**ALEX G. DUKAS**

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| **Education**  **University of Utah** *2018-19* Orthopaedic Sports Medicine Fellowship *Salt Lake City*, *UT*  **University of Connecticut Health Center** *2013-18* Orthopaedic Surgery Residency *Farmington, CT*  **SUNY Downstate Medical Center** *2013* Doctor of Medicine *Brooklyn, NY*  **Boston University School of Medicine** *2008*  Master of Arts in Medical Science  *Boston, MA*  **Northeastern University** *2004*  Bachelor of Science in Communications *Boston, MA* |

Research Experience

**University of Connecticut Health Center, Dept. of Orthopaedics** *2013-18*

**New England Musculoskeletal Institute,** *Resident Physician*

**Current Research Projects**:

* Project Leader/Surgeon: “Biomechanical Comparison of Epiphyseal ACL Fixation Using Cortical Bone Fixation vs Sheath/Interference Screw in a Pediatric Cadaveric Model” Alex Dukas, Matthew Milewski, Carl Nissen, Kevin G. Shea.
* Project Leader/Surgeon: “Long-term Outcomes of Arthroscopic Bankart Stabilization, the UConn Experience” Alex Dukas, John Ross, Robert Arciero.

**Completed Research Projects**:

* “Blinded Ultrasound Evaluation of the Subscapularis Tendon and Functional Correlation Following Shoulder Arthroplasty.”
* “A Biomechanical Analysis of Different Clavicular Tunnel Diameters in Anatomical Acromioclavicular Reconstruction.”
* “Biomechanical Comparison of Olecranon Osteotomies Repaired with Intramedullary Screw Tension Banding vs. Continuous Loop Tension Band Construct.”

**University of Connecticut Health Center, Dept. of Orthopaedics** *2011-12*

**New England Musculoskeletal Institute,** *Research Extern*

* Mentor: Jay R. Lieberman, M.D., Dept. Chairman
* Responsibilities include: experimental planning and design, performing/assisting critical sized femoral defect surgery in rats and mice, histologic/histomorphometric/micro CT analysis, subcutaneous or peritoneal injections, bone marrow harvest and isolation, obtaining x-rays, specimen harvest, fluorescent labeling/staining, help design gene therapy delivery implant, and assisted inter-institution project logistics with Tufts University Cummings School of Veterinary Medicine.

**Research Projects**:

* Project Leader/Surgeon: “Systemic Sclerostin Antibody as an Adjunctive Agent to Enhance BMP Induced Bone Repair.”
* “Regional Gene Therapy with a Lentiviral-BMP-2 Containing Vector to Address a Critical Sized Sheep Femoral Defect.”
* “Evaluation of Osteoprogenitor cell response to bonemorphogenetic protein and demineralized bone matrix in a critical sized defect model using GFP reporter mice.”
* “The Influence of Recombinant Bone Morphogenetic Protein on Pluripotential Cells: Bone Induction with a BMP-2 Vector.”
* “Progenitor Cell Response to Bone Graft Substitutes in Bone Repair with Parathyroid Hormone as Adjuvant Therapy.”
* “Functionalizing Allografts with Polymer Based Bioactive Coatings.”

**NYU Hospital for Joint Diseases, Dept. of Sports Medicine** *2009*

*Summer Research Extern*

* Mentor: Laith Jazrawi, M.D., Sports Medicine Division Chief
* Responsible for grant application of the *Musculoskeletal Transplant Foundation -Established Investigator Grant*
* Collected data for numerous clinical research studies
* Helped implement a Sports Medicine Research Externship
* Helped implement a Resident Arthroscopy Training Program

**Boston University Medical Center** *Masters Student**2008*

* Honors Thesis: Early Prediction of Hypocalcemia after Thyroidectomy using Parathyroid hormone and Calcium Levels: A Metanalysis of Pooled Data from five studies (*Published in* *Head & Neck* April 2010).

**Downstate Medical Center** *Research Assistant/Lab Manager 2006-07*

* Assisted the production of Lymphocyte Function assay for post-transplant patients.
* Experience with sequencing, gel electrophoresis, immunoblotting, antibody production and design, flowcytometry, cell culturing and other various lab techniques.
* Managed daily lab operations and responsible for design and set-up of brand new laboratory.

**Leadership**

**American Orthopaedic Association** C. McCollister Evarts Resident Leadership Forum – Charlotte, NC Resident Select – University of Connecticut*2017*

**AAOS National Orthopaedic Leadership Conference** –Washington, DC**.** *2017*Delegate **-** State of Connecticut

**Connecticut Orthopaedic Society** *2016-2018* Resident Board Member

**AAOS Resident Assembly** *2015-2018*

Delegate – State of Connecticut

**Team Physician Experience**

Hartford Yardgoats Professional Baseball Team *2019-Currenty* Team Physician

Hartford Athletic Professional Soccer Team *2019-Currenty* Team Physician

Utah Jazz Professional Basketball Team *2018-19* Asst. Team Physician

University of Utah Football & Basketball *2018-19* Asst. Team Physician

Herriman High School Football Team *Sept 2018* Team Physician

ISU Short Track Speed Skating World Cup *Nov 2019* Covering Physician – Assisted in care of Olympic Athletes

ISU Long Track Speed Skating World Cup *Jan 2019* Covering Physician – Assisted in care of Olympic Athletes

IBSF North American Cup – Bobsled & Skeleton *Dec 2018* Covering Physician – Assisted in care of Olympic Athletes

**Publications – Peer Reviewed Articles**

O.Neil D, Dukas AG, Aoki S. Isolated Capsular Repair for Iatrogenic Hip Instability. *American Journal of Sports Medicine. In Submission.*

Dukas AG, Maak TG. Step-Reaming Technique for Large Osteochondral Chondral Defects during Allograft Transplantation. *Arthroscopy Techniques. In Submission.*

Chalmers PN, Beck L, Miller M, Kawakami J, Dukas AG, Burks RT, Greis PE, Tashjian RZ. Acromial morphology is not associated with rotator cuff tearing or repair healing. *Journal of Shoulder and Elbow Surgery*. May 2020.

Dukas AG, Maak TG. Arthroscopic Fixation of a Lesser Trochanter Non-Union. *Arthroscopy Techniques.* November *2019. 8(12)*.

Dukas AG, Gupta AS, Peters CL, Aoki SK. Surgical Treatment for FAI: Arthroscopic and Open Techniques for Osteoplasty. *Current Reviews in Musculoskeletal Medicine*. July 2019. 1(1) 281-290.

O’Malley MP, Dukas AG, Cote M, Stock H, Shea KP, Savoy L, Brzoska A, Tinsley BA, Alaee F, Mazzocca, AD. Blinded Ultrasound Evaluation of the Subscapularis Tendon and Functional Correlation Following Shoulder Arthroplasty. *Journal of Shoulder and Elbow Arthroplasty*. January 2019. 7(16).

Dukas AG, Marshall ST, Voss A, Obopilwe E, Browner BD, Mazzocca AD. Biomechanical Comparison of Olecranon Osteotomies Repaired with Intramedullary Screw Tension Banding vs. Continuous Loop Tension Band Construct. *The Orthopaedic Journal of Sports Medicine. December 2018.*

Dukas AG, Shea KG, Nissen CW, Fabricant PD, Cannamela PC, Milewski MD. Biomechanical Comparison of Epiphyseal ACL Fixation Using Cortical Bone Fixation vs. Sheath & Interference Screw Constructs in Skeletally Immature Cadavers. *The Orthopaedic Journal of Sports Medicine.* June 2018. 6(6).

Voss A, Beitzel K, Dukas A, Alaee F, Herbst E, Obopilwe E, Apostolakos J, DiVenere J, Singh H, Cote MP, Mazzocca AD. A Biomechanical Analysis of Different Clavicular Tunnel Diameters in Anatomical Acromioclavicular Reconstruction. *Arthroscopy.* May 2016. pii: S0749-8063(16)00080-3.

Dukas AG, Rodner CM. Metacarpophalangeal joint dislocation following tendon transfer to the thumb. *Journal of Hand Surgery.* March 2016. 41(3):483-486

Tinsley BA, Dukas AG, Pensak M, Adams D, Tang H, Ominsky MS, Ke HZ, Lieberman JR.Systemic administration of sclerostin antibody enhances BMP induced bone repair. *Journal of Bone and Joint Surgery (Am).* November 2015. 97(22):1852-1859

Pensak MJ, Hong S, Dukas AG, Bayron J, Tinsley BA, Jain A, Tang A, Makol A , Rowe DW, Lieberman JR. Combination Therapy with PTH and DBM Cannot Heal a Critical Sized Murine Femoral Defect. *Journal of Orthopaedic Research.* August 2015. 33(8):1242-1249

Pensak M,J Hong S, Dukas AG, Tinsley B, Drissi H, Tang A, Cote M, Sugiyama O, Lichter A, Lieberman J. The Role of Transduced Bone Marrow Cells Over-Expressing BMP-2 in Healing Critical Sized Defects in a Mouse Femur. *Gene Therapy.* March 2015 22:467–475

Sharmin F, Adams D, Pensak M, Dukas A, Lieberman J, Khan Y. Biofunctionalizing Devitalized Bone Allografts through Polymer-Mediated Short and Long Term Growth Factor Delivery. *Journal of Biomedical Materials Research: Part A.* February 2015:00A:000–000

Dukas AG, Wolf JM. Management of Complications of Periarticular Fractures of the DIP, PIP, MCP, CMC joints. *Hand Clinics.* May 2015. 31(2):171-192

Alaee F, Hong SH, Dukas AG, Pensak MJ, Rowe DW, Lieberman JR. Evaluation of osteogenic cell differentiation in response to bone morphogenetic protein or demineralized bone matrix in a critical sized defect model using GFP reporter mice. *Journal of Orthopaedic Research.* September 2014. 32(9):1120-1128

Wolf JM, Dukas AG, Pensak MJ. Advances in Wrist Arthroscopy*. Journal of the American Academy of Orthopaedic Surgeons*. November 2012. 20(11):725-734.

* In addition to contributing article content, created original artwork and figures.

Tinsley BT, Ferreira JV, Dukas AG, Mazzocca AD. Platelet-rich Plasma Non-Operative Injection Therapy- A review of indications and evidence. *Operative Techniques in Sports Medicine*. June 2012. 20(2):192-200*.*

Thut D, Hergan D, Dukas A, et al. Sternoclavicular Joint Reconstruction: A Systematic Review. *Bulletin of the NYU Hospital for Joint Diseases.* December 2011. 69(2):128-35.

Jumaily JS, Noordzij JP, Dukas AG, et al. Prediction of hypocalcemia after using 1-to 6-hour postoperative parathyroid hormone and calcium levels: an analysis of pooled individual patient data from 3 observational studies. *Head & Neck*. April 2010. 32(4):427-34.

**Publications – Book Chapters**

Dwyer C, Deberardino TM, Dukas AG. Chapter 58: Arthroscopic Meniscus Transplantation: Bone Plug (*with on-line video supplement*). In: Surgical Techniques of the Shoulder, Elbow, and Knee in Sports Medicine 3rdEdition. Edited by Cole BJ and Chala J JK. New York, NY. Elsevier expected publication 2021

Dukas AG, Arciero, RA. Chapter 1-1M: Bipolar Lesions: Pathomechanics, Evaluation, and Surgical Approaches. In: Shoulder and Elbow Injuries in Athletes: Prevention, Treatment, and Return to Sport. Edited by Robert A. Arciero, Frank A. Cordasco, Matthew P. Provencher. New York, NY. Elsevier 2018. *Pages* 80-88.

Dukas AG, Ware JK, Deberardino TM. Chapter 66: Arthrex Tightrope Fixation of a Soft Tissue Graft. In: The Anterior Cruciate Ligament: Reconstruction and Basic Science, 2e. Edited By Chadwick Prodromos. New York, NY. Elsevier 2018. Pages 258-262*.*

Ware JK, Dukas AG, Deberardino TM. Chapter 44: [ACL All-Inside Reconstruction: Single- and Double-Bundle Techniques.](http://editorial-emss-http-prod-613127110.us-east-1.elb.amazonaws.com/app/book?execution=e2s2) In: The Anterior Cruciate Ligament: Reconstruction and Basic Science, 2e. Edited by Chadwick Prodromos. New York, NY. Elsevier 2018*.* Pages 178-181.

Dukas AG, Deberardino TM. Surgical Techniques for Chronic Medial Instability. In: Knee Ligament Injuries. Edited by Rossi R, Margheritini F, Springer Verlag Italia 2014 pg. 39-49.

-In addition to synthesizing article content, created original artwork and figures.

Dukas AG, Pensak MJ, Stender ZC, Deberardino TM. Chapter 58: Arthroscopic Meniscus Transplantation: Bone Plug (*with on-line video supplement*). In: Surgical Techniques of the Shoulder, Elbow, and Knee in Sports Medicine 2nd Edition. Edited by Cole BJ and Sekiya JK. New York, NY. Elsevier 2012. *Published April 2013*

Dukas AG, Pensak MJ, Edgar CM, Deberardino TM. Surgical Management of Patellar Instability. In: Operative Arthroscopy 4th Edition. Edited by Johnson DH, Richmond JC, Amendola A et al. Philadelphia, PA: Lippincott Williams & Wilkins, October 29, 2012 pg. 685-691.

-In addition to synthesizing article content, created original artwork and figures.

**Publications** - **Poster/Abstract Presentations**

Biomechanical Comparison of Epiphyseal ACL Fixation Using Cortical Bone Fixation vs. Sheath & Interference Screw Constructs in Skeletally Immature Cadavers. Dukas AG, Shea KG, Nissen CW, Fabricant PD, Cannamela PC, Milewski MD. 5th Annual of *Pediatric Research in Sports Medicine Society (PRiSM). Plantation, Fla Jan25-27, 2018*

The Role of Transduced Bone Marrow Cells Over-Expressing BMP-2 in Healing Critical Sized Defects in a Mouse Femur. Michael J. Pensak, Seung-Hyun Hong, Alex G. Dukas, Brian Tinsley, Hicham M. Drissi, Amy Tang, Mark Cote, Osamu Sugiyama, David W. Rowe, Jay Lieberman. Poster 0093, *2015* *Annual Meeting of the Orthopaedics Research Society.* Las Vegas, NV

Combination Therapy with PTh and dBM can Not heal a critical Sized Murine Femoral defect. Michael J. Pensak, Seung-Hyun Hong, Alex G. Dukas, Jennifer M. Bayron, Brian A. Tinsley, Ashish Jain, Amy Tang, Aditya Makol, David W. Rowe, Jay R. Lieberman. Poster 0593, *2014 Annual Meeting of the Orthopaedics Research Society.* New Orleans, LA

Systemic Administration of Sclerostin Antibody Enhances BMP Induced Bone Repair

Brian A. Tinsley MA MD Alex G. Dukas MA MD Michael J. Pensak MD Hezhen Tang BS Aditya Makol BS Michael S. Ominsky PhD Hua Zhu Ke PhD Jay R. Lieberman MD. Poster 1515, *2014 Annual Meeting of the Orthopaedics Research Society.* New Orleans, LA

Evaluation of osteoprogenitor cell response to bone morphogenetic protein and demineralized bone matrix in a critical sized defect model using GFP reporter mice.

Alaee, F; Dukas, A; Pensak, M; Hong, S; Rowe, D; Lieberman, JR. Poster 0407 *2013 Annual Meeting of the Orthopaedics Research Society.* San Antonio, TX.

-Nominated for *The New Investigator Recognition Award*.

David M. Epstein, Brian Pahk, Michael Day, Alex Dukas, Robert Meislin, Orrin Sherman, Laith Jazrawi. Mid to Long-term Outcomes after Anterior Cruciate

Ligament Reconstructions in Patients over the age of 50. Poster 9609. *2011 AAOS American Orthopaedic Society for Sports Medicine Specialty Day*. San Diego, CA

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| **Presentations**  Retrospective Follow-up of Anterior Cruciate Ligament Reconstruction in Patients Greater than 50 years old. *NYU Hospital for Joint Diseases Externship Forum*. August 5th, 2009.  **Awards**  **Summer Research Fellowship Award** *2009**SUNY Downstate Medical Center Medical Alumni Association*  “Mid to Long-term Outcomes after Anterior Cruciate Ligament Reconstructions in Patients over the age of 50”  **Experiences**  **Proline Construction,** *Carpenter 2004-06*  -Managed small team of carpenters  -Skilled in all types of carpentry and house construction    **Volunteer /Other Activities**  -Clinical Research Asst. King’s County Emergency Room *2007*  -Live Organ Transporter, Downstate Medical Center *2006*  -Emergency Medical Technician Certificate *2005*  -New Paltz Rescue Squad EMT – 12hrs/week *2005*  -Marbletown First Aid Squad EMT – 6hrs/week *2005*  -Shadowed Emergency Room Physician – over 40 hrs *2005*  -Dr. Charles Ellis’ *Drosophila Melanogaster Genetics* lab *2003*  **Hobbies/Interests**  -Aviation, snowboarding, guitar (acoustic/electric), mountain biking, cycling |