effectively Transduces Intraovial Tenocytes with Persistent Expression of the Transgene,” Plastic Surgery Research Council 51<sup>st</sup> Annual Meeting, Dana Point, CA.
- 2006 Abstract Presentation, **Liu, P.Y.**, “Tissue Reactions of Adenoviral, Adeno-Associated Viral, and Liposome-Plasmide Vectors in Tendons and Comparison with Early Stage Healing Responses of Injured Flexor Tendons,” Plastic Surgery Research Council 51<sup>st</sup> Annual Meeting, Dana Point, CA.
- 2006 Abstract Presentation, **Liu, P.Y.**, “PDGF Gene Therapy Enhances Expression of VEGF and BFGF and Activates NF-KB Gene in Signal Pathway but not Genes in other Pathways in Ischemic Flaps,” Plastic Surgery Research Council 51<sup>st</sup> Annual Meeting, Dana Point, CA.
- 2006 Abstract Presentation, **Liu, P.Y.**, “BFGF Gene Therapy through Adeno-Associated Viral Vectors to Digital Flexor Tendons Significantly Increases Healing Strength: An In Vivo Study,” Plastic Surgery Research Council 51<sup>st</sup> Annual Meeting, Dana Point, CA.
- 2006 Abstract Presentation, **Liu, P.Y.**, “Comparison of Early Stage Healing Responses of Injured Flexor Tendons with Tissue Reactions after Delivery of Adenoviral and Adeno-Associated Viral Vectors to Digital Flexor Tendons,” American Society of Annual Meeting, Baltimore, MD.
- 2006 Abstract Presentation, **Liu, P.Y.**, “Tissue Reactions of Adenoviral, Adeno-Associate Viral, and Liposome-Plasmide Vectors in Tendons and

Comparison with Early Stage Healing Responses of Injured Flexor Tendons,” ACS Clinical Congress, Chicago, IL.

- 2006 Abstract Presentation, **Liu, P.Y.**, “Adeno-Associated Viral (AAV) Vector-2 but not Other Serotypes of AAV Effectively Transduces Intrasynovial Tenocytes and Promotes Expression of Collagen Genes,” American College of Surgeons Clinical Congress, Chicago, IL.
- 2007 Abstract Presentation, **Liu, P.Y.**, “Biomechanical and Histological Evaluation of Effectiveness of BFGF Gene Therapy of Multiple Time-Points During Early Healing Period of Injured Flexor Tendon,” Wound Healing Society Annual Meeting, Tampa, FL.
- 2007 Abstract Presentation, **Liu, P.Y.**, “BFGF Gene Transfer by Adeno-Associated Viral 2 Vectors Decreases Work of Active Digital Flexion and Adhesion Formation: An In Vivo Study up to End Tendon Healing Stage,” Wound Healing Society Annual Meeting, Tampa, FL.
- 2007 Abstract Presentation, **Liu, P.Y.**, “Expression Profiles of Genes of Multiple Growth Factors, Type I and III Collagen and NF-KB of Early Stage Healing Flexor Tendons,” Wound Healing Society Annual Meeting, Tampa, FL.
- 2007 Abstract Presentation, **Liu, P.Y.**, “Application of AAV2-Mediated BFGF Gene Therapy on Survival of Ischemic Flap: Effects of Timing of Gene Transfer,” Wound Healing Society Annual Meeting, Tampa, FL.
- 2007 Abstract Presentation, **Liu, P.Y.**, “Expression of the  $\alpha$ -SMA Gene and Contractile Ability of Skin Fibroblasts from Diabetic Mice: Correlation with Wound Closure Rates in Vivo and Implication in Wound Healing,” Wound Healing Society Annual Meeting, Tampa, FL.
- 2007 Abstract Presentation, **Liu, P.Y.**, “Expression of the  $\alpha$ -SMA Gene and Contractility of Skin Fibroblasts from Diabetic Mice,” 52<sup>nd</sup> Annual Meeting of the Plastic Surgery Research Council, Stanford, CA.
- 2007 Abstract Presentation, **Liu, P.Y.**, “BFGF Gene Transfer by Adeno-Associated Viral 2 Vectors Decreases Work of Active Digital Flexion and Adhesion Formation: An In Vivo Study Up To End Tendon Healing Stage,” 52<sup>nd</sup> Annual Meeting of the Plastic Surgery Research Council, Stanford, CA.
- 2007 Abstract Presentation, **Liu, P.Y.**, “Improvement of Survival of Ischemic Flaps by AAV2-Mediated BFGF Gene Therapy”, 93<sup>rd</sup> American College of Surgeons Annual Clinical Congress, New Orleans, LA.

- 2007 Abstract Presentation, **Liu, P.Y.**, “BFGF Gene Transfer by AAV 2 Vectors Decreases Work of Active Digital Flexion and Adhesion Formation Up to End Tendon Healing Stage,” 93<sup>rd</sup> American College of Surgeons Annual Clinical Congress, New Orleans, LA.
- 2008 Abstract Presentation, **Liu, P.Y.**, “Quantitative analysis of gene expression and immunohistological staining of growth factors at different stages of tendon healing.” Presented to The 18<sup>th</sup> Annual Wound Healing Society Meeting, San Diego, CA.
- 2008 Abstract Presentation, **Liu, P.Y.**, “Transgene expression over a prolonged observation period after BFGF gene therapy to promote healing of injured flexor tendons.” Presented to the 18<sup>th</sup> Annual Wound Healing Society Meeting, San Diego, CA.
- 2008 Abstract Presentation, **Liu, P.Y.**, “Decreased expression of type 1 TGF-beta receptors in Db/Db mice.” Presented to The 18<sup>th</sup> Annual Wound Healing Society Meeting, San Diego, CA.
- 2008 Abstract Presentation, **Liu, P.Y.**, Wang XT, Ma QZ, Tang JB, Liu, PY. “Production of AAV2-VEGF: in vitro kinetics.” Presented to The 18<sup>th</sup> Annual Wound Healing Society Meeting, San Diego, CA.
- 2008 Abstract Presentation, **Liu, P.Y.**, “Expression profile of genes in the TGF-Beta signal pathway in diabetic wounds. An in vitro study on fibroblasts of diabetic mice. Presented at the 94<sup>th</sup> Clinical Congress of American College of Surgeons, San Francisco, CA.
- 2009 Abstract Presentation, **Liu, P.Y.**, “Advancing the Understanding of Normal Wound Healing in Humans and How That Will Impact Advancing Understanding of Impaired Healing: Overview of the Current Clinical Status,” presented at New Approaches to Personalized Medicine- Inflammation, Healing, and Regeneration as Prototypes, University of California, Riverside, CA.
- 2009 Abstract Presentation, **Liu, P.Y.**, “An investigation of efficiency of gene delivery methods and time-course of transgene expression in injured tendons and tissue reactions caused by different vectors.” Presented at the 12<sup>th</sup> Annual Meeting of American Society of Gene Therapy, San Diego, CA.

- 2009 Abstract Presentation, **Liu, P.Y.**, “Transgene expression over a prolonged observation period after BFGF gene therapy to promote healing of injured flexor tendons.” Presented at the 12<sup>th</sup> Annual Meeting of American Society of Gene Therapy, San Diego, CA.
- 2009 Abstract Presentation, **Liu, P.Y.**, “Comparison of Efficacy of Prefabrication of the Ischemic Flaps with AAV2-Mediated VEGF and BFGF gene therapy.” Presented at the 12<sup>th</sup> Annual Meeting of American Society of Gene Therapy, San Diego, CA.
- 2009 Abstract Presentation, **Liu, P.Y.**, “Comparison of Efficacy of Prefabrication of Ischemic Flaps with AAV2-Mediated VEGF and BFGF Gene Therapy.: Presented at the Wound Healing Society Annual Meeting, Dallas, TX.
- 2009 Abstract Presentation, **Liu, P.Y.**, “The role of ginsenoside rg1 in augmenting survival of the ischemic skin flap: in vitro studies of cell proliferation and tube formation and in vivo effects.” Presented at the 19<sup>th</sup> Meeting of Wound Healing Society, Dallas, TX.
- 2009 Abstract Presentation, **Liu, P.Y.**, “Molecular events of cellular apoptosis and proliferation in the early tendon healing period.” Presented at the 19<sup>th</sup> Meeting of Wound Healing Society, Dallas, TX.
- 2009 Abstract Presentation, **Liu, P.Y.**, “The role of ginsenoside rg1 in augmenting survival of the ischemic skin flap: in vitro studies of cell proliferation and tube formation and in vivo effects.” Presented at the 88<sup>th</sup> Meeting of American Association of Plastic Surgeons, Westin Mission Hills, Rancho, Mirage, CA.
- 2009 Abstract Presentation, **Liu, P.Y.**, “Comparison of Efficiency of AAV2-Mediated VEGF and AAV2-BFGF Gene Therapy for Improving Ischemic Flap Survival.” Plastic Surgery Research Council Annual Meeting, Philadelphia, PA.
- 2010 Abstract Presentation, **Liu, P.Y.**, “Gene expression profile of AAV2-VEGF treated ischemic flaps: a study using PCR array technology.” Wound Healing Society Annual Meeting, Orlando, FL.
- 2010 Abstract Presentation, **Liu, P.Y.**, “An Investigation of Efficiency of AAV2-VEGF and AAV2-BFGF Gene Delivery to Enhance Strength of

Injured Tendons: An In Vivo Study.” American Association of Plastic Surgeons Annual Meeting, San Antonio, TX.

- 2011 Abstract Presentation, **Liu, P.Y.**, “Changes in tenocyte proliferation and tenocyte apoptosis in the tendons treated with AAV2-BFGF in the early healing period.” The 21<sup>st</sup> Annual Meeting of Wound Healing Society, Dallas, TX.
- 2011 Abstract Presentation, **Liu, P.Y.**, “Changes of gene expression profiles relevant to tenocyte apoptosis after in vitro wounding: a study using a novel array technique.” The 21<sup>st</sup> Annual Meeting of Wound Healing Society, Dallas, TX.
- 2012 Abstract Presentation, **Liu, P.Y.**, “Significant Decreases of the Type I Collagen in the Healing Digital Flexor Tendon and the Effect of AAV2-Gene Therapy to Reverse the Decrease of Collagen Production: An In Vivo Study”. The 22<sup>nd</sup> Annual Meeting of Wound Healing Society, Atlanta, GA.
- 2012 Abstract Presentation, **Liu, P.Y.**, “Cellular Apoptosis and Proliferation in the Healing Intrasynovial Tendons: Temporal Changed and Novel-Dimensional Analysis.” The 22<sup>nd</sup> Annual Meeting of Wound Healing Society, Atlanta, GA.
- 2013 Abstract Presentation, **Liu, P.Y.**, “Temporal Changes in Epithelialization and Dermis in Healing Diabetic and Non-Diabetic Wounds. Quantitative Analysis Using a Genetically Modified Mouse Model.” The 23<sup>rd</sup> Annual Wound Healing Society Meeting, Denver, CO.
- 2013 Abstract Presentation, **Liu, P.Y.**, “Changes in Molecular Profiles Associated with Wound Contractions and Closure During Excisional Wound Healing in Diabetic Mice.” The 23<sup>rd</sup> Annual Wound Healing Society Meeting, Denver, CO.
- 2013 Abstract Presentation, **Liu, P.Y.**, “Improving Wound Healing in Pressure Sore Reconstruction Our Protocol and the C.O.P. (Cone of Pressure) Flap.” The 23<sup>rd</sup> Annual Wound Healing Society Meeting, Denver, CO.
- 2013 Abstract Presentation, **Liu, P.Y.**, “Analyzing the Wound Healing Deficit in Diabetic Mice” the 92<sup>nd</sup> Annual Meeting American Association of Plastic Surgeons, New Orleans, LA.
- 2013 Abstract Presentation, **Liu, P.Y.**, “Changes in Molecular Profiles and Morphological Characteristics Associated with Wound Contraction and Closure of the Wound Healing in Diabetic Mice” New England Society of Plastic and Reconstructive Surgeons 54<sup>th</sup> Annual Meeting, Newport, RI.

- 2013 Abstract Presentation, Gargano F, **Liu, P.Y.**, Breast morphometric analysis: The Ying Yang and Inferior pedicals techniques. Presented at ASAPS Meeting New York. Poster presentation at AAPS New Orleans (April 2013) and Plastic Surgery Research Council Santa Monica (May 2013).
- 2017 Abstract Presentation, V Hsiao, S Swartz, B Johnson, L Gould, D Ciombor, **Liu PY.** “The Role of NRF2 in Diabetic Foot Ulcer Healing During Hyperbaric Oxygen Therapy” SAWC/WHS Meeting San Diego, CA (April 2017)
- 2018 Abstract Presentation, “Head and Neck Reconstruction by Plastic Surgeons Results in Few Complications Compared to ENT” Marten Basta, MD, Daniel Kwan, MD, Karl Breuing MD, Charles Jehle, MD, **Paul Y. Liu, MD,** Albert S. Woo, MD. AAPS 97th Annual Meeting, Seattle, WA (April 2018)
- 2018 Abstract Presentation, “Outcome Analysis of Hyperbaric Oxygen Therapy In Diabetic Wounds and Related Gene Expression Analysis” Vikram Mookerjee, Xiao Tian Wang, Mariska Raglow-Defranco, Solomn Schwartz, Bielinsky Brea, Deborah Ciombor, **Paul Y. Liu, MD.** SAWC/WHS Spring Meeting, Charlotte, NC (April 2018)
- 2018 Abstract Presentation, “Investigation of Endogenous Gene Expression Changes After VEGF Gene Therapy Via AAV2 Double-Stranded Vectors” Xiao Tian Wang, Vikram Mookerjee, William R. Miklavcic, Sherry Y.Q. Tang, **Paul Y. Liu, MD,** SAWC/WHS Spring Meeting, Charlotte, NC (April 2018)
- 2018 Wang XT, Mookerjee VG, Miklavcic W, Tang SYQ, **Liu PY.** Investigation of endogenous gene expression changes after VEGF gene therapy via AAV2 double-stranded vectors: an in vivo study. Wound Healing Society 2018 Annual Meeting, Charlotte, NC, April 25-29, 2018
- 2018 Basta M, Kwan D, Breuing KH, Jehle CC, **Liu P,** Woo A.” Head and Neck Reconstruction by Plastic Surgeons Results in Fewer Surgical Complications Compared to ENT: A Propensity-Matched Analysis of 30-Day Outcomes” Podium Presentation at the American Association for Plastic Surgeon’s Annual Meeting, Seattle, WA, April 2018.

- 2018 Wang XT, Mookerjee VG, Miklavcic W, Tang SYQ, **Liu PY**. Change of endogenous gene expression after VEGF gene therapy via AAV2 double-stranded vectors: an in vivo study. The 21<sup>st</sup> Annual Meeting of the American Society of Gene & Cell Therapy, Chicago, IL, May 16-19, 2018
- 2019 Basta MN, Kwan D, Breuing KH, **Liu PY**, Drolet BC, Schmidt S. “Improved Diagnostic Accuracy of Periprosthetic Breast Infection: Alpha-Defensin 1” Podium Presentation at the American Society of Reconstructive Microsurgery’s Annual Meeting, Palm Desert, CA, February 2019.  
Podium Presentation at the Plastic Surgery Research Council’s Annual Meeting, Baltimore, MD May 2019
- 2019 Basta MN, Rao V, Nissen N, Crozier J, **Liu PY**, Woo AS. “Refining Operative Indications for Orbital Floor Fractures: A Risk-Stratification Tool Predicting Symptom Development and Need for Surgery.” Podium Presentation at the American Association for Plastic Surgeon’s Annual Meeting, Baltimore, MD, April 2019.
- 2019 Basta M, Liu P, Kwan D, Breuing K, Sullivan R, **Jehle CC**, Bass J, Drolet B, Schmidt S. “Improved Diagnostic Accuracy of Periprosthetic Breast Infection: Novel Application of the Alpha-Defensin 1 Biomarker.” Podium Presentation at American Association for Plastic Surgeons Annual Meeting, Baltimore, MA, April 2019.

## **Regional**

- 2006 Abstract Presentation, **Liu, P.Y.**, “An Investigation of Efficacy of Combination Gene Therapy with Multiple Growth Factor cDNAs to Enhance Skin Flap Survival: A Preliminary Study, New England Society of Plastic and Reconstructive Surgeons, Annual Meeting, New Castle, NH.
- 2007 Abstract Presentation, **Liu, P.Y.**, “An Investigation of Efficacy of Combination Gene Therapy with Multiple Growth Factor cDNAs to

Enhance Skin Flap Survival: A Preliminary Study,” NESPRS Annual meeting, Newport, RI.

- 2008 Abstract Presentation, **Liu, P.Y.**, “Construction of AAV vectors for Tissue Repair and Angiogenesis,” 2<sup>nd</sup> Annual Rhode Island Research Alliance Symposium, Providence, RI.
- 2008 Abstract Presentation, **Liu, P.Y.**, “Development of AAV2-VEGF for gene therapy-In vitro kinetics of gene expression.” Presented at New England Surgical Society 89<sup>th</sup> Annual Meeting, Boston, MA.
- 2008 Abstract Presentation, **Liu, P.Y.**, “Quantitative analysis of gene expression and immunohistochemical staining of growth factors at different stages of tendon healing.” Presented at New England Surgical Society 89<sup>th</sup> Annual Meeting, Boston, MA.
- 2008 Abstract Presentation, **Liu, P.Y.**, Tang, JB, Cao Y, Zhu B, Xin KW, Wang XT, Liu P “BFGF gene transfer by adeno-associated viral 2 vectors decreases work of active digital flexion and adhesion formation. An in vivo study up to end tendon healing stage.” Presented at the 11<sup>th</sup> Annual Meeting of American Society of Gene Therapy, Boston, MA.
- 2009 Abstract Presentation, **Liu, P.Y.**, “Comparison of efficacy of prefabrication of the ischemic flaps with AAV2-mediated VEGFf and bFGF gene therapy.” Rhode Island Research Symposium, Providence, RI.
- 2009 Abstract Presentation, **Liu, P.Y.**, “The role of ginsenoside rg1 in augmenting survival of the ischemic skin flap: in vitro studies of cell proliferation and tube formation and in vivo effects.” Rhode Island Research Symposium, Providence, RI.
- 2011 Abstract Presentation, **Liu, P.Y.**, “Comparison of AAV-DS-VEGF and AAV-SS-VEGF: Efficacy of In Vitro Transgene Expression and In Vivo Ischemic Flap Survival” Rhode Island Hospital 19<sup>th</sup> Annual Research Celebration, Providence, RI.
- 2011 Abstract Presentation, **Liu, P.Y.**, “An investigation of Efficiency of AAV2-VEGF Gene Delivery to Enhance Strength of Injured Tendons: An In Vivo Study” Rhode Island Hospital 19<sup>th</sup> Annual Research Celebration, Providence, RI.
- 2012 Abstract Presentation, **Liu, P.Y.**, “Wound Re-epithelialization and



Contraction in Diabetic and Non-diabetic Mice and Related Growth Factor Gene Expression.” Rhode Island Hospital 20<sup>th</sup> Annual Research Celebration, Providence, RI.

2012 Abstract Presentation, **Liu, P.Y.**, “An in vivo study of changes of the type 1 collagen in the healing digital flexor tendon and the effect of AAV2-VEGF gene therapy on collagen production.” Rhode Island Hospital 20<sup>th</sup> Annual Research Celebration, Providence, RI.

2013 Abstract Presentation, **Liu, P.Y.**, “Augmenting Tendon Healing” Rhode Island Hospital Orthopedic Research Symposium, Providence, RI.

2018 Abstract Presentation, “The Underdiagnosis and Incomplete Reconstruction of Nasoorbitoethmoid Fractures” Nicholas Nissen, BA, Sun Hsieh, MD, Vinay Rao, MD, Albert Woo, MD, **Paul Y. Liu, MD.** New England Society of Plastic and Reconstructive Surgeons, Annual Meeting, Manchester Village, VT (June 2018)

2018 Mookerjee VG, Wang XT, **Liu PY.** “Hyperbaric Oxygen Therapy in Diabetic Wounds: Outcomes and Related Gene Expression Analysis”. The New England Society of Plastic and Reconstructive Surgeons 2018 Annual Meeting. Manchester Village, VT, June 8-10, 2018

## **INVITED PRESENTATIONS**

### **International**

2002 Invited Presentation, **Liu, P.Y.**, “Use of the Vacuum-Assisted Closure Device for difficult wounds,” KCI International Symposium, Newport, RI.

2008 Invited Speaker, **Liu, P.Y.**, “Advances in Wound Healing: A Systems Biology Approach” First World Congress for Plastic Surgeons of Chinese Descent, Beijing, China.

- 2010 Invited Speaker, **Liu, P.Y.**, “An Investigation of Efficiency of Gene Delivery Methods and Time-Course of Transgene Expression in Injured Tendons and Tissue Reactions Caused by Different Vectors”, The 2<sup>nd</sup> European Plastic Surgery Research Council, Hamburg, Germany.
- 2010 Invited Speaker, **Liu, P.Y.**, “Mathematical Modeling of Diabetic Wound Closure-A multidisciplinary Approach” The 2<sup>nd</sup> World Congress for Plastic Surgeons of Chinese Descent, Taipei, Taiwan.
- 2011 Keynote Speaker, **Liu, P.Y.**, “Modeling Diabetic Wound Healing: Using Mathematical Descriptors to Improve Clinical Outcomes” 14<sup>th</sup> Congress of the German Wound Healing Society, Hanover, Germany.
- 2012 Invited Speaker, **Liu, P.Y.**, “Developing a Mathematical Model of Diabetic Wound Healing” World Union of Wound Healing Societies, Yokohama, Japan.
- 2012 Invited Speaker, **Liu, P.Y.**, “Recent Advances in Wound Healing”, The Third World Congress for Plastic Surgeons of Chinese Descent, Xi’an, China.
- 2014 Invited Speaker, **Liu, P.Y.**, “Advances in wound healing: employing a systems biology approach”. 4<sup>th</sup> Congress of the WAPSCD, Hong Kong, China.
- 2014 Invited Speaker, **Liu, P.Y.**, “Exciting Developments in Wound Healing-Updates from the USA”. German Wound Healing Society Meeting, Bochum, Germany.
- 2016 Invited Speaker, **Liu, P.Y.**, “Repurposed Erythropoietin Aids in Diabetic Healing,” 5<sup>th</sup> Congress of the WAPSCD, Hunan, China

## **National**

- 1997 Invited Speaker, **Liu, P.Y.**, “Treatment of pressure sores: what’s new?” University of Miami, Department of Dermatology Wound Healing Preceptorship, Miami, FL.
- 1998 Invited Speaker, **Liu, P.Y.**, “Progress in wound healing,” Department of Surgery Grand Rounds, University of Miami, Miami, FL.

- 1998 Invited Speaker, **Liu, P.Y.**, “Clinical update on the treatment of pressure sores,” University of Miami Department of Dermatology Wound Healing Preceptorship, Miami, FL.
- 1999 Invited Presentation, **Liu, P.Y.**, “Advances in clinical management of pressure sores,” Symposium for Advanced Wound Care, Riverside, CA.
- 2005 Invited Presentation, **Liu, P.Y.**, “Growth Factor Session,” Co-Chair, Wound Healing Society Annual Meeting, Chicago, IL.
- 2008 Invited Participant, **Liu, P.Y.**, “Future of Wound Healing,” Panelist on the Future of Plastic Surgery, American Association of Plastic Surgeons Annual Meeting, Boston, MA.
- 2010 Invited Presentation, **Liu, P.Y.**, “The Future of Wound Healing,” The 2<sup>nd</sup> Annual Advancing Wound Healing for Hospitals & Freestanding Clinics, Orlando, FL.
- 2016 Invited Speaker, **Liu, P.Y.**, “Pre-Clinical models in wound healing” Grand Rounds, Hackensack UMC, NJ
- 2017 Invited Panel Speaker, **Liu, P.Y.**, “Advances in Wound Care, Gauzes and Goos”, Surgical Forum, American College of Surgeons, Washington, D.C

## **Regional**

- 1992 Invited Speaker, **Liu, P.Y.**, “Optimizing the wound healing environment,” Brigham and Women’s Hospital Department of Surgery Grand Rounds, Harvard Medical School, Boston, MA.
- 1998 Invited Speaker, **Liu, P.Y.**, “Recent advances in wound healing” Symmes Hospital Department of Medicine Grand Rounds, Arlington, MA.
- 2000 Invited Speaker, **Liu, P.Y.**, “Recent advances in wound healing,” Lahey Clinic Department of Medicine Grand Rounds, Tufts University School of Medicine, Boston, MA

- 2000 Invited Speaker, **Liu, P.Y.**, “What’s new in wound healing,” Department of Surgery Grand Rounds, Mt. Auburn Hospital, Harvard Medical School, Cambridge, MA.
- 2001 Invited Speaker, **Liu, P.Y.**, “Gene transfer in wound healing,” Lahey Clinic Department of Surgery, Grand Rounds, Tufts University School of Medicine, Boston, MA.
- 2002 Invited Speaker, **Liu, P.Y.**, “The use of the Vacuum-assisted Closure Device for difficult wounds,” Spaulding Rehabilitation Hospital, Harvard Medical School, Boston, MA.
- 2004 Invited Speaker, **Liu, P.Y.**, “Controversies in breast reconstruction,” Women and Infants’ Breast Health Symposium, Providence, RI
- 2005 Invited Speaker, **Liu, P.Y.**, “Breast Health: A Plastic Surgery Perspective,” Grand Rounds, Women & Infants’ Hospital, Providence, RI.
- 2008 Invited Presentation, **Liu, P.Y.**, “Plastic Surgical Options for Cosmetic and Reconstructive Breast Surgery,” New England Regional Society of Clinical Laboratory Scientists Scientific Meeting, Rhode Island Convention Center, Providence, RI.
- 2010 Invited Speaker, **Liu, P.Y.**, “Noninvasive Methods of Facial Rejuvenation,” Massachusetts General/Brigham and Women’s Ambulatory Facility Community Outreach Series, Foxboro, MA.
- 2012 Invited Speaker-**Liu, P.Y.**, “Wound Healing Update” PAAV Annual Meeting, Stowe, VT.
- 2016 Invited Speaker, **Liu, P. Y.**, “Update on the latest wound healing technology” 34<sup>th</sup> Annual PAAV Conference, Stowe, VT.
- 2016 Invited Speaker, **Liu, P.Y.**, “Value of multidisciplinary approach in limb Salvage” Rhode Island Podiatric Medical Association Annual Meeting, Newport, RI.

2017 Invited Speaker, **Liu, P.Y.**, “Wound Healing Research at a Multidisciplinary Wound Center” Rhode Island Podiatric Medical Association Annual Meeting, Newport, RI.

## **CORPORATE AUTHORSHIP OR MULTICENTER TRIALS**

### **Clinical Trials**

- 1) Treatment of soft tissue infections with Linezolid, Pharmacia, Peapack, NJ-U Miami site Principal Investigator 1997-1998.
- 2) Treatment of venous stasis ulcers with repifermin (rFGF-2) Human Genome Sciences, Bethesda, MD, Lahey Clinic site Principal Investigator 2001-2002.
- 3) Use of autologous platelet preparation in treatment of chronic wounds with Harvest Technologies, Boston, MA, Principal Investigator 2003-2005.
- 4) Epidermal grafting in treating chronic wounds with Acelity, Inc. San Antonio, TX, 2016

## **GRANT SUPPORT**

1990-1991

Principal Investigator, Plastic Surgery Educational Foundation grant, “Wound Healing in a Liquid Environment”. \$5000 using water-tight chambers over porcine wounds to create a cell culture environment in vivo-allowed for non-invasive sampling and introduction of cells and mediators of healing.

1990-1992

NIH Training Grant #5T32CA 095350-5 (salary support PGY3-4) Research Fellowship during surgical residency.

1991-1992-

Collaborating Investigator, National Science Foundation Small Business Innovations in Research Grant (ISI-9060201) – “Growth of epithelial cells on textured surfaces” with Spire Corp., Bedford, MA. \$50,000. High energy ion stream directed through metal foils deposited surface textures on Petri dishes. We investigated the growth characteristics of epithelial cells on pillars vs. pits.

1991-1993-

Co-Principal Investigator, Genzyme Corporation, Cambridge, MA, “Hyaluronic acid and wound healing”. Attempted recreation of a fetal-like environment in a porcine model using water-tight chambers and differing molecular weight hyaluronans. \$240,000.

1996-1998-

Principal Investigator, University of Miami, Dept. of Surgery Grant, \$70,000. Start-up funds provided by the Department, used to establish ischemic rat flap model, and proof-of-principle that gene therapy could be used to augment flap/wound angiogenesis.

1999-2002-

Principal Investigator, Gordon Fellowship, Lahey Clinic, Burlington, MA, “Gene transfer and flap prefabrication” \$50,000. Construction of plasmid-based vectors for PDGF and bFGF for use in reconstructive flaps.

1999-2001-

Principal Investigator, Grant from Chiron Corp., Emeryville, CA, “Gene transfer of PDGF, VEGF, FGF-2 into reconstructive flaps”, \$25,000 Proprietary vector from Chiron compared to PDGF and VEGF for efficacy of angiogenesis.

2000-2002-

Principal Investigator, Robert E. Wise Research and Education Institute, “Genetic modification of a skin equivalent in wound healing” \$50,000. Using Adenoviral and plasmid vectors to transduce a bilaminar skin equivalent for proof of principle in modifying the therapeutic potential of artificial skin.

2002-2008-

Principal Investigator, Roger Williams Medical Center Department of Research Start Up Grant \$240,000. Construction of higher efficiency vectors (adeno-associated viral vectors) and use of more sophisticated imaging techniques to translate earlier work for potential clinical use.

2003-2005

Co-Investigator, Harvest Technologies, Bedford, MA. Use of Autologous Platelet-Rich Plasma in Wound Healing \$20,000. Site PI for a multicenter trial using autologous platelets in a fibrin gel to accelerate wound healing.

2004-

Co-Investigator, Enhancement of Wound Healing with Genetically Modified Stem Cell Transplantation, RI Foundation Grants \$10,000.

2005-

Co-Investigator, Wound Healing with Genetically Modified Stem Cell Transplantation, Plastic Surgery Research Council, \$10,000.

2006-2011-

Co-Investigator, Flexor Tendon Healing Biology and Gene Therapy, Jinagsu 333 Project Fund, (Principal Investigator Jin Bo Tang) \$200,000.

2007

Principal Investigator, Lifecell Corp., Branchburg, MJ. "Alloderm as a Template for Accelerating Human Bone Marrow-derived Precursor Cell Engraftment" \$43,000 Adoptive transfer of GFP +/- bone marrow into immunodeficient mice with Alloderma implanted subcutaneously to investigate the mechanism of engraftment.

2007-2011-

Co-Investigator (5% effort), Research Project Grant (National Institutes of Health) AG027874: Bone Marrow Stem Cells and the Microenvironment of Chronic Wounds (Principal Investigator Van Badiavas). \$1,402,200.

2008-2009-

Principal Investigator, Smith and Nephew, Hull, U.K. "Versajet deepithelialization in reduction mammoplasty, \$50,000.

2008-2013-

Senior Investigator, NIH Center of Biomedical Research Excellence (Principal Investigator Vincent Falanga), Roger Williams Medical Center, #2P20RR018757-06 "Augmenting Ischemic Skin Flap Survival Using AAV-FGF2, and AAV-VEGF165".  
Principal Investigator, Project #2: Total Direct Costs \$6.5 Million for entire COBRE, \$140,784/yr. for my project.

2014-2015

Principal Investigator, Pilot Project #1(overall PI Qian Chen) NIH Center of Biomedical Research Excellence, "Basic FGF or VEGF gene therapy corrects insufficiency in the intrinsic healing capacity of tendons" (NIH- P 20GM104937-06) - \$50,000

2014- 2019

Principal Investigator, Medline Corporation, (Mundelein, IL) “Effects of Chitosan Dressing on Chronic Wounds”, Total direct costs- \$15,000

2015- present

Principal Investigator, Remedor, Inc.(Nazareth, Israel) “Repurposed erythropoietin in diabetic wound healing in the Db/Db mouse”, Total direct costs- \$15,000

2015- 2018

NSF EAGER Grant (overall PI Eric Darling) “Molecular beaconing in adipose derived stem cells” Direct and indirect costs-\$300,000 subcontract \$50,000

2016

BIRD (Binational Israeli Research Development) Foundation “Use of repurposed erythropoietin and fibronectin in the healing of human diabetic wounds,” Medline and Remedor, total grant \$2.1 Million, direct costs to my lab \$367,000 – awarded but not funded due to contract issues between principal companies

2016-2018

Principal Investigator, Wound Healing Foundation “Nrf-2 as a predictor for responsiveness to hyperbaric oxygen therapy in treating diabetic wounds”, Total direct costs - \$15,000

2016-2018

Principal Investigator, Medline Industries “Plurogel and Highly-esterified Hyaluronic Acid in Healing Chronic Wounds”, Total direct costs - \$60,000

### **Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)**

1996-1998 Fundamentals of Plastic Surgery, University of Miami 2 sessions/week (Plastic Surgery Residents)

1998-2002 Core Curriculums for Plastic Surgery Residents Lahey Clinic, 1 session/week

2006 Clinical Plastic Surg for Dermatologists Clinical Preceptor, 1 session/week (RWMC Dermatology Residence, BUSM)

2008 Breast Reconstruction, Women & Infants Breast Fellowship Alpert Brown Medical School of Brown University. 3-4 Clinical Sessions/year.

2011-present Weekly lab meeting with research fellows and faculty



2011-present Chairman's Rounds with Plastic Surgery Residents-weekly review of core curriculum, 1 hour/weekly, Rhode Island Hospital.

2011-present Hand Conference (with Ortho Hand)-weekly review of hand cases and literature, 1 hour/weekly, Rhode Island Hospital.

**Chief Residents-(100% PASS rate for written and oral boards)**

2011	Erik Hoy, MD Reena Bhatt, MD
2012	Johnny Chang, MD Benjamin Christian, MD
2013	Benjamin Phillips, MD Clint Morrison, MD
2014	Francesco Gargano, MD Tyler Street, MD
2015	Brian Drolet, MD Yifan Guo, MD
2016	Sarah Frommer, MD, PhD Karen Leong, MD
2017	Adnan Prsic, MD Bella Avanesian, MD
2018	Jonathan Bass, MD Sun Hsieh, MD
2019	Jonathan Brower, MD

**Formally Supervised Research Trainees/Mentees**

2000-2001 Kan Liu, MD

Post doc research fellowship, Lahey Clinic, now Radiologist in private practice. Presented at regional meetings and one national meeting, obtained US residency post research year, 2006.

- 2007-2008 Mark Feretti  
Currently urology resident, New York Medical College.  
Published one chapter and presented at a national meeting.
- 2008-2009 Bella Avanesian  
Currently plastic surgery resident at Brown University.  
Published two manuscripts and one national presentation. Co-author of 3<sup>rd</sup> paper accepted for publication.
- 2009-2010 Heather Durfee  
Med student at UNE Medical School, 3 accepted abstracts at national meetings.
- 2013 Charles Patterson-Drexel medical student- coauthor of paper presented at WHS Conference 2013, coauthor of two publications- currently Plastic Surgery resident at LSU.  
  
Claire McKeever- Recent CC Math grad-summer project-authored paper Presented at WHS Conference 2013-currently working for Denver Board of Education.
- 2013-2014 Francesco Gargano, Plastic surgeon in UMDNJ system, coauthored 10 abstracts, 3 papers
- 2014-2015 Brian Drolet, Chief Resident and Clinical Researcher, accepted a faculty position Vanderbilt School of Medicine. Co-authored 5 abstracts, two papers
- 2014-2015 Ryan Denkiewicz, Duke Graduate, first year medical student at Quinnipiac Medical School, one abstract
- 2014-present- Raman Mehrzad, MD, MHL-Plastic Surgery resident  
co-author two chapters, two papers
- 2014-2016 Austin Ha, Brown Medical Student-Full time in research lab, recipient of Susan Kucklein AOA Research Award, currently resident in plastic surgery, Wash. U. St. Louis. Co-author two abstracts
- 2015-2016 Bielinsky Brea- Masters student, Brown University, Biomed Engineering, staff scientist in Boston Biotech company

- 2015-2016 Branden Casey- Masters student, Brown University, Biomed Engineering
- 2013-present Elizabeth Kiwanuka, MD, PhD-Plastic Surgery resident
- 2015-2016 Sarah Frommer, MD, PhD-Chief Resident and Clinical Researcher, received PSF grant in 2015, finished craniofacial fellowship UT Austin
- 2015-2017 Ben Johnston- 4<sup>th</sup> year Brown medical student-Research Lab
- 2016-2018 Solomon Schwartz- 3<sup>rd</sup> year Brown medical student- Research Lab
- 2016-2018 Mariska Franco – 3<sup>rd</sup> year Brown medical student
- 2016-2018 Vivian Hsiao-3<sup>rd</sup> year medical student- Research Lab
- 2016-2017 Dina Blanter-Brown senior-Research Lab
- 2017-2018 Vikram Mookerjee, BU Med School, Yale Plastic Surgery resident. 6 abstracts, 2 papers

## **HOSPITAL TEACHING ROLES**

- 2002-2011 Morbidity and Mortality - Monthly review of deaths and complications for Department of Surgery, 2 hours/monthly, Roger Williams Medical Center.
- 2011-present Trauma Review- every Monday reviewing weekend face and hand trauma cases, 1 hour/weekly, Rhode Island Hospital.
- 2011-present Morbidity and Mortality- Monthly review of deaths and complications for Department of Plastic Surgery, 2 hours/monthly, Rhode Island Hospital.
- 2014- present Plastic Surgery Core Curriculum teaching rounds – weekly didactic and board review sessions for medical students and residents

## **COMMUNITY EDUCATION AND SERVICE**

- 1998 Speaker  
Miami area high schools – Lectured on healthy body image to teens.
- 2003 Speaker  
Warwick, RI HS – Lectured on tattoo removal and piercing complications.

- 2004-2008    Speaker  
                 Roger Williams Medical Center Community Education Series “Minimedical School”, Plastic Surgery 101
- 2009-2012    Elder, Christ Church, East Greenwich, RI
- 2012-2015    Small Group Leader, Sunday School Teacher  
                 Elementary grades 2-4, Southpointe Christian Church, East Greenwich, RI
- 2015- present    1<sup>st</sup> violinist, Warwick Symphony Orchestra