

Edward I-Fei Chang, MD

- EMPLOYER** **MD Anderson Cancer Center**, Houston, TX (7/2011-present)
- Assistant Professor (7/2011-8/2016)
 - Associate Professor (9/2016-present)
 - CAHPS Top 1% National Performance Award (2017, 2018)
 - Honorary Professor Tianjin National Cancer Hospital Tianjin China (2018-present)
 - ASPS PSF Visiting Professor 2019-2020
 - ACS Traveling Fellowship Australia and New Zealand 202

PROFESSIONAL MEMBERSHIPS

- Editorial Board *Plastic & Reconstructive Surgery* – PRS (present)
- Editorial Board *PRS-GO* (1/2017-present)
- Editorial Board *European Journal of Plastic Surgery* (5/2017-present)
- Editorial Board *Journal of Surgical Oncology* (1/2017-present)
- Editorial Board *Annals of Plastic Surgery* (1/2017-present)
- PSF Basic Science Study Section Reviewer (2016-present)
- Plastic Surgery Research Council Member, Membership Committee (5/2013-present)
- American Society of Reconstructive Microsurgery Member (1/2014-present)
- ASRM Young Microsurgeons Group Committee (2014-present)
- ASRM Young Microsurgeons Group Chair (2018-2019)
- ASRM Masters Series Co-Chair (2017-2018)
- ASRM Godina Committee (YMG Representative)- (2014-2015)
- ASRM Nominating Committee (YMG Representative)-(2015-2016)
- ASRM Masters Series Co-Chair (2016-2017)
- ASRM Education Committee (2016-2018)
- ASRM Audit Committee (2017-2018)
- ASRM Program Committee (2018-2019)
- ASRM Executive Council Junior Member at Large (2019-2021)
- American Society of Plastic Surgeons Candidate Member (2014-2015)
- American Society of Plastic Surgeons Member (2016-present)
- Fellow American College of Surgeons-Associate Candidate (2014-2015)
- Fellow American College of Surgeons-FACS (2015-present)
- Membership Committee ACS (2016-present)
- International Federation of Adipose Therapeutics and Science-Member (2014-2016)
- American Society of Maxillofacial Surgeons Member, Best Paper Committee (2013-present)
- ICOPLAST Webinar Committee (2017-present)

- FELLOWSHIP** **MD Anderson Cancer Center**, Houston, TX (07/2010-06/2011)
- 07/2010-01/2014: Candidate member American Society of Reconstructive Microsurgery

TRAINING and AWARDS

- University of California, San Francisco**, San Francisco, CA (06/2003-06/2010)
- 06/2003-06/2004-Julius R. Krevans Award (Surgery Intern of the Year)
- Stanford University**, Palo Alto, CA (06/2006-06/2008)
- 04/2008-Wound Healing Society Young Investigator's Award
 - 07/2006-06/2009-National Institutes of Health LRP grant

- EDUCATION** **New York University School of Medicine**, New York, NY (08/1999-05/2003)
M.D. *Honors Cell Biology*

University of Pennsylvania, Philadelphia, PA (08/1995-05/1999)
B.A. Major Biology, Minor Chemistry and Anthropology, *Summa Cum Laude*

EXPERIENCE

Stanford University Medical Center, Palo Alto, CA

Post Doctoral Fellow, Dr. Geoffrey Gurtner, June 2006-June 2008

- Examining role of HIF1 α mediated neovascularization in aging (**RO1 supplement grant 2008-2010**)
- Examining the role of endothelial progenitor cells in aging and diabetes (**NIH LRP Grant 2008-2011**)
- Developing a novel technique for sutureless microvascular anastomosis with thermoreversible gels and adhesives (**Stanford Bio-X grant 2006-2008**)
- Tissue engineering and gene therapy using novel bioreactor

PUBLICATIONS

1. Mericli AF, Boukvalas S, Rhines LD, Adelman DM, Hanasono MM, **Chang EI**. Free Fibula Flap for Restoration of Spinal Stability After Oncologic Vertebrectomy is Predictive of Bony Union. *Plast Reconstr Surg*. (Accepted)
2. **Chang EI**, Boukvalas S, Liu J, Hanasono MM, Garvey PB. Reconstruction of Posterior Mandibulectomy Defects in the Modern Era of Virtual Planning and Three-Dimensional Modeling. *Plast Reconstr Surg*. (Accepted)
3. **Chang EI**, Hammond DC. Clinical Results on Innovation in Breast Implant Design. *Plast Reconstr Surg*. 2018 Oct;142 (4S The Science of Breast Implants):31S-38S.
4. **Chang EI**, Hammond DC. Introduction to “The Science of Breast Implants.” *Plast Reconstr Surg*. 2018 Oct;142(4S The Science of Breast Implants):4S-5S.
5. Chang EI, Chu CK, **Chang EI**. Advancements in imaging technology for microvascular free tissue transfer. *J Surg Oncol*. 2018 Oct;118(5):729-735.
6. Maricevich M, Lin L, **Chang EI**, Hanasono MM. Interposition Vein Grafting in Head and Neck Free Flap Reconstruction. *Plast Reconstr Surg*. 2018 Oct;142(4):1025-1034
7. Hanson SE, Garvey PB, **Chang EI**, Reece G, Liu J, Butler CE. A Prospective Pilot Study Comparing Rate of Processing Techniques in Autologous Fat Grafting. *Aesthet Surg J*. 2018 Jun 25.
8. **Chang EI**, Liu J. Prospective Evaluation of Obese Patients Undergoing Autologous Abdominal Free Flap Breast Reconstruction. *Plast Reconstr Surg*. 2018 Aug;142(2):120e-125e.
9. Ueno NT, Espinosa Fernandez JR, Cristofanilli M, Overmoyer B, Rea D, Berdichevski F, El-Shinawi M, Bellon J, Le-Petross HT, Lucci A, Babiera G, DeSnyder SM, Teshome M, **Chang E**, Lim B, Krishnamurthy S, Stauder MC, Parmar S, Mohamed MM, Alexander A, Valero V, Woodward WA. International Consensus on the Clinical Management of Inflammatory Breast Cancer from the Morgan Welch Inflammatory Breast Cancer Research Program 10th Anniversary Conference. *J Cancer*. 2018 Apr 6;9(8):1437-1447.
10. Cai R, Xie Z, Zhou L, Wang J, Li X, Huang J, Wang Y, Yang M, **Chang EI**, Tang J. Pedicled Descending Branch Latissimus Dorsi Mini-flap for Repairing Partial Mastectomy Defect: A New Technique. *Plast Reconstr Surg Glob Open*. 2018 Mar 13;6(3):e1692.
11. **Chang EI**, Schaverien MV, Selber JC. Lymphedema Management. *Semin Plast Surg*. 2018 Feb;32(1):3-4.
12. **Chang EI**, Skoracki RJ, Chang DW. Lymphovenous Anastomosis Bypass Surgery. *Semin Plast Surg*. 2018 Feb;32(1):22-27.
13. **Chang EI**, Masia J, Smith ML. Combining Autologous Breast Reconstruction and Vascularized Lymph Node Transfer. *Semin Plast Surg*. 2018 Feb;32(1):36-41.
14. Largo RD, Selber JC, Garvey PB, **Chang EI**, Hanasono MM, Yu P, Butler CE, Baumann DP. Outcome Analysis of Free Flap Salvage in Outpatients Presenting with Microvascular Compromise. *Plast Reconstr Surg*. 2018 Jan;141(1):20e-27e.

15. Starnes-Roubaud MJ, Hanasono MM, Kupferman ME, Liu J, **Chang EI**. Microsurgical Reconstruction Following Oncologic Resection in Pediatric Patients: A 15-Year Experience. *Ann Surg Oncol*. 2017 Dec;24(13):4009-4016.
16. **Chang EI**, Esmaeli B, Butler CE. Eyelid Reconstruction. *Plast Reconstr Surg*. 2017 Nov;140(5):724e-735e.
17. **Chang EI** and Yu P. Prospective Series of Reconstruction of Complex Composite Mandibulectomy Defects with Double Island Free Fibula Flap. *J Surg Oncol*. 2017 Aug;116(2):258-262.
18. **Chang EI** and Liu J. Prospective Unbiased Experience with Three Acellular Dermal Matrices in Breast Reconstruction. *J Surg Oncol*. 2017 Sep;116(3):365-370.
19. Mericli AF, Friedstat JS, **Chang EI**, Hanasono MM. Simultaneous vascularized bony reconstruction of the maxilla and mandible using a single fibula: A case report. *Microsurgery*. 2017 Mar;37(3):243-247.
20. **Chang EI**, Hanasono MM, Butler CE. Management of Unfavorable Outcomes in Head and Neck Free Flap Reconstruction: Experience-Based Lessons from the MD Anderson Cancer Center. *Clin Plast Surg*. 2016 Oct;43(4):653-67.
21. Nguyen AT, Suami H, Hanasono MM, Womack VA, Wong FC, **Chang EI**. Long-term outcomes of the minimally invasive free vascularized omental lymphatic flap for the treatment of lymphedema. *J Surg Oncol*. 2017 Jan;115(1):84-89.
22. Scaglioni MF, Arvanitakis M, Chen YC, Giovanoli P, Chia-Shen Yang J, **Chang EI**. Comprehensive review of vascularized lymph node transfers for lymphedema: Outcomes and complications. *Microsurgery*. 2016 Jun 7.
23. **Chang EI**, Hanasono MM. State-of-the-art reconstruction of midface and facial deformities. *J Surg Oncol*. 2016 Jun;113(8):962-970.
24. Selber JC, **Chang EI**, Clemens MW, Gaber L, Hanasono MM, Klebuc M, Skoracki RJ, Trask T, Yu P, Gaber AO. Simultaneous Scalp, Skull, Kidney, and Pancreas Transplant from a Single Donor. *Plast Reconstr Surg*. 2016 Jun;137(6):1851-61.
25. **Chang EI**, Ibrahim A, Papazian N, Jurgus A, Nguyen AT, Suami H, Yu P. Perforator Mapping and Optimizing Design of the Lateral Arm Flap: Anatomy Revisited and Clinical Experience. *Plast Reconstr Surg*. 2016 Aug;138(2):300e-6e
26. **Chang EI**, Kronowitz SJ. Dual-Pedicle Flap for Unilateral Autologous Breast Reconstruction Revisited: Evolution and Optimization of Flap Design over 15 Years. *Plast Reconstr Surg*. 2016 May;137(5):1372-80
27. Zhang Q, Johnson JA, Dunne LW, Chen Y, Iyyanki T, Wu Y, **Chang EI**, Branch-Brooks CD, Robb GG, Butler CE. Decellularized skin/adipose tissue flap matrix for engineering vascularized composite soft tissue flaps. *Acta Biomater*. 2016 Apr 15;35:166-184.
28. **Chang EI**, Ibrahim A, Liu J, Zhang H, Nguyen AT, Reece GP, Yu P. Deciphering the True Sensitivity and Specificity Implantable Doppler in Free Flap Monitoring. *Plast Reconstr Surg*. 2016 Mar;137(3):971-976.
29. **Chang EI**, Nguyen AT, Zhang H, Crosby MA, Moeller J, Hughes JK, Skoracki RJ, Lewis VO, Chang DW, Hanasono MM. Free Flap for Limb Salvage Following Oncologic Resection: 12-Year Experience. *Ann Surg Oncol*. 2016 Mar;23(3):1036-1043.
30. Zhang Q, Hubenak J, Iyyanki T, Alfred E, Turza KC, Davis G, **Chang EI**, Branch-Brooks CD, Beahm EK, Butler CE. Engineering vascularized soft tissue flaps in an animal model using human adipose-derived stem cells and VEGF+PLGA/PEG microspheres on a collagen-chitosan scaffold with a flow-through vascular pedicle. *Biomaterials*. 2015 Sep 18;73:198-213.
31. **Chang EI**, Zhang H, Liu J, Yu P, Skoracki RJ, Hanasono MM. Analysis of Risk Factors for Flap Loss and Salvage in Free Flap Head and Neck Reconstruction. *Head Neck*. 2016 Apr;38 Suppl 1:E771-775.
32. Ghali S, **Chang EI**, Rice DC, Walsh GL, Yu P. Microsurgical reconstruction of combined tracheal and total esophageal defects. *J Thorac Cardiovasc Surg*. 2015 Nov;150(5):1261-6.
33. Iyyanki T, Hubenak J, Liu J, **Chang EI**, Beahm EK, Zhang Q. Harvesting Technique Affects Adipose-Derived Stem Cell Yield. *Aesthet Surg J*. 2015 May;35(4):467-476.

34. Nguyen AT, **Chang EI**, Suami H, Chang DW. An Algorithmic Approach to Simultaneous Vascularized Lymph Node Transfer with Microvascular Breast Reconstruction. *Ann Surg Oncol*. 2015 Sep;22(9):2919-2924.
35. **Chang EI**, Chang EI, Soto-Miranda M, Zhang H, Nosrati N, Ghali S, Chang DW. Evolution of Bilateral Free Flap Breast Reconstruction Over 10 Years: Optimizing Outcomes and Comparison to Unilateral Reconstruction. *Plast Reconstr Surg*. 2015 Jun;135(6):946e-953e
36. **Chang EI**, Chang EI, Ito R, Zhang H, Nguyen AT, Crosby MA, Skoracki RJ, Hanasono MM, Ueno N, Hunt KK. Challenging a Traditional Paradigm: 12-year Experience with Autologous Free Flap Breast Reconstruction for Inflammatory Breast Cancer. *Plast Reconstr Surg*. 2015 Feb;135(2):262e-269e.
37. **Chang EI**, Yu P, Skoracki RJ, Liu J, Hanasono MM. Functional Outcomes Following Microvascular Reconstruction of Partial, Hemi-, Subtotal and Total Glossectomy Defects. *Ann Surg Oncol*. 2015 Sep;22(9):3061-3069.
38. Scaglioni MF, Suami H, Brandozzi G, Dusi D, **Chang EI**. Cadaveric Dissection and Clinical Experience with 20 Consecutive Tunneled Superficial Temporal Artery Perforator (T-STAP) Flaps for Ear Reconstruction. *Microsurgery*. 2015 Mar;35(3):190-195.
39. **Chang EI**, Chang EI, Soto-Miranda MA, Zhang H, Nosrati N, Crosby MA, Reece GP, Robb GL, Chang DW. Comprehensive Evaluation of Risk Factors and Management of Impending Flap Loss in 2138 Breast Free Flaps. *Ann Plast Surg*. 2016 Jan;77(1):67-71.
40. Selber JC, Xue A, Liu J, Hanasono MM, Skoracki RJ, **Chang EI**, Yu P. Pharyngoesophageal Reconstruction Outcomes Following 349 Cases. *J Reconstr Microsurg*. 2014 Nov;30(9):641-54.
41. Lee PS, Sedrak P, Guha-Thakurta N, **Chang EI**, Ginsberg LE, Esmaeli B, Debnam JM. Imaging Findings of Recurrent Tumors After Orbital Exenteration and Free Flap Reconstruction. *Ophthal Plast Reconstr Surg*. 2014 Jul-Aug;30(4):315-321.
42. Sedrak P, Lee PS, Guha-Thakurta N, **Chang EI**, Ginsberg LE, Esmaeli B, Debnam JM. MRI Findings of Myocutaneous and Fasciocutaneous Flaps Used for Reconstruction of Orbital Exenteration Defects. *Ophthal Plast Reconstr Surg*. 2014 Jul-Aug;30(4):328-336.
43. Scaglioni MF, Di Giuseppe A, **Chang EI**. Propeller Flap Reconstruction of Abdominal Defects: Review of Literature and Case Report. *Microsurgery*. 2015 Jan;35(1):72-78.
44. Scaglioni MF, **Chang EI**, Gur E, Barnea Y, Meller I, Kollander Y, Bickels J, Dadia S, Zaretski A. The Role of the Fibula Head Flap for Joint Reconstruction after Osteoarticular Resections. *J Plast Reconstr Aesthet Surg*. 2014 May;67(5):617-623.
45. **Chang EI**, Fearmonti GM, Chang DW, Butler CE. Cephalic Vein Transposition vs. Vein Grafts for Venous Outflow in Free Flap Breast Reconstruction. *Plast Reconstr Surg Glob Open*. 2014 Jun 6;2(5):e141.
46. **Chang EI**, Chang EI, Soto-Miranda MA, Zhang H, Nosrati N, Robb GL, Chang DW. Comprehensive Analysis of Donor Site Morbidity Following Abdominal-Based Free Flap Breast Reconstruction. *Plast Reconstr Surg*. 2013 Dec;132(6):1383-1391.
47. **Chang EI**, Selber JC, Chang EI, Zhang H, Nosrati N, Robb GL, Chang DW. Choosing the Optimal Timing for Contralateral Symmetry Procedures Following Unilateral Free Flap Breast Reconstruction. *Annals Plast Surg*. 2015 Jan;74(1):12-16.
48. Chang EI, **Chang EI**, Soto-Miranda MA, Zhang H, Nosrati N, Robb GL, Chang DW. Demystifying the Internal Mammary Vessels as Recipient Vessels in Free Flap Breast Reconstruction. *Plast Reconstr Surg*. 2013 Oct;132(4):763-768.
49. Zang M, Zhang Q, **Chang EI**, Mathur AB, Yu P. Decellularized tracheal matrix scaffold for tracheal tissue engineering: in vivo host response. *Plast Reconstr Surg*. 2013 Oct;132(4):549e-559e.
50. **Chang EI**. My First 100 Consecutive Microvascular Free Flaps: Pearls and Lessons Learned in First Year of Practice. *Plast Reconstr Surg Glob Open*. 2013 Aug 7;1(4):e27.
51. **Chang EI**, Lamaris GA, Chang DW. Simultaneous Contralateral Reduction Mammoplasty or Mastopexy During Unilateral Free Flap Breast Reconstruction. *Ann Plast Surg*. 2013 Aug;71(2):144-148.

52. Auerbach LJ, Galvez MG, De Clerck BK, Glotzbach J, Wehner MR, **Chang EI**, Gurtner GC, Auerbach PS. A novel mouse model for frostbite injury. *Wilderness Environ Med.* 2013 Jun;24(2):94-104.
53. Selber JC, Garvey PB, Clemens MW, **Chang EI**, Zhang H, Hanasono MM. A Prospective Study of Transit Time Flow Volume (TTFV) Measurement for Intraoperative Evaluation and Optimization of Free Flaps. *Plast Reconstr Surg.* 2013 Feb;131(2):270-281.
54. Selber JC, **Chang EI**, Liu J, Suami H, Adelman DM, Garvey P, Hanasono MM, Butler CE. Tracking the learning curve in microsurgical skill acquisition. *Plast Reconstr Surg.* 2012 Oct;130(4):551e-558e.
55. Garvey PB, **Chang EI**, Selber JC, Skoracki RJ, Madewell JE, Liu J, Yu P, Hanasono MM. A prospective study of preoperative computed tomographic angiographic mapping of free fibula osteocutaneous flaps for head and neck reconstruction. *Plast Reconstr Surg.* 2012 Oct;130(4):542e-550e.
56. Zang M, Zhang Q, **Chang EI**, Mathur AB, Yu P. Decellularized tracheal matrix scaffold for tissue engineering. *Plast Reconstr Surg.* 2012 Sep;130(3):532-540.
57. **Chang EI**, Peled AW, Foster RD, Lin C, Zeidler KR, Ewing CA, Alvarado M, Hwang ES, Esserman LJ. 10 Year Experience Evaluating Safety and Efficacy of Extended Partial Mastectomy and Immediate Reduction Mammoplasty Reconstruction in Large Breasted Patients. *Ann Surg.* 2012 Jun;255(6):1151-1157.
58. **Chang EI**, Clemens MW, Garvey PB, Skoracki RJ, Hanasono MM. Cephalometric Analysis for Microvascular Head and Neck Reconstruction. *Head Neck.* 2012 Nov;34(11):1607-1614.
59. **Chang EI**, Leon P, Hoffman WY, Schmidt BL. Quality of Life for Patients Requiring Surgical Resection and Reconstruction for Mandibular Osteoradionecrosis: 10-Year Experience at the University of California San Francisco. *Head Neck.* 2012 Feb;34(2):207-212.
60. Samant M, **Chang EI**, Petrungaro J, Ver Halen JP, Yu P, Skoracki RJ, Chang DW. Reconstruction of Massive Oncologic Defects Following Extremity Amputation: A 10-Year Experience. *Ann Plast Surg.* 2012 May;68(5):467-471.
61. Clemens MW, **Chang EI**, Selber JC, Lewis VO, Oates SD, Chang DW. Composite Extremity and Trunk Reconstruction with Vascularized Fibula Flap in Post-Oncologic Bone Defects: A 10-Year Experience. *Plast Reconstr Surg.* 2012 Jan;129(1):170-178.
62. Yu P, **Chang EI**, Hanasono MM. Perforator patterns of the ulnar artery perforator flap. *Plast Reconstr Surg.* 2012 Jan;129(1):213-220.
63. **Chang EI**, Galvez MG, Glotzbach JP, Hamou CD, El-ftesi S, Sommer KM, Abilez OJ, Rajadas J, Fuller GG, Longaker MT, Gurtner GC. Novel Engineered Thermoreversible Nanoparticle Poloxamer Gel for Vascular Anastomosis. *Nat Med.* 2011 Aug 28;17(9):1147-1152.
64. Yu P, **Chang EI**, Hanasono MM. Design of a reliable skin paddle for the fibula osteocutaneous flap: perforator anatomy revisited. *Plast Reconstr Surg.* 2011 Aug;128(2):440-446.
65. **Chang EI**, Carlson GA, Vose JG, Huang EJ, Yang GP. Comparative Healing of Surgical Incisions in Rat Fascia Created by the PEAK PlasmaBlade, Conventional Electrosurgery, and a Standard Scalpel. *J Surg Res.* 2011 May 1;167(1):e47-54.
66. **Chang EI**, Galvez MG, Padilla BE, Freise CE, Foster RD, Hoffman WY. 10 Year Retrospective Analysis of Incisional Herniorrhaphy in Kidney Transplant Patients. *Arch Surg.* 2011 Jan;146(1):21-25.
67. Gruber RP, **Chang EI**, Buchanan E. Suture Techniques in Rhinoplasty. *Clin Plast Surg.* 2010 Apr;37 (2):231-243.
68. Thangarajah H, Vial IN, Grogan RH, Yao D, Januszynk M, Galiano RD, **Chang EI**, Galvez MG, Glotzbach JP, Wong VW, Brownlee M, Gurtner GC. HIF-1 α dysfunction in diabetes. *Cell Cycle.* 2010 Jan 1;9(1):75-79.
69. Loh SA, Carlson GA, **Chang EI**, Huang E, Palanker D, Gurtner GC. Comparative Healing of Surgical Incisions Created by the PEAK PlasmaBlade, Conventional Electrosurgery, and a Scalpel. *Plast Reconstr Surg.* 2009 Dec;124(6):1849-1859.
70. Thangarajah H, Yao D, **Chang EI**, Shi Y, Jazayeri L, Galiano RD, Vial IN, Galiano RD, Du XL, Grogan R, Galvez MG, Januszynk M, Brownlee M, Gurtner GC. The Molecular Basis for

- Impaired Hypoxia Induced VEGF Expression in Diabetic Tissues. *Proc Nat Acad Science* 2009 Aug; 106 (32): 13505-13510.
71. Hopper RA, Verhalen JP, Tepper O, Mehrara BJ, Detch R, **Chang EI**, Baharestani S, Simon BJ, Gurtner GC. Osteoblasts stimulated with pulsed electromagnetic fields increase HUVEC proliferation via a VEGF-A independent mechanism. *Bioelectromagnetics*. 2009 Apr;30(3):189-197.
 72. **Chang EI**, Loh SA, Galvez MG, Thangarajah H, El-Ftesi S, Vial IN, Lin DA, Gurtner GC. SDF-1 α Expression during Wound Healing in the Aged is HIF Dependent. *Plast Reconstr Surg*. 2009 Feb;123(2 Supp): 65-75.
 73. El-ftesi, S, **Chang EI**, Longaker MT, Gurtner GC. Aging and Diabetes Impair Neovascular Potential of Adipo-Derived Stromal Cells. *Plast Reconstr Surg*. 2009 Feb;123(2):475-485.
 74. **Chang EI**, Bonillas RG, El-ftesi S, Chang EI, Vial IN, Chan DA, Ceradini DJ, Gurtner GC. Tissue Engineering Using Autologous Microcirculatory Beds as Vascularized Scaffolds. *FASEB J*. 2009 Mar;23(3):906-915.
 75. Thangarajah H, Vial IN, Chang E, El-ftesi S, Janusyk M, **Chang EI**, Paterno J, Neofytou E, Longaker MT, Gurtner GC. IFATS Series: Adipose Stromal Cells Adopt a Proangiogenic Phenotype Under the Influence of Hypoxia. *Stem Cells*. 2008 Oct 30.
 76. **Chang EI**, Chang EI, Thangarajah H, Hamou C, Gurtner GC. Hypoxia, Hormones, and Vascular Progenitors in Hemangioma. *Lymphatic Research & Biology*. 2007 Dec; 5(4): 237-244.
 77. Callaghan MJ, **Chang EI**, Seiser N, Aarabi S, Ghali S, Kinnucan ER, Simon BJ, Gurtner GC. Pulsed Electromagnetic Fields Accelerate Normal and Diabetic Wound Healing by Increasing Endogenous FGF-2 Release. *Plastic and Reconstructive Surgery*. 2008 Jan;121(1):130-140.
 78. Chang EI, Loh SA, Ceradini DJ, **Chang EI**, Lin SE, Bastidas N, Aarabi S, Chan DA, Freedman ML, Giaccia AJ, Gurtner GC. Age Decreases Endothelial Progenitor Cell Recruitment through Decreases in HIF-1 α Stabilization during Ischemia. *Circulation*. 2007 Dec 11;116(24):2818-2829.
 79. **Chang EI**, Foster RD, Hansen SL, Jazayeri L, Patti MG. Autologous Reconstruction of Large Ventral Hernias in Morbidly Obese Patients. *Archives of Surgery*. 2007 Aug;142(8):746-751.
 80. Aarabi S, Bhatt KA, Shi Y, Paterno J, **Chang EI**, Loh SA, Holmes JW, Longaker MT, Yee H, Gurtner GC. Mechanical load initiate hypertrophic scar formation through decreased cellular apoptosis. *FASEB Journal*. May 15, 2007.
 81. Singh SP, **Chang EI**, Gossain AK, Mehara BJ, Galiano RD, Jensen J, Longaker MT, Gurtner GC, Saadeh PB. Cyclic mechanical strain increases production of regulators of bone healing in cultured murine osteoblasts. *J Am Coll Surg*. 204 (3):426-434.
 82. Cetrulo C Jr, Knox, KR, Brown DJ, Ashinoff RL, Dobryansky M, Ceradini DJ, Capla JM, **Chang EI**, Bhatt KA, McCarthy JG, Gurtner GC. Stem Cells and Distraction Osteogenesis: Endothelial Progenitor Cells Home to the Ischemic Generate in Activation and Consolidation. *Plastic & Reconstructive Surgery*. 116(4):1053-1064.
 83. Tepper OM, Callaghan MJ, **Chang EI**, Galiano RD, Bhatt KA, Baharestani S, Gan J, Simon B, Hopper RA, Levine JP, Gurtner GC. Electromagnetic Fields Increase in vitro and in vivo angiogenesis through endothelial cell release of FGF-2. *FASEB Journal*. (11): 1231-1243.

INVITED DISCUSSION

1. **Chang EI**, Chang DW. Reply: comprehensive analysis of donor-site morbidity in abdominally based free flap breast reconstruction. *Plast Reconstr Surg*. 2015 Jan;135(1):227e.
2. **Chang EI**. Discussion: The Economic Impact of Closed-Incision Negative-Pressure Therapy in High-Risk Abdominal Incisions: A Cost-Utility Analysis. *Plast Reconstr Surg*. 2016 Apr;137(4):1290-1.
3. **Chang EI**. Discussion: Calf Perforator Flaps – a Freestyle Solution for Oral Cavity Reconstruction. *Plast Reconstr Surg*. 2017 Feb;139(2):466-467.
4. **Chang EI**. Discussion: Molecular profiling using breast cancer subtype to plan for breast reconstruction. *Plast Reconstr Surg*. 2017 Mar;139(3):597e-598e.
5. **Chang EI**, Esmali B, Butler CE. Reply: The Value of Secondary Intention Healing in Eyelid Reconstruction. *Plast Reconstr Surg*. 2018 May;141(5):786e-787e.

6. **Chang EI.** Discussion: External Port Tissue Expansion in the Pediatric Population: Confirming their Safety and Efficacy. *Plast Reconstr Surg.* 2018 Jun;141(6):891e-892e.
7. **Chang EI.** Discussion: Comparison between negative pressure fixation and film dressing in wound management after tissue expansion: A randomized controlled trial. *Plast Reconstr Surg.* 2018 Jul;142(1):42-43.
8. Phillips BT, **Chang EI.** Discussion: Secondary Surgery following initial replantation/revascularization or completion amputation in the hand or digits. *Plast Reconstr Surg.* 2018 Sep;142(3):717-718.
9. Starnes-Roubaud MJ and **Chang EI.** Discussion: Impact of Chronic Steroid Use on Plastic Surgery Outcomes: Analysis of 94,140 Cases. *Plast Reconstr Surg.* 2018 Nov;142(5):780e-781e.
10. Kapur SK and **Chang EI.** Discussion: The Utility of Preoperative Arteriography for Free Flap Planning in Patients with Chronic Lower Extremity Wounds. *Plast Reconstr Surg.* 2019 Feb;143(2):614-615.

BOOK CHAPTERS

- Kwan MD, Slater BJ, **Chang EI,** Longaker MT, Gurtner GC. Tissue Engineering in Plastic Surgery. *Fundamentals of Tissue Engineering and Regenerative Medicine.*
- **Chang EI** and Skoracki RJ. Silicone Breast Implants. *Breast.*
- **Chang EI,** Kupferman M, Sacks JM. Carcinomas of the Upper Aerodigestive Tract. *Plastic Surgery 3rd Edition.* Editor Neligan.
- **Chang EI,** Moeller JA, Chang DW. Free Tissue Transfer. *Rehabilitation Medical Reference.*
- **Chang EI** and Hanasono MM. Radial forearm flap. *Reconstructive Plastic Surgery of the Head and Neck: Current Techniques and Flap Atlas*
- **Chang EI** and Hanasono MM. Local pedicle flaps in head and neck reconstruction. *Reconstructive Plastic Surgery of the Head and Neck: Current Techniques and Flap Atlas*
- **Chang EI,** Crosby MA, Robb GL. Breast Reconstruction. *MD Anderson Cancer Center Handbook.*
- **Chang EI.** Superior Gluteal Artery Perforator (SGAP) Flap for Breast Reconstruction. *Oncoplastic and Reconstructive Management of the Breast: A Multidisciplinary Approach,* Third Edition
- **Chang EI** and Hanasono M. ALT Flap for Pharyngoesophageal Reconstruction. *Operative Techniques in Surgery.*
- **Chang EI.** Lymphovenous Bypass/ Anastomosis. *Handbook of Reconstructive Flaps.* Editors: C. Butler and M. Hanasono.
- **Chang EI.** Medial Plantar Artery Flap. *Handbook of Reconstructive Flaps.* Editors: C. Butler and M. Hanasono.
- **Chang EI.** Lateral Arm Flap. *Handbook of Reconstructive Flaps.* Editors: C. Butler and M. Hanasono.
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