

**Kevin L. Ong, Ph.D., P.E.**  
**Managing Engineer**

**Professional Profile**

Dr. Kevin L. Ong is a Managing Engineer in Exponent's Biomedical Engineering practice. Dr. Ong's area of expertise is product design evaluation and failure analysis of medical devices, with a focus on evaluating how patient, surgical, and design factors influence performance. He also has expertise in nonlinear finite element analysis, solid mechanics, and orthopaedic biomechanics. He has experience with orthopaedic, spine, fracture fixation, cardiovascular, and diagnostic medical devices from product liability, intellectual property, regulatory (FDA) compliance, product development, epidemiology, health economics, and technology assessment perspectives. Dr. Ong has directed preclinical and postmarket mechanical testing experiments of bone and soft tissue to evaluate and characterize biomaterials and medical devices, including wear testing and retrieval (explant) analysis. He has designed experiments for standard tests (e.g., ASTM, ISO), as well as developed non-standard or novel testing protocols. His research interests include investigating the failure mechanisms of implantable devices, as well as evaluating the efficacy of novel medical devices. He has also evaluated the interaction between medical devices and injury tolerances/patterns.

Dr. Ong has been involved in biomechanics and biomedical engineering research since 1997. He is also presently holding a research faculty appointment at the School of Biomedical Engineering, Science and Health Systems at Drexel University. Prior to joining Exponent, Dr. Ong was a research assistant in the Department of Mechanical and Aerospace Engineering at Cornell University, in the Cornell University-Hospital for Special Surgery Program in Biomedical Mechanics.

**Academic Credentials and Professional Honors**

Ph.D., Mechanical Engineering, Cornell University, 2004  
B.S., Mechanical Engineering, Cornell University (*summa cum laude*), 1998

Lawrence D. Dorr, MD Award for the most outstanding paper in surgical techniques and technologies at AAHKS 19<sup>th</sup> Annual Meeting, Awarded by the American Association of Hip and Knee Surgeons, 2009

TribOS<sup>™</sup> New Investigator Prize Paper for Issue 7 of the 2009 TribOS<sup>™</sup> Newsletter

2<sup>nd</sup> Prize research paper at the British Orthopaedic Association Annual Congress 2008, Awarded by the British Orthopaedic Research Society and the British Orthopaedic Trainees Association, 2008

Lawrence D. Dorr, MD Award for the most outstanding paper in surgical techniques and technologies at AAHKS 18<sup>th</sup> Annual Meeting, Awarded by the American Association of Hip and Knee Surgeons, 2008

Best Poster Award at AAHKS 17<sup>th</sup> Annual Meeting, Awarded by the American Association of Hip and Knee Surgeons, 2007

Cornell University Mechanical & Aerospace Engineering Outstanding Teaching Assistant Award, 2002

Olin Fellowship, Cornell University, 1998–2001

Merrill Presidential Scholar, Cornell University, 1998

### **Licenses and Certifications**

Registered Professional Engineer, Pennsylvania, #PE077597

### **Publications**

Bozic KJ, Lau E, Kurtz S, Ong K, Berry DJ. Patient-related risk factors for postoperative mortality and periprosthetic joint infection in Medicare patients undergoing TKA. *Clin Orthop Relat Res* 2011; Aug 27 [Epub ahead of print].

Kurtz SM, Ong KL, Lau E, Widmer M, Maravic M, Gómez-Barrena E, de Fátima de Pina M, Manno V, Torre M, Walter WL, de Steiger R, Geesink RG, Peltola M, Röder C. International survey of primary and revision total knee replacement. *Int Orthop* 2011; Mar 15 [Epub ahead of print].

Edidin AA, Ong KL, Lau E, Kurtz SM. Mortality risk for operated and nonoperated vertebral fracture patients in the Medicare population. *J Bone Miner Res* 2011; 26(7):1617–1626.

Johanson NA, Kleinbart FA, Cerynik DL, Brey JM, Ong KL, Kurtz SM. Temporal relationship between knee arthroscopy and arthroplasty. A quality measure for joint care? *J Arthroplasty* 2011; 26(2):187–191.

Markel D, Day J, Siskey R, Liepins I, Kurtz S, Ong K. Deformation of metal-backed acetabular components and the impact of liner thickness in a cadaveric model. *Int Orthop* 2011; 35(8):1131–1137.

Ong KL, Villarraga ML, Lau E, Carreon LY, Kurtz SM, Glassman SD. Off-label use of BMP in the U.S. using administrative data. *Spine* 2010; 35(19):1794–1800.

Day JS, Lau E, Ong KL, Williams GR, Ramsey ML, Kurtz SM. Prevalence and projections of total shoulder and elbow arthroplasty in the United States to 2015. *J Shoulder Elbow Surg* 2010; 19(8):1115–1120.

Malkani AL, Ong KL, Lau E, Kurtz SM, Justice BJ, Manley MT. Early- and late- term dislocation risk after primary hip arthroplasty in the Medicare population. *J Arthroplasty* 2010; 25(6 Suppl):21–25.

Ong KL, Lau E, Suggs J, Kurtz SM, Manley MT. Risk of subsequent revision after primary and revision total joint arthroplasty. *Clin Orthop Relat Res* 2010; 468(11):3070–3076.

Bozic KJ, Ong K, Lau E, Kurtz SM, Vail TP, Rubash HE, Berry DJ. Risk of complication and revision total hip arthroplasty among Medicare patients with different bearing surfaces. *Clin Orthop Relat Res* 2010; 468(9):2357–2362.

Heller MF, Prange MT, Ong KL, Watson HN, Iyer M, Ivarsson BJ, Fisher JL. Effects of special population considerations on injury patterns in pedestrian crashes. Society of Automotive Engineers 2010 World Congress, SAE 2010-01-1165.

Kurtz SM, Ong KL, Lau E, Bozic KJ, Berry D, Parvizi J. Prosthetic joint infection risk after TKA in the Medicare population. *Clin Orthop Relat Res* 2010; 468(1):52–56.

Ong KL, Lau E, Moore T, Heller MF. Accidental falls involving medical implant re-operation. *Injury* 2009; 40 (10):1088–1092.

Bozic KJ, Kurtz SM, Lau E, Ong K, Chiu V, Vail TP, Rubash HE, Berry DJ. The epidemiology of revision total knee arthroplasty in the United States. *Clin Orthop Relat Res* 2010; 468(1):45–51.

Ong KL, Kurtz SM, Lau E, Bozic KJ, Berry D, Parvizi J. Prosthetic joint infection risk following total hip arthroplasty in the Medicare population. *J Arthroplasty* 2009; 24(6 Suppl 1):105–109.

Ong KL, Rundell S, Liepins I, Laurent R, Markel D, Kurtz S. Biomechanical modeling of acetabular component polyethylene stresses, fracture risk, and wear rate during press-fit implantation. *J Orthopaedic Research* 2009; 27(11):1467–1472.

Bozic KJ, Kurtz S, Lau E, Ong K, Chiu V, Vail TP, Rubash HE, Berry DJ. The epidemiology of total hip arthroplasty bearing surface usage in the United States. *J Bone Joint Surg Am* 2009; 91(7):1614–1620.

Kurtz SM, Lau E, Ong K, Zhao K, Kelly M, Bozic KJ. Future young patient demand for primary and revision joint replacement: National projections from 2010 to 2030. *Clin Orthop Relat Res* 2009; 467(10):2606–2612.

Moore T, Fisher J, Heller M, Lau E, Watson H, Ong K. Occupant injury in motor vehicle collisions: Using data from medical databases. Society of Automotive Engineers 2009 World Congress, SAE 2009-01-0394.

Manley M, Ong K, Lau E, Kurtz SM. Total knee arthroplasty survivorship in the United States Medicare population: Effect of hospital and surgeon procedure volume. *J Arthroplasty* 2009; 24(7):1061–1067.

Bozic KJ, Kurtz SM, Lau E, Ong K, Vail TP, Berry DJ. The epidemiology of revision total hip arthroplasty in the United States. *J Bone Joint Surg Am* 2009; 91(1):128–133.

Ong KL, Day JS, Manley MT, Kurtz SM, Geesink R. Biomechanical comparison of 2 proximally coated femoral stems: Effects of stem length and surface finish. *J Arthroplasty* 2009; 24(5):819–824.

Ong KL, Day JS, Kurtz SM, Field FE, Manley MT. Role of surgical position on interface stress and initial bone remodeling stimulus around hip resurfacing arthroplasty. *J Arthroplasty* 2009; 24(7):1137–1142.

Ong K, Lau E, Manley M, Kurtz SM. Patient, hospital, and procedure characteristics influencing total hip and knee arthroplasty procedure duration. *J Arthroplasty* 2009; 24(6):925–931.

Ong K, Kurtz S. The use of modelling to predict implant behaviour. *Med Device Technol* 2008; 19(5):64–66.

Manley M, Ong K, Lau E, Kurtz SM. Effect of volume on total hip arthroplasty revision rates in the United States Medicare population. *J Bone Joint Surg Am* 2008; 90(11):2446–2251.

Ong KL, Manley MT, Kurtz SM. Have contemporary hip resurfacing designs reached maturity? A review. *J Bone Joint Surg Am* 2008; 90(Suppl 3):81–88.

Lau E, Ong K, Kurtz SM, Schmier J, Edidin A. Mortality following the diagnosis of a vertebral compression fracture in the Medicare population. *J Bone Joint Surg Am* 2008; 90(7):1479–1486.

Ong KL, Lau E, Manley M, Kurtz SM. Effect of procedure duration on total hip arthroplasty and total knee arthroplasty survivorship in the United States Medicare population. *J Arthroplasty* 2008; 23(6 Suppl 1):127–132.

Ong K, Santner T, Bartel DL. Robust design for acetabular cup stability accounting for patient and surgical variability. *J Biomechanical Engineering* 2008; 130(3):031001.

Kurtz SM, Ong K, Schmier J, Zhao K, Mowat F, Lau E. Primary and revision arthroplasty surgery caseloads in the United States from 1990 to 2004. *J Arthroplasty* 2009; 24(2):195–203.

Kurtz SM, Lau E, Schmier J, Ong KL, Zhao K, Parvizi J. Infection burden for hip and knee arthroplasty in the United States. *J Arthroplasty* 2008; 23(7):984–991.

Kurtz SM, Ong KL, Schmier J, Mowat F, Saleh K, Dybvik E, Karrholm J, Garellick G, Havelin

LI, Furnes O, Malchau H, Lau E. Future clinical and economic impact of revision total hip and knee arthroplasty. *J Bone Joint Surg Am* 2007; 89(Suppl 3):144–151.

Kurtz S, Ong K, Lau E, Mowat F, Halpern M. Projections of primary and revision hip and knee arthroplasty in the United States from 2005 to 2030. *J Bone Joint Surg Am* 2007; 89(4):780–785.

Kobayashi N, Ong K, Villarraga M, Schwardt J, Wenz R, Togawa D, Fujishiro T, Turner AS, Seim III H, Bauer TW. Histological and mechanical evaluation of self-setting calcium phosphate cements in a sheep vertebral bone void model. *J Biomed Mater Res (Part A)* 2007; 81(4):838–846.

Manley MT, Ong KL, Kurtz SM. The potential for bone loss in acetabular structures following THA. *Clin Orthop Relat Res* 2006; 453:246–253.

Kurtz SM, Lau E, Halpern MT, Ong KL. Statistical trend shows growing orthopedic surgery case load. Will surgeons be able to keep up? *Mater Manag Health Care* 2006; 15(7):61–62.

Ong KL, Kurtz SM, Manley MT, Rushton N, Mohammed NA, Field RE. Biomechanics of the Birmingham hip resurfacing arthroplasty. *J Bone Joint Surg Br* 2006; 88(8):1110–1115.

Ong KL, Mowat FS, Chan N, Lau E, Halpern MT, Kurtz SM. Economic burden of revision hip and knee arthroplasty in Medicare enrollees. *Clin Orthop Relat Res* 2006; 446:22–28.

Ong K, Lehman J, Notz WI, Santner TJ, Bartel DL. Acetabular cup geometry and bone-implant interference have more influence on initial periprosthetic joint space than joint loading and surgical cup insertion. *J Biomech Eng* 2006; 128(2):169–175.

Mazzucco D, Bowden A, Ong K. Examining failure causation in retrieved medical devices. *Med Dev Diagn Ind* 2006; 28(1):110–115.

Kurtz S, Mowat F, Ong K, Chan N, Lau E, Halpern M. Prevalence of primary and revision total hip and knee arthroplasty in the United States from 1990 through 2002. *J Bone Joint Surg Am* 2005; 87(7):1487–1497.

Ong K. Stability of uncemented acetabular components: Design, patient-dependent, and surgical effects and complications due to trapped interfacial fluid. Dissertation, Cornell University, 2004.

## **Book Chapters**

Kurtz SM, Day J, Ong K. Total joint arthroplasty bearing surfaces. In: *The PEEK Biomaterials Handbook*. Kurtz SM (ed), Elsevier Academic Press, Burlington, 2011, in press.

Kurtz SM, Ong K. Contemporary total hip arthroplasty: Hard-on-hard bearings and highly crosslinked UHMWPE. In: *The UHMWPE Biomaterials Handbook: Ultra-High Molecular Weight Polyethylene in Total Joint Replacements and Medical Devices, Second Edition*. Kurtz SM (ed), Elsevier Academic Press, Burlington, 2009.

## **Published Abstracts and Presentations**

Patel JD, Ong K, Watson H, Kuehn C, Ochoa JA. Population-based analysis of the epidemiology and reintervention rates of cardiovascular stenting procedures: A Medicare study. Transcatheter Cardiovascular Therapeutics Conference, San Francisco, CA, November 7–11, 2011.

Bozic KJ, Lau E, Ong K, Kurtz SM, Vail TP, Rubash HE, Berry DJ. Comparative effectiveness of metal-on-metal and metal-on-polyethylene bearings in Medicare THA patients. Paper No. 9, 21st Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 4-6, 2011.

Edidin AA, Ong KL, Lau E, Wang N, Kurtz SM. Life expectancy following diagnosis of a vertebral compression fracture. North American Spine Society 26th Annual Meeting, Chicago, IL, November 2–5, 2011.

Zampini JM, Ong KL, Lau E, Edidin AA, Kurtz SM. Hospital outcomes of VCF treatment with kyphoplasty and vertebroplasty in the United States. North American Spine Society 26th Annual Meeting, Chicago, IL, November 2–5, 2011.

Kurtz SM, Lau E, Ong K, Carreon L, Glassman S. Infection risk for primary and revision instrumented lumbar spine fusion in the Medicare population. North American Spine Society 26th Annual Meeting, Chicago, IL, November 2–5, 2011.

Ong K, Rundell S, Liepins I, Markel D, Kurtz S. Biomechanical modeling of acetabular component polyethylene stresses, fracture risk, and wear rate following press-fit implantation. FDA/NHLBI/NSF Workshop on Computer Methods for Medical Devices, Silver Spring, MD, September 7–9, 2011.

Ong K, Watson H, Patel J, Kuehn C, Ochoa J. Bare-metal and drug-eluting coronary and peripheral vascular stent procedures: Utilization in the United States. 3rd North American Congress of Epidemiology, Montreal, Quebec, Canada, June 21–24, 2011.

Sanders AP, Tibbitts IB, Kakarla D, Siskey SD, Ochoa JA, Ong KL, Brannon RM. Contact mechanics of impacting slender rods: measurement and analysis. Paper No. 274, Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, Uncasville, CT, June 13–16, 2011.

Ong K, Watson H, Patel J, Kuehn C, Ochoa J. Bare-metal and drug-eluting coronary and peripheral vascular stent procedures: Utilization in the United States. Poster No. P138, Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke, Washington DC, May 12-14, 2011.

Ong K, Lau E, Patel J, Ochoa J. Epidemiology of heart valve repair and replacement procedures in the United States: A 15-Year perspective. Poster No. P52, Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke, Washington DC, May 12-14, 2011.

Edidin AA, Ong KL, Lau E, Kurtz SM. Distinguished abstract: Mortality risk for operated and non-operated vertebral fracture patients in the U.S. Medicare population. Society of Interventional Radiology 36<sup>th</sup> Annual Scientific Meeting, Chicago, IL, March 26-31, 2011.

Edidin AA, Ong KL, Lau E, Kurtz SM. Mortality risk for operated and non-operated vertebral fracture patients in the U.S. Medicare population. Paper No. OC40, ECCEO11-IOF European Congress on Osteoporosis and Osteoarthritis, Valencia, Spain, March 23-26, 2011.

Malkani A, Carroll C, Roberts C, Seligson D, Lau E, Kurtz SM, Ong K. Complication risk following treatment of acetabular fractures in the Medicare population. Paper No. 212, 78<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 15-19, 2011.

Bozic KJ, Ong K, Lau E, Kurtz S, Vail TP, Rubash HE, Berry DJ. Risk factors for periprosthetic joint infection and peri-operative mortality following total hip arthroplasty in Medicare patients. Paper No. 480, 78<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 15-19, 2011.

Curtin B, Malkani A, Lau E, Kurtz S, Ong K. Revision after total knee arthroplasty and unicompartmental knee arthroplasty in Medicare population. Poster No. 114, 78<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 15-19, 2011.

Kurtz SM, Ong KL, Greenwald S, Bozic K. Prevalence of primary metal-on-metal bearings in the United States. Scientific Exhibit No. 16, 78<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 15-19, 2011.

Edidin AA, Ong KL, Lau E, Kurtz SM. Mortality risk for operated and non-operated vertebral fracture patients in the Medicare population. Scientific Exhibit No. 56, 78<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 15-19, 2011.

Malkani A, Carroll C, Roberts C, Seligson D, Lau E, Day J, Kurtz S, Ong K. Do the outcomes justify changes in treatment patterns following hip fractures? Scientific Exhibit No. 77, 78<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 15-19, 2011.

Bozic KJ, Ong K, Lau E, Kurtz S, Vail TP, Rubash HE, Berry DJ. Risk factors of periprosthetic joint infection and peri-operative mortality following total hip arthroplasty in Medicare patients. Paper No. 7, 20<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 5–7, 2010.

Bozic KJ, Ong K, Lau E, Kurtz S, Vail TP, Rubash HE, Berry DJ. Patient-related risk factors for periprosthetic joint infection and postoperative joint infection and postoperative mortality following total knee arthroplasty in Medicare patients. Poster, 20<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 5–7, 2010.

Malkani AL, Carroll C, Roberts CS, Seligson D, Lau E, Kurtz S, Ong K. Risk of complications following treatment of intertrochanteric hip fractures with IM nails and plate fixation in the Medicare population. Paper No. 40, 26th Annual Meeting of the Orthopaedic Trauma Association, Baltimore, MD, October 13–16, 2010.

Malkani A, Carroll C, Roberts C, Seligson D, Lau E, Day J, Kurtz S, Ong K. Complication risk following treatment of intracapsular and extracapsular hip fractures in the Medicare population. Poster, 26th Annual Meeting of the Orthopaedic Trauma Association, Baltimore, MD, October 13–16, 2010.

Edidin AA, Ong KL, Lau E, Kurtz SM. Mortality risk for operated and non-operated vertebral fracture patients in the U.S. Medicare population. Paper No. 1207.1, Cardiovascular and Interventional Radiological Society of Europe, Valencia, Spain, October 2–6, 2010.

Edidin A, Ong K, Lau E, Kurtz S. Mortality risk for operated and non-operated vertebral fracture patients in the U.S. Medicare population. Paper No. 31, EuroSpine Annual Meeting, Vienna, Austria, September 15–17, 2010.

Bozic KJ, Lau E, Kurtz S, Ong K, Rubash H, Vail TP, Berry DJ. Patient-related risk factors for periprosthetic joint infection and postoperative mortality following total knee arthroplasty in Medicare patients. Knee Society Members Meeting, Rochester, MN, September 11, 2010.

Edidin AA, Ong KL, Lau E, Kurtz SM. Mortality risk for operated and non-operated vertebral fracture patients in the U.S. Medicare population. Paper No. OC23, Joint Congress of the International Osteoporosis Foundation and the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis, Florence, Italy, May 5–8, 2010.

Siskey SD, Day JS, Capello WN, D'Antonio JA, Kurtz SM, Ong KL. Late radiographic changes around a HA-coated stem: Feasibility of FE models to evaluate remodeling. Scientific Exhibit No. 17, 77<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, New Orleans, LA, March 9–13, 2010.

Ong KL, Lau E, Villarraga ML, Glassman S, Kurtz SM. Evaluating on-label and off-label use of BMP in the U.S. using administrative data. Scientific Exhibit No. 71, 77<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, New Orleans, LA, March 9–13, 2010.

Ong KL, Lau E, Villarraga ML, Glassman S, Kurtz SM. Evaluating on-label and off-label use of BMP in the U.S. using administrative data. Paper No. 19, 77<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, New Orleans, LA, March 9–13, 2010.

Ong KL, Ianuzzi A, Zhao K, Lau E, Kurtz SM. Interspinous process device procedures in the U.S.: Epidemiology and in-hospital complications. Poster No. 361, 77<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, New Orleans, LA, March 9–13, 2010.

Malkani A, Ong K, Lau E, Kurtz SM, Manley M. Early and late dislocation risk following primary hip arthroplasty in the Medicare population. Poster No. 48, 77<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, New Orleans, LA, March 9–13, 2010.

Ong K, Ianuzzi A, Lau E, Kurtz S, Ochoa J. Epidemiology and in-hospital complications associated with interspinous process decompression device procedures: The initial U.S. experience using national administrative data. Paper No. 428, 56<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, March 6–9, 2010.

Kurtz SM, Röder C, Ong K, Lau E, Widmer M, Maravic M, Gomez-Barrena E, Pina F, Manno V, Geesink R. International survey of primary and revision total knee replacement. Paper No. 214, 56<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, March 6–9, 2010.

Kurtz SM, Röder C, Lau E, Ong K, Widmer M, Maravic M, Gomez-Barrena E, Pina F, Manno V, Geesink R. International survey of primary and revision total hip replacement. Paper No. 365, 56<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, March 6–9, 2010.

Ong K, Villarraga M, Lau E, Carreon L, Kurtz S, Glassman S. Evaluating on-label and off-label use of BMP in the U.S. using administrative data. Poster No. 1406, 56<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, March 6–9, 2010.

Bozic KJ, Ong K, Lau E, Kurtz S, Vail TP, Rubash HE, Berry DJ. The comparative effectiveness of total hip arthroplasty bearing surfaces in the Medicare population. Poster No. 2356, 56<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, March 6–9, 2010.

Ong KL, Lau E, Villarraga ML, Carreon LY, Kurtz SM, Glassman S. Evaluating off-label use of BMP in the U.S. using administrative data. 5th Annual Philadelphia Spine Research Symposium, Philadelphia PA, December 9, 2009.

Edidin AA, Ong KL, Lau E, Kurtz SM. Mortality risk for operated and non-operated vertebral compression fracture patients in the Medicare population. International Society for Fracture Repair Osteoporosis Symposium, Monaco, France, December 4–5, 2009.

Ong K, Lau E, Ianuzzi A, Kurtz S, Villarraga M. Future demand in cervical, thoracic, and lumbar spine fusions: U.S. projections to 2020. Poster No. P114, 24<sup>th</sup> Annual Meeting of the North American Spine Society, San Francisco, CA, November 10–14, 2009.

Ong K, Ianuzzi A, Zhao K, Lau E, Kurtz S. Epidemiology and in-hospital complications following interspinous process decompression device procedures in the U.S. Poster No. P118, 24<sup>th</sup> Annual Meeting of the North American Spine Society, San Francisco, CA, November 10-14, 2009.

Malkani A, Ong K, Lau E, Kurtz SM, Manley M. Short-term dislocation risk following primary hip arthroplasty in the Medicare population. Lawrence D. Dorr Award Paper, 19<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 6-8, 2009.

Bozic KJ, Ong K, Lau E, Kurtz S, Vail TP, Rubash HE, Berry DJ. The comparative effectiveness of total hip arthroplasty bearing surfaces in the Medicare population. Paper No. 1, 19<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 6-8, 2009.

Moore T, Fisher J, Heller M, Lau E, Watson H, Ong K. Occupant injury in motor vehicle collisions: Using data from medical databases. Society of Automotive Engineers 2009 World Congress, Detroit, MI, April 20-23, 2009.

Day JS, Lau E, Ong KL, Manley MT, Kurtz SM. Where is the baby boomer bulge? Projections for the incidence of hip fractures in the United States. Paper No. 228, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22-25, 2009.

Edidin AA, Ong KL, Lau E, Kurtz SM. Mortality risk for operated and non-operated vertebral fracture patients in the Medicare population. Poster No. 1800, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22-25, 2009.

Ong KL, Bozic KJ, Lau E, Vail TP, Rubash HE, Berry DJ, Kurtz SM. Epidemiology of metal-on-metal total hip arthroplasty and hip resurfacing arthroplasty in the U.S. Poster No. 2017, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22-25, 2009.

Day JS, Lau E, Ong KL, Williams GR, Ramsey ML, Kurtz SM. Prevalence and projections for upper extremity arthroplasty in the United States. Poster No. 1927, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22-25, 2009.

Ong KL, Lau E, Suggs J, Kurtz SM, Manley MT. Short-term complication risk following primary and revision total joint arthroplasty. Poster No. 2459, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22-25, 2009.

Johanson NA, Keinbart R, Cerynik D, Ong KL, Lau E, Kurtz SM. Temporal relationship between knee arthroscopy and arthroplasty: A quality measure for joint care? Paper and Poster No. 367, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22-25, 2009.

Ong KL, Siskey S, Bastian A, Hozack W, Puri L, Merritt P, Nogler M, Kreuzer S, Lovell T. Influence of length and medial-lateral geometry on femoral stem biomechanics. Poster No. 2411, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22–25, 2009.

Bozic KJ, Kurtz SM, Lau E, Ong K, Chiu V, Vail TP, Rubash HE, Berry DJ. The epidemiology of total hip arthroplasty bearing surface use in the United States. Poster No. 2451, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22–25, 2009.

Bozic KJ, Kurtz SM, Lau E, Ong K, Vail TP, Rubash HE, Berry DJ. The epidemiology of revision total knee arthroplasty in the United States. Poster No. 2471, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22–25, 2009.

Day JS, Ong KL, Manley MT, Kurtz SM. A comparison of peri-prosthetic bone remodeling for extensively coated and proximally coated femoral stems. Poster No. 2247, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22–25, 2009.

Ong KL, Lau E, Suggs J, Kurtz SM, Manley MT. Relative risk of subsequent revision following revision total joint arthroplasty. Poster No. 2456, 55<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, February 22–25, 2009.

Edidin AA, Ong K, Lau E, Kurtz S. Mortality risk for operated and non-operated vertebral fracture patients in the Medicare population. Paper No. 312, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Bozic KJ, Kurtz SM, Lau E, Ong K, Vail T, Rubash H, Berry D. The epidemiology of revision total knee arthroplasty in the United States. Scientific Exhibit No. 84, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Kurtz SM, Lau E, Ong K, Zhao K, Kelly M, Bozic K. National projections of younger patient demand for primary and revision joint replacement. Paper No. 183, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Ong K, Lau E, Suggs J, Manley M, Kurtz SM. Complication risk following revision hip and knee arthroplasty in the Medicare population. Paper No. 181, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Ong K, Lau E, Mont M, Kurtz SM, Manley M. Correlation of procedure time and surgeon volume with primary knee outcomes: A Medicare study. Paper No. 252, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Bozic KJ, Kurtz SM, Lau E, Ong K, Vail T, Rubash H, Berry D. The epidemiology of revision total knee arthroplasty in the United States. Poster No. 116, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Bozic KJ, Kurtz S, Lau E, Ong K, Vail T, Berry D. The epidemiology of revision total hip arthroplasty in the United States. Paper No. 182, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Bozic KJ, Kurtz SM, Lau E, Ong K, Vail T, Rubash H, Berry D. The epidemiology of THA bearing usage in the United States. Paper No. 616, 76<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Las Vegas, NV, February 25–28, 2009.

Kurtz SM, Lau E, Ong K, Bozic K, Parvizi J, Berry D. Prosthetic joint infection risk following total hip and knee arthroplasty in the Medicare population. Paper No. 4, 18<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 7–9, 2008.

Bozic KJ, Kurtz S, Lau E, Ong K, Vail T, Berry D. The epidemiology of revision total hip arthroplasty in the United States. Lawrence D. Dorr Award Paper, Paper No. 30, 18<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 7–9, 2008.

Kurtz SM, Lau E, Ong K, Zhao K, Kelly M, Bozic K. Young patient demand for primary and revision joint replacement: National projections from 2010 to 2030. Paper No. 31, 18<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 7–9, 2008.

Bozic KJ, Kurtz S, Lau E, Ong K, Vail T, Rubash H, Berry D. Premium bearing surface usage in total hip arthroplasty. Paper No. 41, 18<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 7–9, 2008.

Bozic KJ, Kurtz S, Lau E, Ong K, Vail TP, Rubash HE, Berry DJ. The epidemiology of revision total knee arthroplasty in the United States. Poster No. 4, 18<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 7–9, 2008.

Ong K, Lau E, Suggs J, Manley M, Kurtz SM. Relative risk of complications following revision hip and knee arthroplasty in the Medicare population. Poster No. 37, 18<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 7–9, 2008.

Berry D, Kurtz SM, Ong K, Lau E, Bozic K, Parvizi J. Incidence and risk factors for prosthetic joint infection following total knee arthroplasty in the Medicare population. 25<sup>th</sup> Annual Knee Society Interim Meeting, Denver, CO, October 2–4, 2008.

Vail T, Bozic KJ, Kurtz SM, Lau E, Ong K, Rubash H, Berry D. The epidemiology of revision total knee arthroplasty in the United States. 25<sup>th</sup> Annual Knee Society Interim Meeting, Denver, CO, October 2–4, 2008.

Kurtz S, Ong K, Lau E, Bozic K, Parvizi J. Infection incidence and risk factors following total hip and total knee arthroplasty in the U.S. Medicare population. 27<sup>th</sup> Annual Meeting of the European Bone and Joint Infection Society, Barcelona, Spain, September 18–20, 2008.

Latif AMH, Ong K, Siskey S, Field RE. A combined finite element and radiological analysis of the proximal femur following hip resurfacing arthroplasty. 2<sup>nd</sup> Prize research paper, BOA Annual Congress, Liverpool, UK, September 16–19, 2008.

Ong K, Rundell S, Liepins I, Laurent R, Markel D, Kurtz S. Biomechanical evaluation of acetabular component polyethylene stresses, fracture risk, and wear rate during press-fit implantation. Poster No. P10, 2<sup>nd</sup> Joint Meeting of the Bone Research Society and the British Orthopaedic Research Society, Manchester, UK, June 23–25, 2008.

Markel D, Day J, Siskey R, Liepins I, Kurtz S, Ong K. Deformation of metal-backed acetabular components and the impact of liner thickness in a cadaveric model. Poster No. P18, 2<sup>nd</sup> Joint Meeting of the Bone Research Society and the British Orthopaedic Research Society, Manchester, UK, June 23–25, 2008.

Ong K, Lau E, Moore T, Heller M. Characteristics of accidental falls involving re-surgery of medical implants. XXth Annual International Occupational Ergonomics and Safety Conference Chicago, IL, June 12–13, 2008.

Latif AMH, Ong KL, Siskey S, Field R. A combined finite element and radiological analysis of the proximal femur following hip resurfacing arthroplasty. Paper No. F400, 9th EFORT Congress, Nice, France, May 29–June 1, 2008.

Latif AMH, Ong KL, Siskey S, Field R. Bone remodelling in the proximal femur post hip resurfacing arthroplasty. Paper No. O-026, 17<sup>th</sup> Annual Meeting of the European Orthopaedic Research Society, Madrid, Spain, April 24–26, 2008.

Latif AMH, Ong KL, Siskey S, Field R. A combined finite element and radiological analysis of the proximal femur following hip resurfacing arthroplasty. Paper No. O-005, 17<sup>th</sup> Annual Meeting of the European Orthopaedic Research Society, Madrid, Spain, April 24–26, 2008.

Bozic K, Kurtz S, Lau E, Ong K, Vail T, Berry D. Revision total joint arthroplasty: Early insights into cause of failure, type of revision from newly implemented diagnosis and procedure codes. Paper No. 235. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Kurtz S, Lau E, Ong K, Zhao K, Kelly M, Bozic K. Future young patient demand for primary and revision joint replacement: National Projections from 2010 to 2030. Poster No. 1754. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Day J, Beredjiklian P, Lau E, Ong K, Kurtz S. Trends in the incidence and treatment of wrist fractures in the Medicare population. Poster No. 1026. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Kurtz S, Ong K, Bartel D. Revisiting the effects of conformity, thickness, and material properties for contemporary polyethylene acetabular inserts. Poster No. 1765. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Manley M, Ong K, Lau E, Kurtz S. THA and TKA survivorship in the United States Medicare population: Effect of hospital and surgeon procedure volume. Paper No. 220. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Markel D, Day J, Siskey R, Liepins I, Kurtz S, Ong K. Deformation of metal-backed acetabular components and the impact of liner thickness in a cadaveric model. Poster No. 1769. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Ong K, Day J, Geesink R, Manley M, Kurtz S. Biomechanical comparison of two proximally-coated femoral stems: Effects of stem length and distal finish. Poster No. 1824. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Ong K, Latif A, Siskey S, Field R. A combined finite element and radiological analysis of the proximal femur following hip resurfacing arthroplasty. Poster No. 1825. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Ong K, Lau E, Manley M, Kurtz S. Association between procedure duration and THA and TKA survivorship in the United States Medicare population. Poster No. 1737. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Ong K, Rundell S, Liepins I, Laurent R, Markel D, Kurtz S. Biomechanical evaluation of acetabular component polyethylene stresses, fracture risk, and wear rate during press-fit implantation. Poster No. 1755. 54<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2–5, 2008.

Ong K, Lau E, Ianuzzi A, Villarraga M, Kurtz S. Future demand in spine fusions: U.S. projections to 2030. Scientific Exhibit SE64. 75<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA, March 5–9, 2008.

Manley M, Ong K, Lau E, Kurtz S. THA and TKA survivorship in the United States Medicare population: Effect of hospital and surgeon procedure volume. Paper 581. 75<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA, March 5–9, 2008.

Kurtz S, Lau E, Manley M, Ong K. Association between procedure duration and THA and TKA survivorship in the United States Medicare population. Poster P066. 75<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA, March 5–9, 2008.

Ong KL, Lau E, Manley M, Kurtz SM. THA and TKA survivorship in the United States Medicare population: Effect of hospital and surgeon procedure volume. Best Poster Award, Poster No. 181. 17<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 2–4, 2007.

Ong K, Lau E, Manley M, Kurtz SM. Association between procedure duration and THA and TKA survivorship in the United States Medicare population. Paper No. 4. 17<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 2–4, 2007.

Markel D, Day J, Siskey R, Kurtz S, Ong K, Liepins I. Deformation of metal-backed acetabular components and the impact of liner thickness in a cadaveric model. Paper A3-2. 20<sup>th</sup> Annual Symposium of the International Society for Technology in Arthroplasty, Paris, October 4–6, 2007.

Ong K, Rundell S, Markel D, Kurtz S. Biomechanical evaluation of acetabular component polyethylene stresses, fracture risk, and wear rate during press-fit implantation. Poster P22. 20<sup>th</sup> Annual Symposium of the International Society for Technology in Arthroplasty, Paris, October 4–6, 2007.

Ong K, Day J, Manley M, Kurtz S. Effects of surgical variations in hip resurfacing arthroplasty. Paper C655/057. Institution of Mechanical Engineers, “Engineers & Surgeons: Joined at the Hip,” London, April 19–21, 2007.

Manley M, Ong K, Kurtz S, Rushton N, Field R. Biomechanics of a PEEK horseshoe-shaped cup: Comparisons with a predicate deformable cup. Paper C655/058. Institution of Mechanical Engineers, “Engineers & Surgeons: Joined at the Hip,” London, April 19–21, 2007.

Ong K, Bowden A, Manley M, Kurtz S, Munting E. Biomechanics of a stemless, metaphyseal fixation femoral design: Effects of screw fixation and interface conditions. Paper C655/059. Institution of Mechanical Engineers, “Engineers & Surgeons: Joined at the Hip,” London, April 19–21, 2007.

Day J, Ong KL, Kurtz SM, Manley M. A finite element comparison of bone remodeling around bone-conserving femoral stems. Poster No. 552. Trans. 8<sup>th</sup> EFORT Congress, Florence, Italy, May 11–15, 2007.

Kurtz SM, Lau E, Havelin L, Dybvik E, Ong KL, Malchau H. Comparison of arthroplasty survivorship in the U.S. and Scandinavia. Free Paper No. F176. Trans. 8<sup>th</sup> EFORT Congress, Florence, Italy, May 11–15, 2007.

Ong KL, Day J, Kurtz SM, Field R, Manley M. Role of surgical variations on initial bone remodeling around hip resurfacing arthroplasty. Poster No. 727. Trans. 8<sup>th</sup> EFORT Congress, Florence, Italy, May 11–15, 2007.

Lau E, Kurtz SM, Havelin L, Dybvik E, Ong K, Malchau H. Arthroplasty survivorship in the US and Scandinavia: A Medicare-based comparison. Poster No. 1753. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Manley M, Ong K, Kurtz SM, Rushton N, Field R. Biomechanics of a PEEK horseshoe-shaped cup: Comparisons with a predicate deformable cup. Poster No. 1717. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Ong K, Bowden A, Manley M, Kurtz SM, Munting E. Biomechanics of a stemless, metaphyseal fixation femoral design: Effects of screw fixation and interface conditions. Poster No. 1714. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Ong K, Day J, Kurtz SM, Field R, Manley M. Adaptive bone remodeling around the Birmingham hip resurfacing arthroplasty. Poster No. 1693. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Ong K, Day J, Kurtz SM, Field R, Manley M. Role of surgical variations on initial bone remodeling around the Birmingham resurfacing arthroplasty. Poster No. 1709. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Ong K, Lau E, Kurtz SM, Chin K, Ianuzzi A, Villarraga ML. Cervical, thoracic, and lumbar fusion rates in the U.S.: Perspective from two health databases. Poster No. 1016. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Ong K, Lau E, Kurtz SM, Chin K, Ianuzzi A, Villarraga ML. Projections to 2030 of the prevalence of primary and revision spine fusions in the U.S. Poster No. 1070. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Ong K, Lau E, Mowat F, Saleh K, Schmier J, Kurtz SM. Projected economic burden of revision THA and TKA for Medicare enrollees in the next decade. Poster No. 0746. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Kurtz SM, Lau E, Ong K, Schmier J, Parvizi J. The future infection burden in the United States: National projections from 2005 to 2030. Poster No. 0747. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Day J, Ong K, Bowden A, Manley M, Kurtz SM. A finite element comparison of bone conserving femoral stems. Poster No. 1715. 53<sup>rd</sup> Annual Meeting of the Orthopaedic Research Society, San Diego, CA, February 11–14, 2007.

Ong K, Lau E, Mowat F, Saleh K, Schmier J, Kurtz SM. Projected economic burden of revision THA and TKA for Medicare enrollees in the next decade. Paper No. 22. 74<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 14–18, 2007.

Kurtz SM, Ong K, Schmier J, Mowat F, Lau E. The surgeons' revision burden: Analysis of caseload disparities in the United States (1990 to 2003). Poster No. 134. 74<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 14–18, 2007.

Kurtz SM, Ong KL, Schmier J, Mowat F, Saleh K, Malchau H, Lau E. Future clinical and economic impact of revision THA and TKA. Scientific Exhibit No. SE39. 74<sup>th</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, San Diego, CA, February 14–18, 2007.

Lau E, Kurtz SM, Ong K. Survival of hip and knee arthroplasty in the U.S. using Medicare data. Poster No. 33. 16<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 3–5, 2006.

Manley M, Ong K, Kurtz SM, Rushton N, Field R. Biomechanical assessment of a novel deformable acetabular cup design. Poster No. 188. British Hip Society 2006 Annual Meeting, Edinburgh, UK, March 1–3, 2006.

Ong K, Kurtz SM, Day J, Manley M, Rushton N, Field R. Biomechanics of the Birmingham hip resurfacing arthroplasty. Poster No. 187. British Hip Society 2006 Annual Meeting, Edinburgh, UK, March 1–3, 2006.

Kurtz SM, Lau E, Zhao K, Mowat F, Ong K, Halpern M. The future burden of hip and knee revisions: U.S. projections from 2005 to 2030. Paper No. PAPR403. 73<sup>rd</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, IL, March 22–26, 2006.

Ong K, Lau E, Mowat F, Kurtz SM, Chin K, Villarraga ML. Changes in revision spine fusion rates at all levels in the United States from 1990–2003. Poster No. P394. 73<sup>rd</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, IL, March 22–26, 2006.

Ong KL, Day J, Manley M, Kurtz SM. Biomechanics of the Birmingham hip resurfacing arthroplasty. Scientific Exhibit No. SE13. 73<sup>rd</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, IL, March 22–26, 2006.

Kurtz SM, Ong KL, Manley M. Periprosthetic bone stresses in modular acetabular components of hip replacement for young patients. Scientific Exhibit No. SE21. 73<sup>rd</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, IL, March 22–26, 2006.

Kurtz SM, Lau E, Zhao K, Mowat F, Ong KL, Halpern M. The future burden of hip and knee revisions: U.S. projections from 2005 to 2030. Scientific Exhibit No. SE53. 73<sup>rd</sup> Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, IL, March 22–26, 2006.

Kurtz S, Lau E, Mowat F, Ong K, Halpern M. Nationwide trends in revision surgery caseload in the U.S. from 1990–2003. Paper No. 179. 52<sup>nd</sup> Annual Meeting of the Orthopaedic Research Society, Chicago, IL, March 19–22, 2006.

Kurtz S, Lau E, Ong K, Mowat F, Halpern M. The future revision burden in the United States: National projections from 2005 to 2030. Poster No. 1576. 52<sup>nd</sup> Annual Meeting of the Orthopaedic Research Society, Chicago, IL, March 19–22, 2006.

Ong K, Day J, Manley M, Kurtz S. Biomechanics of the Birmingham hip resurfacing arthroplasty: Effects of fixation and interface conditions. Poster No. 528. 52<sup>nd</sup> Annual Meeting of the Orthopaedic Research Society, Chicago, IL, March 19–22, 2006.

Manley M, Ong K, Kurtz S, Rushton N, Field R. Biomechanical assessment of a novel deformable acetabular cup design. Poster No. 517. 52<sup>nd</sup> Annual Meeting of the Orthopaedic Research Society, Chicago, IL, March 19–22, 2006.

Kurtz S, Manley M, Ong K. Shell material properties and periprosthetic bone stresses in modular acetabular components of hip replacement for young patients. Poster No. 486. 52<sup>nd</sup> Annual Meeting of the Orthopaedic Research Society, Chicago, IL, March 19–22, 2006.

Ong K, Chin K, Lau E, Mowat F, Kurtz S, Villaraga M. Age and gender prevalence of revision spine fusion rates in the United States from 1990 to 2003. Poster No. 1265. 52<sup>nd</sup> Annual Meeting of the Orthopaedic Research Society, Chicago, IL, March 19–22, 2006.

Lau E, Ong K, Kurtz SM, Mowat F, Schmier J, Halpern M. Racial differences in hip and knee arthroplasty in the United States. Poster No. 1. 15<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 4–6, 2005.

Lau E, Mowat F, Ong K, Halpern M, Schmier J, Kurtz SM. The future burden of hip and knee revisions: U.S. projections from 2005 to 2030. Poster No. 2. 15<sup>th</sup> Annual Meeting of the American Association of Hip and Knee Surgeons, Dallas, TX, November 4–6, 2005.

Ong K, Manley M, Kurtz SM. Biomechanics of the Birmingham hip resurfacing arthroplasty. Paper A3-4. 18<sup>th</sup> International Symposium of the International Society for Technology in Arthroplasty, Kyoto, Japan, September 29–October 2, 2005.

Ong K, Chin K, Lau E, Mowat F, Kurtz SM, Villarraga ML. Age and gender prevalence of revision spine fusion rates in the United States from 1990 to 2003. Philadelphia Spine Research Symposium, Philadelphia, PA, September 27, 2005.

Kurtz S, Mowat F, Ong K, Chan N, Lau E, Halpern M. Hip and knee arthroplasty revision rates in the United States: Implications for a national registry. Paper No. 265. 51<sup>st</sup> Annual Meeting of the Orthopaedic Research Society, Washington, DC, February 20–23, 2005.

Mowat F, Ong K, Chan N, Lau E, Halpern M, Kurtz S. Economic burden of hip and knee arthroplasty procedures in the Medicare population. Poster No. 58. 51<sup>st</sup> Annual Meeting of the Orthopaedic Research Society, Washington, DC, February 20–23, 2005.

Ong K, Villarraga M, Teti S, Sankaran M, Turner A, Seim H, Schwardt J. Vertebral augmentation with calcium phosphate cements: Bioceramic integration characteristics and compressive strength in ovine vertebral bodies. Paper No. 272. 51<sup>st</sup> Annual Meeting of the Orthopaedic Research Society, Washington, DC, February 20–23, 2005.

Kurtz SM, Mowat F, Ong K, Chan N, Lau E, Halpern M. The revision burden for hip and knee arthroplasty in the United States. Trans. 72<sup>nd</sup> Annual Meeting of the American Association of Orthopedic Surgeons, P058, 2005.

Ong K, Villarraga ML, Mazzucco D, Jaekel D, Kurtz SM, Edidin A. Mechanical properties of freshly-procured and previously-frozen human cadaveric nucleus. Trans. 72<sup>nd</sup> Annual Meeting of the American Association of Orthopedic Surgeons, P319, 2005.

Ong K, Bartel D. Extent of reamed acetabular surface roughness is critical to initial implant stability. Poster No. 1424. 50<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 7–10, 2004.

Ong K, Cui Z, Santner T, Notz W, Bartel D. Stochastic analysis of acetabular component stability incorporating patient-dependent and surgical variables. Poster No. 1423. 50<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 7–10, 2004.

Ong K, Bartel D. Bone ingrowth conditions are sensitive to the presence of trapped periacetabular fluid. Poster No. 1359. 49<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, February 2–5, 2003.

Ong K, Bartel D. Inherent acetabular reaming variations are critical to implant stability at small interference fits. Poster No. 1360. 49<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, February 2–5, 2003.

Ong K, Gunsallus K, Notz W, Lehmann J, Santner T, Bartel D. Acetabular cup designs have more influence on mechanical stability than joint loading and surgical variations. Paper No. 190. 48<sup>th</sup> Annual Meeting of the Orthopaedic Research Society, Dallas, TX, February 10–13, 2002.

Ong K, Gunsallus K, Ryan M, Sculco T, Wright T, Bartel D. Comparison of the initial stability of hemispherical and elliptical acetabular cups. Poster No. 765. American Society of Mechanical Engineers Summer Bioengineering Conference, Snowbird, UT, June 27–July 1, 2001.

## **Peer Reviewer**

*Clinical Orthopaedics and Related Research*  
*Clinical Medicine & Research*  
*Computer Methods and Programs in Biomedicine*  
*Journal of Bone and Joint Surgery*  
*Journal of Biomedical Materials Research*  
*Acta Biomaterialia*  
*Medical Engineering and Physics*  
*Journal of Arthroplasty*  
*Journal of Orthopaedic Research*  
*Journal of Biomechanical Engineering*  
*Journal of Testing and Evaluations*  
*Arthritis Care and Research*  
*Journal of Clinical Epidemiology*

## **Editorial Board**

*The Journal of Arthroplasty*

### **Selected Invited Seminars**

Trends in bearing surface utilization in the United States. 5<sup>th</sup> Annual Hip Joint Course: The Spectrum of Treatment for Adult Hip Disorders, Baltimore, MD, August 26-28, 2011.

Utilization of cost-effectiveness endpoints and data to support commercialization. 5<sup>th</sup> Annual Medical Device Clinical Research and Reimbursement Conference, Dallas, TX, March 7-8, 2011.

Dislocation rates and associated revision risk for young total hip arthroplasty patients. 4<sup>th</sup> Annual Hip Joint Course: Treatments for Young Patients with Hip Arthritis, Baltimore, MD, August 27–29, 2010.

Epidemiology of resurfacing in the United States. 4<sup>th</sup> Annual Hip Joint Course: Treatments for Young Patients with Hip Arthritis, Baltimore, MD, August 27–29, 2010.

The Nationwide Inpatient Sample (NIS) as a Source of Data on Pedestrian and Cyclist Injuries (presented by Robert Lange). Pedestrian Safety, SAE 2010, Government/Industry Meeting, Washington DC, January 26–29, 2010.

Epidemiology of hip resurfacing arthroplasty in the United States. Hip Joint Preservation and Resurfacing Arthroplasty Course, Baltimore, MD, September 4–5, 2009.

Epidemiology of resurfacing in the United States. 3<sup>rd</sup> Annual Hip Joint Preservation and Resurfacing Arthroplasty Course, Baltimore, MD, September 4–5, 2009.

Understanding health outcomes: The utility of healthcare databases. Grand Rounds Lecture, Drexel University, College of Medicine, Philadelphia, PA, March 26, 2009.

Biomechanics—Concepts/Joints. Basic Science Lecture, Thomas Jefferson University, Department of Orthopaedic Surgery, Philadelphia, PA, March 16, 2009.

Use of health economics data to supplement clinical evidence. Medical Device Clinical Research and Reimbursement Conference, Phoenix, AZ, December 8–9, 2008.

Considerations for bone conserving designs and thinner cups. American Society for Testing and Materials (ASTM), “Future of Arthroplasty Standards: Planning for the Next Five Years” workshop, St. Louis, MO, November 18, 2008.

Medical device failures and premises liability—Looking into the crystal ball. Swartz Campbell LLC Continuing Legal Education seminar, Philadelphia, PA, June 3, 2008.

Hip resurfacing: Art and science as of 2008. Orthopaedic Research Society-American Academy of Orthopaedic Surgeons Combined Symposium, San Francisco, CA, March 5, 2008.

Have contemporary designs reached maturity? First Annual U.S. Comprehensive Course on Total Hip Resurfacing Arthroplasty, Annapolis, MD, November 8–10, 2007.

Acetabular fixation in total hip replacement. Mechanical Engineering, Cornell University, Ithaca, NY, November 8, 2002.

Finite element application: Total hip replacements. Mechanical Engineering, Cornell University, Ithaca, NY, April 11, 2002.

Mechanics of acetabular components: Effects of cup design. Arthroplasty Conference, Hospital for Special Surgery, New York, NY, December 6, 2001.

### **Academic Appointments**

Visiting Research Professor, Drexel University, School of Biomedical Engineering, Science and Health Systems

### **Professional Affiliations**

Orthopaedic Research Society  
American Society for Testing and Materials  
American Society of Mechanical Engineers  
National Society of Professional Engineers