**Gregory Paul Colbath, MD, MS**

**Contact Info**

Mary Black Orthopedics

Mary Black Health Systems

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**Education**

**Bachelor of Arts: History** 1997

Sewanee -The University of the South: Sewanee, Tennessee

**Master of Science: Microbiology** 2000

Georgia State University: Atlanta, Georgia

**Post Graduate Education and Training**

**Doctor of Medicine** 2007

Medical University of South Carolina: Charleston, South Carolina

**Orthopaedic Internship and Residency** 2007-2012

Medical University of South Carolina: Charleston, South Carolina

Langdon Hartsock, MD- Chairman

**Sports Medicine and Shoulder Reconstruction Fellowship 2**012-2013

Steadman Hawkins Clinic of Carolinas

Richard Hawkins, MD

Greenville, SC

**Faculty Position**

**Adjunct Assistant Professor of Bioengineering** 2012-Current

Clemson University

Clemson, South Carolina

**Certifications**

**South Carolina Medical License ML 29863** 2007

**ABOS Board Certified** 20

**Professional Society Memberships**

American Shoulder and Elbow Society

Arthroscopy Association of North America-

American Hip and Knee Society

American Shoulder and Elbow Society

American Association of Sports Medicine

Spartanburg County Medical Society- Board Member

Medical University of South Carolina College of Medicine Alumni Board

**Honors and Awards**

**Boy Scouts of America**

Eagle Scout Award 1992

**The University of the South**

The Order of the Gownsmen- (Academic Honor Society) - 1995-1997

Proctor for Trezevant Dormitory- 1996, 1995

**Georgia State University**

Teacher’s Assistant- Human Anatomy and Physiology Course- 1998-2000

**Medical University of South Carolina**

Merit Based Scholarships:

DeWitt L. Harper, M.D. Scholarship, 2004

Joseph W. & Celia B. Dobson Scholarship, 2004

Deans’ Scholarship, College of Medicine, 2005, 2006

Rich Scholarship*, 2006*

Teacher’s Assistant for Medical School Gross Anatomy, 2003

MUSC Summer Research Fellowship, 2004

Clinical Rotation Honors: Pediatrics, Psychiatry, Surgery

***AOA***, 2007

Medical University of South Carolina Orthopaedic Residency

Golden Apple Teaching Award -2008

Best PGY-3 Orthopaedic Teaching Resident of the Year 2010

Outstanding Basic Science Paper (MUSC Siegling Research Day April 16, 2010)

Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach.

ASSH Resident and Fellow Traveling Scholarship-2010

Harley and Betty Baxter Southern Orthopaedic Association Resident Research Award-2011

3rd Place Award for Resident Presentation at *99th Clinical Orthopaedic Society Meeting.* Charleston, SC. October 1, 2011

**Team Coverage Experience**

2008-2010: West Ashley High School, Charleston, SC

2012- Greenville Road Warriors- EHL Hockey

2012- Greenville Drive- Minor League Baseball

2012- North Greenville University- Team Physician

2012-2013- South Carolina School for the Deaf and Blind- Team Physician

2013- Colorado Rockies- Served as Spring Training Physician

2013- Union County High School-Team Physician

2014- Current- Gaffney High School- Team Physician

2014- Current- Blacksburg High School- Team Physician

**Administrative Service**

**President** *Sawbones*-

MUSC Student Orthopaedic Interest Group, 2005- 2006

**Planning Committee Member**, MUSC-*AOA* AIDS Symposium, 2005

**Committee Member**, MUSC Golf Tournament for Children’s Hospital, 2005

**MUSC Reaffirmation Committee Member**,

Southern Accreditation of Colleges & Schools, 2005-2006

**Executive Committee Member**, Waring Library Historical Society, 2004-2006

**Admission Committee Interviewer**, MUSC College of Medicine, 2008-Present

**Medical University of South Carolina Alumni Board-** 2016-2019

**Stewardship Committee-** First Presbyterian Church Spartanburg, SC- 2015

**Access Health Spartanburg-** Physician Advisor- 2016

**Chairman Department of Surgery-** Mary Black Health -Gaffney-2016-Current

**Board Member MUSC College of Medicine Alumni-** 2015-2018

**Executive Board Member, Spartanburg County Medical Society-** 2017

**Local and National Service/Work Experience**

Participated with orthopaedic earthquake relief teams to

Bonne Fin, Haiti. Feb 9-15, 2010

Port-Au-Prince, Haiti Jan, 2016

Instructor (Anatomy), MUSC Center for Academic Excellence, 2003

Emergency Room Technician, MUSC, 2002-2003

Orthopaedic Product Specialist, Depuy/Mitek (Johnson & Johnson), 2000-2002

Spine Clinical Consultant, Sulzer-Medica/Spinetech, 1998-1999

Emergency Room Technician, Northside Hospital, Atlanta

Summer 1996, 1997-1998

**Publications**

**Peer-Reviewed Publications**

1. Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach. **Colbath, GP.** *MUSC Orthopaedic Journal Vol. XII*, June 2009.
2. Spatiotemporal induction of matrix metalloproteinase-9 transcription after discrete myocardial injury. Mukherjee R, **Colbath GP**, Justus CD, Bruce JA, Allen CM, Hewett KW, Saul JP, Gourdie RG, Spinale FG. *FASEB J*. 2010 Jun 15.
3. The Potential of Magnesium Alloy Use in Orthopaedic Surgery. Barfield, WR**. Colbath, GP**, An, Y, Hartsock, LA. *MUSC Orthopaedic Journal*. Vol XIII, June 2010
4. The Potential of Magnesium Alloy Use in Orthopaedic Surgery. Barfield, WR**. Colbath, GP**, An, Y, Hartsock, LA. Current Orthopaedic Practice)

**Non-Peer Reviewed Publications**

1. The Role of Emerging Resistance Patterns to Antibiotics. **Colbath, GP**.

Master’s Thesis paper at Georgia State University. 2000

**Abstracts and Proceedings**

1. Spatiotemporal induction of matrix metalloproteinase-9 transcription after discrete myocardial injury. Mukherjee R, **Colbath GP**, Justus CD, Bruce JA, Allen CM, Hewett KW, Saul JP, Gourdie RG, Spinale FG.

Presented at MUSC Summer Scholars Research Day, 2004:

Kreidel-Spring Visiting Professorship Lecture: (Dept. of Surgery: MUSC) 2005

American Heart Association Annual Meeting. Dallas, TX*-* May, 2005.

1. Venous Thrombotic Events Associated with Surgically Treated Patella Fractures. **Colbath GP**, Hartsock, LA, Schutte. HD. Presented at the *27thAnnual Southern Orthopaedic Association Meeting.* Fajardo, Puerto Rico. May, 2010.
2. Why I Prefer to Nail Distal Femoral Fractures. Trauma Symposium. **Colbath, GP.** Presented at the *27thAnnual Southern Orthopaedic Association Meeting.* Fajardo, Puerto Rico. May, 2010.
3. Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach. **Colbath GP**, Kang,QK, Li, X, Whatley, BR, Beachley, V, Chou, PC, Kindy, M, Wen X. MUSC Orthopaedic Department, Siegling Research Day, June 2010. (**Outstanding Basic Science Paper Award)**
4. South Carolina’s Orthopaedic Response to the Haitian Earthquake. **Colbath GP**. Presentedat *2010 South Carolina Orthopaedic Association Meeting.* Kiawah, SC. July, 2010.
5. Venous Thrombotic Events Associated with Surgically Treated Patella Fractures. **Colbath GP**, Hartsock, LA, Schutte. HD. Presentedat *2010 South Carolina Orthopaedic Association Meeting.* Kiawah, SC. July, 2010.
6. Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach. **Colbath GP**, Kang,QK, Li, X, Whatley, BR, Beachley, V, Chou, PC, Kindy, M, Wen X. Selected for **Harley and Betty Baxter SOA Resident Award.** Presentedat the 28th *Southern Orthopaedic Association Annual Meeting*  in July 20-23, Hawaii.
7. Knee Stiffness in Femoral Shaft Fracture Fixation in Victims of the 2010 Hatian Earthquake. Angermeier, EA**, Colbath, GP**, Hartsock, L, Richeme, R. Podium presentation by Eric Angermeier at the 28th *Southern Orthopaedic Association Annual Meeting*  in July 20-23, Hawaii.
8. Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach. **Colbath GP**, Kang,QK, Li, X, Whatley, BR, Beachley, V, Chou, PC, Kindy, M, Wen X. *2011 South Carolina Orthopaedic Association Meeting.* Kiawah, SC. August 6th, 2011.
9. Venous Thrombotic Events Associated with Surgically Treated Patella Fractures. **Colbath GP**, Schutte. HD, Jr. (Presented by H. Del Schutte, MD) XXV Triennial World Congress SICOT. Prague, Czechoslovakia. September 8th, 2011.

1. Venous Thrombotic Events Associated with Surgically Treated Patella Fractures. **Colbath GP**, William R Barfield PhD, Zachary J. Coffman, BA, Charles A. Daly, BA, Gini B. Ikwuezunma, BA, H. Del Schutte MD, Langdon A. Hartsock, MD. Podium presentation and **3rd Place Award for Resident Presentation** at *99th Clinical Orthopaedic Society Meeting.* Charleston, SC. October 1, 2011
2. Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach. **Colbath GP**, Kang,QK, Li, X, Whatley, BR, Beachley, V, Chou, PC, Kindy, M, Wen X*. Fall 2011 OREF/ORS Resident Research Symposium* Wake Forest University, Winston-Salem, NC. October 26th, 2011.
3. Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach. **Colbath GP**, Kang,QK, Li, X, Whatley, BR, Beachley, V, Chou, PC, Kindy, M, Wen X Podium presentation at *2012 AAOS Annual Meeting*, February 7-11, 2012. San Francisco, California.
4. Venous Thrombotic Events Associated with Surgically Treated Patella Fractures. **Colbath GP**, William R Barfield PhD, Zachary J. Coffman, BA, Charles A. Daly, BA, Gini B. Ikwuezunma, BA, H. Del Schutte MD, Langdon A. Hartsock, MD. Poster presentation by Charles Daly.

AO Challenges in Fracture Care Across Disciplines. February 23-25, 2012

Lake Buena Vista, FL

1. Venous Thrombotic Events Associated with Surgically Treated Patella Fractures. **Colbath GP**, William R Barfield PhD, Zachary J. Coffman, BA, Charles A. Daly, BA, Gini B. Ikwuezunma, BA, H. Del Schutte MD, Langdon A. Hartsock, MD. Podium presentation at *Spring Southeastern 2012 OREF/ORS Resident Research Symposium* Columbia, SC June 1, 2012.
2. Augmentation of Soft Tissue Repairs Utilizing Adipose Derived Stem Cells**.** Grace Dion, MS, **Gregory P. Colbath, MD, MS**, Dan Simionescu, Ph.D, Chuck Thigpen, Ph.D Ted Schlegel MD, Richard Hawkins, MD. Podium presentation at 25th Annual Hawkins Society Meeting. Hilton Head, South Carolina. May 16th, 2013.
3. Shoulder Arthritis. **Gregory P. Colbath, MD, MS.** Podium presentation at 25th Annual Hawkins Society Meeting. Hilton Head, South Carolina. May 16th, 2013.
4. Augmentation of Soft Tissue Repairs Utilizing Adipose Derived Stem Cells**.** Grace Dion, MS, **Gregory P. Colbath, MD, MS**, Dan Simionescu, Ph.D, Chuck Thigpen, Ph.D Ted Schlegel MD, Richard Hawkins, MD. Podium presentation by Richard Hawkins at Twentieth Century Orthopaedic Association. 2013 Annual Meeting. Thompsonville, Michigan. August 7th, 2013
5. Glenoid Loading and Stability of the Inlay versus Onlay Should Implant Systems. Przestrzelski, Breanne T., M.S., Hawkins, Richard J., M.D., Colbath, Gregory P., M.D., Gagliano, Jeffrey R., M.D., Njinimbam, Nuvi B., Helms, Sarah M., Marionneaux, Alan M., DesJardins, John D., PhD. 2013 Biomedical Engineering Society Annual Conference.
6. Augmentation of Soft Tissue Repairs Utilizing Adipose Derived Stem Cells**.** Grace Dion, MS, **Gregory P. Colbath, MD, MS**, Dan Simionescu, Ph.D, Chuck Thigpen, Ph.D Ted Schlegel MD, Richard Hawkins, MD. Poster Presentation. 2014 AAOS Annual Meeting. New Orleans. March 12-15th, 2014.
7. A Pilot Study of Loading and Stability of the Glenoid Inlay versus Onlay Shoulder System. Przestrzelski, Breanne T., M.S., Hawkins, Richard J., M.D., **Gregory P. Colbath, M.D.**, Gagliano, Jeffrey R., M.D., Marionneaux, Alan M., Njinimbam, Nuvi B., Helms, Sarah M., DesJardins, John D., PhD, , Proceedings of the 60th Annual Meeting of the ORS, March 15-18, 2014, New Orleans, LA.
8. A Comparison of Two Glenoid Systems in Total Shoulder Arthroplasty, S. M. Helms, **Gregory P. Colbath, M.D**., R.J. Hawkins, M.D., J.R. Gagliano, M.D., L.W. Pietrykowski, B.T. Przestrzelski, M.S., J.D. DesJardins, Ph.D., Inlay vs. Onlay:, Proceedings of the Southeast Biomedical Engineering Career Conference (SEBECC), September 26, 2014, Atlanta, GA.
9. Assessment of Total Shoulder Arthroplasty Glenoid Stability During Simulated “Rocking Horse” Motion, Helms, Sarah M., **Gregory P. Colbath, M.D**., Hawkins, Richard J., M.D., Gagliano, Jeffrey R., M.D., Pietrykowski, Luke W., Przestrzelski, Breanne T., M.S., Barrett, Alex, DesJardins, John D., PhD, Proceedings of the Biomedical Engineering Society (BMES), October 22-25, 2014, San Antonio, TX.
10. Assessment of Total Shoulder Arthroplasty Glenoid Stability During Simulated “Rocking Horse” Motion, Helms, Sarah M., **Gregory P. Colbath., M.D.**, Hawkins, Richard J., M.D., Gagliano, Jeffrey R., M.D., Pietrykowski, Luke W., Przestrzelski, Breanne T., M.S., DesJardins, John D., PhD, Proceedings of the 61st Annual Meeting of the ORS, March 28-31, 2015, Las Vegas, Nevada.

1. Biceps Tendon Tenocytes from Patients Undergoing Rotator Cuff Repair Induce Adipose Derived Stem Cell Differentiation – Towards Tendon Engineering in the Operating Room . Siatkowski, S; Pate, T; Welch, A; Hawkins, R; Kissenberth, M; Tolan, S; **Colbath, G**; Mercuri,. Proceedings of the 61st Annual Meeting of the ORS, March 28-31, 2015, Las Vegas, Nevada.
2. S.M. Helms, G.P. Colbath, R.J. Hawkins, J.R. Gagliano, L.W. Pietrykowski, B. T. Przestrzelski, J.D. DesJardins, *Comparing Onlay vs Inlay Glenoid Prosthetic Design Survivorship Characteristics in Total Shoulder Arthroplasty*, Proceedings of the 206 Annual Meeting of the Canadian Orthopedic Association, June 16-19, 2016, Quebec, Canada (Accepted)

**Other Basic Communications**

1. Dѐgagѐ**. Colbath GP**. Editorial describing South Carolina’s Orthopaedic Response to the Haitian Earthquake. *MUSC Orthopaedic Journal*. Vol XIII, June 2010
2. Augmentation of Rotator Cuff Repairs Using a Bioengineering Approach. **Colbath GP.** Update to Advisory Board for Clemson University/MUSC Orthopaedic Research Meeting. October 1st, 2010
3. Comparison of Inlay and Onlay Glenoid Implants with Loading and Clinical Loosening- A Pilot Study. **Gregory P. Colbath MD, MS.** Presented at 2013 Arthrosurface Meeting. Sonoma, California. September 17th, 2013
4. Boomeritis: Caring for The Aging Athelete. Furman OLLI program. Greenville, SC. September 23, 2014.
5. Comparison of Inlay and Onlay Glenoid Implants with Loading and Clinical Loosening- A Pilot Study. **Gregory P. Colbath MD, MS.** Presented at 2014 Arthrosurface Shoulder Study Group. New Orleans, LA. March 13, 2014.
6. Use of Exparel in Upper Extremity Procedures. **Gregory P. Colbath MD, MS.**  Pacira Consultant Meeting. March 14, 2014. New Orleans, LA.
7. Treatment Options for Cartilage Restoration. **Gregory P. Colbath MD, MS.**  Grand Rounds for Tuckahoe Orthopaedics. May 20, 2014.
8. Use of Exparel in Orthopaedic Procedures. **Gregory P. Colbath MD, MS.**  Pacira Consultant Meeting. Grand Rounds for Orlando General Orthopaedic Residency. May 6th, 2014 Orlando, Fla.
9. Arthroscopic Techniques for Rotator Cuff Repairs. **Gregory P. Colbath MD, MS.**  Conmed-Linvatec Regional Sales Training Meeting. Largo, Florida. July 22, 2014
10. Use of Exparel in Orthopaedic Procedures and Project Development for Depofoam. **Gregory P. Colbath MD, MS.**  Steadman Clinic, Vail Co. July 29, 2014.
11. Use of Exparel in Orthopaedic Procedures. **Gregory P. Colbath MD, MS.**  Pacira Consultant Meeting. Charleston, SC. September 6, 2014
12. Boomeritis: Caring for The Aging Athelete. **Gregory P. Colbath MD, MS.**  Gaffney Rotary Club, Oct 15, 2014.
13. Pacira Scientific Advisory Board Meeting. Potential Applications for New Depofoam Product. Atlanta, Ga. Nov 22, 2014
14. Pacira Pharmaceuticals Analyst and Investor Day. DepoTranexamic (DepoTXA): Clinical application. **Gregory P. Colbath MD, MS.** New York, NY. Jan. 22, 2015
15. Interdisciplinary Orthopaedic Care. **Gregory P. Colbath MD, MS.** Gaffney Medical Center. April16th, 2015.
16. Boomeritis: Caring for The Aging Athelete. **Gregory P. Colbath MD, MS.**  Gaffney YMCA, April , 2018.
17. Current Treatments for Rotator Cuff Injuries/Complex Regional Pain Syndrome/Ultrasound in the Office/ Worker’s Comp Strategies. **Gregory P. Colbath MD, MS.** South Carolina Association of Occupational Health Nurses. November 11, 2016
18. The Opioid Crisis: What Everyone Needs to Know. Spartanburg Opioid Community Forum. Wofford College. March 20, 2018.

**Current Research Projects:**

1. **Depotranexamic Acid-** Currently working with Pacira Pharmaceuticals to further develop proposed my proposed concept of delivering tranexamic acid (antifibrinolytic) bound in liposomal suspension to further prolong hemostasis for major orthopaedic surgery application. Drug is currently in preclinical testing and will be submitted for Initial New Drug Application (IND) this year to FDA.
2. **Comparison of Arthrosurface Inlay and DJO Onlay Glenoid Implants.** Head to head comparison of two different designs of glenoid implants for TSA, with matched paired cadaveric shoulders and subsequent biomechanical testing to determine contact area, pressure, and patterns of implant loosening.
3. **Topical Application of Tranexamic Acid in Joint Arthroplasty**.

Principal Investigator for Clinical Trial NCT01937559 clinicaltrials.gov.

Study currently enrolling patients through the Hawkins Foundation.

A Randomized, Prospective Control Trial currently enrolled 105/120 patients. The objective of this study is to evaluate the efficacy of topical tranexamic acid (TXA) in decreasing blood loss following both shoulder arthroplasty and primary total hip arthroplasty.

1. **Scaffold Augmentation with Stem Cell Derived Tenocytes for Improving Tendon Regeneration.** In collaboration with Hawkins Foundation and Clemson Bioengineering Department.
2. **Clemson Bioengineering Senior Design**: currently working with design teams to develop novel shoulder reconstruction/arthroscopic delivery devices.

**Prior Consultant Work:**

**Pacira Pharmaceuticals, Microaire, Arthrosurface** consulting to optimize delivery and potential novel applications for orthopedic use.

**HOBBIES AND INTERESTS**

Married to wife Molly for 12 years, with 4 children, Annie (13), Caroline (11), Helen (9), and Jane (7).

Gourmet Cooking, Home Remodeling, Golf, Basketball, Hunting and Fly-Fishing