

# Stephen Thomas Duncan

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## EDUCATION

- 8/99-5/03     **Vanderbilt University**  
Nashville, TN  
Bachelor of Science in Chemistry, Minor in Biological Sciences  
Summa Cum-Laude
- 8/03-5/07     **Vanderbilt University Medical School**  
Nashville, TN  
Doctorate of Medicine  
Magna Cum-Laude
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## Residency Training

- 7/07-6/12     **University of Kentucky, Department of Orthopaedic Surgery/General Surgery**
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## Fellowship Training

- 8/12-7/13     **Washington University, St. Louis, MO**  
Adult Reconstruction and Hip Preservation
- 7/13-10/13    **Washington University, St. Louis, MO**  
Research Fellowship, John Clohisy, MD., Mentor
- 10/13-11/13   **Traveling Hip Preservation Observer**  
Chris Larson, M.D.; Twin Cities Orthopaedics, Minneapolis, MN  
Bryan Kelly, M.D.; Hospital for Special Surgery, New York, NY  
Young Jo Kim, M.D. and Michael Millis, M.D.; Boston Children's Hospital, Boston, MA
- 1/14- 1/16     **AAHKS Health Policy Fellowship**
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## Licensure

- 2008-Current   **Kentucky**
- 2012-2014     **Missouri**
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## Board Certifications

- 2012            ABOS Part I, Pass
- 2015            ABOS Part II, Pass
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## Academic Appointments

- 2013 – present   Associate Professor, Department of Orthopaedic Surgery & Sports Medicine University of Kentucky  
Director, Center for Hip Preservation Associate Residency Program Director
- 2013 - present   Associate Professor, Veterans Hospital, Lexington, Kentucky
- 2014 – present   Associate Professor, Shriners Hospital for Children, Lexington, Kentucky
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## Committee Appointments

- 2014 – present   Central Evaluation Committee, AAOS
- 2015 – present   Kentucky Orthopaedic Society, Board of Directors, Vice President
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## Research Support

- 2009            University of Kentucky Institutional Orthopaedic Research Grant
- 2013            University of Kentucky Translational research and outcomes studies in joint arthroplasty and hip preservation
- 2015            Stryker Tritanium Acetabular Shell Longitudinal Follow-up study
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## Presentations

**Duncan ST, Rizzo CJ.** De Novo Synthesis of 4-Hydroxy-2-Nonenal. Vanderbilt Undergraduate Summer Research Program Presentation Day 2001.

**Duncan ST, Rizzo CJ, Marnett LJ.** De Novo Synthesis of 2,3-Epoxy-4-Hydroxynonenal. Vanderbilt Undergraduate Summer Research Program Presentation Day 2002.

**Duncan ST, Rizzo CJ, Marnett LJ.** Induction of apoptosis in colorectal carcinoma cells treated with 4-hydroxy-2-nonenal and structurally related aldehydic products of lipid peroxidation. Presented for fulfillment of requirements for BS degree from Vanderbilt University, 2003.

**Duncan ST, Spindler KP, Dunn WR, Wright RW.** Standing Radiographs to Screen for Signs of Knee Osteoarthritis: A Systematic Review of Level I and II Studies. Vanderbilt Orthopaedic Institute Annual Outcomes Research Meeting 2006.

**Duncan ST, Spindler KP, Dunn WR, Wright RW.** Standing Radiographs to Screen for Signs of Knee Osteoarthritis: A Systematic Review of Level I and II Studies. Presentation during visitation at Vanderbilt Orthopaedic Institute for European Traveling Fellows in AOSSM-ESSKA, 2007.

**Duncan ST, Milbrandt TA.** Soft Tissue Reconstruction for Treatment of a Flexible Cavovarus Foot in Charcot-Maire-Tooth Disease. Lexington Shriners Hospital Research Presentation Day, 2008.

**Duncan ST, Giordani M, Pienkowski D.** Polymethylmethacrylate, gentamicin, and nanocarbon technology: a laboratory study of the characteristics of this new technology in acrylic-bone cement spacer design. University of Kentucky, Department of Orthopaedic Surgery, Grand Rounds, 2009.

**Duncan ST, Noerhen BW, Lattermann C.** Radiographic Parameters associated with Early Patellofemoral OA in Young Patients. University of Kentucky Graduation Day, 2010.

**Duncan ST, Noerhen BW, Latterman C.** Radiographic Parameters associated with Early Patellofemoral OA in Young Patients. Kentucky Orthopaedic Society Annual Meeting. 2010.

**Duncan ST, Noerhen BW, Mildrandt T, Lattermann C.** Patellar Instability: A New Radiographic Measure for Displacement. Kentucky Orthopaedic Society Annual Meeting. 2011.

**Duncan ST.** FAI and Hip Preservation: Making Sense of It All. University of Kentucky, Department of Orthopaedic Surgery, Grand Rounds, 2012.

**Duncan ST.** Revision THA and Management of Osteolysis. Washington University, Department of Orthopaedic Surgery, Grand Rounds, 2013.

**Duncan ST.** Approach to the Diagnosis and Management of Pain in the Young Adult Hip. University of Kentucky, Department of Orthopaedic Surgery, Alumni Reunion, 2013.

**Duncan ST.** Understanding Hip Preservation for the Family Practitioner. University of Kentucky Family Practice 45<sup>th</sup> Annual Review Course, 2013.

**Duncan ST.** Approach and Understanding to Primary THA and BHR. University of Kentucky Lecture Series, 2013.

**Duncan ST.** Revision THA and Management of Osteolysis. University of Kentucky, Department of Orthopaedic Surgery, Grand Rounds, 2013.

**Duncan ST.** Approach and Understanding Revision THA. University of Kentucky Lecture Series, 2014.

**Duncan ST.** Understanding Hip Preservation for the General Public. University of Kentucky Community Outreach, 2014.

**Duncan ST.** Hip and Knee Impairment: What Does it Mean for Disability? Informational session for Social Security Administration Judges, 2014.

**Duncan ST.** Hip Preservation: A Guide to Understanding and Management. University of Kentucky Internal Medicine Grand Rounds, 2014.

**Duncan ST.** Hip Arthroscopy: The Basics. University of Kentucky Lecture Series. 2014.

**Duncan ST.** Why Do Hip Arthroscopies Fail? University of Kentucky Alumni Association Annual Meeting. 2014

**Duncan ST.** MIS Posterior THA Approach – Why I Favor This over Direct Anterior. University of Kentucky Alumni Association Annual Meeting. 2014.

**Duncan ST.** TKA and THA: How to stay and get out of trouble. University of Kentucky Lecture Series. 2014.

**Duncan ST.** Hip Arthroscopy: Common indications and its expanded use. Stryker- Pivot Hip Arthroscopy Local Lab, 2015.

**Duncan ST.** Understanding and Approach to Hip and Knee Arthritis. Liberty Ridge Retirement Community. 2016

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## Publications

West JD, Ji C, **Duncan ST**, Amarnath V, Schnedier C, Rizzo CJ, Brash AR, Marnett LJ. Induction of apoptosis in colorectal carcinoma cells treated with 4-hydroxy-2-nonenal and structurally related aldehydic products of lipid peroxidation. *Chem Res Toxicol.* 2004 April;17(4):453-62.

Hepper CT, Halvorson JJ, **Duncan ST**, Gregory AJ, Dunn WR, Spindler KP. The efficacy and duration of intra-articular corticosteroid injection for knee osteoarthritis: a systematic review of level I studies. *J Am Acad Orthop Surg.* 2009 Oct;17(10):638-46.

**Duncan ST**, Riley SA. An Overview of Madelung Deformity. *Current Orthopaedic Practice* 2009 Nov/Dec;20(6):648-54.

**Duncan ST**, Wright RD, Lawrence SL. Pantalar Dislocation without Extrusion: A Case Report. *J Orth.and Trauma.* 2011

Noerhen BW, **Duncan ST**, Lattermann C. Radiographic Parameters associated with Lateral Patellar Degeneration in Young Patients. *Knee Surg Sports Traum Arthros.* Dec;20(12):2385-90.

**Duncan ST**, Noerhen BW, Lattermann C. The role of trochleoplasty in patellofemoral instability: Systematic Review. *Sports Medicine and Arthroscopy Review.* 2012 Sep;20(3):171-80.

Polkowski G, **Duncan ST**, Bloemke A, Schoenecker P, Clohisy C. Screening for Deep Vein Thrombosis After Periacetabular Osteotomy in Adult Patients: Is It Necessary? *Clin Orthop Rel Res* 2014 April 15.

Park A, **Duncan ST**, Nunley RM, Keeney JA, Barrack RL, Nam D. Relationship of the posterior femoral axis of the “kinematically aligned” total knee arthroplasty to the posterior condylar, transepicondylar, and anteroposterior femoral axes. *Knee* Jul 25 2014.

Ross JR, Baca G, Pashos GE, **Duncan ST**, Schoenecker PL, Clohisy JCC. Early Clinical and Radiographic Outcomes of Combined Hip Arthroscopy and Periacetabular Osteotomy. *Ortho J Sports Medicine Aug 2014*

**Duncan ST**, Wingerter SW, Keith A, Fowler SA, Clohisy J. Does Previous Osteotomy Compromise Total Hip Arthroplasty?: Systemtic Review. *J Arthroplasty* Sept 6 2014.

Park A, Nam D, Friedman M, **Duncan ST**, Hillen T, Barrack R. Inter-Observer Precision and Physiologic Variability of MRI Landmarks Used to Determine Rotational Alignment in Conventional and Patient-Specific TKA. *J Arthroplasty.* Sept 6 2014

**Duncan ST**, Burnham J, Dunn W, Spindler K, Wright R. Sensitivity of Standing Radiographs to Detect Knee Arthritis: A Systematic Review of the Literature. *Arthroscopy: The Journal of Arthroscopic and Related Research* Oct 10 2014.

**Duncan ST**, Bogunovic L, Pashos G, Baca G, Schoenecker P, Clohisy J. Are There Sex-dependent Differences in Acetabular Dysplasia Disease Characteristics? *CORR* Jan 30 2015

**Duncan ST**, Hayes CB, Nunley RM. Case Report: Fracture at the Modular Junction of Cementless Revision Hip System. *JBJ*S (accepted)

Sankar W, Clohisy J, **Duncan S**, Baca G, Millis M, Zaltz I, Kim Y, Trousdale R, Sink E, Sucato D, Beaulieu P, Sierra R, Schoenecker P, Peters C, Podeszwa D. What is the Epidemiology and Baseline Characteristics of Patients Undergoing Periacetabular Osteotomy in North America? *JAAOS* (accepted)

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## **Abstracts/Poster/Podium Presentations**

**Duncan ST**, Spindler KP, Dunn WR, Wright RW. Standing Radiographs to Screen for Signs of Knee Osteoarthritis: A Systematic Review of Level I and II Studies. Vanderbilt University Medical Center Biomedical Research Annual Poster Presentation. 2007.

**Duncan ST**, Noerhen BW, Latterman C. Radiographic Parameters associated with Early Patellofemoral OA in Young Patients. Poster presentation. International Cartilage Research Society Annual Meeting, Barcelona, Spain. 2010.

Noerhen BW, Powers C, **Duncan ST**, Latterman C. Lateral Tilting of the Patella: The influence of Patellar Height and Trochlear Groove Depth. Podium presentation, APTA CSM. New Orleans, LA. 2011.

Noerhen BW, **Duncan ST**, Latterman C. The Effect of Patella Height and Trochlear Groove Depth on Patella Lateral Tilt. Podium Presentation, International Patellofemoral Study Group Research Retreat, San Diego, CA. 2011.

**Duncan ST**, Noerhen BW, Mildrandt T, Lattermann C. Patellar Instability: A New Radiographic Measure for Displacement. Poster presentation, International Pediatric Orthopaedic Society, POSNA/AAOS, Orlando, FL, 2011.

**Duncan ST**, Noerhen BW, Mildrandt T, Lattermann C. Patellar Instability: A New Radiographic Measure for Displacement. Podium presentation, Southern Orthopaedic Association Annual Meeting, White Sulphur Springs, WV, 2012.

Kenney NA, Howard JS, Noehren BN, **Duncan ST**, Lattermann CL. Comparison of Measures of Patellofemoral Alignment Reported Outcomes following Autologous Chondrocyte Implantation among Patients with Gradual versus Sudden Onset of Symptoms. International Cartilage Research Society Annual Meeting. Vancouver, BC, 2013.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Accuracy of Acetabular Correction in Periacetabular Osteotomy. Podium presentation, Hip Society Annual Meeting, Charleston, SC, 2013.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Periacetabular Osteotomy for Acetabular Dysplasia: Are male patients at higher risk for secondary femoroacetabular impingement? Podium presentation, American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2013.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Intermediate Results of the Bernese Periacetabular Osteotomy for the treatment of Perthes-like Hip Deformities. Poster presentation, American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2013.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Descriptive Epidemiology of Symptomatic Acetabular Dysplasia : A North American Cohort. Poster presentation, American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2013.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Combined Surgical Hip Dislocation and Proximal Femoral Osteotomy for Severe Hip Deformities. Poster presentation, American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2013.

Andrew Park, Michael Friedman, **Stephen Duncan**, Travis Hillen, Denis Nam, Ryan Nunley, Robert Barrack. Variability and Reliability of MRI Landmarks for Patient-Specific TKA Guide Generation. Poster presentation. 25<sup>th</sup> Annual Holiday Hospital for Special Surgery Total Knee Course. New York, NY, 2013.

Andrew Park, Michael Friedman, **Stephen Duncan**, Travis Hillen, Denis Nam, Ryan Nunley, Robert Barrack. Variability and Reliability of MRI Landmarks for Patient-Specific TKA Guide Generation. Poster presentation. Orthopaedic Research Society Annual Meeting. New Orleans, LA, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Accuracy of Acetabular Correction in Periacetabular Osteotomy. Poster presentation, AAOS Annual Meeting, New Orleans, LA, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Descriptive Epidemiology of Symptomatic Acetabular Dysplasia : A North American Cohort. Poster presentation, AAOS Annual Meeting, New Orleans, LA, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Intermediate Results of the Bernese Periacetabular Osteotomy for the treatment of Perthes-like Hip Deformities. Podium presentation, AAOS Annual Meeting, New Orleans, LA, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Combined Surgical Hip Dislocation and Proximal Femoral Osteotomy for Severe Hip Deformities. Poster presentation, AAOS Annual Meeting, New Orleans, LA, 2014.

**Duncan ST**, Baca G, Pashos G, Keith A, Schoenecker P, Clohisy J. Intermediate term results of the Bernese periacetabular osteotomy for acetabular dysplasia. Podium presentation, Mid-American Orthopaedic Association Annual Meeting, San Antonio, TX, 2014.

**Duncan ST**, Baca G, Pashos G, Keith A, Schoenecker P, Clohisy J. Combined Surgical Hip Dislocation and Proximal Femoral Osteotomy for Severe Hip Deformities. Poster presentation, Mid-American Orthopaedic Association Annual Meeting, San Antonio, TX, 2014.

**Duncan ST**, Baca G, Pashos G, Keith A, Schoenecker P, Clohisy J. Intermediate Term Results of the Bernese Periacetabular Osteotomy for the Treatment of Severe Acetabular Dysplasia. Poster presentation, Mid-American Orthopaedic Association Annual Meeting, San Antonio, TX, 2014.

**Duncan ST**, Wingerter S, Keith A, Fowler S, Clohisy J. Does Previous Hip Osteotomy Compromise THA Procedures and Outcomes? A Systematic Review. Poster presentation, Mid-American Orthopaedic Association Annual Meeting, San Antonio, TX, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Descriptive Epidemiology of Symptomatic Acetabular Dysplasia : A North American Cohort. Poster presentation, POSNA Annual Meeting, Hollywood, CA, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Accuracy of Acetabular Correction in Periacetabular Osteotomy. Poster presentation, POSNA Annual Meeting, Hollywood, CA, 2014.

Clohisy J, Ross J, **Duncan ST**. Early Clinical And Radiographic Outcomes Of Combined Hip Arthroscopy And Periacetabular Osteotomy. Podium presentation, POSNA Annual Meeting, Hollywood, CA, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Accuracy of Acetabular Correction in Periacetabular Osteotomy. Poster presentation, SOA Annual Meeting, Beaver Creek, CO, 2014.

**Duncan ST**, Baca G, Pashos G, Keith A, Schoenecker P, Clohisy J. Combined Surgical Hip Dislocation and Proximal Femoral Osteotomy for Severe Hip Deformities. Poster presentation, SOA Annual Meeting, Beaver Creek, CO, 2014.

**Duncan ST**, Pashos G, Keith A, Baca G, Schoenecker P, Clohisy J. Intermediate Results of the Bernese Periacetabular Osteotomy for the treatment of Perthes-like Hip Deformities. Podium presentation, SOA Annual Meeting, Beaver Creek, CO, 2014.

**Duncan ST**. Periprosthetic Fractures following THA. Southern Orthopaedic Association Annual Meeting, Beaver Creek, CO, 2014.

**Duncan ST**, Pashos G, Baca G, Schoenecker P, Clohisy J. Intermediate Results of the Bernese Periacetabular Osteotomy for the treatment of Symptomatic Acetabular Dysplasia. Podium presentation: American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2014.

Park A, **Duncan ST**, Nunley RM, Keeney JA, Barrack RL, Nam D. Relationship of the posterior femoral axis of the “kinematically aligned” total knee arthroplasty to the posterior condylar, transepicondylar, and anteroposterior femoral axes. Poster Presentation: American Academy of Orthopaedic Surgeons Annual Meeting, Las Vegas, NV, 2015.

**Duncan ST**, Jacobs C, Christensen C, Nunley RM, Macaulay W. Is Physician Quality Reporting System Worth the Cost to Report to CMS? Podium Presentation: American Academy of Orthopaedic Surgeons Annual Meeting, Las Vegas, NV, 2015. Chosen as part of the Game Changers.

**Duncan ST**. Hip Arthroscopy: Common and Expanded Indications to address hip pathology. Podium Presentation: Kentucky Orthopaedic Society Annual Meeting, Louisville, KY, 2015.

**Duncan ST**, Pashos G, Baca G, Schoenecker P, Clohisy J. Is Combined Surgical Hip Dislocation and Periacetabular Osteotomy a Safe Procedure for Complex Hip Deformities? Poster Presentation: American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2015.

**Duncan ST**, Pashos G, Baca G, Schoenecker P, Clohisy J. Average 10 Year Clinical Outcomes of the Bernese PAO for Severe Acetabular Dysplasia. Podium Presentation: American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2015.

**Duncan ST**. Healthy Policy Fellowship Update. Podium Presentation: American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, 2015.

Clohisy JC, **Duncan ST**, Wells J, Schoenecker P. 10 year outcomes of the Bernese PAO for Classic Acetabular Dysplasia. Podium Presentation: Closed Hip Society Meeting, 2016.

**Duncan ST**, Thomason K, Baca G, Pashos G, Schoenecker PL, Clohisy JC. Average Ten Year Clinical Outcomes of the Bernese PAO for the Treatment of Classic Acetabular Dysplasia. AAHKS Specialty Day, American Academy of Orthopaedic Surgeons Annual Meeting, Orlando, FL, 2016.

**Duncan ST**. Highlights of the 25<sup>th</sup> AAHKS Annual Meeting. Podium Presentation: American Association of Hip and Knee Surgeons Spring Annual Meeting, Washington, D.C., 2016.

**Duncan ST**. Symposium: Step by Step: Key Choices and Techniques in the Tough Revision Total Hip Arthroplasty and Revision Total Knee Arthroplasty. Podium Presentation: American Association of Hip and Knee Surgeons Spring Annual Meeting, Washington, D.C., 2016.

**Duncan ST**. Symposium: Key Choices in Difficult Joint Arthroplasty Cases. Washington University Key Society Alumni Meeting, Phoenix, AZ, 2016.

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## Book Chapters

**Duncan ST**, Clohisy JC. Combined Periacetabular Osteotomy and Proximal Femoral Osteotomy for Severe Hip Deformities. Diagnosis and Surgical Treatment of Hip Disease. Editor McCarthy, Villar & Noble, 2013.

**Duncan ST**, Carlisle J, Clohisy JC. Radiographic Evaluation of the Hip. The Adult Hip: Hip Preservation Surgery. Editors: Clohisy, Beaule, Della Valle, 2014.

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## Media Presentations

**Duncan ST**. ABC News, Channel 36. Understanding New Technologies in TKA. 2014

**Duncan ST**. Oh, my aching . . . Kentucky Living. 2014

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## Recent Honors/Awards

### *Vanderbilt University*

2003 Merck Index Award for Outstanding Senior in Chemistry

### *University of Kentucky*

2010 University of Kentucky Best Junior Resident, Department of Orthopaedics

2012 Ray Neef Outstanding Chief Resident Award, Department of Orthopaedics, University of Kentucky

### *Kentucky Orthopaedic Society*

2011 Kentucky Orthopaedic Society Annual Meeting Harkess-Brower Research Award, 2<sup>nd</sup> Place

### *Pediatric Orthopaedic Society of North America*

2011 POSNA / AAOS International Pediatric Orthopaedics Symposium Scholarship Recipient for Patellar Instability: A New Radiographic Measure for Displacement.

### *Journal of Orthopaedic Trauma*

2010 Journal of Orthopaedic Trauma, Resident Teaching Award

### *American Orthopaedic Association*

2011 AOA/OREF/Zimmer Resident Leadership Forum, Boston, MA

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## Professional Organizations and Affiliations

AAOS Candidate Member

International Congress for Joint Reconstruction

Arthroscopy Association of North America

American Association of Hip and Knee Surgeons

AOA Emerging Leaders Program

Southern Orthopaedic Association

Kentucky Orthopaedic Society

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## Courses – Instructor

Mitek Sports Fellows Course – Hip Arthroscopy, Las Vegas, 2014.

2014 University of Kentucky Orthopaedic Alumni Association Annual Meeting – Program Director, Planning Committee

2016 AAHKS Annual Spring Meeting

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## Journal/Abstract Reviewer

Reviewer – Journal of Arthroplasty

Reviewer – Journal of Biomedical Materials Research

Reviewer – AAHKS Annual Meeting Abstract Reviewer

Reviewer – BMC Musculoskeletal Disorders

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## Advisory Team

Smith and Nephew Journey 2.0 BCS Knee

Smith and Nephew Journey XR Knee  
Smith and Nephew Polar stem  
DePuy/Mitek Hip Arthroscopy Product Line  
Morph Recovery Force DVT Compression Sleeves