

**Andrew D. Carbone**  
[andrew.carbone@orlandohealth.com](mailto:andrew.carbone@orlandohealth.com)

10155 Dowden Drive  
Orlando, FL

---

**EDUCATION**

<b>Orlando Health</b> , Orlando, FL <i>Sports Medicine and Hip Preservation Attending Surgeon</i>	September 2023 - present
<b>American Hip Institute</b> , Des Plaines, IL <i>Hip Preservation Fellowship Program</i>	August 2022-August 2023
<b>Cedars-Sinai Kerlan-Jobe Institute</b> , Los Angeles, CA <i>Sports Medicine Fellowship Program</i>	July 2021- August 2022
<b>Mount Sinai Hospital</b> , New York, NY <i>Orthopedic Surgery Residency Program</i>	Class of 2021
<b>New York Medical College</b> , Valhalla, NY <i>Doctor of Medicine (M.D.)</i>	December 2015
<b>Emory University</b> , Atlanta, GA <i>Bachelor of Science in Neuroscience and Behavioral Biology</i>	May 2010
<b>University of St. Andrews</b> , St. Andrews, Scotland <i>Neuroscience courses</i>	January-May 2009

**AWARDS AND ACTIVITIES**

*ALPHA OMEGA ALPHA Medical Honor Society*

- Inducted September 2015

*Nominated for the JOURNAL OF ORTHOPAEDIC RESEARCH EARLY CAREER AWARD*

- For lead author publication on the role of the Indian hedgehog signaling pathway on tendon-to-bone healing

*Emerging Leaders Program American Orthopaedic Society for Sports Medicine*

*Peer Reviewer for American Journal of Sports Medicine*

*Member of the American Academy of Orthopaedic Surgery*

*Member of the American Orthopaedic Society for Sports Medicine*

*Member of the International Society of Hip Arthroscopy*

**PUBLICATIONS**

Prabhavalkar, O. **Carbone, A.** Curley, A. Padmanabhan, S. Nerys-Figueroa, J. Domb, B. “Endoscopic Tendon Compression Bridge Technique for Repair of Partial-Thickness Gluteus Medius Tears With Concomitant Arthroscopy for Labral Tears: Minimum 2-Year Outcomes With Benchmark Control Group” *American Journal of Sports Medicine* Nov 2023 51(14)

Parsa, A. Chishti, Z. Saeed, S. **Carbone, A.** Domb, B. Schinsky, M. “Non-metallic cerclage fixation methods for proximal femoral osteotomy and periprosthetic hip fractures offer promising outcomes: A systematic review” *Journal of Orthopedics* Jan 2024 Vol 47

- Carbone, A.** Sayeed, S. Perez-Padilla, P. Domb, B. "Fixation of the Proximal Hamstring Tendon Using an All-Suture Tensionable Knotless Technique" *Arthroscopy Techniques* June 2023; (12)7
- Carbone, A.** McGarry, M. Kwak, D. Chung, N. Nakla, A. Banffy, M. Lee, T. "Effect of Glenoid Bone Loss and Shoulder Position on Axillary Nerve Anatomy during Latarjet Surgery" Submitted to *American Journal of Sports Medicine*.
- Carbone, A.** Prabhavalkar, O. Perez-Padilla, P. Curley, A. Nerys-Figueroa, J. Domb, B. "Utility of 3D Planning Software in Understanding Residual Proximal Femoral Deformity for Planning of Revision Hip Arthroscopy" *American Journal of Sports Medicine* Jul 2023 51(13)
- Prabhavalkar, O. Curley, A. **Carbone, A.** Padmanabhan, S. Nerys-Figueroa, J. Domb, B. "Endoscopic Fiber Staple Technique for Repair of Partial-Thickness Gluteus Medius Tears with Concomitant Arthroscopy for Labral Tears: Minimum 2-Year Outcomes with Benchmark Control Group" Accepted Jul 31<sup>st</sup> 2023 *American Journal of Sports Medicine*
- Tiao, J. Wang, K. Herrera, M. **Carbone, A.** Rosenberg, A. Zubizarreta, N. Anthony, S. "Hip Arthroscopy: Trends in Utilization and Cost Reduction Associated with Ambulatory Surgery Centers versus Outpatient Hospitals" Accepted for publication to *Arthroscopy: The Journal of Arthroscopic and Related Surgery*
- Uffmann, W. **Carbone, A.** ElAttrache, N. "Return to Sport after Arthroscopic Capsular Repair in Elite Baseball Players" *Orthopaedic Journal of Sports Medicine*. Feb 2023; (11)2
- Carbone, A.** Prabhavalkar, O. Chishti, Z. Curley, A. Parsa, A. Domb, B. "Improved Patient Outcomes with Capsular Closure in Hip Arthroscopy: A Systematic Review" *Arthroscopy: Journal of Arthroscopic and Related Surgery*. Feb 2023;(39)2, p488-497
- Curley, A. Nerys-Figueroa, J. George, T. **Carbone, A.** Parsa, A. Domb, B. "Patient Reported Outcomes Improve at 2-Year Minimum Follow-up After Hip Arthroscopy for Femoroacetabular Impingement Syndrome: A Systematic Review" *Arthroscopy*. Feb 2023; (39)2, p476-487
- Tiao, J. Wang, K. **Carbone, A.** Herrera, M. Zubizarreta, N. Gladstone, J. Colvin, A. Anthony, S. "Ambulatory Surgery Centers Significantly Decrease Total Healthcare Expenditures in Primary Anterior Cruciate Ligament Reconstruction" *American Journal of Sports Medicine*. Jan 2023; (51)1, p97-106
- Carbone, A.** Limpisvasti, O. "Understanding Batter's Shoulder: Diagnosis, Treatment, and Outcomes" *Current Reviews in Musculoskeletal Medicine*. Dec 2022; (15)6, p547-551
- Carbone, A.** Wang, K. Tiao, J. Chu, B. Poeran, J. Colvin, A. Gladstone, J. Anthony, S. "Trends in Healthcare Expenditures and Patient Out-Of-Pocket Expenses in Primary Anterior Cruciate Ligament Reconstruction" *American Journal of Sports Medicine*. Aug 2022 (50)10: p2680-2687
- Vervaecke, A., **Carbone, A.**, Zubizarreta, N., Poeran, J., Parsons, B., Verborgt, O., Galatz, L., Cagle, P. "Reverse shoulder arthroplasty for rotator cuff tears with and without prior failed rotator cuff repair: A large-scale comparative analysis" *Journal of Orthopaedics* May-June 2022; (31): p1-5
- Carbone, A.**, Vervaecke, A., Ye, I., Poeran, J., Parsons, B., Galatz, L., Cagle, P. "Outpatient versus Inpatient Total Shoulder Arthroplasty: A Cost and Outcome Comparison in a Comorbidity Matched Analysis" *Journal of Orthopaedics* Nov-Dec 2022; (28), p126-133
- Carbone, A.**, Poeran, J., Zubizarreta, N., Chan, J., Mazumdar, M., Parsons, B., Galatz, L., Cagle, P. "Administration of Tranexamic Acid During Total Shoulder Arthroplasty Is Not Associated With Increased Risk of Complications In Patients With a History of Thrombotic Events." *Journal of Shoulder and Elbow Surgery*. Jan 2021 30(1) p 104-112
- Freetly, T., Kissin, Y., **Carbone, A.**, Kelly, M. "Incidental Asymptomatic Fibular Stress Fractures Presenting as Varus Knee Osteoarthritis: A Case Report." *American Journal of Orthopaedics*. Dec 2018; 47(12)
- Zong, J., Mosca, M., Degen, R., Lebaschi, A., Carballo, C., **Carbone, A.**, Gong, G., Ying, L., Deng, X., Rodeo, S. "Involvement of Indian hedgehog signaling in mesenchymal stem cell-augmented rotator cuff tendon repair in an athymic rat model." *Journal of Shoulder and Elbow Surgery*. Apr 2017 26(4): 580-88

Lebaschi, A., Deng, X., Coleman, N., Camp, C., Zong, J., **Carbone, A.**, Carballo, C., Cong, G., Album, Z., Rodeo, S. "Restriction of Postoperative Joint Loading in a Murine Model of Anterior Cruciate Ligament Reconstruction: Botulinum Toxin Paralysis and External Fixation." *Journal of Knee Surgery*. Sept 2017 30(7): 687-93

**Carbone, A.**, Rodeo, S. "A Review of Current Understanding of Post-Traumatic Osteoarthritis Resulting from Sports Injuries." *Journal of Orthopaedic Research*. Mar 2017 35(3): 397-405

Degen, R., **Carbone, A.**, Zong, J., Carballo, C., Lebaschi, A., Ying, L., Deng, X., Rodeo, S. "The Effect of Multipotent Bone-Marrow Derived Mesenchymal Stem Cells on Rotator Cuff Tendon Healing in an Athymic Rat: Is Regenerative Healing Possible?" *Arthroscopy: The Journal of Arthroscopic and Related Surgery*. Jul 2016 32(12): 2435-2443

**Carbone, A.**, Carballo, C., Ma, R., Wang, H., Deng, X., Dahia, C., Rodeo, S. "Indian Hedgehog Signaling and the Role of Graft Tension in Tendon-to-Bone Healing: Evaluation in a Rat ACL Reconstruction Model." *Journal of Orthopaedic Research*. Apr 2016 34(4): 641-49

Rifai, A., Pourtaheri, S., **Carbone, A.**, Callaghan, J., Stadler, C., Record, N., Issa, K. "Bilateral Femur Fractures Associated With Short-term Bisphosphonate Use." *Orthopaedics*. Feb 2015 38: e139-e142.  
doi:10.3928/01477447-20150204-90

Mao, Y., Kiss, S., Boyer, J., Hackett, N., Qiu, J., **Carbone, A.**, Mezey, J., Kaminsky, S., Crystal, R. "Persistent Suppression of Ocular Neovascularization with Intravitreal Administration of AAVrh.10 Coding for Bevacizumab." *Human Gene Therapy*. Jul 2011 22(12): 1525-35.

## BOOK CHAPTERS

**Carbone, A.**, Kissin, Y., Kelly, M., "The Role of Arthroscopy in Treating Degenerative Joint Disease," The Adult Knee, Second Edition,

**Carbone, A.**, Kissin, Y. "General and Radiographic Evaluation of the Knee Patient," Surgical Insights: Total Knee Arthroplasty, AAOS Educational Resources

## POSTERS AND PRESENTATIONS

Malige, A. **Carbone, A.** Huang, D. Kanjiya, S. Rahman, O. Banffy, M. Metzger, M. "Biomechanical Evaluation Of Posterolateral Corner Reconstruction With Suture Augmentation In A PLC And PCL Deficient Knee Model" Accepted for presentation at the 2024 70<sup>th</sup> Annual Meeting of the Orthopedic Research Society (ORS)

**Carbone, A.** Prabhavalkar, O. Curley, A. Domb, B. "Predictors of Clinical Outcomes After Hip Arthroscopy: 10-Year Follow-up Analysis of 1038 Patients" Podium presentation at the 2023 annual International Society of Hip Arthroscopy (ISHA) Oct 5-7th, 2023 in Cape Town, South Africa

**Carbone, A.** Curley, A. Perez-Padilla, P. Parsa, A. Domb, B. "The Low-Volume Acetabulum: A CT- Based Method for Characterizing a Variant of Acetabular Dysplasia with Normal Lateral Center-Edge Angles" Podium presentation at the 2023 annual International Society of Hip Arthroscopy (ISHA) Oct 5-7th, 2023 in Cape Town, South Africa

**Carbone, A.** Prabhavalkar, O. Perez-Padilla, P. Domb, B. "Fiber Staple Technique for Repair of Partial-Thickness Gluteus Medius Tears with Concomitant Arthroscopy for Labral Tears: Minimum 2-Year Outcomes with Benchmark Control Group. Podium presentation at the 2023 annual International Society of Hip Arthroscopy (ISHA) Oct 5-7th, 2023 in Cape Town, South Africa

**Carbone, A.** Prabhavalkar, O. Perez-Padilla, P. Curley, A. Nerys-Figueroa, J. Domb, B. "Utility of 3D Planning Software in Understanding Residual Proximal Femoral Deformity for Planning of Revision Hip Arthroscopy" Podium Presentation at the 2023 annual International Society of Hip Arthroscopy (ISHA) Oct 5-7<sup>th</sup>, 2023 in Cape Town, South Africa

- Tiao, J. Wang, K. Herrera, M. Rosenberg, A. **Carbone, A.** Zubizarreta, N. Poeran, J. Anthony, S. “Hip Arthroscopy: Trends in Immediate Procedure Reimbursement, Patient Out-of-Pocket Expenditure, and Surgeon Reimbursement” Accepted for Podium at 14<sup>th</sup> International Society of Arthroscopy, Knee Surgery and Orthopedic Sports Medicine (ISAKOS)
- Tiao, J. Wang, K. Herrera, M. Rosenberg, A. **Carbone, A.** Zubizarreta, N. Poeran, J. Anthony, S. “Hip Arthroscopy: Trends in Utilization and Cost Savings Associated with Ambulatory Surgery Centers versus Outpatient Hospitals” Accepted for Podium at 14<sup>th</sup> International Society of Arthroscopy, Knee Surgery and Orthopedic Sports Medicine (ISAKOS)
- Tiao, J. Wang, K. Herrera, M. Rosenberg, A. **Carbone, A.** Zubizarreta, N. Poeran, J. Anthony, S. “Hip Arthroscopy: Predictors of Ambulatory Surgery Center Utilization” Accepted for poster at 14<sup>th</sup> International Society of Arthroscopy, Knee Surgery and Orthopedic Sports Medicine (ISAKOS)
- Carbone, A.,** Wang, K., Tiao, J. Chu, B., Colvin, A., Anthony, S., Gladstone, J. “Understanding Patient Out-of-Pocket Expenditure in ACL Reconstruction” Accepted for Presentation at the American Orthopaedic Society for Sports Medicine (AOSSM) Specialty Day 2022.
- Wang, K., **Carbone, A.,** Tiao, J., Chu, B., Colvin, A., Anthony, S., Gladstone, J. “Economic Analysis of Ancillary and Day of Surgery Reimbursements in ACL Reconstruction” Poster at the American Orthopaedic Society for Sports Medicine (AOSSM) Specialty Day 2022.
- Tiao, J., **Carbone, A.,** Wang, K., Chu, B., Colvin, A., Anthony, S., Gladstone, J. “Comparing ACL Reconstruction Expenditures in the Outpatient Hospital vs Ambulatory Surgery Center” Submitted for Presentation at the American Orthopaedic Society for Sports Medicine (AOSSM) Specialty Day 2022.
- Carbone, A.,** Vervaecke, A., Ye, I., Poeran, J., Parsons, B., Galatz, L., Cagle, P. “Outpatient versus Inpatient Total Shoulder Arthroplasty: A Cost and Outcome Comparison in a Comorbidity Matched Analysis” Accepted for Podium Presentation at the 2021 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS)
- Vervaecke, A., **Carbone, A.,** Poeran, J., Parsons, B., Galatz, L., Cagle, P. “Cost Analysis of Shoulder Arthroplasty at a Large Academic Center: Implications for Bundled Payments” Accepted for Podium Presentation at the 2021 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS)
- Carbone, A.,** Vervaecke, A., Ye, I., Poeran, J., Parsons, B., Galatz, L., Cagle, P. “What are the Significant Drivers of Cost and Readmission in Outpatient versus Inpatient Total Shoulder Arthroplasty?” Accepted for Poster Presentation at the 2021 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS)
- Vervaecke, A., Bernstein, Z., **Carbone, A.,** Walia, B., Schnall, S., Verborgt, O., Galatz, L., Huang, A., “Delivery Of Tendon Progenitor Cells Enhances Functional Rotator Cuff Tendon Healing” Accepted for Podium Presentation 2021 Annual Meeting of the Orthopedic Research Society (ORS)
- Carbone, A.,** Poeran, J., Zubizarreta, N., Mazumdar, N., Parsons, B., Galatz, L., Cagle, P. “Administration of Tranexamic Acid during Total Shoulder Arthroplasty is Not Associated with Increased Risk of Complications In Patients With a History of Thrombotic Events” Podium Presentation at the 2020 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS)
- Carbone, A.,** Ippolito J., Lelkes V., Patterson F., Beebe K., Benevenia J., “Cemented versus Uncemented Endoprostheses Following resection of Sarcoma: A Meta-Analysis Of Implant Survival And Aseptic Loosening.” Podium presentation at the 2017 Musculoskeletal Tumor Society; September 27-29, 2017; Denver, CO
- Carbone, A.,** Carballo C., Gu X., Wang H., Ying L., Ma R., Deng, XH., Rodeo S. “Indian Hedgehog Signaling in Tendon-Bone Healing: A Potential Regulator of Entesis Repair.” Poster session presented at the 2016 Annual Meeting of the Orthopedic Research Society; March 5-8, 2016; Orlando, FL
- Degen, R., **Carbone, A.,** Carballo, C., Zong, J., Lebaschi, A., Ying, L., Deng, X., Rodeo, S. “Bone-marrow Derived Human

Mesenchymal Stem Cells in a Rodent Rotator Cuff Repair: Is Regenerative Healing Possible?" Oral Presentation by Dr. Ryan Degen at the 2016 Annual Meeting of the American Academy of Orthopaedic Surgeons; March 1-5, 2016; Orlando, FL

Degen, R., **Carbone, A.**, Carballo, C., Zong, J., Lebaschi, A., Ying, L., Deng, X., Rodeo, S. "Bone-marrow Derived Human Mesenchymal Stem Cells in a Rodent Rotator Cuff Repair: Is Regenerative Healing Possible?" Accepted for Oral Presentation at the 2016 Annual Meeting of the American Orthopaedic Society for Sports Medicine; July 7-9, 2016; Colorado Springs, CO

Lebaschi, A., Coleman, N., Zong, J., Carballo, C., **Carbone, A.**, Deng, X., Rodeo, S. "Knee Joint Immobilization in a Mouse ACL Reconstruction Model Using Neuromuscular Blockade and External Fixation." Poster Presentation at the 2016 Annual Meeting of the Orthopaedic Research Society; March 5-8, 2016; Orlando, FL

Zong, J., Degen, R., Lebaschi, A., Carballo, C., **Carbone, A.**, Cong, G., Khilnani, T., Ying L., Deng, X., Rodeo, S. "Involvement of Indian Hedgehog Signaling in Mesenchymal Stem Cell-augmented Rotator Cuff Tendon Repair in an Athymic Rat Model." Poster Presentation at the 2016 Annual Meeting of the Orthopaedic Research Society; March 5-8, 2016; Orlando, FL

Degen, R., **Carbone, A.**, Carballo, C., Zong, J., Lebaschi, A., Ying, L., Deng, X., Rodeo, S. "Bone-marrow Derived Human Mesenchymal Stem Cells in a Rodent Rotator Cuff Repair: Is Regenerative Healing Possible?" Poster Presentation at the 2016 Annual Meeting of the Orthopaedic Research Society; March 5-8, 2016; Orlando, FL

Schär, M., Ma, R., Titan, A., **Carbone, A.**, Carballo, C., Gu, W., Sisto, M., Deng, X., Rodeo, S. "Bone Marrow Derived Mesenchymal Stem Cells Transduced with SOX-9 Improve Rotator Cuff Healing in a Rat Model." Poster session presented at the 2015 Annual Meeting of the Orthopaedic Research Society; March 28-31, 2015; Las Vegas, NV

Grawe, B., Wang, H., Collins, B., Willey, J., Carballo, C., **Carbone, A.**, Hutchinson, I., Deng, X., Rodeo, S. "A Novel Murine Model of Autograft Anterior Cruciate Ligament Reconstruction." Oral Presentation by Dr. Camila Carballo at the 14th Annual International Symposium on Ligaments and Tendons; March 27, 2015; Las Vegas, NV

**Carbone, A.**, Carballo, C., Gu, X., Wang, H., Ying, L., Ma, R., Deng, X., Rodeo, S. "Indian Hedgehog Signaling in Tendon-Bone Healing: A Potential Regulator of Entesis Repair." Oral Presentation at the 14th Annual International Symposium on Ligaments and Tendons; March 27, 2015; Las Vegas, NV

Giannakidis, D., **Carbone, A.**, Hidalgo, A., Prestigiacomo, C., Gandhi, C. "Indications for Poor Prognosis in Patients with Surgically Treated Spontaneous Non-Traumatic Intracerebral Hemorrhage." *Neurology*. no. 80 Meetings Abstract 1 (2013): PD7.009. [http://www.neurology.org/cgi/content/meeting\\_abstract/80/1\\_MeetingAbstracts/PD7.009](http://www.neurology.org/cgi/content/meeting_abstract/80/1_MeetingAbstracts/PD7.009).

Mao, Y., Kiss, S., Boyer, J., **Carbone, A.**, Mezey, J., Kaminsky, S., D'Amico, D., Crystal, R. "Persistent Suppression of Ocular Neovascularization with a Single Intravitreal Administration of AAVrh.10BevMab, an AdenoAssociated Viral Gene Transfer Vector Coding for Bevacizumab." Paper presented by Dr. Stephen Kaminski at the 14<sup>th</sup> Annual Meeting of the American Society of Gene and Cell Therapy (ASCGT); May 18-21 2011; Seattle, WA

## EMPLOYMENT

**IBM Watson Project**, Yorktown Heights, NY

June 2015-June 2016

Senior Medical Annotator

- Worked with IBM software developers to use the Watson computer system to analyze medical data in order to improve patient care by analyzing patient records more effectively, catching medical errors, improving diagnoses, and making treatment recommendations.

## RESEARCH EXPERIENCE

**Hospital for Special Surgery – Department of Orthopaedics**, New York, NY

August 2014-July 2015

*Tissue Engineering Regeneration and Repair Laboratory*

Medical Researcher

- Worked with Dr. Scott Rodeo on several projects and was responsible for organizing experiments, performing animal surgeries, preparing manuscripts, proposal writing, microscopy, data analysis, experimental design,

clinical research, stem cell culturing and manipulation

**Westchester Medical Center – Department of Orthopedics, Valhalla, NY**

May-June 2014

Clinical Researcher

- Worked on a retrospective analysis of hospital patient records from 2003-2014 to study complications of knee-spanning external fixators in patients who suffered bicondylar unstable pre-tibial plateau fractures (Schatzker V and VI), and to evaluate the incidence of peroneal nerve palsy and its relationship to the degree of extension of the external fixator

**St. Joseph Regional Medical Center – Department of Orthopedics, Paterson, NJ**

July 2013-June 2014

Clinical Researcher

- Assembled and organized patient information for case write-ups, and wrote drafts of case reports

**UMDNJ-New Jersey Medical School – Department of Neurosurgery, Newark, NJ**

June-August 2012

Clinical Researcher

- Compiled and organized data regarding risk factors for intraparenchymal hemorrhages

**Weill Cornell Medical College – Department of Genetic Medicine, New York, NY**

May 2010-July 2011

*Ronald G. Crystal Laboratory, Belfer Gene Therapy Core Facility*

Research Technician I

- Studied a potential treatment for “wet” form of macular degeneration by expressing the anti-angiogenic drug Avastin in the retina using a viral vector
- Responsible for viral preparation, intravitreal injections, microscopy, data preparation, and analysis

**Emory University – Department of Ophthalmology, Atlanta, GA**

January 2008-January 2009

Research Technician

- Studied genetic eye disorders causing blindness using a mouse RPE 65 KO model and developed fluorescent antibody staining technique to track effectiveness of different plasmid delivery systems