



## Bryan J. Loeffler, MD

### Bio

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Dr. Loeffler specializes in the entire spectrum of hand and upper extremity disorders from the fingertips to the shoulder. He has a special interest in complex elbow conditions and peripheral nerve injuries. Dr. Loeffler has been awarded multiple research grants to fund various clinical studies as well as a basic science study on biologic solutions to improve rotator cuff healing. He has authored numerous book chapters and peer-reviewed articles on topics ranging from forearm injuries to shoulder and elbow replacement. Academic honors and achievements range from excellence in surgery to resident teaching award. He has also participated in two international medical missions, providing orthopaedic surgical care in underserved areas. Dr. Loeffler is a former NCAA Division I wrestler at the University of Maryland, and he remains active by running and spending time with his wife, Jennifer, and their three children.

**P: 704.323.2426**

### Patient Rating:

4.7 out of 5 Stars

### LOCATIONS

- Brachial Plexus and Limb Paralysis Center
- Hand Center
- Reconstructive Center for Lost Limbs
- South Park

### CLINICAL SPECIALTIES

- Elbow
- Hand
- Shoulder & Elbow
- Shoulder

### Education

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- **University of Maryland** - *Bachelor of Science*
- **University of Maryland School of Medicine** - *Doctor of Medicine*
- **Atrium Health - Carolinas Medical Center** - *Residency*
- **Thomas Jefferson University, Rothman Institute** - *Fellowship*
- **Thomas Jefferson University, The Philadelphia Hand Center** - *Fellowship*

### Practice

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- Shoulder & Elbow Surgery
- Hand & Upper Extremity Surgery
- American Board of Orthopaedic Surgery Certified
- The North Carolina Medical Board of Medical Examiners, #2006-01344

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- American Academy of Orthopaedic Surgeons, Fellow (2018)
  - American Shoulder and Elbow Surgeons, Associate Member

- American Society for Surgery of the Hand, Candidate Member (2012)
  - American Association for Hand Surgery, Active Member (2018)
  - North Carolina Medical Society (2013)
  - Mecklenburg County Medical Society (2013)
  - Hand-e Editorial Board Member and Sports-Shoulder section editor (2014-2019)
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- Board of Partners, OrthoCarolina 2016-present
- Research Advisory Committee, OrthoCarolina Research Institute, 2014-present
- Quality Improvement Committee, OrthoCarolina, 2017-present
- Performance Evaluation Committee, OrthoCarolina Hand and Upper Extremity Fellowship, 2014-2016
- Core Competency Committee, Atrium Health - Carolinas Medical Center Orthopaedic Surgery Residency, 2016-present

## Awards

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- 2023 [North Carolina's Top Doctors](#), Charlotte Region, SouthPark Magazine
  - 2022 [North Carolina's Top Doctors](#), Charlotte Region, SouthPark Magazine
  - Named a 2021 Top Doctor by Charlotte Magazine
  - Named a Carolina Top Doctor, 2020
  - Named a 2020 Top Doctor by Charlotte Magazine
  - Named a 2019 Top Doctor by Charlotte Magazine
  - Named a 2018 Top Doctor by Charlotte Magazine
  - Resident Teaching Award, Atrium Health - Carolinas Medical Center Department of Orthopaedic Surgery
  - Co-Chairman, Oscar Miller Day: New Horizons in Hand and Upper Extremity Surgery. 2017 Oct 6th
  - American Orthopaedic Association, Emerging Leaders Program
  - First Place Award, Orthopedic Research, and Education Foundation and Orthopaedic Research Society Atlantic Coast Regional Resident Research Symposium: *Prospective Study of Iliac Crest Donor Site Morbidity in Patients Undergoing Treatment of Fracture Nonunion*
  - Resident Leadership Forum Delegate, American Orthopaedic Association
  - Orthopaedic Research and Education Foundation Residency Enhancement Scholarship Award
  - Best Resident Clinical Research Paper, Atrium Health - Carolinas Medical Center Spring Symposium: Morbidity at the *Donor Site Morbidity after Anterior Iliac Crest Bone Grafting for Fracture Nonunion*
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- *Best Resident Basic Science Research Paper (co-author)*, Atrium Health - Carolinas Medical Center Spring Symposium: *Effect of Autologous Cell Implantation on Tendon-to-Bone Healing in the Rat Rotator Cuff*
- *Best Resident Clinical Research Paper (co-author)*, Atrium Health - Carolinas Medical Center Spring Symposium: *Outcomes after fixation of ankle fractures with syndesmotic injuries: Should the syndesmotic screw be removed?*
- *Best Resident Basic Science Research Paper*, Atrium Health - Carolinas Medical Center Spring Symposium: *Cell-Based Augmentation of Tendon-to-Bone Healing in a Rat Model of Rotator Cuff Repair*

### **Appointments and Committee Activities**

- Hand-e Editorial Board Member and Shoulder section editor, American Society for Surgery of the Hand, 2014-2019
- Education Committee and OrthoBullets Editor, American Shoulder and Elbow Surgeons, 2016-8
- Reviewer, Journal of Shoulder and Elbow Surgery, 2016-present
- Co-Chairman, Oscar Miller Day: New Horizons in Hand and Upper Extremity Surgery. 2017 Oct 6.
- Resident and Fellows Scientific Abstract Reviewer, American Society for Surgery of the Hand Annual Meeting, 2016
- Question writer, Arthroscopy Association of North America Maintenance of Certification Exam, Shoulder Arthritis, 2015
- Young Leaders, American Society for Surgery of the Hand, 2015
- Assistant Professor, Atrium Health - Carolinas Medical Center Department of Orthopaedic Surgery Residency Program, 2013-present
- Clinical Faculty, OrthoCarolina Hand and Upper Extremity Fellowship, 2014-present
- OrthoCarolina Research Advisory Committee, 2014-present
- Hospital Credentialing Committee, Atrium Health - Carolinas Medical Center, Resident Representative 2008-2010
- Residency Selection Committee, Atrium Health - Carolinas Medical Center Department of Orthopaedic Surgery, 2007-8 & 2010-11
- Housestaff Liaison Committee, Atrium Health - Carolinas Medical Center, 2006-7

## **Research**

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### **Peer-Reviewed Publications**

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1. [Steindler Flexorplasty: A Description of Current Technique and Case Series.](#) Marinello PG, Gaston RG, Loeffler BJ, Lewis DR. Tech Hand Up Extrem Surg. 2019 Dec;23(4):165-169.
2. Electives in Hand Surgery, American Society for Surgery of the Hand. New Orleans, Jan 2020, Faculty Presentations: Proximal Humerus Fractures: fix or replace?, Rotator Cuff Tears, Elbow Anatomy, Elbow Ligament Reconstructions
3. Pierrie SN, Gaston RG, **Loeffler BJ**. Targeted Muscle Reinnervation for Prosthesis Optimization and Neuroma Management in the Setting of Transradial Amputation. J Hand Surg Am. 2019 Feb 4. [Epub ahead of print]
4. Barber JA, **Loeffler B**, Gaston RG, Lourie GM. Excision of Incomplete Hook of the Hamate Fractures. Orthopedics. 2019 Jan 30:1-4. [Epub ahead of print]
5. Ford SE, Andersen JS, Macknet DM, Connor PM, **Loeffler BJ**, Gaston RG. Major complications after distal biceps tendon repairs: retrospective cohort analysis of 970 cases. J Shoulder Elbow Surg 2018 aug 20 (Epub ahead of print).
6. Gaston RG, Bracey JW, Tait MA, **Loeffler BJ**. [A Novel Muscle Transfer for Independent Digital Control of a Myoelectric Prosthesis: The Starfish Procedure.](#)
7. Pierrie S, Gaston RG, **Loeffler BJ**. Current Concepts in Upper Extremity Amputations. J Hand Surg Am. 2018 Jun 2.
8. Ode G, **Loeffler BJ**, Chadderdon RC, Haines N, Scannell B, Patt J, Gaston RG. Knee Arthroscopy Simulation Training: Does It Translate to Improved Arthroscopic Proficiency in the Wrist? Journal of Surgical Education 2018 May 2.
9. Bean B, Cook D, **Loeffler BJ**, Gaston RG. High Pressure Water Injection Injuries to the Hand: Perhaps not a benign injury. Orthopedics 2018. Jan 25:1-7.
10. **Loeffler BJ**, Lewis DR: Restoration of Elbow Flexion. Hand Clin 2016 Aug;32(3):311-21.
11. Brannan P, **Loeffler BJ**, Lewis D, Gaston RG: Complications with the use of BMP-2 in scaphoid nonunion surgery. J Hand Surg Am. Mar 21, 2016 (Epub ahead of print)
12. Bell P, Scannell BP, **Loeffler BJ**, Brighton BK, Gaston RG, Casey V, Peters ME, Frick S, Cannada L, Vanderhave KL.: Adolescent distal humerus fractures: ORIF vs. CRPP. J Pediatr Orthop. 2015 Dec 17. [Epub ahead of print]

13. Gaston RG, **Loeffler BJ**: Sports-specific injuries of the hand and wrist. *Clinics in Sports Medicine*. 2015 Jan; 34(1):1-10. Epub 2014 Oct 11.
14. VanBeek C, **Loeffler BJ**, Narzikul A, Gordon V, Rasiej MJ, Kazam JK, Abboud JA: Diagnostic accuracy of non-contrast MRI for detecting glenohumeral cartilage lesions: A prospective comparison to arthroscopy. *J Shoulder Elbow Surg*. 2014 Jul;23(7):1010-6. Epub 2014 Apr 22.
15. Russo SA, **Loeffler BJ**, Zlotolow DA, Kozin SH, Richards JG, Ashworth S: Limited Glenohumeral Cross-body Adduction in Children with Brachial Plexus Birth Palsy: A contributor to scapular winging. *J Pediatr Orthop* 2015 Apr-May; 35(3):240-5. Epub 2014 July 2
16. **Loeffler BJ**, Green JB, Zelouf DS: Forearm Instability. *J. Hand Surg Am*. 2014 Jan;39(1):156-67. Epub 2013 Dec 6.
17. **Loeffler BJ**, Scannell BP, Peindl RD, Connor P, Davis DE, Hoelscher GL, Norton HJ, Hanley EN Jr, Gruber HE: Cell-Based Tissue Engineering Augments Tendon-to-Bone Healing in a Rat Supraspinatus Model. *J Orthop Res*. 2013 Mar;31(3):407-12. Epub 2012 Oct 15.
18. **Loeffler BJ**, Kellam JF, Sims SH, Bosse MJ: Prospective, Observational Study of Donor Site Morbidity Following Anterior Iliac Crest Bone Grafting in Orthopaedic Trauma Reconstruction Patients. *J Bone Joint Surg Am*. 2012 Sep 19;94(18):1649-54. (Epub ahead of print).
19. **Loeffler BJ**, Brown S, D'Alessandro DF, Fleischli JE, Connor PM: Incidence of False Positive Rotator Cuff Pathology in MRI's of Patients with Adhesive Capsulitis. *Orthopedics*. 2011 May 18;34(5):e81-7
20. Cannada LK, **Loeffler BJ**, Zadnik MB, Eglseider WA: Treatment of High energy Supracondylar-Intercondylar Fractures of the Distal Humerus. *J Surg Orthop Adv*. 2011 Winter;20(4):230-5.
21. **Loeffler BJ**, Gaston RG: Aromatase Inhibitors and their Side Effects: What Hand Surgeons Should Know. *J Hand Surg Am*. 2010 Jul;35(7):1206-8.
22. Hoenig MP, **Loeffler B**, Brown S, Peindl R, Fleischli JE, Connor PM, D'Alessandro DF: Reverse Glenoid Component Fixation: Is a Posterior Screw Necessary? *J Shoulder Elbow Surg*. 2010 Jun;19(4):544-9. (Epub Jan 5, 2010 ahead of print).
23. Scannell BP, **Loeffler BJ**, Hoenig M, Connor PM, D'Alessandro DF, Fleischli JE: Biomechanical Comparison of Hamstring Tendon Fixation Devices for Anterior Cruciate Ligament Reconstruction. Part I: Five Femoral Devices. *Am J Orthop*, 2015 Jan;44(1):32-36.
24. Scannell BP, **Loeffler BJ**, Hoenig M, Connor PM, D'Alessandro DF, Fleischli JE: Biomechanical Comparison of Hamstring Tendon Fixation

- Devices for Anterior Cruciate Ligament Reconstruction. Part II: Four Tibial Devices. *Am J Orthop*, 2015 Feb;44(2):82-5.
25. Gruber HE, Deepe R, Hoelscher GL, Ingram JA, Norton HJ, Scannell B, **Loeffler B**, Zinchenko N, Hanley EN, Tapp H: Human Adipose-derived Mesenchymal Stem Cells: Direction to a Phenotype Sharing Similarities with the Disc, Gene Expression Profiling, and Co-Culture with Human Annulus. *Tissue Eng Part A*. 2010 Sep;16(9):2843-60.
26. Hamid N, **Loeffler BJ**, Braddy W, Kellam JF, Cohen BE, Bosse MJ: Outcomes after fixation of ankle fractures with syndesmotic injuries: Effect of the Syndesmotic Screw. *J Bone Joint Surg Br*. 2009 Aug; 91(8): 1069-73.
27. Gruber HE, Hoelscher G, **Loeffler B**, Chow Y, Ingram JA, Halligan W, Hanley EN: Prostaglandin E1 and Misoprostol Increase Epidermal Growth Factor Production in 3D-Cultured Human Annulus Cells. *Spine J* 2009 Sep;9(9): 760-6.
28. Scannell BP, **Loeffler BJ**, Bosse MJ, Kellam JF, Sims SH.: [Efficacy of intraoperative red blood cell salvage and autotransfusion in the treatment of acetabular fractures.](#) *J Orthop Trauma*. 2009 May-Jun;23(5):340-5.
29. Sun Y, Mauerhan DR, Firestein GS, **Loeffler BJ**, Hanley EN, Gruber HE: Telomerase Transduced Osteoarthritis Fibroblast-Like Synoviocytes Display a Distinct Gene Expression Profile, *J Rheumatol* 2009 Jan;36(1):141-155.
30. Gruber, HE, Hoelscher, G, Ingram, JA, Chow Y, **Loeffler B**, and Hanley, EN: 1,25(OH)<sub>2</sub>-Vitamin D<sub>3</sub> inhibits proliferation and production of monocyte chemoattractant protein-1, thrombopoietin, VEGF, and angiogenin by human annulus cells in vitro. *Spine (Phila Pa 1976)*. 2008 Apr 1;33(7):755-65. *J Hand Surg Am*. 2018 Jun 13. [Epub ahead of print]

### Book Chapters

- Gart M, **Loeffler BJ**, Gaston RG. Upper Extremity Amputations. Rehabilitation of the Hand and Upper Extremity, 7<sup>th</sup> Edition. Skirven TM, Osterman AL(eds) (publication pending)
- Pierrie S, **Loeffler BJ**. Common Nerve Injuries about the Shoulder. Rehabilitation of the Hand and Upper Extremity, 7<sup>th</sup> Edition. Skirven TM, Osterman AL(eds) (publication pending)
- Kruse L, **Loeffler BJ**. Radial Nerve Injuries. Orthopaedic Hand Trauma. Altorai (ed). Publication pending 2018.
- **Loeffler BJ**, Gaston RG. Nerve Transfers for Elbow Function. [ASSH Surgical Anatomy: Nerve Reconstruction](#). Dy C and Isaacs J (eds). (2017)

- **Loeffler BJ**, Connor, PM. Total Elbow Arthroplasty for Rheumatoid Arthritis. In: Weisel, S and Ramsey, M (eds): Operative Techniques in Orthopaedic Surgery Ed.2. Lippincott Williams & Wilkins. (2015)
- **Loeffler BJ**, Williams GR. Shoulder Arthroscopy. In Abzug J, Zlotolow DA, Kozin SH (eds): The Pediatric Upper Extremity. Springer. (2015).
- **Loeffler BJ**, Culp RW. Both Bone Forearm Fractures. In: Carlson M, Goldfarb C (eds): Comprehensive Care of the High Level Athlete: A Master Skills Publication. American Society for Surgery of the Hand. (2014).
- **Loeffler BJ**, Abboud JA. Combined Anterior Instability and Glenohumeral Arthritis. In: Dodson CC, Dines DM, Dines JS, Walch G, and Williams GR (eds): Controversies in Shoulder Instability. Lippincott Williams & Wilkins. (2013).
- **Loeffler BJ**, Connor, PM. Total Elbow Arthroplasty for Rheumatoid Arthritis. In: Weisel, S and Ramsey, M (eds): Operative Techniques in Orthopaedic Surgery. Lippincott Williams & Wilkins. (2010)

### Course Presentations

- Hanger Education Fair Annual Meeting. Las Vegas, NV. Feb 18-22, 2019.
  - 1. TMR and the Starfish Procedure to Improve Myoelectric Prosthetic Control.
  - 2. The OrthoCarolina Reconstructive Center for Lost Limbs: Establishment of a Multidisciplinary Clinic to Optimize Amputee Care
  - South Carolina Workers Compensation Educational Association, Annual Meeting. October 14-17, 2018. Hilton Head, SC.
  - Keynote address: Advancements in Prosthetics
- Annual Meeting, American Society for Surgery of the Hand, Boston, MA 2018
  - Instructional Course Lecture #10: Upper Extremity Amputations: The Future is Now!
  - Forearm TMR
- Ability Spring Practitioners Meeting, April 10, 2018, Philadelphia, PA
  - Keynote address: Targeted Muscle Reinnervation and The Starfish Procedure
- South Carolina Workers Compensation Educational Association, Medical Seminar, Feb 25-27, 2018, Charleston, SC
  - Keynote address: Surgical and Technological Innovations and Advancements in Upper Extremity Prosthetics
- Electives in Hand Surgery, American Society for Surgery of the Hand. New Orleans, Jan 2018, Faculty

- Presentations: Proximal Humerus Fractures: fix or replace?, Rotator Cuff Tears, Elbow Anatomy, Elbow Ligament Reconstructions
- Annual Meeting, American Society for Surgery of the Hand, San Francisco, CA 2017
  - 1. Pre-course: Humeral Nonunions
  - 2. Symposium 06: Game-changing surgeries for upper extremity amputees that every hand surgeon can perform. Forearm Targeted Muscle Reinnervation.
  - Hanger Clinic National Meeting, 2017, Las Vegas, NV
  - Forearm TMR and The Starfish Procedure
- Phoenix Society Biannual Meeting, Axillary nerve injuries. Avalon, New Jersey. 2017
- Annual Meeting, American Society for Surgery of the Hand, Austin, TX 2016
  - 1. Elbow reconstruction pre-course: Ulnar collateral ligament reconstruction
  - 2. Interactive Case Reviews: Shoulder fractures
- Electives in Hand Surgery, American Society for Surgery of the Hand. New Orleans, 2016, Faculty
  - Presentations: Proximal Humerus Fractures: fix or replace?, Rotator Cuff Tears, Elbow Anatomy, Elbow Ligament Reconstructions

### [Full List of Scientific Podium Presentations and Research Grants](#)

## Team

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- Administrative Assistant: Crystal Sigmon
- Clinical Assistant: Veda Lewis
- Surgery Scheduler: Sarah Martoccia
- PA: Kenneth Reardon, PA-C