Plastic and Reconstructive Surgery Fellowship Program

Shaping the Future of Cancer Care

Memorial Sloan Kettering Cancer Center

Training the Future Leaders
of Cancer Care

CONTENTS

HISTORY

Memorial Sloan Kettering Cancer Center was founded in 1884 as New York Cancer Hospital on Manhattan's Upper West Side by a group that included John J. Astor and his wife, Charlotte.

Dr. Danika Kovachev joined the Plastic Surgery Service in the 1970s, and she played a major role in head and neck reconstruction. Dr. Ted Chaglassian was recruited to the Plastic Surgery Service in the 1980s and later became chief of the service. By then, myocutaneous flaps were used for reconstruction, and local and regional flaps were used for repair of surgical defects following major ablative surgery for head and neck tumors. During the 1970s and '80s, the development of myocutaneous flaps, including the pectoralis major, latissimus, and trapezius flaps, allowed plastic surgeons to "close" very large defects in a reliable and effective manner. However, in many of these cases, the aesthetic and functional results were less than optimal.

Dr. David Hidalgo was recruited in 1986 to bring microsurgical free flap reconstruction to Memorial Sloan Kettering. The introduction of free flaps completely revolutionized the capabilities of the Plastic Surgery Service to provide reconstructive support to head and neck surgeons.

Microsurgical techniques were first applied to achieve coverage of massive scalp and midface defects, using large myocutaneous free flaps as well as more elegant reconstructions of nasal defects and cheek defects with thin cutaneous free flaps, often folded to provide both internal lining and external skin coverage. The ilium free flap was popular at the time for mandible reconstruction but had important technical and aesthetic shortcomings. This led Dr. Hidalgo to pioneer the use of the fibulaosteoseptocutaneous flap for mandible reconstruction.

Dr. Hidalgo's championing of mandible reconstruction using the fibula free flap was a major breakthrough, and the application of this technique was pivotal in advancing head and neck reconstruction. One of his key contributions was recognizing that the fibula could be osteotomized in multiple locations on the basis of its dual endosteal and periosteal blood supply. Although other osseus flap options existed, none had such a robust blood supply with a reliable ability to freely contour a piece of straight bone into the mandible parabola. Moreover, the associated skin island could be used to reconstruct contiguous soft tissue defects, both internal and external. Dr. Hidalgo perfected the operation through continual aesthetic refinements, using both acrylic templates derived from imaging studies and titanium miniplates to improve the accuracy of bone shaping, restricting facial incisions to the neck, and replanting the native condyle for extensive lateral defects. This raised the bar for the cosmetic and functional outcomes that could be achieved. In fact, the fibula flap has become the gold standard for mandible reconstruction worldwide as a result of these efforts at Memorial. Newer, more sophisticated algorithms for reconstruction of many areas of the head and neck, including the oral cavity, tongue, midface, maxilla, hypopharynx, and skull base, were introduced in the 1990s and by other surgical faculty.

Memorial Sloan Kettering Cancer Center

Memorial Sloan Kettering sets a new standard for outpatient cancer surgery with the newly opened Josie Robertson Surgery Center, the first-of-its-kind freestanding facility on Manhattan's Upper East Side.

Dr. Peter Cordeiro was appointed Chief of the service in 2001. Although advances in mandible reconstruction came first, no individual surgeon had amassed enough experience in maxillary reconstruction to devise a definitive algorithm. Most patients were not reconstructed with tissue but instead had obturators placed to seal the oral cavity. Peter Cordeiro's fellowship background in craniofacial surgery and microsurgery, combined with the large number of ablative defects seen at MSK, created an ideal opportunity to advance midface reconstruction. His contributions include the establishment of proper orbital floor support with autologous bone grafting and manipulating, obliteration of surgical dead space with soft tissue replacement in anticipation of postoperative radiotherapy, the sandwiched osteocutaneous radial forearm flap for palatal bony reconstruction, and creation of multiple rectus flap skin islands to resurface both the nasal and the oral cavities. Dr. Cordeiro's algorithm and conceptual considerations have moved maxillary reconstruction forward and serve as the standard of care in many centers.

Dr. Cordeiro is also internationally recognized for his expertise in expander/implant breast reconstruction. He has been a thought leader on the use of implants in a variety of settings including patients who undergo postmastectomy radiation therapy. Dr. Cordeiro has also served as the primary investigator of a major clinical trial assessing the use of form stable breast implant.

Dr. Disa joined the faculty in 1998 and has led a number of important initiatives. Dr. Disa developed a definitive algorithm for hypopharynx reconstruction, accurately describing the variety of defects present in this area, with idealized reconstructive approaches. He also conducted one of the few randomized, controlled trials in the reconstruction discipline. He dispelled the microsurgery myth that Dextran improves flap outcomes and demonstrated an increased risk of perioperative complications. Dextran is no longer used at MSK or most other centers. Dr. Disa is internationally recognized as a leader in microsurgical breast and head and neck reconstruction.

Dr. Babak Mehrara joined the faculty in 2002 having completed a microsurgical fellowship at UCLA under the direction of the late William Shaw. Dr. Mehrara has been instrumental in developing perforator flap reconstruction techniques at MSK. He has also developed our lymphedema research program and together with Dr. Dayan serves as co-director of the clinical lymphedema management team. Dr. Mehrara's innovative research has helped elucidate the pathophysiology of lymphedema and this knowledge has led to direct translational projects. In 2016, Dr. Mehrara was appointed Chief of the service.

Dr. Colleen McCarthy completed her fellowship at MSK and joined the faculty in 2007. Dr. McCarthy is a recognized national leader in outcomes studies and has served as the chairperson and primary investigator for a number of national clinical projects including 'PROFILE (Patient Registry and Outcomes for Breast Implants and Anaplastic Large Cell Lymphoma (ALCL) Etiology and Epidemiology) study'.

Our plastic and reconstructive surgeons perform hundreds of complex reconstructions each year as part of an integrated oncologic team.

Dr. Evan Matros completed his microsurgical fellowship at MSK in 2010 and has played a key role in our Head and Neck reconstruction efforts and health disparity research in patients who undergo breast reconstruction. He has developed FACE-Q Oncology a PRO specific for head and neck reconstruction, introduced CAD/CAM modeling for shaping complex osseus free flaps as well as published a number of highly cited manuscripts on breast reconstruction outcomes and socioeconomic factors.

Dr. Joseph Dayan completed his microsurgery fellowship at Chang Gung Memorial Hospital in Taiwan and joined the faculty in 2014. Dr. Dayan is an internationally recognized figure in microsurgical reconstruction for lymphedema and has published extensively in this area. Working together with Dr. Mehrara, Dr. Dayan has developed a unique lymphedema treatment program at MSK combining state of the art basic science research with world class microsurgery.

Dr. Robert Allen joined the faculty here at MSK in 2016. He completed his residency training in plastic surgery at NYU Langone Medical Center's Department of Plastic Surgery. Subsequently, Dr. Allen completed a microsurgery fellowship at Chang Gung Memorial Hospital in Taipei, Taiwan. His clinical interest include microsurgical breast reconstruction, head and neck reconstruction and lymphedema surgery.

Dr. Jonas Nelson completed his microsurgery fellowship at MSK. His plastic surgery training was obtained at the University of Pennsylvania where he established a health outcomes research database leading to many successful publications and presentations. He was subsequently recruited as a faculty member starting his practice in 2017.

Dr. Michelle Coriddi completed her microsurgery fellowship at MSK. Her plastic surgery training was obtained at the Ohio State University where she published on novel treatments for lymphedema. She was subsequently recruited as a faculty member starting her practice in 2018. Working with Dr. Dayan and Dr. Mehrara, Dr. Coriddi has helped to grow the lymphedema treatment program at MSK, working to study and expand surgical methods to prevent lymphedema.

Dr. Carrie Stern joined the MSK Plastic Surgery Faculty after completing her Microsurgery Fellowship in 2019. She completed her plastic surgery residency at Montefiore Medical Center in Bronx, NY. During her training, she dedicated a year to plastic surgery research using innovative and novel technology in clinical care and operative planning. She was recruited to join the faculty at MSK to modernize patient education, to optimize data management and to integrate technology in patient care and research.

Dr. Farooq Shahzad joined MSK in 2019. After completing his fellowship at MSK in 2016, he joined Lurie Children's Hospital in Chicago and established a pediatric microsurgery and replantation program. Dr. Shahzad is faculty at several academic medical centers in Pakistan where he operates and teaches plastic surgeons and residents. MSK fellows have the opportunity to accompany him and get exposure to complex reconstruction at a high acuity and high-volume center in Pakistan.

Robert J. Allen, Jr., MD

Assistant Attending Surgeon
Plastic and Reconstructive Surgery
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Assistant Professor of Surgery
Weill Medical College of Cornell University

Education: BS, James Madison University
MD, Medical University of South Carolina

Residency: NYU Langone Medical Center, Plastic Surgery

Fellowships: Chang Gung Memorial Hospital in Taiwan(Microsurgery)
NYU Langone Medical Center, Institute of Reconstructive Plastic Surgery Laboratory (Postdoctoral Research Fellowship)

Dr. Allen came to MSK in 2016 following his microsurgery fellowship at Chang Gung Memorial Hospital in Taiwan. He completed his residency at NYU Langone Medical Center's Institute of Reconstructive Plastic Surgery. He is the residency director at MSK, working closely with Cornell and Mount Sinai plastic surgery residents during their rotations on service. Dr. Allen's clinical practice is focused on oncologic reconstruction of the breast, head and neck, trunk, and extremities, with specialization in alternative flaps for breast reconstruction and bony reconstruction of the head and neck. His clinical research areas of interest include patient-reported outcomes and quality of life measures following reconstruction of the breast and head and neck.

Selected publications:

The Profunda Artery Perforator Flap Experience for Breast Reconstruction. **Allen RJ Jr.**, Lee ZH, Mayo JL, Levine J, Ahn C, Allen RJ Sr. Plast Reconstr Surg. 2016 Nov;138(5):968-975.

Allen RJ Jr., and Cheng, M. H. (2016). Lymphedema surgery: Patient selection and an overview of surgical techniques. *Journal of Surgical oncology*.

Allen RJ Jr., Soares, M. A., Haberman, I. D., Szpalski, C., Schachar, J., Lin, C. D., and Warren, S. M. (2014). Combination therapy accelerates diabetic wound closure. *PloS one*, 9(3), e92667.

Allen RJ Jr., Canizares Jr, O., Scharf, C., Nguyen, P. D., Thanik, V., Saadeh, P. B., and Hazen, A. (2013). Grading lipoaspirate: is there an optimal density for fat grafting?. *Plastic and Reconstructive Surgery*, 131(1), 38-45.

Allen RJ Jr., LoTempio, M. M., Craigie, J. E., and Allen Sr, R. J. (2008). Transplantation in identical twins: another option for breast reconstruction. *Plastic and Reconstructive Surgery*, 122(4), 1019-1023.

Dayan JH, **Allen RJ Jr.**, Lower extremity free flaps for breast reconstruction. *Plast ReconstrSurg*. 2017 Nov;140(5S Advances in Breast Reconstruction):77S-86S.

Chu YY, **Allen RJ Jr**, Wu TJ, Cheng MH. Greater omental lymph node flap for upper limblymphedema with lymph nodes-depleted patient. *Plast Reconstr Surg Glob Open*. 2017 Apr25;5(4):e1288.

Nelson JA, Sobti N, Patel A, Matros E, McCarthy CM, Dayan JH, Disa JJ, Cordeiro PG, Mehrara BJ, Pusic AL, **Allen RJ Jr**. The Impact of Obesity on Patient-Reported Outcomes Following Autologous Breast Reconstruction. *Ann Surg Oncol*. 2019 Dec 6. doi: 10.1245/s10434-019-08073-5.

Dayan JH, **Allen RJ Jr**. Neurotized Diagonal Profunda Artery Perforator Flaps for Breast Reconstruction. *Plast Reconstr Surg Glob Open.* 2019 Oct 16;7(10):e2463.

Nelson JA, **Allen RJ Jr**, Polanco T, Shamsunder M, Patel AR, McCarthy CM, Matros E, Dayan JH, Disa JJ, Cordeiro PG, Mehrara BJ, Pusic AL. Long-term Patient-reported Outcomes Following Postmastectomy Breast Reconstruction: An 8-year Examination of 3268 Patients. *Ann Surg*. 2019 Sep;270(3):473-483. PMID: 31356276.

Allen RJ Jr., Shenaq DS, Rosen EB, Patel SG, Boyle JO, Nelson JA, Matros E. Immediate Dental Implantation in Oncologic Jaw Reconstruction: Workflow Optimization to Decrease Time to Full Dental Rehabilitation. *Plast Reconstr Surg Glob Open*. 2019 Jan 14;7(1):e2100.

Peter G. Cordeiro, MD, FACS

Attending Surgeon
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Professor of Surgery
Weill Medical College of Cornell University

Education: BA, Harvard College
MD, Harvard Medical School

Residencies: Harvard Surgical Service, New England Deaconess Hospital
New York University Medical Center

Fellowships: Memorial Sloan Kettering Cancer Center
University of Miami

Dr. Cordeiro is a leader in the area of oncologic reconstructive surgery at a national and international level. Within the field of plastic surgery Dr. Cordeiro has made some major intellectual and practical surgical advances. His particular areas of focus include breast reconstruction, microsurgery, and reconstruction in the head and neck. Drawing on a large experience in free tissue transfers for oncologic reconstruction, he has developed new applications for free flaps to establish state-of-the-art approaches to complex reconstructive problems. Areas of innovation include reconstruction of the mandible, maxilla, mid face, pharynx, vagina, and breast. In addition to routine approaches to breast reconstruction, he is currently developing newer techniques and approaches to reconstruction for patients who have been previously radiated or who may require future radiation using implants as well as the patient's own tissues.

Dr. Cordeiro has lectured extensively throughout the United States and the world and has authored more than 280 scientific papers and book chapters. He has been on the editorial boards of four major plastic and reconstructive surgery journals.

Selected publications:

Cordeiro PG, Albornoz CR, McCormick B, Hudis CA, Hu Q, Heerdt A, Matros E. What is the Optimum Timing of Post-mastectomy Radiotherapy in Two-stage Prosthetic Reconstruction: Radiation to the Tissue Expander or Permanent Implant? *Plastic and Reconstructive Surgery*. 2015 June; 135:1509-1517.

Cordeiro PG, Albornoz CR, McCormick B, Hu Q, Van Zee K. The impact of postmastectomy radiotherapy on two-stage implant breast reconstruction: An analysis of long-term surgical outcomes, aesthetic results, and satisfaction over 13 years. *Plastic and Reconstructive Surgery*. 2014 Oct;134(4):588-595.

Cordeiro PG, Chen CM. A 15-year review of midface reconstruction after total and subtotal maxillectomy: Part II. Technical modifications to maximize aesthetic and functional outcomes. *Plastic and Reconstructive Surgery*. 2012 Jan;129(1):139-147.

Cordeiro PG, Chen CM. A 15-year review of midface reconstruction after total and subtotal maxillectomy: Part I. Algorithm and outcomes. *Plastic and Reconstructive Surgery*. 2012 Jan;129(1):124-136.

Cordeiro PG. Breast reconstruction after surgery for breast cancer. *New England Journal of Medicine*. 2008;359:1590-1601.

Cordeiro PG, McCarthy CM. A single surgeon's 12-year experience with tissue expander/implant breast reconstruction: Part II. An analysis of long-term complications, patient satisfaction. *Plastic and Reconstructive Surgery*. 2006 Sep;118(4):832-839.

Cordeiro PG, McCarthy CM. A single surgeon's 12-year experience with tissue expander/implant breast reconstruction: Part I. A prospective analysis of early complications. *Plastic and Reconstructive Surgery*. 2006 Sep;118(4):825-831.

Chang RR, Mehrara BJ, Hu QY, Disa JJ, **Cordeiro PG**. Reconstruction of complex oncologic chest wall defects - A 10-year experience. *Annals of Plastic Surgery*. 2004 May;52(5):471-479.

Cordeiro PG, Pusic AL, Disa JJ. A classification system and reconstructive algorithm for acquired vaginal defects. *Plastic and Reconstructive Surgery*. 2002 Sep;110(4):1058-1065.

Cordeiro PG, Santamaria E. A classification system and algorithm for reconstruction of maxillectomy and midfacial defects. *Plastic and Reconstructive Surgery*. 2000 Jun;105(7):2331-2346.

Michelle Coriddi, MD

Assistant Attending Surgeon
Plastic and Reconstructive Surgery
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Assistant Professor of Surgery
Weill Medical College of Cornell University

Education: BS, Syracuse University
MD, University of Rochester School of Medicine

Residency: The Ohio State University, Plastic Surgery

Fellowships: Memorial Sloan Kettering Cancer Center (Microsurgery)

Dr. Coriddi has a diverse practice including breast reconstruction, head and neck reconstruction, sarcoma reconstruction and surgical treatment of lymphedema. She specializes in lymphovenous bypass for both treatment and for prevention of breast cancer related lymphedema. She has published on novel treatments for lymphedema including the vascularized jejunal mesenteric lymph node transfer. Her long-term goals are to research and advance surgical techniques to prevent lymphedema.

Selected publications:

Coriddi M, Shenaq D, Kenworthy E, Mbabuike J, Nelson J, Pusic A, Mehrara B, Disa JJ. Autologous Breast Reconstruction after Failed Implant-Based Reconstruction: Evaluation of Surgical and Patient-Reported Outcomes and Quality of Life. *Plast Reconstr Surg*. 2019 Feb;143(2):373-379. doi: 10.1097/PRS.0000000000005197.

Coriddi M, Kenworthy E, Weinstein A, Mehrara BJ, Dayan JH. The importance of indocyanine green near-infrared fluorescence angiography in perfusion assessment in vascularized omentum lymphatic transplant. *J Surg Oncol*. 2018 Jul;118(1):109-112. doi: 10.1002/jso.25126. Epub 2018 Jun 19.

Coriddi M, Wee C, Meyerson J, Eiferman D, Skoracki R. Vascularized Jejunal Mesenteric Lymph Node Transfer: A Novel Surgical Treatment for Extremity Lymphedema. *J Am Coll Surg*. 2017 Nov;225(5):650-657. doi: 10.1016/j.jamcollsurg.2017.08.001. Epub 2017 Aug 14.

Coriddi M, Skoracki R, Eiferman D. Vascularized jejunal mesenteric lymph node transfer for treatment of extremity lymphedema. *Microsurgery*. 2017 Feb;37(2):177-178. doi: 10.1002/micr.30037. Epub 2016 Feb 18. No abstract available.

Chao AH, **Coriddi M**. The Impact of Intraoperative Microvascular Compromise on Outcomes in Microsurgical Breast Reconstruction. *J Reconstr Microsurg*. 2015 Sep;31(7):493-9. doi: 10.1055/s-0035-1554939. Epub 2015 Jul 10.

Coriddi M, Khansa I, Stephens J, Miller M, Boehmler J, Tiwari P. Analysis of factors contributing to severity of breast cancer-related lymphedema. *Ann Plast Surg*. 2015 Jan;74(1):22-5. doi: 10.1097/SAP.0b013e31828d7285.

Coriddi M, Nadeau M, Taghizadeh M, Taylor A. Analysis of satisfaction and well-being following breast reduction using a validated survey instrument: the BREAST-Q. *Plast Reconstr Surg*. 2013 Aug;132(2):285-90. doi: 10.1097/PRS.0b013e31829587b5.

Coriddi M, Angelos T, Nadeau M, Bennett M, Taylor A. Analysis of satisfaction and well-being in the short follow-up from breast augmentation using the BREAST-Q, a validated survey instrument. *Aesthet Surg J*. 2013 Feb;33(2):245-51. doi: 10.1177/1090820X12472980. Epub 2013 Jan 16.

Joseph H. Dayan, MD

Assistant Attending Surgeon
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Assistant Professor of Surgery
Weill Medical College of Cornell University

Education: BA, New York University
MD, University of Vermont College of Medicine

Residency: Georgetown University Hospital

Fellowship: Chang Gung Memorial Hospital, Taiwan

Dr. Dayan has been a leader in the new field of lymphatic surgery since training at Chang Gung Hospital in Taiwan and subsequently working at the Beth Israel Medical Center in New York City. He was recruited to MSK because of his large clinical and research experience with reversed lymph node mapping and lymph node transfers. He has already rapidly built our program in lymphatic diseases at MSK. In addition, he also has a special interest in facial reanimation and oncoplastic breast surgery.

Selected publications:

Dayan JH, et al. Reverse lymphatic mapping: a new technique for maximizing safety in vascularized lymph node transfer. *Plast Reconstr Surg*. 2015.

Dayan JH, et al. The use of magnetic resonance angiography in vascularized groin lymph node transfer: an anatomic study. *J Reconstr Microsurg*. 2014.

Dayan JH. Revision of Wise pattern breast reductions with vertical procedures, Sultan MR, Schwartz JA, Smith ML, Samson W. *Ann Plast Surg*. 2013.

Dayan JH. Bilateral breast reconstruction from a single hemiabdomen using angiosome-based flap design. Smith ML, Gandolfi BM, Dayan E, Clarke-Pearson EM, Samson W, Sultan MR. *Plast Reconstr Surg*. 2013.

Dayan JH. Fibula osteo-adipofascial flap for mandibular and maxillary reconstruction. Smith ML, Clarke-Pearson E. *Head Neck*. 2012.

Joseph J. Disa, MD, FACS

Attending Surgeon
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Professor of Surgery
Weill Medical College of Cornell University

Education: BS, University of Notre Dame
MD, University of Massachusetts Medical School

Residencies: University of Maryland Medical System
Johns Hopkins Hospital/University of Maryland Medical System

Fellowship: Memorial Sloan Kettering Cancer Center

Dr. Disa has been at MSK for over 20 years. His practice includes the diverse field of reconstructive oncology, but is focused on both autologous and prosthetic breast reconstruction head and neck reconstruction including reconstruction after facial skin cancer (Moh's) procedures. Administratively, he is the Vice Chair of Clinical Activities in the Department of Surgery at Memorial Sloan Kettering Cancer Center. He is also Surgical Director of the Westchester and Bergen MSK Regoinal sites. Nationally he is past president of the Northeastern Society of Plastic Surgeons, president of the American Society of Reconstructive Microsurgery, Secretary/Treasurer of the American Board of Plastic Surgery, and on the Editorial Board of the journals *Plastic and Reconstructive Surgery, Plastic and Reconstructive Surgery – Global Open, and the Journal of Surgical Oncology*. Research interests center around autologous and prosthetic breast reconstruction and the role of acellular dermal matrix.

Selected publications:

Connolly KL, Nehal KS, **Disa JJ**. Evidence-Based Medicine: Cutaneous Facial Malignancies: Nonmelanoma Skin Cancer.*Plastic Reconstructive Surgery*. Jan 2017;139(1):181e-190e.

Henderson PW, Fernandez JG, Cemal Y, Mehrara BJ, Pusic AL, McCarthy CM, Matros E, Cordeiro PG, **Disa JJ**. Successful Salvage of Late Anastomotic Thrombosis after Free Tissue Transfer. *Journal of Reconstructive Microsurgery*. May 2016;32(4):316-24.

Hanasono, M.M., Matros, E., **Disa JJ**. Important aspects of head and neck reconstruction. *Plast Reconstr Surg*. 2014;134:968e–980e.

Weichman KE, Cemal Y, Albornoz CR, McCarthy CM, Pusic AL, Mehrara BJ, **Disa JJ**. Unilateral Preoperative Chest Wall Irradiation in Bilateral Tissue Expander Breast Reconstruction with Acellular Dermal Matrix: A Prospective Outcomes Analysis. *Plastic Reconstruction Surgery*. May 2013;131:921,2013

McCarthy CM, Lee CN, Halvorson EG, Riedel E, Pusic AL, Mehrara BJ, **Disa JJ**. The use of acellular dermal matrices in two-stage expander/implant reconstruction: a multicenter, blinded, randomized controlled trial. *Plastic Reconstruction Surgery*. Nov 2012; 130:57S-66S.

Levine SM, Patel N, **Disa JJ**. Outcomes of Delayed Abdominal-Based Autologous Reconstruction Versus Latissimus, Dorsi Flaps plus Implant Reconstruction in Previously Irradiated patients. Annals of Plastic Surgery 69: 380, 2012 Disa JJ, Draper L. Do Acellularized Dermal Matrices Change the Rationale for Immediate Versus Delayed Breast Reconstruction? *Clinics in Plastic Surgery*.(2012)113-118.

Lemaine V, McCarthy C, Kaplan K, Mehrara B, Pusic A, Cordeiro P, **Disa JJ**. Venus Thromboembolism following Microsurgical Breast Reconstruction: An Objective Analysis in 225 Consecutive Patients Using Low-Molecular-Weight Heparin Prophylaxis. *Plastic and Reconstructive Surgery*. September 8, 2010. 127(4); 1399-1406

Antony AK, McCarthy CM, Cordeiro PG, Mehrara BJ, Pusic AL, Teo EH, Arriaga AF, **Disa JJ**. Acellular human dermis implantation in 153 immediate two-stage tissue expander breast reconstructions: determining the incidence and significant predictors of complications.

Evan Matros, MD, MMSc

Associate Attending Surgeon
Director, Fellowship Training Program in Plastic & Reconstructive Surgery
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Associate Professor of Surgery
Weill Medical College of Cornell University

Education: BA, University of Pennsylvania
MD, University of Chicago, Pritzker School of Medicine
MMSc, Harvard Medical School
MPH, Columbia University, Mailman School of Public Health

Residencies: Brigham and Women's Hospital/Harvard Medical School
Harvard Program in Plastic Surgery

Fellowship: Memorial Sloan Kettering Cancer Center

Although Dr. Matros performs reconstruction for all oncologic defects, he is particularly interested in complex head and neck as well as breast restoration. His interest in these areas allows him to routinely utilize the full gamut of regional and free flaps such as the fibula, scapula, parascapula, DIEP, forehead, supraclavicular, and trapezius. Outside of the operating room, he has a broad interest in health outcomes research especially understanding recent trends in US breast reconstruction, head and neck quality of life and health policy. A variety of study designs are used including cost effectiveness, logistic regression, and patient reported outcome development.

Dr. Evan Matros joined the faculty after completing his fellowship at MSK in 2010. Dr. Matros was appointed fellowship director in 2017. His clinical expertise includes reconstruction of head and neck defects using the most up to date techniques. Repair of these defects requires use of the full gamut of soft tissue and osseous flaps including but not limited to: ALT, radial forearm, fibula, scapula, ulnar, IMAP, supraclavicular. For osseous mandible and maxillary reconstruction, CAD/CAM technology is routinely employed. Dr. Matros also performs reconstruction of complex MOHS defects of the lip, nose, septum and cheek. For composite defects a variety of techniques are often combined such as folded forehead, Estlander and Mustarde flaps. Reconstruction of other anatomic areas is common including the scalp, trunk, breast, pelvis and lower extremities using both regional flaps and free tissue transfer.

Dr. Matros' scientific interests include quality of life outcomes in head and neck patients as well as health services research in breast reconstruction. There is ample opportunity to become involved in ongoing projects in theses two areas as well as clinical papers.

Selected publications:

Conceptual Considerations for Payment Bundling in Breast Reconstruction. Sheckter CC, Razdan SN, Disa JJ, Mehrara BJ, **Matros E**. *Plast Reconstr Surg*. 2018 Feb;141(2):294-300. doi:

Current Trends in Postmastectomy Breast Reconstruction. Panchal H, **Matros E.** *Plast Reconstr Surg.* 2017 Nov;140(5S Advances in Breast Reconstruction):7S-13S

The Impact of the Cosurgeon Model on Bilateral Autologous Breast Reconstruction.Razdan SN, Panchal HJ, Hespe GE, Disa JJ, McCarthy CM, Allen RJ Jr, Dayan JH, Pusic A, Mehrara B, Cordeiro PG, **Matros E**. *J Reconstr Microsurg*. 2017 Nov;33(9):624-629. doi: 10.1055/s-0037-1604106.

Health-Related Quality of Life following Reconstruction for Common Head and Neck Surgical Defects. Cohen WA, Albornoz CR, Cordeiro PG, Cracchiolo J, Encarnacion E, Lee M, Cavalli M, Patel S, Pusic AL, **Matros E.** *Plast Reconstr Surg*. 2016 Dec;138(6):1312-1320.

Tradeoffs Associated With Contralateral Prophylactic Mastectomy in Women Choosing Breast Reconstruction: Results of a Prospective Multicenter Cohort. Momoh AO, Cohen WA, Kidwell KM, Hamill JB, Qi J, Pusic AL, Wilkins EG, **Matros E.** *Ann Surg*. 2017 Jul;266(1):158-164.

Important aspects of head and neck reconstruction. Hanasono MM, **Matros E**, Disa JJ. *Plast Reconstr Surg*. 2014 Dec;134(6):968e-80e. doi:

Bilateral Mastectomy versus Breast-Conserving Surgery for Early-Stage Breast Cancer: The Role of Breast Reconstruction. Albornoz CR, **Matros E**, Lee CN, Hudis CA, Pusic AL, Elkin E, Bach PB, Cordeiro PG, Morrow M. *Plast Reconstr Surg*. 2015 Jun;135(6):1518-26. doi:

Safety of the supraclavicular artery island flap in the setting of neck dissection and radiation therapy. Razdan SN, Albornoz CR, Ro T, Cordeiro PG, Disa JJ, McCarthy CM, Stern CS, Garfein ES, **Matros E**. J Reconstr Microsurg. 2015 Jun;31(5):378-83. doi: 10.1055/s-0035-1546294. Epub 2015 Mar 13.

Cost-effectiveness analysis of implants versus autologous perforator flaps using the BREAST-Q. **Matros E**, Albornoz CR, Razdan SN, Mehrara BJ, Macadam SA, Ro T, McCarthy CM, Disa JJ, Cordeiro PG, Pusic AL. *Plast Reconstr Surg*. 2015 Apr;135(4):937-46.

Colleen McCarthy, MD, FRCS(C)

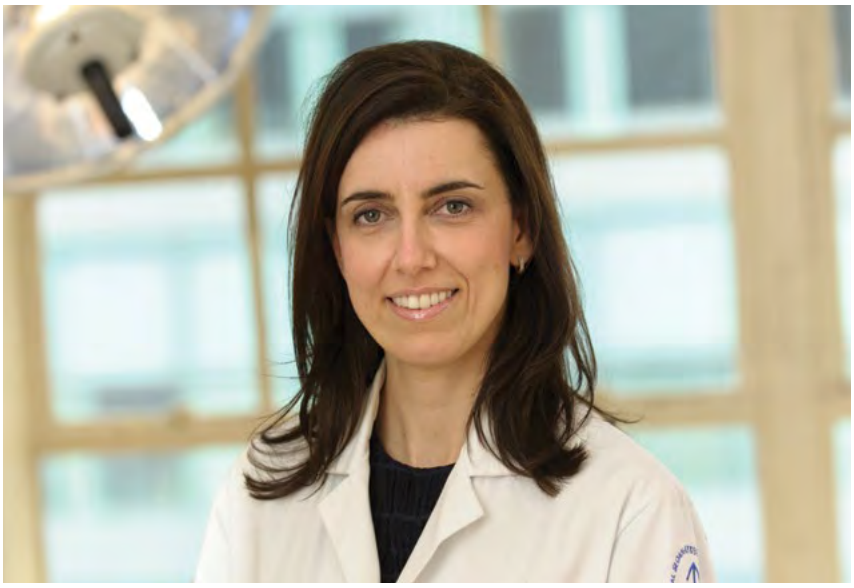
Associate Attending Surgeon
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Assistant Professor of Surgery
Weill Medical College of Cornell University

Education: BS, Queen's University, Canada
MD, McMaster University Medical School, Canada
MS, Columbia University

Residency: University of British Columbia, Canada

Fellowship: Memorial Sloan Kettering Cancer Center



Dr. McCarthy was hired after completing a Masters of Biostatistics for Clinical Research and brought with her expertise in advanced clinical research design and analysis. She subsequently designed and performed one of the first blinded, multi-center randomized trials in the setting of breast reconstructive surgery. The goal of this trial was to provide surgeons and patients alike with an unbiased understanding of the impact of acellular dermal matrices on postmastectomy TE/I reconstruction from a patient perspective and with this knowledge, to ultimately improve surgical care. Since that time, Dr. McCarthy has worked further to elucidate the determinants of patient satisfaction following postmastectomy reconstruction. Her current areas of interest include the systematic evaluation and management of patient expectations, an important predictor of patient satisfaction with elective breast reconstructive surgery. Dr. McCarthy serves as the Principal Investigator of the 'PROFILE (Patient Registry and Outcomes for Breast Implants and Anaplastic Large Cell Lymphoma (ALCL) Etiology and Epidemiology) study'. Through this collaboration between the FDA and the ASPS, the possible link between women with breast implants and ALCL is currently being evaluated.

Selected publications:

McCarthy CM, Mehrara BJ, Long T, Garcia P, Kropf N, Klassen AF, Cano SJ, Li Y, Hurley K, Scott A, Disa JJ, Cordeiro PG, Pusic AL. Chest and upper body morbidity following immediate postmastectomy breast reconstruction. *Ann Surg Oncol*. 2014 Jan;21(1):107-12.

McCarthy CM, Lee CN, Halvorson EG, Riedel E, Pusic AL, Mehrara BJ, Disa JJ. The use of acellular dermal matrices in two-stage expander/implant reconstruction: a multicenter, blinded, randomized controlled trial. *Plast Reconstr Surg*. 2012; 130:57S-66S

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McCarthy CM, Klassen AF, Cano SJ, Scott A, VanLaeken N, Lennox PA, Alderman AK, Mehrara BJ, Disa JJ, Cordeiro PG, Pusic AL. Patient Satisfaction with Postmastectomy Breast Reconstruction: A Comparison of Saline and Silicone Implants. *Cancer*. 2010; 116:5584-91

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McCarthy CM, Vanlaeken N, Lennox P, Scott AM, Pusic AL. The efficacy of artecoll injections for the augmentation of nipple projection in breast reconstruction. *Eplasty*. 2010; 10:e7

McCarthy CM, Pusic AL, Kerrigan CL. Silicone breast implants and magnetic resonance imaging screening for rupture: Do U.S. Food and Drug Administration recommendations reflect an evidence-based practice approach to patient care? *Plast Reconstr Surg*. 2008; 121:1127-34

McCarthy CM, Pusic AL, Sclafani L, Buchanan C, Fey JV, Disa JJ, Mehrara BJ, Cordeiro PG. Breast cancer recurrence following prosthetic, postmastectomy reconstruction: Incidence, detection, and treatment. *Plast Reconstr Surg*. 2008; 121:381-88

McCarthy CM, Mehrara BJ, Riedel E, Davidge K, Hinson A, Disa JJ, Cordeiro PG, Pusic AL. Predicting complications following expander/implant breast reconstruction: An outcomes analysis based on preoperative clinical risk. Plast Reconstr Surg. 2008; 121:1886-92

Babak J. Mehrara, MD

Attending Surgeon
Chief of Plastic and Reconstructive Surgery
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Professor of Surgery
Weill Medical College of Cornell University

Education: BS, Boston University
M.D., Columbia University, New York, NY

Residencies: New York University Medical Center
New York University, Post-Doctoral Research

Fellowship: UCLA Medical Center

Babak Mehrara trained in microsurgery at UCLA and has an extensive experience in reconstruction with perforator flaps including DIEP and SGAP for breast reconstruction. As Chief of the Plastic and Reconstructive Surgical Service at Memorial Sloan Kettering, he oversees the clinical and research activities of the service. His basic science and clinical research interests overlap and he clinically applies liposuction, lymph node transfer and lymphatic bypass procedures to patients with lymphedema. His long term goal is to design novel methods including surgery and medical treatments to prevent and treat lymphedema. His NIH funded laboratory provides cutting edge translational solutions to this complicated problem.

Dr. Mehrara has published extensively in both clinical and basic science studies and has had numerous national leadership positions in the American Society of Plastic Surgeons, The Plastic Surgery Research Council, the American Society of Reconstructive Microsurgery, The American Society of Lymphatic Surgery, and The American College of Surgeons. He is current president of the Northeastern Society of Plastic Surgeons.

Selected publications:

Savetsky, IL, Torrisi, JS, Cuzzone, DA, Ghanta, S, Albano, N, Gardenier, JC, Joseph, W, and **Mehrara BJ**. Obesity increases inflammation and impairs lymphatic function in a mouse model of lymphedema. *Am J Physiol Heart Circ Physiol*. 2014 15; 307 (2): H165-72.

Cuzzone, DA, Weitman, ES, Albano, NJ, Ghanta, S, Savetsky, IL, Gardenier, JC, Joseph, WJ, Torrisi, JS, Bromberg, JF, Olszewski, WL, Rockson, SG, and **Mehrara BJ**. IL-6 regulates adipose deposition and homeostasis in lymphedema. *Am J Physiol Heart Circ Physiol*, 2014 May; 306 (10):1426.

Weitman, ES, Aschen, SZ, Farias-Eisner, G, Albano, N, Cuzzone, DA, Ghanta, S, Zampell, JC, Thorek, D, and **Mehrara BJ**. Obesity impairs lymphatic fluid transport and dendritic cell migration to lymph nodes. *PLoS One.* 2013 Aug 12(8): e70703

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Zampell JC, Yan A, Elhadad S, Avraham T, Weitman E, **Mehrara BJ**. CD4+ Cells Regulate Fibrosis and Lymphangiogenesis in Response to Lymphatic Fluid Stasis. *PLoS One*. 2013;7(11)

Aschen S, Zampell JC, Elhadad S, Weitman E, De Brot M, **Mehrara BJ**. Regulation of adipogenesis by lymphatic fluid stasis: part II. Expression of adipose differentiation genes. *Plast Reconstr Surg*. 2012 Apr;129(4):838-47

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Yan A, Avraham T, Zampell JC, Haviv YS, Weitman E, **Mehrara BJ**. Adipose-derived stem cells promote lymphangiogenesis in response to VEGF-C stimulation or TGF-β1 inhibition. *Future Oncol*. 2011 Dec;7(12):1457-73.

Zampell JC, Yan A, Avraham T, Daluvoy S, Weitman ES, **Mehrara BJ**. HIF-1α coordinates lymphangiogenesis during wound healing and in response to inflammation. FASEB

Jonas A. Nelson, MD

Assistant Attending Surgeon
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Assistant professor of Surgery
Weill Medical College of Cornell University

Education: BA, Johns Hopkins University
MD, University of Maryland School of Medicine

Residency: University of Pennsylvania, Plastic Surgery

Fellowships: Memorial Sloan Kettering Cancer Center
Doris Duke Clinical Research Fellowship, University of Pennsylvania

Dr. Nelson joined the Plastic and Reconstructive Surgery Service in 2017. His clinical interests focus on both autologous and alloplastic breast reconstruction, microsurgical head and neck reconstruction, and complex abdominal wall reconstruction. His research goals are to improve the real time translation of patient reported outcome measures (PROMS) from research instruments to clinical tools with the potential to directly improve outcomes. He is also interested in improving early recovery and functional outcomes after breast reconstruction.

Selected publications:

Nelson JA, Lee I, and Disa JJ. The functional impact of breast reconstruction: an overview and update. *Plast Reconstr Surg Glob Open* 2018;6:e1640.

Kenworthy EO, **Nelson JA**, Verma R, Mbabuike J, Mehrara BJ, Dayan JH. Double vascularized omentum lymphatic transplant (VOLT) for the treatment of lymphedema. *J Surg Oncol*. 2018 Mar 8.

Voineskos SH and **Nelson JA**, Klassen AF, Pusic AL. Measuring Patient-Reported Outcomes: Key Metrics in Reconstructive Surgery. *Annu Rev Med*. 2018 Jan 29;69:467-479.

Nelson JA, Chung CU, Bauder AR, Wu LC. Prevention of thrombosis in hypercoagulable patients undergoing microsurgery: A novel anticoagulation protocol. *J Plast Reconstr Aesthet Surg*. 2017 Mar;70(3):307-312.

Nelson JA, Disa JJ. Breast Reconstruction and Radiation Therapy: An Update. *Plast Reconstr Surg*. 2017 Nov;140(5S Advances in Breast Reconstruction):60S-68S.

Fischer JP, Fox JP, **Nelson JA**, Kovach SJ, Serletti JM. A Longitudinal Assessment of Outcomes and Healthcare Resource Utilization After Immediate Breast Reconstruction-Comparing Implant- and Autologous-based Breast Reconstruction. *Ann Surg*. 2015 Oct;262(4):692-9.

Nelson JA, Fischer JP, Grover R, Kovach SJ, Low DW, Kanchwala SK, Levin LS, Serletti JM, Wu LC. Vein grafting your way out of trouble: Examining the utility and efficacy of vein grafts in microsurgery. *J Plast Reconstr Aesthet Surg*. 2015 Jun;68(6):830-6.

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Nelson JA, Fischer JP, Grover R, Mirzabeigi MN, Nelson P, Wes AM, Au A, Serletti JM, Wu LC. Intraoperative perfusion management impacts postoperative outcomes: an analysis of 682 autologous breast reconstruction patients. *J Plast Reconstr Aesthet Surg*. 2015 Feb;68(2):175-83.

Nelson JA, Tecci MG, Lanni MA, Fischer JP, Fosnot J, Selber JC, Wu LC, Serletti JM. Function and Strength after Free Abdominally Based Breast Reconstruction: A 10-Year Follow-Up. Plast Reconstr Surg. 2019 Jan;143(1):22e-31e. doi: 10.1097/PRS.0000000000005096. PubMed PMID: 3043154

Farooq Shahzad, MBBS, FACS, FAAP

Assistant Attending Surgeon
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Assistant Professor of Surgery
Weill Medical College of Cornell University

Education: MBBS, Aga Khan University (Pakistan)
MS, Northwestern University

Residencies: West Virginia University, General Surgery
Oregon Health & Science University, Plastic Surgery

Fellowships: Washington University in St Louis, Craniofacial & Pediatric Plastic Surgery
Memorial Sloan-Kettering Cancer Center, Reconstructive Microsurgery

Dr. Farooq Shahzad is dual fellowship trained, in craniofacial surgery and microsurgery. His main clinical interest is in head & neck reconstruction. He also performs trunk and extremity reconstruction, Mohs reconstruction and targeted muscle reinnervation.

Dr. Shahzad's research interests are in optimizing outcomes in head & neck reconstruction, sensory reconstruction in the head and neck and perforator mapping.

Dr. Shahzad has a passion for global surgery. He is a regular visiting faculty at several academic medical centers in Pakistan where he operates and teaches plastic surgeons and residents.

Selected publications:

Jejunum Flap for Pharyngeal Reconstruction
Shahzad F, Mehrara BJ. In KC Chung (Ed), *Operative Techniques in Plastic Surgery. Wolters Kluwer*, 2019

Tumors of the Skull Base: Presentation and Management
Ordon M, **Shahzad F**, Gosain AK. In K Agrawal (Ed), *Textbook of Plastic, Reconstructive, and Aesthetic Surgery, Volume III: Head and Neck Reconstruction.* Thieme, 2018

The Future of Fat Grafting
Shahzad F, Mehrara B.
Aesthetic Surgery Journal 2017;37(suppl_3):S59-S64.

The Transcaruncular Approach for Treatment of Medial Wall and Large Orbital Blowout Fractures
Nguyen DC, **Shahzad F,** Snider-Warwick A, Patel KB, Woo AS
Craniomaxillofacial Trauma & Reconstruction 2016; 9(1):46-54

Breast Reconstruction with the Bostwick Autoderm Technique
Ladizinsky DA, Sandholm PH, Jewett ST, **Shahzad F**, Andrews K
Plastic & Reconstructive Surgery 2013; 132(2): 261-270

Plastic Surgery Case Review: Oral Board Study Guide
Albert S. Woo, **Farooq Shahzad**, Alison H. Snyder-Warwick (Eds). Thieme, 2014.

Carrie Stern, MD

Assistant Attending Surgeon
Plastic and Reconstructive Service, Memorial Sloan Kettering Cancer Center

Education: MD, NYU School of Medicine

Residencies: General Surgery – Montefiore Medical Center, Albert Einstein College of Medicine
Plastic Surgery - Montefiore Medical Center, Albert Einstein College of Medicine

Fellowships: Reconstructive Plastic Surgery/Microsurgery
Memorial Sloan Kettering Cancer Center

Dr. Stern joined the MSK Plastic Surgery Faculty after completing her Microsurgery Fellowship in 2019. Her clinical practice includes general reconstruction of complex defects in patients with cancer with a focus on breast reconstruction. She has particular interest in patient education and optimizing patient experience and clinical outcomes. Her research and clinical focus involves integrating technology, particularly 3D imaging and soft tissue analysis in patient care and the use 3D photography during consultation, in the operating room and to assess post-operative outcomes.

Selected publications:

Schreiber JE, **Stern CS**, Jelks EB, Jelks GW, Tepper OM. 3D topographical surface changes in response to volumization of the lateral sub-orbicularis oculi fat compartment. *Plast Reconstr Surg*. 2019 Dec 17.

Daneshgaran G, **Stern CS**, Garfein ES. Reporting practices on immunosuppression and rejection management in face transplantation: a systematic review. *J Reconstr Microsurg*. 2019 Nov;35(9):652-661.

Stranix JT, **Stern CS**, Rensberger M, Ganly I, Boyle JO, Allen RJ Jr, Disa JJ, Mehrara BJ, Garfein ES, Matros E. A virtual surgical planning algorithm for delayed maxillomandibular reconstruction. P*last Reconstr Surg*. 2019 Apr;143(4):1197-1206.

Schreiber JE, Terner J, **Stern CS**, Beut J, Jelks EB, Jelks GW, Tepper OM. The boomerang lift: a three-step compartment-based approach to the youthful cheek. *Plast Reconstr Surg*. 2018 Apr;141(4):910-913.

The fellows participate in over 1,400 breast reconstuction procedures.

Lymphedema

Lymphedema is a long neglected disease that has recently experienced a resurgence in interest by the plastic surgery community. Refinements in surgical techniques have improved outcomes in lymph node transplantation and lymphovenous procedures. More importantly, the safety of these procedures has improved with greater understanding of lymphatic anatomy and advent of innovative procedures such as reverse lymphatic mapping as pioneered by Joseph Dayan.

MSK is a leading center for the surgical treatment of lymphedema. The program, headed by Drs. Mehrara and Dayan, is a referral center not only for MSK patients but also a large number of patients referred both regionally and nationally. Microsurgery fellows play a crucial role in preoperative evaluation of these patients enabling them to identify suitable surgical candidates, understand the pathophysiology of the disease, and develop algorithms for preop and postoperative evaluation. Equally importantly, microsurgery fellows learn hands on how to perform these challenging procedures including harvest of donor lymph nodes, use of reverse lymphatic mapping to improve safety of lymph node harvest, preparation of recipient sites, supermicrosurgical anastomosis, and flap inset to maximize lymphatic regeneration. Our surgical volume in lymphedema microsurgery has grown steadily over the past 3 years and is expected to be 50-80 procedures/year.

Breast reconstruction

Microsurgical breast reconstruction is a major focus of the microsurgical fellowship at MSK. The volume of these cases has grown exponentially over the past 10 years. The volume of these cases has grown an annualized 25% per year since 2002. Our projections indicate that this number will continue to increase in the years to come due to increases in patient demands, increased referrals after radiation therapy, and changes in patient demographics. Although the majority of reconstructions performed at MSK are DIEP and muscle sparing TRAM flaps, the entire gamut of microsurgical reconstruction is available. Gracilis muscle (TUG/DUG), profunda artery perforator (PAP), lateral thigh perforator a gluteal flaps have been used more frequently in the past several years due to improvements in techniques that have decreased donor site morbidity. The use of these flaps has substantially increased the surgical armamentarium available for reconstruction and adds variety to our surgical program. At the conclusion of the fellowship, all microsurgical fellows are highly proficient in patient evaluation, flap harvesting, and preparation of recipient vessels (particularly in patients with hostile surgical environments), microsurgical anastomosis, and flap inset. In addition, due to the large volume of cases performed at MSK, fellows gain substantial experience in flap revision and second stage procedures if they desire.

MSK has also led the way in prosthetic based breast reconstruction. Dr. Cordeiro has vast experience in this area having demonstrated the feasibility and safety of implant use in the setting of radiation and established well-known algorithms for the use of implants in the setting of post-mastectomy radiation. Dr. Disa has written about the benefits of latissimus flaps combined with implants for reconstruction of patients with previous chest wall radiotherapy. Meanwhile, Dr. McCarthy and Disa published the results of a prospective randomized trail using acellular dermal matrices in implant breast reconstruction. In addition, well prior to FDA approval, MSK had already accumulated extensive experience with anatomic cohesive gel implants.

Head and Neck reconstruction

MSK remains a leader in advancing head and reconstruction. Algorithms developed by MSK faculty for pharynx, mandible, maxilla will inform reconstructive decision making. Fellows will also learn detailed head and neck anatomy including the facial nerve and exposure of recipient vessles. Osseus reconstruction of the facial skeleton will use a variety of bone flaps including the scapula, fibula, iliac crest and radius. Flap shaping employs traditional techniques as well as substantial exposure to CAD/CAM virtual surgical planning. Fellows will also learn facial nerve reconstruction including static and dynamic procedures along with nerve transfers. There is also ample opportunity to become involved and proficient in reconstruction of MOHs skin cancer defects. Local flaps and advanced applications of the forehead flap for nasal reconstruction are common.

EDUCATION

Our graduates have primarily gone on to prominent academic positions in major university centers, with a large number serving in leadership roles.

The Plastic and Reconstructive Fellowship at Memorial Sloan Kettering Cancer Center is a unique fellowship that offers broad exposure to reconstructive procedures after oncologic resections.

The goal of the Plastic & Reconstructive fellowship is to train general plastic surgery fellows to become experts in microsurgical reconstruction of oncologic surgical defects and master the principles and techniques of breast reconstruction.

The fellows participate in the management of complex reconstructive problems that relate to many areas in reconstructive surgery. These include breast reconstruction, head and neck reconstruction, chest wall, pelvic reconstruction, and extremity reconstruction.

The principal areas of training consist of microsurgical free tissue transfers, myocutaneous flap coverage, and breast reconstruction.

There are over 450 elective free tissue transfers done each year for tumor-related problems, and there are another 100 additional microsurgical procedures, including nerve grafting and vascularized lymph node transfer. The fellows participate in over 1,400 breast reconstruction procedures, such as autologous tissue reconstruction, tissue expansion, implant placement and symmetry procedures. The fellows are responsible for all preoperative and postoperative patient care, and they will perform operations under the direction of an attending surgeon. They will also gain experience in the clinics, as well as attend rounds, conferences, lectures, and seminars. There is ample opportunity to conduct research on oncologic surgery.

Some of the defined goals and objectives of the program

Include:

1. To learn the special microsurgical techniques necessary for free tissue transfer
2. To learn the indications for free flaps vs. local flaps
3. To master the analysis of complex surgical defects to determine appropriate free flap donor site selection
4. To learn the specific preoperative and postoperative care required by free flap patients
5. To learn how to monitor free flaps, recognize a failing free flap, and to render appropriate care to salvage a failing flap
6. To learn the aesthetics of free flap insetting
7. To acquire the ancillary skills necessary for shaping osseous free flap, i.e. osteotomy strategy and miniplate fixation
8. To learn tissue expander and implant methods of breast reconstruction
9. To learn autogenous tissue methods of breast reconstruction
10. To learn management of the contralateral breast in breast reconstruction
11. To learn ancillary techniques involved in breast reconstruction such as nipple reconstruction
12. To learn how to manage complications and untoward results in breast reconstruction
13. To learn how to develop a clinical research project, how to write a scientific paper, and how to present at scientific meetings
14. To acquire skills involved in pelvic and gynecologic reconstruction
15. To learn how to use synthetic and biologic materials to aide in breast and abdominal wall reconstruction
16. To learn to properly diagnose and surgical treat lymphedema
17. To learn the ancillary skills to perform breast reconstruction, such as autologous fat grafting

Operative Experience

The operative experience in the microsurgery at MSK is unparalleled. In 2017 a total of 3311 cases were performed (See table). Each procedure is either performed or first assisted by a fellow. There is close supervision of all fellows and residents by the Attending staff with graduated increasing operative responsibility according to experience. Fellows will typically be operating 4 or 5 days out of the week.

Starting in July 2019, the fellowship will expand to 5 fellows per year. The case-load is large enough to accommodate and train each fellow in a senior capacity. Junior and senior residents from prestigious programs including Cornell are also assigned to the Plastic Service. Plastic Surgery nurse practitioners and physician assistants work full-time on the service and assist in the operating room, inpatient perioperative care, and in the outpatient clinic. In addition to the 5 plastic surgical trainees, in some years the service will also train a head and neck surgeon in microsurgery. This indidivual will have same clinical responsibilities and case distribution as the plastic surgery trainees.

Ambulatory Experience

A responsibility of the fellows is to attend clinic in order to evaluate and work-up new patients under the supervision of the attending surgeon. There is a separate outpatient clinic where patients are seen pre and post-operatively. Typically 2-3 attendings may have clinic on any given day. All trainees participate in these clinics which are considered a critical part of their education. The Plastic & Reconstructive trainees are afforded the opportunity not only to be exposed to the surgical therapy of our patients, but are able to initiate the first patient encounter, make diagnostic and therapeutic decisions and follow patients postoperatively in clinic.

Rotation Schedule

The current rotation schedule puts each fellow on an attending team. Each team consists of 2-3 attendings and one fellow. Fellows generally rotate with each attending team twice during the academic year so that they can revisit principles learned earlier in the year.

Elective Rotation

Each fellow will have the opportunity to create their own one week elective rotation based upon their personal interests. For example, fellows could rotate on another MSKCC service to observe neck dissections, melanoma management, or alternatively travel to visit a surgeon elsewhere to see procedures not performed at MSK including transgender surgery.

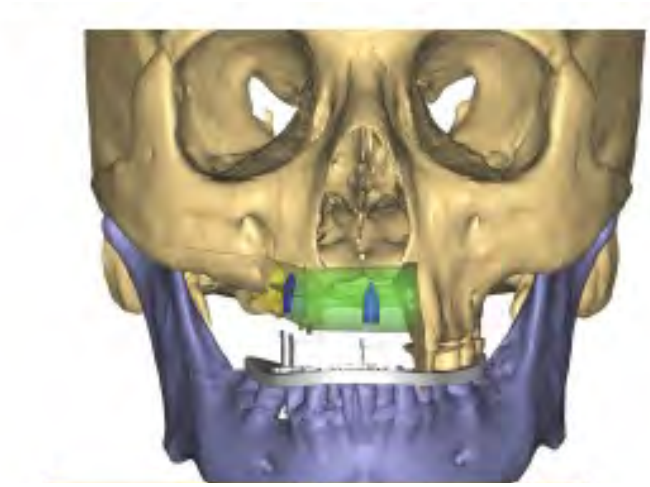
Fellows may also opt to visit a medical center in Pakistan with Dr. Shahzad, where fellows gain exposure to reconstruction for complex defects from trauma, tumors, infections and burns. This international rotation polishes the fellows' skills and affords a high level of autonomy.

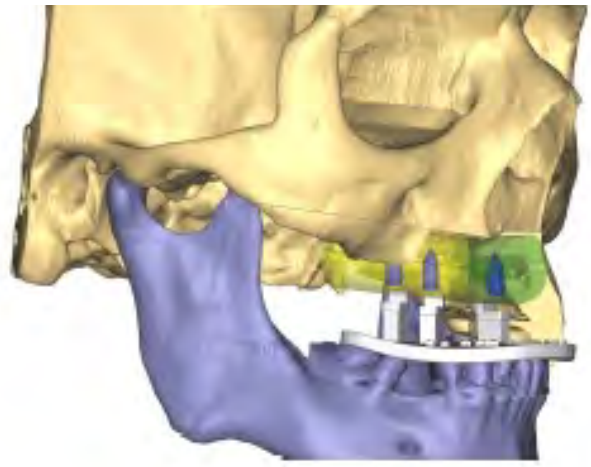
Didactics and Conferences

Education is of paramount importance for the Plastic Service, as the training of superior surgeons and leaders in plastic surgery is a crucial part of our Mission. The Didactic component of the Training Program builds on the trainee's fund of knowledge, but is also aimed at developing the critical thinking and cognitive skills necessary to make intelligent decisions about appropriate patient management. The multidisciplinary nature of plastic surgery requires the trainee to master a large amount of information across multiple disciplines in order to arrive at the optimum treatment strategy. To that effect, the Plastic Surgery Service hosts several conferences weekly:

1. Breast Conference – multidisciplinary conference and review of management of breast cancer cases, present relevant topics
2. Head and Neck Conference – multidisciplinary conference and review of management of head/neck cases, present relevant topics
3. Cadaver labs are performed 1-2 times each academic year
4. NYH Plastic Surgery Lectures – Present core curriculum topics in plastic surgery
5. MSK Plastic Surgery M&M – review of complications
6. MSK Plastic Surgery Journal Club – Review latest literature
7. MSK Plastic Surgery Attending Rounds – Present patients, case management
8. MSK hosted visiting professors
9. Department of Surgery Grand Rounds – Exposure to visiting speaker by various surgical service
10. Clinical Research Methods – Summer only lecture series for incoming residents

Surgical Plan: Immediate Dental Implants





Weekly Plastic Surgery Conference Schedule

Recent Invited Speakers

Dr. Jeffrey Ascherman
Dr. Jason Spector
Dr. Ming-Huei Cheng
Dr. Robert Grant
Dr. Mark Smith
Dr. Randy Sherman
Dr. Liza Wu
Dr. Henry Spinelli
Dr. David Hidalgo
Dr. Christine Rohde
Dr Fu-Chan Wei
Dr Yixin Zhang
Dr Bauback Safa

Topics

Air Expander
Flaps of the Lower Extremity
Updates in Lymphedema/Microsurgery
Prepectoral Implant Breast Reconstruction
Autogenous Breast Reconstructionww
Extremity Reconstruction
Breast Reconstruction
Oculoplastic Reconstruction
History & Refinements of Fibula Flap
Pulsed Electromagnetic Fields
Evolution in Microsurgery
KISS Principle
Functional Extremity Reconstruction

Topics Delivered by MSK Faculty

Cadaver Lab
Chest Wall Reconstruction
Nasal Reconstruction
Prosthetic Breast Reconstruction
Pelvic & Vaginal Reconstruction
Local and Regional Flaps in Head and Neck Reconstruction
Lymphedema

Head & Neck Cancer
Dental Splints/Obturators/ Prosthesis
Facial Reanimation
Sawbones & Anastomosis
Midfacial Reconstruction
Skull Base Reconstruction
Melanoma

RESEARCH

The Plastic & Reconstructive Surgery Service has established extensive prospective databases compiling surgical and clinical outcomes for more than 40,000 surgical procedures over the past two and a half decades. Utilizing these databases, our surgeons have developed algorithms for complex reconstructive procedures and collected considerable information on complications and aesthetic outcomes. In the past several years, research has been focused on assessing health-related quality of life among oncology patients by using patient-reported outcomes (PRO) measures. By using existing PRO measures and developing newer tools, our surgeons are better able to measure patient satisfaction and quality of life outcomes among patients having reconstructive surgery following oncologic surgery. In the lab, we are working to identify the mechanisms that control lymphatic function in order to develop innovative treatments for chronic lymphatic diseases such as lymphedema. Our faculty aim to improve patient outcomes through the advancement of novel therapies and translating research into better clinical care. Fellows meet weekly with attendings to discuss on going research projects.

Dr. Disa focuses on clinical research largely related to breast reconstruction. He has published extensively on the use of acellular dermal matrix in prosthetic breast reconstruction, including both prospective and retrospective studies.

Dr. Cordeiro's principal research focus has been in outcomes research. He has established multiple extensive databases and applied over two decades of prospectively collected data to the development of algorithms for reconstruction of defects by anatomic region. These outcomes include early postoperative results, complications as well as long term evaluations. Long-term aesthetic and functional datasets include both surgeon and patient reported outcomes. Special interests have included the mandible and midface in the head and neck as well implant- based breast reconstruction with an emphasis on patients who undergo pre and post-mastectomy radiation.

Dr. Mehrara is a reconstructive surgeon that specializes in cancer reconstruction. He has an active, NIH funded laboratory, studying the pathophysiology of lymphedema a chronic, progressive, and incurable disorder that occurs commonly in cancer patients who undergo lymph node dissection. Over the past 10 years, his lab has identified a number of key pathologic steps in the development of lymphedema. These studies have led to a first ever clinical trial for immunotherapy of lymphedema at MSK. In addition, a better understanding of the pathophysiology of lymphedema has led to changes in surgical techniques and improved surgical outcomes. Over the past several years, his lab has worked closely with collaborators in Stanford University, MD Anderson Cancer Center, Madrid Institute of Cancer, USC Medical Center, and Boston Children's Hospital.

The BREAST-Q patient reported outcome measure was developed at MSK in conjunction with Dr. Andrea Pusic. Prior to development of this instrument, there was no objective way of demonstrating the benefit to patients of many aesthetic and reconstructive procedures. The BREAST-Q and other patient reported outcomes measures (PROMS) are now commonplace metrics used within our discipline to scientifically measure the impact of our procedures. This significantly elevated the quality of plastic surgery research moving it beyond traditional surgical outcomes such as infection and flap loss.

More recently, Dr. McCarthy has focused on specific areas of quality of life research. Her studies have demonstrated the importance of understanding patient expectations on satisfaction with their surgical experience. To this end she is currently developing patient decision aids and educational materials. She has also increased awareness of response shift in measuring patient reported outcomes in plastic surgery. We now understand that a patient's views, values, and expectations can change over time and this needs to be accounted for in outcomes assessment.

Dr. Evan Matros has compared findings from the BREAST-Q with procedural trends in breast reconstruction. This has helped understand whether or nor the US is moving away from, or towards, high quality reconstructive operations over time. It has simultaneously led to understanding of the impact of reconstruction on the decision making for women who choose to undergo contralateral prophylactic mastectomies. Most recently he has used the BREAST-Q as the outcome measure in cost-effectiveness analyses. The principal goal of this line of research is to convert quality of life measures into a metric which can be interpreted by third party payers and hospitals to understand the relative value of plastic surgery operations.

Dr. Dayan recently joined MSK where he has focused on establishing programs in lymphatic surgery in collaboration with Dr. Mehrara as well as facial reanimation. His research is focused on improving patient outcomes and quality of life for patients facing these challenging problems. Dr. Dayan's interests also include streamlining perforator flap breast reconstruction using enhanced recovery protocols and oncoplastic breast reconstruction.

Dr. Farooq Shahzad's major research interest is in optimizing outcomes in head and neck reconstruction. His ongoing research projects include sensory reconstruction in the head and neck and perforator mapping.

GRADUATES OF PLASTIC SURGERY TRAINING PROGRAM (1990-2019)

1990-1991	Freedman, Alan North Shore University/Private Practice, Great Neck, NY
1991-1992	Cordeiro, Peter Memorial Sloan Kettering Cancer Center, New York, NY
1992-1993	Tachmes, Leonard North Shore Hospital Medical Center – Miami/Private Practice, Miami Beach, FL
1993-1994	Bucky, Louis University of Penn Health System, Philadelphia, PA
1994-1995	Zenn, Michael Duke University, Durham, NC
1994-1995	Paul Costas Private Practice, Concord, MA
1995-1996	Fahey, Leilani Cooper University Health Care, Camden, NJ
1996-1997	Disa, Joseph Memorial Sloan Kettering Cancer Center, New York, NY
1996-1997	Ad-El, Dean Memorial Sloan Kettering Cancer Center, New York, NY
1997-1998	Rodriguez, Victor Private Practice, Manati, Puerto Rico
1997-1998	Sharma, Sheel Private Practice, New York, NY
1998-1999	Smith, John University of Rochester/Private Practice, Rochester, NY
1998-1999	Smith, Andrew New York Presbyterian/Private Practice, New York, NY
1998-1999	Bacilious, Norma Westchester Medical Center, Valhalla, NY
1999-2000	Alizadeh, Kaveh North Shore University/Private Practice, Manhasset, NY
1999-2000	Davenport, Thomas Yale New Haven Health/Private Practice, Fairfield, CT
1999-2000	Ott-Young, Anke Private Practice, Athens, Greece
2000-2001	Mastorakos, Dmitrios Private Practice, Boston, MA
2000-2001	Chiou, Portia Academic Practice, Sydney, Australia
2000-2001	Liew, Steven Private Practice, Atlanta, GA
2001-2002	Gordon, Julian North Shore University/Private Practice, Manhasset, NY
2001-2002	Guertin, Charles University of Montreal/ Private Practice, Montreal, Canada
2002-2003	Chunilal, Ashwin University of Montreal/ Private Practice, Montreal, Canada
2002-2003	Chang, Raymond Penn State Milton S. Hershey Medical Center, Hershey, PA
2001-2003	Bui, Duc SUNY Stony Brook University, Stony Brook, NY
2003-2004	Samson, William Mount Sinai St. Lukes – Roosevelt/Private Practice, New York, NY
2003-2004	Howard, Michael Mount Sinai St. Lukes – Roosevelt/Private Practice, New York, NY
2003-2004	Chiu, Ernest NYU Langone Medical Center, New York, NY
2004-2005	Stover, Stephanie Private Practice, Miami, FL
2004-2005	Glatt, Brian Private Practice, Morristown, NJ
2004-2005	Behnam, Amir Reading Health Physician Network, Boston, MA
2005-2006	Avram, Ronen McMaster University, Ontario, Canada
2005-2006	Halvorsen, Eric Harvard Medical School/Brigham and Women's Hospital, Chapel Hill, NC
2005-2006	McCarthy, Colleen Memorial Sloan Kettering Cancer Center, New York, NY
2006-2007	Jugenburg, Martin University of Toronto, Toronto, CA
2006-2007	Mosahebi, Afshin Royal Free Hospital/University College London, London, United Kingdom
2007-2008	Antony, Anuja University of Illinois, Chicago, IL
2007-2008	Mesbahi, Ali Virginia Hospital Center, Arlington, VA
2007-2008	Zhong, Toni University of Toronto, Toronto, CA
2008-2009	Addano, Tommaso North Shore-LIJ Health System/Private Practice, New York, NY

2008-2009 Lemaine, Valerie
Mayo Health System, Rochester, MN

2008-2009 Sisco, Mark
University of Chicago-Pritzker School of Medicine, Chicago, IL

2009-2010 Matros, Evan
Memorial Sloan Kettering Cancer Center, New York, NY

2009-2010 Torina, Philip
Mount Sinai Hospital, New York, NY

2009-2010 Schwarz, Graham
Cleveland Clinic, Cleveland, OH

2009-2010 Snell, Laura
University of Toronto, Sunnybrook Health Science Center, Toronto, Canada

2010-2011 Nelson, Rebecca
University of British Colombia, Vancouver, Canada

2010-2011 Nowillo, Karoline
Private Practice, Westchester, NY

2010-2011 Patel, Nima
Maimonides Medical Center, Brooklyn, NY

2010-2011 Jones, Deirdre
University College Hospital in Galway, Galway, Ireland

2011-2012 Ravnic, Dino
Penn State Milton S. Hershey Medical Center, Hershey, PA

2011-2012 Kaplan, Karly
Kaiser Permanente, Sacramento, CA

2011-2012 Fernandez, John
Private Practice (Berks Plastic Surgery), Reading, PA

2011-2012 Bajnrauh, Robert
Private Practice, Los Angeles, CA

2012-2013 Wang, Theresa
Private Practice (Plastic and Reconstructive Surgery of Atlanta), Atlanta, GA

2012-2013 Wei, Cindy
Private Practice(Seattle Plastic Surgery), Seattle, WA

2012-2013 Kulkarni, Anita
Private Practice (Plastic Surgery Institute of Washington), Washington, D.C.

2012-2013 Clavin, Nicholas
Private Practice (Carolinas HealthCare System), Charlotte, NC

2013-2014 Pepin, Marie Eve
Private Practice, Montreal, Canada

2013-2014 Sjarif, Adrian
Aesthetic Day Surgery, Academic Practice, Kogarah, Australia

2013-2014 Nguyen, Trang
Kaiser Permanente, Oakland, CA

2013-2014 Weichman, Katie
Montefiore Medical Center, Bronx, NY

2014-2015 Sackeyfio, Robyn
Surgical Center for Cosmetic Surgery, Grand Rapids, MI

2014-2015 Jazayeri, Leila
Kaiser Permanente, San Leandro, CA

2014-2015 Frank, Simon
Boston's Children's Hospital fellowship; Private Practice Halifax, Nova Scotia

2014-2015 Albornoz Garrido, Claudia
University of Chile, Chile

2015-2016 Farhang Khoee, Hana
St Micheal's Hospital, Toronto, Canada

2015-2016 George, Finny
Long Island Plastic Surgical Group, Long Island, NY

2015-2016 Ray, Edward
Cedars-Sinai Medical Center Los Angeles, CA

2015-2016 Shahzad, Farooq
Ann & Robert H. Lurie Children's Hospital, Chicago, IL

2016-2017 Henderson, Peter
Mount Sinai Medical Center, NY

2016-2017 Nelson, Jonas
MSK, NY

2016-2017 Voineskos, Sophocles
McMaster University, Canada

2016-2017 Sinkin, Jeremy
Rutgers, NJ

2017-2018 Shenaq, Deana
Rush University Medical Center

2017-2018 Coriddi, Michelle
Memorial Sloan Kettering Cancer Center

2017-2018 Seth, Akhil
NorthShore University HealthSystem

2017-2018 Ratanshi, Imran
Surrey Memorial Hospital/Fraser Health Authority

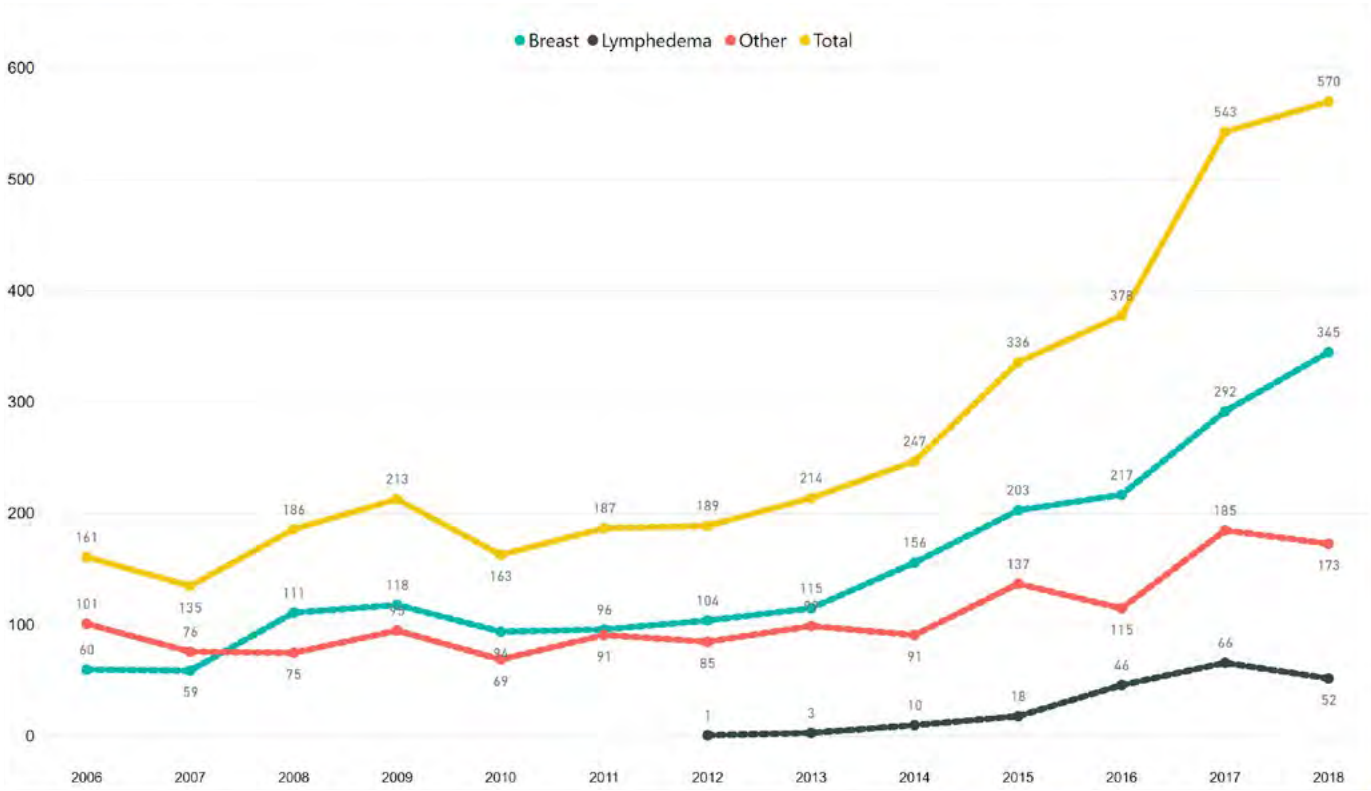
2018-2019 Stern, Carrie
Memorial Sloan Kettering Cancer Center, NY

2018-2019 Samra, Fares
Private Practice, NJ

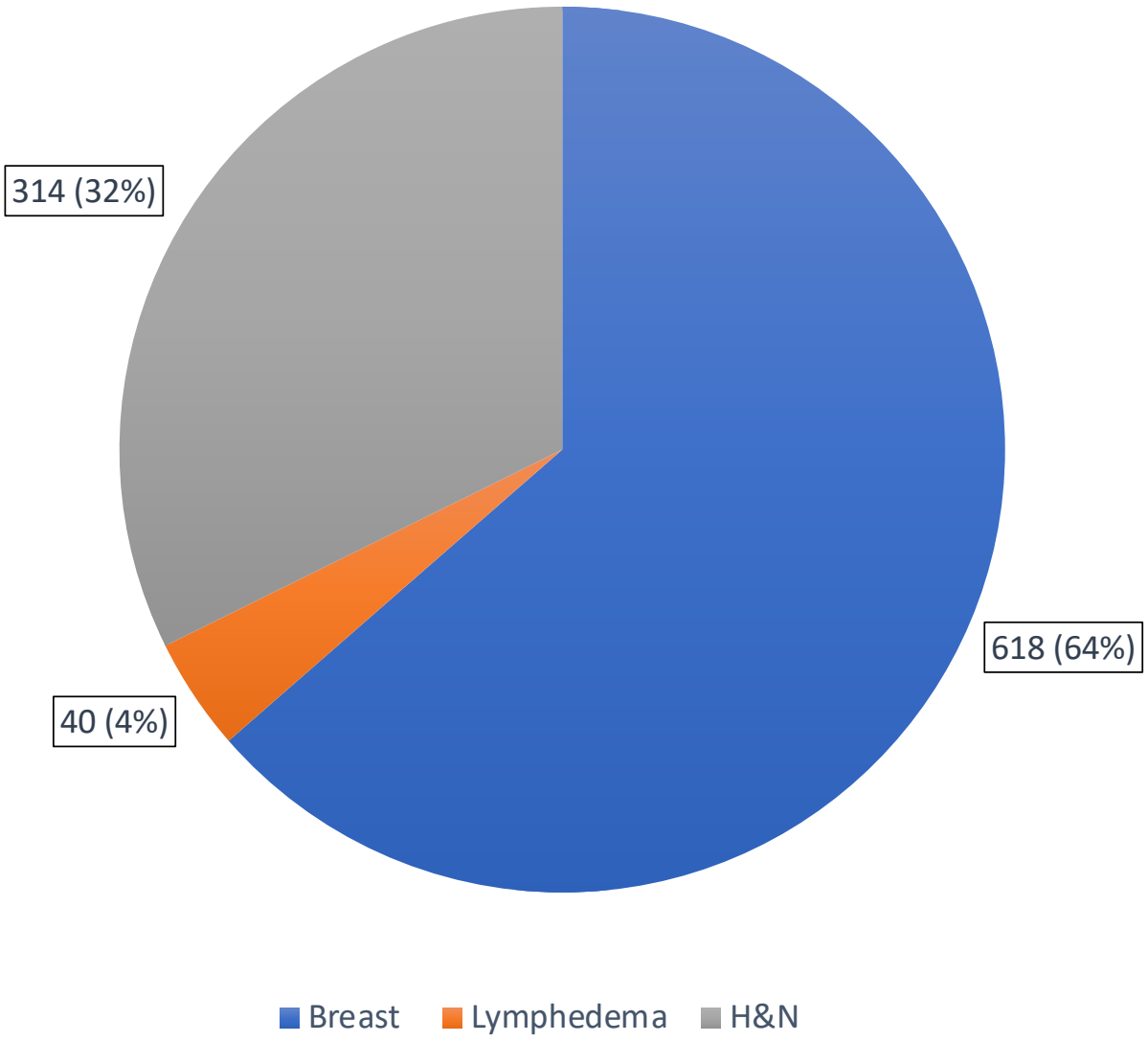
2018-2019 Raganath, Bharat
Broward Health Medical Center, FL

2018-2019 Teven, Chad
Mayo Clinic, MN

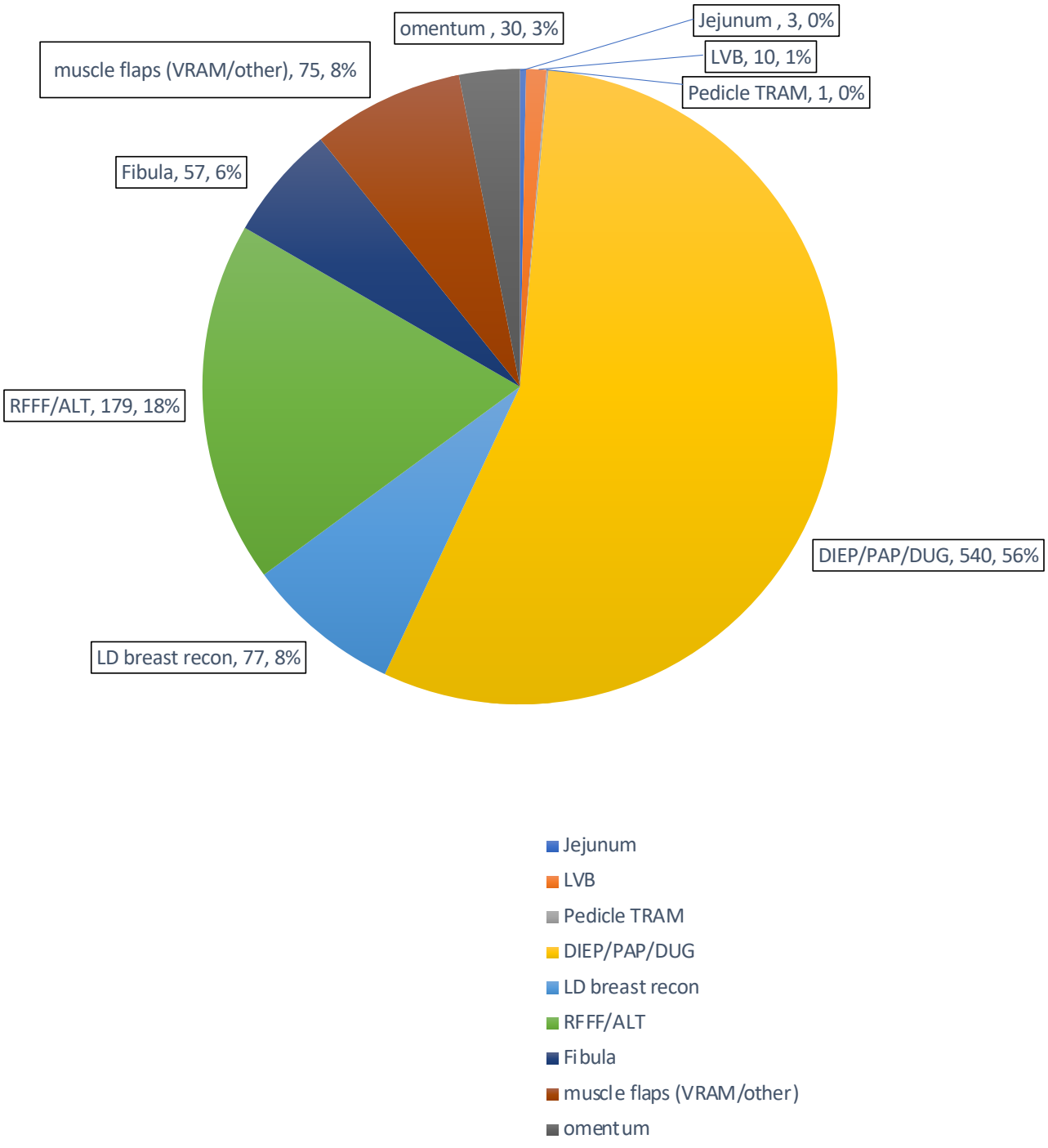
Free Flap
2018-2019



Free Flap Procedures
2018-2019



Number of Free Flaps by Type of Flap 2018-2019



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