

CURRICULUM VITAE

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POSITION: Hand Surgery Fellow, UC San Francisco
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EDUCATION:

2008 MBBS Medical degree, King's College London; London, UK
2009 DPM Philosophy of Medicine, Society of Apothecaries, London, UK
2011 MSc (DIC) Surgical Technology, Imperial College London; London, UK
2013 Certificate Global Innovations Program, Stanford Graduate School of Business; Stanford, CA

HONORS AND AWARDS:

2002 National Merit Scholar
2002 AP Scholar with Distinction
2008 Honors in MBBS
2013 Celleration Travel Award for American College of Surgeons Meeting
2013 Highly Commended Certificate Award at British Medical Association (BMA) Medical Book Awards
2014 Best Basic Science Presentation Award at Stanford Plastic Surgery Research Symposium
2014 Plastic Surgery Education Foundation Research Fellowship Grant (\$50,000)
2014 Excellence in Research Award (Plastic Surgery) at American College of Surgeon's Surgical Forum
2014 Translational Research and Applied Medicine (TRAM) Pilot Grant – Stanford University (\$14,500)
2014 Hagey Fellowship
2015 Translational Research and Applied Medicine (TRAM) Pilot Grant Renewal
2015 Clifford C. Snyder, MD Past Chairman Award - Plastic Surgery Research Council
2016 Thuss Award - Stanford University Department of Plastic Surgery
2018 DePuy Synthes Course Support Grant (\$1900)
2019 Best Long Paper Award – European Plastic Surgery Research Council
2019 Basic Science Session Moderator – European Plastic Surgery Research Council
2020 Troxel Fellowship – Zedplast Alumni Association
2020 Zedplast Traveling Scholarship – Zedplast Alumni Association
2020 Daniel C. Riordan Award - Riordan Hand Society & American Foundation for Surgery of the Hand
2020 Plastic Surgery Education Foundation Pilot Research Grant (\$10,000)
2021 Best Basic Science Presentation Award at Holman Lecture - Stanford Department of Surgery

TRAINING and EMPLOYMENT:

2008-10 Foundation Training, South Thames Rotation, London, UK
2010-12 Core Surgical Training, East of England Deanery; Cambridge, UK
2012-15 Postdoctoral Scholar, Stanford University
2015-22 Plastic Surgery Resident, Stanford University
2022-23 Hand Surgery Fellow, UC San Francisco

LICENSURE AND CERTIFICATION:

- 2011 Member of the Royal College of Surgeons of England
2017 California Physician & Surgeon's License: A 150534
2019 California Fluoroscopy X-Ray Supervisor and Operator: RHC00205141

PUBLICATIONS

**These authors contributed equally*

Manuscripts Published/In Press:

1. Al-Jabri T, Daneshi M, **Maan ZN**, Misra SK, Khan K, Coker C. 2011. Simple intratesticular cysts: a 13 year experience in a single institution. *Diag Path* 6(24). PMID: 21435258
2. **Maan ZN**, Gibbins N, Al-Jabri T, D'Souza AR. 2012. The use of robotics in otolaryngology - head and neck surgery: a systematic review. *Am J Otol* 33(1): 137-46. PMID: 21658808
3. **Maan ZN**, D'Souza AR. 2012. Spontaneous subcutaneous emphysema associated with methadone usage. *Ann R Coll Surg Engl* 94(1): 38-40. PMID: 22524925.
4. Sierakowski A, Tare M, **Maan Z**. 2012. Co-existing neuroma of the palmar cutaneous branch of the median nerve and an arterio-venous malformation after open carpal tunnel decompression. *J Plast Reconstr Aesthet Surg* 65(4): 541-2. PMID: 21968282
5. **Maan ZN**, Maan IN, Darzi A, Aggarwal R. 2012. Systematic review of predictors of surgical performance. *Br J Surg* 99(12): 1610-21. PMID: 23034658.
6. Naqvi M, Ward ST, Dowswell G, Donnelly J; on behalf of the **SWIFT group collaborators [incl. Maan ZN]** & the West Midlands Research Collaborative (WMRC). 2013. The influence of key clinical practices on the knowledge of first year doctors about the patients under their car. *Int J Clin Pract* 67(2): 181-8. PMID: 23216806.
7. Rennert RC, Rodrigues M, Wong VW, Duscher D, Hu MS, **Maan ZN**, Sorkin M, Gurtner GC, Longaker MT. 2013. Biological therapies for the treatment of cutaneous wounds: phase III and launched therapies. *Expert Opin Biol Ther* 13(11): 1523-41. PMID: 24093722.
8. **Maan ZN**, Januszyk M, Rennert RC, Duscher D, Rodrigues M, Fujiwara T, Ho N, Whitmore A, Hu MS, Longaker MT, Gurtner GC. 2014. Non-contact low frequency ultrasound therapy enhances neovascularization and wound healing in diabetic mice. *Plast Reconstr Surg* 134(3):402e-11e. PMID: 25158717.
9. Duscher D, **Maan ZN**, Wong VW, Rennert RC, Januszyk M, Rodrigues M, Hu MS, Whitmore AJ, Whittam AJ, Longaker MT, Gurtner GC. 2014. Mechanotransduction and Fibrosis. *J Biomech* S0021-9290(14): 00201-2. PMID: 24709567.
10. Zimmerman A, Morrison SD, Li S, Nauta A, Sorkin M, Meyer NP, Walmsley GG, **Maan ZN**, Chan DA, Gurtner GC, Giaccia AJ, Longaker MT. 2014. Epidermal or dermal specific knockout of PHD-2 enhances wound healing and minimizes ischemic injury. *PLOS One* 9(4): e93373. PMID: 24695462.
11. Hu MS, Januszyk M, Hong WX, Walmsley GG, Zielins, ER, Atashroo DA, **Maan ZN**, McArdle A, Takanishi DM, Gurtner GC, Longaker MT, Lorenz HP. 2014. Gene expression in fetal murine keratinocytes and fibroblasts. *J Surg Res* 190(1): 344-57. PMID: 24726057.
12. Hu MS, **Maan ZN**, Wu J, Rennert RC, Lai TS, Longaker MT, Lorenz HP. 2014. Tissue engineering and regenerative repair in wound healing. *Ann Biomed Eng* PMID: 24788648.
13. Januszyk M, Sorkin M, Glotzbach JP, Vial IN, **Maan ZN**, Rennert RC, Duscher D, Thangarajah H, Longaker MT, Butte AJ, Gurtner GC. 2014. Diabetes irreversibly depletes bone marrow-derived mesenchymal progenitor cell subpopulations. *Diabetes*. PMID: 24740572.
14. Rennert RC, Sorkin M, Januszyk M, Duscher D, Kosaraju R, Chung MT, Lennon J, Radiya-Dixit A, Raghvendra S, **Maan ZN**, Hu MS, Rajadas J, Rodrigues M, Gurtner GC. 2014. Diabetes impairs the

angiogenic potential of adipose derived stem cells by selectively depleting cellular subpopulations. *Stem Cell Res Ther* 5(3): 79. PMID: 24943716.

15. **Maan ZN**, Rodrigues M, Rennert RC, Whitmore A, Duscher D, Januszyk M, Hu MS, Davis CR, Whittam AJ, Gurtner GC. 2014. Understanding regulatory pathways of neovascularization in diabetes. *Expert Reviews in Endocrinology and Metabolism* 9(5): 487-501. DOI: 10.1586/17446651.2014.938054.
16. Chang E*, Paterno J*, Duscher D*, **Maan ZN**, Chen J, Januszyk M, Rodrigues M, Rennert RC, Bishop S, Whitmore AJ, Whittam AJ, Longaker MT, Gurtner GC. 2015. Exercise induces stromal cell-derived factor-1 α -mediated release of endothelial progenitor cells with increased vasculogenic function. *Plast Reconstr Surg* 135(2):340e-50e. PMID: 2562819
17. Zielins ER, Atashroo D, **Maan ZN**, Duscher D, Walmsley GG, Hu MS, Marecic O, McArdle A, Senarath-Yapa K, Tevlin R, Wearda T, Paik KJ, Duldulao C, Hong WX, Gurtner GC, Longaker MT. 2014. Wound Healing: An Update. *Regen Med* 9(6): 817-30. PMID: 25431917.
18. Walmsley GG, **Maan ZN**, Duscher D, Hu MS, Zielins ER, Wearda T, Muhonen E, McArdle A, Wong VW, Lorenz HP, Gurtner GC, Longaker MT. 2015. Scarless wound healing: chasing the holy grail. *Plast Reconstr Surg* 135(3): 907-17. PMID: 25719706
19. **Maan ZN**, Frew Q, Din AH, Smailes S, Philp B, El-Muttardi N, Dziewulski P. 2014. Burns ITU admissions: length of stay in specific levels of care for adult and paediatric patients. *Burns* 40(8): 1458-62. PMID: 25155115.
20. **Maan ZN***, Rennert RC*, Koob T, Li W, Gurtner GC. Cell recruitment by amnion chorion grafts promotes neovascularization. *J Surg Res* 193(2): 953-62. PMID: 25266600.
21. Walmsley GC, Rinkevich Y, Hu MS, Montoro DM, Lo DD, McArdle A, **Maan ZN**, Morrison SM, Duscher D, Wong VW, Weissman IL, Gurtner GC, Longaker MT. 2015. Live fibroblast harvest reveals surface marker shift in vitro. *Tissue Eng Part C Methods* 21(3): 314-21. PMID: 25275778.
22. Duscher D*, Rennert RC*, Januszyk M*, Anghel E, **Maan ZN**, Whittam AJ, Rodrigues M, Than P, Rajadas J, Longaker MT, Gurtner GC. 2014. Aging disrupts cell subpopulation dynamics and diminishes the function of mesenchymal stem cells. *Sci Rep* 4: 7144. PMID: 25413454
23. Duscher D*, Neoflyou E*, Wong VW, **Maan ZN**, Rennert RC, Inayathullah M, Januszyk M, Rodrigues M, Malkovskiy AV, Whitmore AJ, Walmsley GG, Galvez MG, Whittam AJ, Brownlee M, Rajadas J, Gurtner GC. 2015. Transdermal deferoxamine prevents pressure-induced diabetic ulcers. *Proc Nat Acad Sci USA* 112(1):94-9. PMID: 25535360.
24. Atashroo DA, Luan A, Vyas KS, Zielins ER, **Maan Z**, Duscher D, Walmsley GG, Lynch MP, Davenport DL, Wan DC, Longaker MT, Vasconez HC. 2015 What Makes a Plastic Surgery Residency Program Attractive? An Applicant's Perspective. *Plast Reconstr Surg* 136(1):189-196. PMID: 2611321.
25. Walmsley GG, Hu MS, **Maan ZN**, Rinkevich Y, Weissman IL, Longaker MT. 2015. En1 fibroblasts and melanoma. *Melanoma Manag* 2(3): 191-2. PMID: 30190847
26. Paik KJ, Zielins ER, Atashroo DA, **Maan ZN**, Duscher D, Luan A, Walmsley GG, Momeni A, Vistnes S, Gurtner GC, Longaker MT, Wan DC. 2015. Studies in fat grafting: part V. Cell-assisted lipotransfer to enhance fat graft retention is dose dependent. *Plast Reconstr Surg* 136(1):67-75. PMID: 25829158.
27. Rinkevich Y*, Walmsley GG*, Hu MS*, **Maan ZN***, Newman AM, Drukker M, Januszyk M, Krampitz GW, Gurtner GC, Lorenz PH, Weissman IL, Longaker MT. 2015. Skin fibrosis: Identification and isolation of a dermal lineage responsible with intrinsic fibrogenic potential. *Science* 348(6232):aaa2151. PMID: 25883361.
28. Walmsley GG, Atashroo DA, **Maan ZN**, Hu MS, Zielins ER, Tsai JM, Duscher D, Paik K, Tevlin R, Marecic O, Wan DC, Gurtner GC, Longaker MT. 2015. High-Throughput Screening of Surface Marker Expression on Undifferentiated and Differentiated Human Adipose-Derived Stromal Cells. *Tissue Eng Part A* 21(15-16):2281-2291. PMID: 26020286.
29. Houschyar KS, Momeni A, **Maan ZN**, Pyles MN, Jew OS, Strathe M, Michalsen A. 2015. Medical leech therapy in plastic reconstructive surgery. *Wien Med Wochenschr.* 2015. 165(19-20):419-425. PMID: 26297126.

30. Houschyar KS, Momeni A, Pyles MN, **Maan ZN**, Whittam AJ, Siemers F. 2015. Wnt signaling induces epithelial differentiation during cutaneous wound healing. *Organogenesis* 11(3):95-104. PMID: 26309090.
31. Duscher D, Barrera J, Wong VW, **Maan ZN**, Whittam AJ, Januszyk M, Gurtner GC. 2016. Stem Cells in Wound Healing: The Future of Regenerative Medicine? A Mini-Review. *Gerontology* 62(2):216-225. PMID: 26045256.
32. Pollhammer MS, Duscher D, **Maan ZN**, Schmidt M, Huemer GM. 2015. Gigantic LCFA-SCIP Mosaic Flap for Upper Extremity Reconstruction. *Plast Reconstr Surg Glob Open* 3(9):e506. PMID: 26495219.
33. **Maan ZN***, Duscher D*, Whittam AJ, Sorkin M, Hu MS, Walmsley GG, Baker H, Fischer LH, Januszyk M, Wong VW, Gurtner GC. 2015. Fibroblast-Specific Deletion of Hypoxia Inducible Factor-1 Critically Impairs Murine Cutaneous Neovascularization and Wound Healing. *Plast Reconstr Surg* 136(5):1004-1013. PMID: 26505703.
34. Walmsley GG, Senarath-Yapa K, Wearda TL, Menon S, Hu MS, Duscher D, **Maan ZN**, Tsai JM, Zielins ER, Weissman IL, Gurtner GC, Lorenz HP, Longaker MT. 2016. Surveillance of Stem Cell Fate and Function: A System for Assessing Cell Survival and Collagen Expression In Situ. *Tissue Eng Part A* 22(1-2):31-40. PMID: 26486617.
35. Hu MS, Leavitt T, Malhotra S, Duscher D, Pollhammer MS, Walmsley GG, **Maan ZN**, Cheung AT, Schmidt M, Huemer GM, Longaker MT, Lorenz HP. 2015. Stem Cell-Based Therapeutics to Improve Wound Healing. *Plastic Surg Int* 2015:383581. PMID: 26649195.
36. Fujiwara T, Duscher D, Rustad KC, Kosaraju R, Rodrigues M, Whittam AJ, Januszyk M, **Maan ZN**, Gurtner GC. 2016. Extracellular Superoxide Dismutase Deficiency Impairs Wound Healing in Advanced Age by Reducing Neovascularization and Fibroblast Function. *Exp Dermatol* 25(3): 206-11. PMID: 26663425.
37. Duscher D, Atashroo D, **Maan ZN**, Luan A, Brett EA, Barrera J, Khong SM, Zielins ER, Whittam AJ, Hu MS, Walmsley GG, Pollhammer MS, Schmidt M, Schilling AF, Machens HG, Huemer GM, Wan DC, Longaker MT, Gurtner GC. 2016. Ultrasound-Assisted Liposuction Does Not Compromise the Regenerative Potential of Adipose-Derived Stem Cells. *Stem Cells Transl Med* 5(2):248-257. PMID: 26702129.
38. **Maan ZN***, Walmsley GG*, Hu MS, Atashroo DA, Whittam AJ, Duscher D, Tevlin R, Marecic O, Lorenz HP, Gurtner GC, Longaker MT. 2016. Murine Dermal Fibroblast Isolation by FACS. *J Vis Exp* (107). PMID: 26780559.
39. Davis CR, Rappleye CT, Than PA, Rodrigues M, Findlay MW, Bishop SN, Whitmore AJ, **Maan ZN**, McGoldrick RB, Grobbelaar AO, Gurtner GC. 2016. Sutureless Microsurgical Anastomosis Using an Optimized Thermoreversible Intravascular PloXamer Stent. *Plast Reconstr Surg* 137(2):546-556. PMID: 26818289.
40. Whittam AJ, **Maan ZN**, Duscher D, Wong VW, Barrera JA, Januszyk M, Gurtner GC. 2016. Challenges and Opportunities in Drug Delivery for Wound Healing. *Adv Wound Care* 5(2):79-88. PMID: 26862465.
41. Kosaraju R, Rennert RC, **Maan ZN**, Duscher D, Barrera J, Whittam AJ, Januszyk M, Rajadas J, Rodrigues M, Gurtner GC. 2016. Adipose-Derived Stem Cell-Seeded Hydrogels Increase Endogenous Progenitor Cell Recruitment and Neovascularization in Wounds. *Tissue Eng Part A* 22(3-4):295-305. PMID: 26871860.
42. Houschyar KS, Momeni A, Pyles MN, Cha JY, **Maan ZN**, Duscher D, Jew OS, Siemers F, van Schoonhoven J. 2016. The Role of Current Techniques and Concepts in Peripheral Nerve Repair. *Plast Surg Int* 2016:4175293. PMID: 26904282.
43. Paik KJ, **Maan ZN**, Zielins ER, Duscher D, Whittam AJ, Morrison SD, Brett EA, Ransom RC, Hu MS, Wu JC, Gurtner GC, Longaker MT, Wan DC. Short Hairpin RNA Silencing of PHD-2 Improves Neovascularization and Functional Outcomes in Diabetic Wounds and Ischemic Limbs. *PLoS One*. 2016. 11(3):e0150927. PMID: 26967994.
44. Rennert RC, Achrol AS, Januszyk M, Kahn SA, Liu TT, Liu Y, Sahoo D, Rodrigues M, **Maan ZN**, Wong VW, Cheshier SH, Chang SD, Steinberg GK, Harsh GR, Gurtner GC. 2016. Multiple subsets of brain tumor initiating cells co-exist in glioblastoma. *Stem Cells*. PMID: 26991945.
45. Rennert RC, Schäfer R, Bliss T, Januszyk M, Sorkin M, Achrol AS, Rodrigues M, **Maan ZN**, Kluba T, Steinberg GK, Gurtner GC. 2016. High-Resolution Microfluidic Single-Cell Transcriptional Profiling Reveals

- Clinically Relevant Subtypes among Human Stem Cell Populations Commonly Utilized in Cell-Based Therapies. *Front Neurol* 7:41. PMID: 27047447.
46. Duscher D, Luan A, Rennert RC, Atashroo D, **Maan ZN**, Brett EA, Whittam AJ, Ho N, Lin M, Hu MS, Walmsley GG, Wenny R, Schmidt M, Schilling AF, Machens HG, Huemer GM, Wan DC, Longaker MT, Gurtner GC. 2016. Suction assisted liposuction does not impair the regenerative potential of adipose derived stem cells. *J Transl Med* 14(1):126. PMID: 27153799
 47. Rennert RC, Januszyk M, Sorkin M, Rodrigues M, **Maan ZN**, Duscher D, Whittam AJ, Kosaraju R, Chung MT, Paik K, Li AY, Findlay M, Glotzbach JP, Butte AJ, Gurtner GC. 2016. Microfluidic single-cell transcriptional analysis rationally identifies novel surface marker profiles to enhance cell-based therapies. *Nat Commun* 7:11945. PMID: 27324848.
 48. Tevlin R, Seo EY, Marecic O, McArdle A, Tong X, Zimdahl B, Malkovskiy A, Sinha R, Gulati G, Li X, Wearda T, Morganti R, Lopez M, Ransom RC, Duldulao CR, Rodrigues M, Nguyen A, Januszyk M, **Maan Z**, Paik K, Yapa KS, Rajadas J, Wan DC, Gurtner GC, Snyder M, Beachy PA, Yang F, Goodman SB, Weissman IL, Chan CK, Longaker MT. 2017. Pharmacological rescue of diabetic skeletal stem cell niches. *Sci Transl Med* 9(372). pii: eaag2809. PMID: 28077677.
 49. Duscher D, Januszyk M, **Maan ZN**, Whittam AJ, Hu MS, Walmsley GG, Dong Y, Khong SM, Longaker MT, Gurtner GC. Comparison of the hydroxylase inhibitor dimethylxalylglycine and the iron chelator deferoxamine in diabetic and aged wound healing. 2017. *Plast Reconstr Surg* 139(3):695e-706e. PMID: 28234841.
 50. **Maan ZN**, Legrand A, Long C, Chang JC. 2017. Reverse radial forearm flap. *Plast Reconstr Surg Glob Open* 5(4):e1287. PMID: 28507856.
 51. Houschyar KS, Pyles MN, Rein S, Nietzsche-Schmann I, Duscher D, **Maan ZN**, Weissenberg K, Philipps HM, Strauss C, Reichelt B, Siemers F. 2017. Continuous hemoabsorption with a cytokine adsorber during sepsis - a review of the literature. *Int J Artif Organs* 40(5):205-211. PMID: 28525674.
 52. Fujiwara T, Dohi T, **Maan ZN**, Rustad KC, Kwon SH, Padmanabhan J, Whittam AJ, Suga H, Duscher D, Rodrigues M, Gurtner GC. 2017. Age-associated intracellular superoxide dismutase deficiency potentiates dermal fibroblast dysfunction during wound healing. *Exp Dermatol* . PMID: 28677217.
 53. Houschyar KS, Philipps HM, Duscher D, Rein S, Weissenberg K, Nietzsche-Schmann I, **Maan ZN**, Pyles MN, Siemers F. 2017. The Body Dysmorphic Disorder in Plastic Surgery - A Systematic Review of Screening Methods. *Handchir Mikrochir Plast Chir* 49(6):415-422. PMID: 28763813.
 54. Januszyk M, Kwon SH, Wong VW, Padmanabhan J, **Maan ZN**, Whittam AJ, Major MR, Gurtner GC. 2017. The Role of Focal Adhesion Kinase in Keratinocyte Fibrogenic Gene Expression. *Int J Mol Sci* 18(9). Pii: E1915. PMID: 28880199.
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 56. Hu MS, Walmsley GG, Barnes LA, Weiskopf K, Rennert RC, Duscher D, Januszyk M, **Maan ZN**, Hong WX, Cheung AT, Leavitt T, Marshall CD, Ransom RC, Malhotra S, Moore AL, Rajadas J, Lorenz HP, Weissman IL, Gurtner GC, Longaker MT. 2017. Delivery of monocyte lineage cells in a biomimetic scaffold enhances tissue repair. *JCI Insight* 2(19). pii: 96260. PMID: 28978794.
 57. Hu MS, Cheng J, Borrelli MR, Leavitt T, Walmsley GG, Zielins ER, Hong WX, Cheung ATM, Duscher D, **Maan ZN**, Irizarry DM, Stephan B, Parsa FD, Wan DC, Gurtner GC, Lorenz HP, Longaker MT. 2018. An improved humanized mouse model for excisional wound healing using double transgenic mice. *Adv Wound Care* 7(1):11-17. PMID: 29344430.
 58. Houschyar KS, Chelliah MP, Rein S, **Maan ZN**, Weissenberg K, Duscher D, Branski LK, Siemers F. 2018. Role of Wnt signaling during inflammation and sepsis: a review of the literature. *Int J Artif Organs* 41(5):247-253. PMID: 29562813.

59. Hu MS, Hong WX, Januszyk M, Walmsley GG, Luan A, **Maan ZN**, Moshrefi S, Tevlin R, Wan DC, Gurtner GC, Longaker MT, Lorenz HP. 2018 Pathway analysis of gene expression in murine fetal and adult wounds. *Adv Wound Care* 7(8):262-275. PMID: 30087802.
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61. Sheckter CC, Kiwanuka H, **Maan Z**, Pirrotta E, Curtin C, Wang NE. Increasing ambulatory treatment of pediatric minor burns-The emerging paradigm for burn care in children. *Burns* 2018. PMID: 30236815
62. Houschyar KS, Tapking C, Duscher D, Harati K, Wallner C, Wagner JM, **Maan ZN**, Rein S, Chelliah MP, Reumuth G, Grieb G, Siemers F, Lehnhardt M, Behr B. 2018. [Regulation of bone metabolism by the Wnt signaling pathway]. *Handchir Mikrochir Plast Chir* PMID: 30278469.
63. Whittam AJ, **Maan ZN**, Duscher D, Barrera JA, Hu MS, Fischer LH, Khong S, Kwon SH, Wong VW, Walmsley GG, Giacco F, Januszyk M, Brownlee M, Longaker MT, Gurtner GC. 2018. Small molecule inhibition of dipeptidyl peptidase-4 enhances bone marrow progenitor cell function and angiogenesis in diabetic wounds. *Transl Res* S1931-5244(18)30205-6. PMID: 30452888.
64. Hopfner U, Aitzetmueller MM, Nessbach P, Hu MS, Machens HG, **Maan ZN**, Duscher D. 2018. Fibrin Glue Enhances Adipose-Derived Stromal Cell Cytokine Secretion and Survival Conferring Accelerated Diabetic Wound Healing. *Stem cells Int* 1353085. PMID: 30662467.
65. Houschyar KS, Tapking C, Borrelli MR, Popp D, Duscher D, **Maan ZN**, Chelliah MP, Li J, Harati K, Wallner C, Rein S, Pforringer D, Remuth G, Grieb G, Mouraret S, Dadras M, Wagner JM, Cha JY, Siemers F, Lehnhardt M, Behr B. 2018. Wnt Pathway in Bone Repair and Regeneration - What Do We Know So Far. *Front Cell Dev Biol* 6:170. PMID: 30666305.
66. Miller TJ, Deptula PL, Buncke GM, **Maan ZN**. 2019. Digit Tip Injuries: Current Treatment and Future Regenerative Paradigms. *Stem Cells Int* 9619080. PMID: 30805012.
67. Houschyar KS, Tapking C, Nietzsche I, Rein S, Weissenberg K, Chelliah MP, Duscher D, **Maan ZN**, Philipps HM, Sheckter CC, Reichelt B, Branski LK, Siemers F. 2019. Five Years Experience With Meek Grafting in the Management of Extensive Burns in an Adult Burn Center. *Plast Surg (Oakv.)* 27:44-8. PMID: 30854361
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69. Kiwanuka H, **Maan ZN**, Rochlin D, Curtin C, Karanas Y, Sheckter CC. 2019. Homelessness and Inpatient Burn Outcomes in the United States. *J Burn Care Res* 40:633-8. PMID: 30938433.
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71. Houschyar KS, Tapking C, Duscher D, **Maan ZN**, Sheckter CC, Rein S, Chelliah MP, Nietzsche I, Weissenberg K, Reumuth G, Schulz T, Branski LK, Siemers F. 2019. Optimising management of self-inflicted burns: a retrospective review. *J Wound Care* 28:317-22. PMID: 31166860.
72. Duscher D, Trotsyuk AA, **Maan ZN**, Kwon SH, Rodrigues M, Engel K, Stern-Buchbinder ZA, Bonham CA, Barrera J, Whittam AJ, Hu MS, Inayathullah M, Rajadas J, Gurtner GC. 2019. Optimization of transdermal deferoxamine leads to enhanced efficacy in healing skin wounds. *J Control Release* 308:232-9. PMID: 31299261.
73. Houschyar KS, Philipps HM, Duscher D, Rein S, Weissenberg K, Nietzsche I, **Maan ZN**, Pyles MN, Siemers F. 2019. The body dysmorphic disorder in plastic surgery – a systematic review of screening methods. *Laryngorhinootologie* 98(5):325-22. PMID: 31618775.
74. Padmanabhan J, **Maan ZN**, Kwon SH, Kosaraju R, Bonham CA, Gurtner GC. 2019. *In vivo* models for the study of fibrosis. *Adv Wound Care* 8(12): 645-54. PMID: 31827979.
75. Sheckter CC, Pham C, Rochlin D, **Maan ZN**, Karanas Y, Curtin C. 2019. The association of burn patient volume with patient safety indicators and mortality in the US. *Burn* S0305-4179(19)30614-X. PMID: 31843281.

76. Duscher D, **Maan ZN**, Hu MS & Thor D. 2020. A single-center blinded randomized clinical trial to evaluate the anti-aging effects of a novel HSF™-based skin care formulation. *J Cosmet Dermatol*. PMID: 32306525.
77. Henn D, Chen K, **Maan ZN**, Greco AH, Moortgat Illouz SE, Bonham CA, Barrera JA, Trotsyuk AA, Padmanabhan J, Momeni A, Wan DC, Nguyen D, Januszyk M, Gurtner GC. 2020. Cryopreserved human skin allografts promote angiogenesis and dermal regeneration in a murine model. *Int Wound J* 17(4): 925-936. PMID: 32227459.
78. Hopfner U, **Maan ZN**, Hu MS, Aitzetmüller MM, Zaussinger M, Kirsch M, Machens HG, Duscher D. 2020. Deferoxamine enhances the regenerative potential of diabetic Adipose Derived Stem Cells. *J Plast Reconstr Aesthet Surg* 73(9): 1738-1746. PMID: 32418841.
79. Houschyar KS, Borrelli MR, Tapking C, Popp D, Puladi B, Ooms M, Chelliah MP, Rein S, Pfürringer D, Thor D, Reumuth G, Wallner C, Branski LK, Siemers F, Grieb G, Lehnhardt M, Yazdi AS, **Maan ZN**, Duscher D. 2020. Molecular Mechanisms of Hair Growth and Regeneration: Current Understanding and Novel Paradigms. *Dermatology* 236(4): 271-280. PMID: 32163945.
80. Houschyar M, Borrelli MR, Tapking C, **Maan ZN**, Rein S, Chelliah MP, Shekter CC, Duscher D, Branski LK, Wallner C, Behr B, Lehnhardt M, Siemers F, Houschyar KS. 2020. Burns: modified metabolism and the nuances of nutrition therapy. *J Wound Care* 29(3): 184-191. PMID: 32160092.
81. Kosaric N, Srifa W, Bonham CA, Kiwanuka H, Chen K, Kuehlmann BA, **Maan ZN**, Noishiki C, Porteus MH, Longaker MT, Gurtner GC. 2020. Macrophage Subpopulation Dynamics Shift following Intravenous Infusion of Mesenchymal Stromal Cells. *Mol Ther* 28(9):2007-2022. PMID: 32531238.
82. Oliver JD, Hu AC, **Maan ZN**, Hu MS. 2020. Innovation in Plastic Surgery: A Call for Re-Emergence of the Surgeon-Scientist. *Plast Reconstr Surg* 145(4):892e. PMID: 32221267.
83. Oliver JD, Hu AC, **Maan ZN**, Hu MS. 2020. Plastic Surgery Research: A Means to an End? *Plast Reconstr Surg* 145(4):890e-892e. PMID: 32221266.
84. Leavitt T, Hu MS, Borrelli MR, Januszyk M, Garcia JT, Ransom RC, Mascharak S, desJardins-Park HE, Litzemberger UM, Walmsley GG, Marshall CD, Moore AL, Duoto B, Adem S, Foster DS, Salhotra A, Shen AH, Griffin M, Shen EZ, Barnes LA, Zielins ER, **Maan ZN**, Wei Y, Chan CKF, Wan DC, Lorenz HP, Chang HY, Gurtner GC, Longaker MT. 2020. Prrx1 Fibroblasts represent a pro-fibrotic lineage in the mouse ventral dermis. *Cell Rep* 33(6): 108356. PMID: 33176144.
85. Hu MS, **Maan ZN**, Leavitt T, Hong WX, Rennert RC, Marshall CD, Borrelli MR, Zhu TN, Esquivel M, Zimmermann A, McArdle A, Chung MT, Foster DS, Jones RE, Gurtner GC, Giaccia AJ, Lorenz HP, Weissman IL, Longaker MT. 2021. Wounds Inhibit Tumor Growth In Vivo. *Ann Surg* 273(1): 173-80. PMID: 30829705.
86. Barrera JA, Trotsyuk AA, **Maan ZN**, Bonham CA, Larson MR, Mittermiller PA, Henn D, Chen K, Mays CJ, Mittal S, Mermin-Bunnell AM, Sivaraj D, Jing S, Rodrigues M, Kwon SH, Noishiki C, Padmanabhan J, Jiang Y, Niu S, Inayathullah M, Rajadas J, Januszyk M, Gurtner GC. 2021. Adipose-derived stromal cells seeded in pullulan-collagen hydrogels improve healing in murine burns. *Tissue Eng Part A*. PMID: 33789446.
87. Chen K, Kwon SH, Henn D, Kuehlmann BA, Tevlin R, Bonham CA, Griffin M, Trotsyuk AA, Borrelli MR, Noishiki C, Padmanabhan J, Barrera JA, **Maan ZN**, Dohi T, Mays CJ, Greco AH, Sivaraj D, Lin JQ, Fehlmann T, Mermin-Bunnell AM, Mittal S, Hu MS, Zamaleeva AI, Keller A, Rajadas J, Longaker MT, Januszyk M, Gurtner GC. 2021. Disrupting biological sensors of force promotes tissue regeneration in large organisms. *Nat Commun* 12(1):5256. PMID: 34489407.
88. **Maan ZN**, Rinkevich Y, Barrera J, Chen K, Henn D, Foster D, Bonham CA, Padmanabhan J, Sivaraj D, Duscher D, Hu M, Yan K, Januszyk M, Longaker MT, Weissman IL, Gurtner GC. 2021. Epidermal-Derived Hedgehog Signaling Drives Mesenchymal Proliferation during Digit Tip Regeneration. *J Clin Med* 10(18): 4261. PMID: 4575372.
89. Crowe CS, Lopez J, Morrison SD, Drolet BC, Janis JE; **Resident Council Wellness and Education Study Group**. 2021. The Effects of the COVID-19 Pandemic on Resident Education and Wellness: A National Survey of Plastic Surgery Residents. *Plast Reconstr Surg* 148(3):462e-474e.

Non-Peer-Reviewed Publications

1. **Maan ZN**. 2013. NextGenVoices. *Science* 341(6141): 28-30. doi:10.1126/science.341.6141.28.

2. **Maan ZN** & Sheckter CS. 2019. Should I take a research year – or two? *Plastic Surgery Resident*. Fall 2019.

Books:

1. Akunjee M, Akunjee N, **Maan Z** and Ally M. (2012) *Clinical Skills Explained*. London: Scion Publishing. ISBN: 9781904842781

Book Chapters:

1. Findlay MW, **Maan ZN**, Lee G. Keystone Island Flap Reconstruction in the Upper Limb. In Shokrollahi et al. (Eds.) *The International Flap Manual*. Harley, UK: TFM Publishing Ltd, 2013. ISBN 1903378702.
2. Barrera JA, **Maan ZN**, Gurtner GC. Adipose Tissue in Wound Healing. In Coleman et al. (Eds.) *Fat Injection: From filling to regeneration*. Boca Raton, FA: CRC Press. 2017. ISBN 1482241358.
3. **Maan ZN**, Souza KE, Chang J. Posterior Interosseus Flap. In Chung et al. (Eds.) *ASSH Surgical Anatomy: Flap Reconstruction of the Upper Extremity*. In Manuscript

SELECTED ORAL PRESENTATIONS:

International

1. **Maan ZN**, Leong A, D'Souza A. Comparing cosmetic outcome and cost in the treatment of facial telangiectasias: Laser or the hyfrecator. 33rd Annual conference of the European Academy of Facial Plastic Surgery, Turkey. Sep 2010.
2. **Maan ZN**, Gibbins N, Al-Jabri T, D'Souza AR. The use of robotics in otolaryngology - head and neck surgery: a systematic review. 1st Congress of the Confederation of the European ORL-HNS, Barcelona, Spain. Jul 2011.
3. **Maan ZN**, Leong A, D'Souza AR. Comparing cosmetic outcome and cost in the treatment of facial telangiectasias: Laser or the hyfrecator. 1st Congress of the Confederation of the European ORL-HNS, Barcelona, Spain. Jul 2011.
4. **Maan ZN**, Yassin G, D'Souza AR. Facial Ageing: Aetiology, Assessment and Management. 34th Annual conference of the European Academy of Facial Plastic Surgery, Belgium. Sep 2011.
5. Yassin G, **Maan ZN**, D'Souza AR. A systematically conducted literature review of the management techniques for parotid leak. 34th Annual conference of the European Academy of Facial Plastic Surgery, Belgium. Sep 2011.
6. Naqvi M, Ward S, Dowswell G, Donnelly J, **the SWIFT group collaborators**. How well do junior doctors know their patients? A cross sectional survey. The Association of Surgeons of Great Britain and Ireland 2012 International Surgical Congress, Liverpool, UK. May 2012.
7. **Maan ZN**, Frew Q, Din A, Smailes S, Philp B, El-Muttardi N, Oakey, S, Dziewulski P. Adult burns: length of stay in specific levels of care. The 16th Congress of the International Society for Burn Injuries, Edinburgh, UK. Sep 2012
8. **Maan ZN**, Rennert R, Sorkin M, Rodrigues M, Duscher D, Findlay M, Gurtner GC. Endothelial cell production of SDF-1 promotes progenitor cell recruitment and wound healing. BAPRAS Winter Scientific Meeting 2013. Dublin, Ireland. Nov 2013.
9. Walmsley GG, Rinkevich Y, Hu MS, McArdle A, **Maan ZN**, Lorenz HP, Weissman IL, Longaker MT. Identification, characterization and prospective isolation of a fibroblast lineage contributing to dermal development, cutaneous scarring, radiation fibrosis, and cancer stroma. Plastic Surgery Research Council 59th Annual Meeting. New York. Mar 2014.
10. **Maan ZN**, Rennert RC, Duscher D, Januszyk M, Chung MT, Paik K, Fujiwara T, Rodrigues M, Ho N, Baker H, Perez M, Hu M, Sorkin M, Longaker MT, Gurtner GC. SDF-1 regulates adipose niche homeostasis and adipose derived stromal cell function. Plastic Surgery Research Council 59th Annual Meeting (**Best Paper Session**). New York. Mar 2014.

11. **Maan ZN**, Ho N, Rennert RC, Duscher D, Sorkin M, Rodrigues M, Chen J, Vial IN, Januszyk M, Findlay M, Hu M, Walmsley GG, Longaker MT, Gurtner GC. Global and endothelial cell specific deletion of SDF-1 results in delayed wound healing. Plastic Surgery Research Council 59th Annual Meeting (**Best Paper Session**). New York. Mar 2014.
12. **Maan ZN**, Rinkevich Y, Januszyk M, Weissman IL, Gurtner GC. Germ layer restricted Wnt and Hedgehog signaling regulate digit tip regeneration. Plastic Surgery Research Council 64th Annual Meeting. Baltimore. May 2019.
13. **Maan ZN**, Rinkevich Y, Januszyk M, Weissman IL, Gurtner GC. Germ layer restricted Wnt and Hedgehog signaling regulate digit tip regeneration. European Plastic Surgery Research Council 11^h Annual Meeting. Munich. Aug 2019.
14. **Maan ZN**, Rinkevich Y, Januszyk M, Weissman IL, Gurtner GC. Digit Tip Regeneration Relies on Germ Layer Restricted Wnt and Hedgehog Signaling. American College of Surgeons 2019 Clinical Congress. San Francisco. Oct 2019.
15. **Maan ZN**, Zhao ET, Barrera JA, Henn D, Padmanabhan J, Chen KC, Melosh NT, Gurtner GC. NeuroStitch: Nanofabrication of a High Resolution Biomimetic Peripheral Nerve Interface. American Society for Peripheral Nerve 2021 Nerve Week. Virtual, Jan 2021.

National

1. **Maan ZN**, Yassin G, Rachmanidou A. A nasal alar mass of unknown aetiology. 139th Semon Club, London. May 2010.

POSTERS AT CONFERENCES

International

1. **Maan ZN**, Maan IN, Darzi A, Aggarwal R. Predictors of surgical performance: a systematic review. Association of Surgical Education annual meeting, San Diego, USA. Mar 2012.
2. **Maan ZN**, Din A, Frew Q, Smailes S, Philp B, El-Muttardi N, Dziewulski P. Paediatric burns: length of stay in specific levels of care. European Club for Paediatric Burns annual workshop, Birmingham, UK. May 2012.
3. Din A, Frew Q, **Maan ZN**, Dziewulski P. A 13 Year Review of Intensive Care Requirements for Paediatric Intensive Care Burns in One Regional Burns Service. European Club for Paediatric Burns annual workshop, Birmingham, UK. May 2012.
4. Din A, Frew Q, **Maan ZN**, Ganapthy H, Emamdee R, Philp B, El-Muttardi N, Dziewulski P. Organ support requirements in severe paediatric burns. The 16th Congress of the International Society for Burn Injuries, Edinburgh, UK. Sep 2012
5. **Maan ZN**, Chen JS, Vial IN, Rennert R, Sorkin M, Bishop S, Rodrigues M, Duscher D, Findlay M, Gurtner GC. Global and endothelial cell specific deletion of SDF-1 results in delayed wound healing. 2013 Clinical Congress of the American College of Surgeons. Washington D.C. Oct 2013.
6. **Maan ZN**, Januszyk M, Rennert R, Findlay M, Gurtner GC. Evaluation of the role of non-contact low-frequency ultrasound therapy on angiogenesis during wound healing. 2013 Clinical Congress of the American College of Surgeons. Washington D.C. Oct 2013.
7. **Maan ZN**, Rinkevich Y, Januszyk M, Barrera J, Weissman IL, Gurtner GC. Germ layer restricted hedgehog signaling regulates digit tip regeneration. American Association of Plastic Surgery 99th Annual Meeting. Miami. May 2021.

National

1. **Maan ZN**, Gibbins N, Ally Z, Khalil R, D'Souza AR. The use of robotics in otolaryngology - head and neck surgery: a systematic review. Society of Academic and Research Surgery annual meeting, Nottingham. Jan 2012.

2. Yassin G, **Maan ZN**, D'Souza A. Management of a sialocele complicating rhytidectomy: case report and literature review. 14th British Academic Conference in Otolaryngology, Glasgow. Jul 2012.

RESEARCH PROJECTS:

Present:

- 07/18-present Hagey Lab, Stanford University School of Medicine
Foreign Body Response at Peripheral Nerve / Electrode Interface
Role: Co-PI
- 06/14-present Hagey Lab, Stanford University School of Medicine (PI: Geoffrey Gurtner)
Single Cell Analysis of Dupuytren Disease
Role: Co-investigator
- 12/13-present Hagey Lab, Stanford University School of Medicine (PI: Geoffrey Gurtner)
The Role of CXCL12 in Adipose Tissue Homeostasis
Role: Co-investigator

Past:

- 06/14-12/20 Hagey Lab, Stanford University School of Medicine (PI: Geoffrey Gurtner)
Lineage Restricted Signaling Governing Digit Tip Regeneration
Role: Co-investigator
- 09/12-06/15 Hagey Lab, Stanford University School of Medicine (PI: Geoffrey Gurtner)
The Role of Endothelial Cell Derived CXCL12 in Neovascularization and Progenitor Cell Recruitment
Role: Co-investigator
- 09/12-06/13 Hagey Lab, Stanford University School of Medicine (PI: Geoffrey Gurtner)
Evaluation of Amniotic Membrane in Progenitor Cell Recruitment during Wound Healing
Role: Co-investigator
- 09/12-03/13 Hagey Lab, Stanford University School of Medicine (PI: Geoffrey Gurtner)
Evaluation of the Role of Noncontact Low-Frequency Ultrasound Therapy on Angiogenesis during Diabetic Wound Healing
Role: Co-investigator
- 09/10-08/11 MSc, Imperial College London (PI: Rajesh Aggarwal)
Systematic Review of Predictors of Surgical Performance
Role: Co-Investigator

FUNDING OBTAINED

- 2014 Plastic Surgery Foundation Research Fellowship Grant (\$50,000)
2014 Stanford University Translational Research and Applied Medicine Pilot Grant (\$14,500)
2015 Stanford University Translational Research and Applied Medicine Pilot Grant (renewal) (\$10,500)
2017 Stanford University Division of Plastic Surgery Thuss Award (\$2,000)

- 2018 DePuy Synthes Course Support Grant (\$1,900)
- 2020 Zedplast Alumni Association Troxel Fellowship (\$1,500)
- 2020 Plastic Surgery Foundation Pilot Research Grant (\$10,000)

PROFESSIONAL SERVICE:

Committee / Leadership Positions

- 2013 Treasurer, Stanford University Postdoctoral Association, Stanford, CA
- 2013 Mentor, Stanford Institutes of Medicine Summer Research Program (SIMR)
- 2013 Member, Stanford University Faculty Senate Committee on Research, Stanford, CA
- 2014 Co-Chair, Stanford University Postdoctoral Association, Stanford, CA
- 2017-2018 Member, CSPA Scientific Program Committee
- 2018-2021 Member, ASPS/PSF Researcher Education Subcommittee
- 2018-2021 Member, ASPS Resident’s Council
- 2018- Member, PSRC Technology Committee
- 2019-2020 Member, ASPS Legislative Advocacy Committee
- 2019- Member, PSRC Education Committee
- 2019- Member, PSRC Bylaws Committee

Journal Service

- 2012- Reviewer, International Journal of Medical Education
- 2013- Reviewer, Clinical Otolaryngology
- 2016- Reviewer, Journal of Tissue Engineering and Regenerative Medicine
- 2018- Reviewer, Journal of Advanced Research
- 2018- Reviewer, Plastic & Reconstructive Surgery

Other Experience and Professional Memberships

- 2011- Member, Royal College of Surgeons of England
- 2012- Member, Association of Academic Surgeons
- 2014- Member, American Society of Plastic Surgeons (Resident and Fellows Forum)
- 2014- Member, Plastic Surgery Research Council
- 2015- Member, American College of Surgeons
- 2018- Member, American Society of Peripheral Nerve
- 2019- Member, American Society for Surgery of the Hand

HOBBIES AND INTERESTS

Skiing, archery, investing, sports, and reading fiction