

Matthew J. Kraay, M.S., M.D.

Department of Orthopaedic Surgery
Case Western Reserve University School of Medicine
University Hospitals Case Medical Center
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CURRENT POSITIONS:

Kingsbury G. Heiple, MD and Fred A. Lennon Professor of Orthopaedics—Endowed Chair,
Case Western Reserve University / University Hospitals Case Medical Center

Director, Division of Joint Reconstruction and Arthritis Surgery, Department of Orthopaedic Surgery,
University Hospitals Case Medical Center

EDUCATION:

September 1979 - June 1983	Doctor of Medicine Wayne State University School of Medicine Detroit, Michigan
September 1977 - August 1978	Master of Science—Bioengineering The University of Michigan Ann Arbor, Michigan
September 1973 - June 1977	Bachelor of Science—Mechanical Engineering and Biomedical Engineering Michigan State University East Lansing, Michigan

POSTGRADUATE TRAINING:

August 1990 - July 1991	Fellow and Junior Attending Surgeon Comprehensive Arthritis Program The Hospital for Special Surgery
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Cornell University Medical College
New York City, New York

Fellow in Orthopaedic Surgery
Memorial Sloan Kettering Cancer Center
Cornell University Medical College
New York City, New York

Orthopaedic Consultant - Hemophilia Clinic
The New York Hospital
New York City, New York

July 1989 - July 1990

Fellow in Total Joint Replacement and Adult
Reconstructive Surgery
Department of Orthopaedic Surgery
University Hospitals of Cleveland/
Case Western Reserve University
Cleveland, Ohio

July 1983 - June 1989

Resident - Orthopaedic Surgery
University Hospitals of Cleveland/
Case Western Reserve University
Cleveland, Ohio

July 1984 - June 1985

Allen Surgical Research Fellow
Orthopaedic Engineering
Case Western Reserve University
Cleveland, Ohio

PROFESSIONAL APPOINTMENTS

September 2006- present

Kingsbury G. Heiple, MD and Fred A. Lennon
Professor of Orthopaedics – Endowed Chair
Case Western Reserve University
University Hospitals Case Medical Center

July 2006- present

Professor of Orthopaedics
Case Western Reserve University School of Medicine

August 2005- present

Fellowship Director, Division of Joint Reconstruction and
Arthritis Surgery
Department of Orthopaedic Surgery
University Hospitals of Cleveland

July 1995 – present

Director, Division of Joint Reconstruction and
Arthritis Surgery
Department of Orthopaedic Surgery
University Hospitals of Cleveland

July 2001 – June 2006	Associate Professor of Orthopaedics Case Western Reserve University School of Medicine
June 1992 – July 2001	Assistant Professor of Orthopaedics Case Western Reserve University School of Medicine Orthopaedic Consultant – Hemophilia Clinic University Hospitals of Cleveland
August 1991 - June 1992	Instructor-Orthopaedic Surgery Case Western Reserve University School of Medicine
August 1991 - present	Attending Orthopaedic Surgeon University Hospitals of Cleveland Cleveland, Ohio
August 1991 - October 2000	Attending Orthopaedic Surgeon Wade Park VA Medical Center Cleveland, Ohio
May 1994 – September 2000	Staff Orthopaedic Surgeon Southwest General Hospital Middleburg Heights, Ohio
August 1991 - July 1993	Attending Orthopaedic Surgeon Metrohealth Medical Center Cleveland, Ohio

HONORS AND AWARDS

Board of Governors, College of Engineering Alumni Society,
The University of Michigan, 2009-2012.

Selected as one of the 2009-2010 “Best Doctors in America”
by Best Doctors, Inc.

Selected as a “Top Doc” in Orthopaedic Surgery by
Cleveland Magazine, March 2009

Selected as a “Top Doc” in Orthopaedic Surgery by
Cleveland Magazine, March 2008.

Selected as one of the 2007-2008 “Best Doctors in America”
by Best Doctors, Inc.

Selected as a “Top Doc” in Orthopaedic Surgery by
Cleveland Magazine, March 2007

Volunteer Leadership Award – The Arthritis Foundation of Northeastern Ohio, May 2006

Marquis's Who's Who in America, 2006- present

Selected as a "Top Doc" in Orthopaedic Surgery by Cleveland Magazine, February 2006

Best Case Study at Second Annual Joint Arthroplasty Young Investigators Conference, "Multidisciplinary Approach to Total Knee Arthroplasty for Post-traumatic Arthritis", Fitzgerald, SJ and Kraay, MJ. 2006

2006 Hip Society Otto Aufranc Award for "Clinical Significance of In Vivo Degradation for Polyethylene in Total Hip Arthroplasty", Kurtz, SM, Hozack, W, Purtill, J, Marcolongo, M, Kraay, MJ, Goldberg, VM, Sharkey, P, Parvisi, J, Rimnac, CM, Edinin, AA.

Selected as one of the 2005-2006 "Best Doctors in America" by Best Doctors, Inc.

Elected to membership in American Orthopaedic Association, June 2005

Selected as one of five "Top Doctors" in Orthopaedic Surgery by survey of 3000 physicians in Northeastern Ohio, *Northern Ohio Live Magazine* - April 2005

Selected as a "Top Doctor" in Orthopaedic Surgery-Joint Replacement by physicians in Northeastern Ohio *Northern Ohio Live Magazine* - April 2001

Aesculapians
Wayne State University School of Medicine
Detroit, Michigan

Tau Beta Pi Engineering Honor Society
Michigan State University
East Lansing, Michigan

The Honors College
Michigan State University
East Lansing, Michigan

PROFESSIONAL LICENSURE / BOARD CERTIFICATION

Diplomate-National Board of Medical Examiners

New York State Medical License: #182052

Ohio State Medical License: #35-051121

American Board of Orthopaedic Surgery -
Board Certified, 1993

American Board of Orthopaedic Surgery-
Recertified 1/1/2004 – 12/31/2013

PROFESSIONAL AFFILIATIONS

Member – American Orthopaedic Association

Member – Shands Circle, Orthopaedic Research and Education Foundation

Member – American Society for Testing and Materials

Member - American Association of Hip and Knee Surgeons

Fellow - American Academy of Orthopaedic Surgeons

Member - Cleveland Orthopaedic Society

Member - The Charles Herndon Society

Member - The Hospital for Special Surgery Alumni Association

Member - Wayne State University School of Medicine Alumni Association

RESEARCH GRANTS

Principal Co-investigator: Orthopaedic Research and
Education Foundation Grant-"Fatigue Damage Estimation in
Retrieved Bulk Cortical Allografts"
1992: \$54,097 1993: \$52,292

Principal Investigator: Multi-dose, Open Label Clinical Trial
of the Safety and Efficacy of Enoxaparin Compared to
Unfractionated Heparin for the Prevention of Post-operative
Venous Thromboembolism Following TKR.
Sponsored by Rhone-Poulenc Rorer Pharmaceuticals.

Principal Investigator: Randomized, Open-label Comparison of the Safety and Efficacy of Lovenox vs. Adjusted dose coumadin for the Prevention of Thromboembolic disease Following THA.

Sponsored by Rhone-Poulenc Rorer Pharmaceuticals.

Co-investigator: Epoch Hip Prosthesis Multicenter Trial
Zimmer, Inc.

Co-investigator: Open-labeled, randomized, parallel group Study comparing the preoperative administration of Procrit (Epoetin alfa) to the standard of care in blood conservation for primary total knee reconstruction. Sponsored by Orthobiotech, Inc.

Principal Investigator: Prospective Randomized Study of Zirconia Ceramic versus Co-Cr-Mo Alloy Femoral Heads with Respect to Wear of the Acetabular Cups in Total Hip Arthroplasty. 1999 OREF Prospective Clinical Research Award Grant. Funding period:1999-2002. Amount: \$142,387

Co-investigator: *MBK* Mobile Bearing Knee Multicenter Trial, Zimmer, Inc.

Co-investigator: Mechanics and Performance of Traceable UHMWPE Hip Implants. Funded by PHS. Co-investigators: S.M. Kurtz, M. Marcolongo, A. Edidin, W. Hozack, C. Rimnac, V. M. Goldberg. Amount: \$1,024,347.

Co-investigator: Conserve Plus Resurfacing Total Hip Arthroplasty, Wright Medical Products, Inc.

Zimmer EPOCH II Composite Hip Stem Evaluation Team

Zimmer WAVE II MIS Tibial Component Evaluation Team

Investigation of In vivo Oxidation in Conventional and Highly Crosslinked UHMWPE Hip and Knee Components; Zimmer, Inc. \$93,750.

Mechanics and Performance of Traceable UHMWPE Implants, Co-investigators: S.M. Kurtz, M. Marcolongo, A. Edidin, W. Hozack, C. Rimnac, V. M. Goldberg, P. Sharkey, J. Purtill, J Parvasi, et al. Total amount \$2,848,559. Funded by NIH, 2005-2010.

Principal Investigator: Investigation of in-vivo oxidation in historic, conventional and highly cross-linked UHMWPE knee components. Rimnac, CM – Co-PI, Funded by Zimmer, Inc. Funding period: 11/1/2005- 10/31/2008. Total amount: \$326,188.

CURRENT HOSPITAL / ACADEMIC / PROFESSIONAL COMMITTEES

Program Committee, Knee Reconstruction Subcommittee, The American Academy of Orthopaedic Surgeons, March 2008-2012

Co-Chair, Medical and Scientific Committee, The Arthritis Foundation of Northeast Ohio, 2009-2012

Transfusion Medicine Committee, University Hospitals Case Medical Center, 2006- present

Perioperative Quality Improvement Committee, University Hospitals Case Medical Center, 2006- present

Perioperative Medicine and Service Committee, University Hospitals of Cleveland, 2004-present

MIS Advisory Statement Task Force – American Academy of Orthopaedic Surgeons/AAHKS, 2004-present

Board of Directors, The Arthritis Foundation of Northeast Ohio, 2003-2011

Medical and Scientific Committee, The Arthritis Foundation of Northeast Ohio, 2002-2008

Orthopaedic Research and Education Foundation, Cleveland Area Fundraising Campaign Chairman, 1997- present

PREVIOUS HOSPITAL / ACADEMIC / PROFESSIONAL COMMITTEES

Co-chairman, ASTM Symposium on Titanium, Niobium, Zirconium and Tantalum for Medical and Surgical Applications, Washington, D.C., November 9-10, 2004

Biomedical Engineering Committee, The American Academy of Orthopaedic Surgeons, February 2001 – 2008

Antibiotic Bone Cement Subcommittee, American Academy of Orthopaedic Surgeons, 2003-2005

Clinical Operations Council, University Hospitals of Cleveland, 2005

American Academy of Orthopaedic Surgeons Representative
to 7th Consensus Conference on Thromboembolism,
American College of Chest Physicians, September 2003

President, Cleveland Orthopaedic Society, 2003-2004

Anticoagulation Management and Monitoring Committee,
University Hospitals of Cleveland, 2003

Blueprint for Change Committee, University Hospitals of
Cleveland Operative Services, 2003

Academic Review and Productivity Committee, Department
of Orthopaedic Surgery, University Hospitals of Cleveland,
2003 – present

Medical Policy Committee- Qualchoice (3/98 – 1/2002)

Peer Review Committee – Qualchoice (3/98 – 1/2002)

Value Analysis Committee, Department of Operative
Services, University Hospitals of Cleveland 1998 – 2003

Advisory Committee for Rehab Services
University Hospitals of Cleveland

Anti-Infective Utilization Subcommittee
University Hospitals of Cleveland

Membership Chairman, Cleveland Orthopaedic Society
1997-2003

Future Competitiveness Initiative Committee, 1999 – present
University Hospitals of Cleveland

Member – Rheumatology Chairperson Search Committee,
University Hospitals of Cleveland – 2000

Surgical/Perioperative Services Quality Council
University Hospitals of Cleveland, 2000-2001

Surgery Physician Advisory Panel – Cleveland Health
Quality Choice Program

Medical Advisory Board- Aetna Senior Choice HMO

Medical Advisory Committee – PCOSS Computer System
University Hospitals of Cleveland

Quality Assurance Committee – Department of Orthopaedics
University Hospitals of Cleveland

Orthopaedic Research Committee
University Hospitals of Cleveland

Chairman, Extended Carepaths Development Committee -
Joint Replacement, University Hospitals of Cleveland

Leader, Performance Improvement Project – Joint
Replacement, University Hospitals of Cleveland

Chairman, HCFA Joint Replacement “Centers of Excellence”
Project, University Hospitals of Cleveland

Personnel Committee, University Orthopaedic Associates, Inc.

OTHER SCIENTIFIC ACTIVITIES

NIH NIAMS P60 Multidisciplinary Core Research Center Grant
Review Committee – October 18-19, 2007

Reviewer- Journal of Bone and Joint Surgery

Consultant Reviewer:
Journal of Arthroplasty
Clinical Orthopaedic and Related Research

ADDITIONAL EXPERIENCE

January - August 1991 FDA Study Site Coordinator
Hydroxyapatite coated APRIL Total Hip Arthroplasty,
Intermedics, Inc.

September - October 1984 Instructor, School of Medicine
Phase II Musculoskeletal Unit
Case Western Reserve University
Cleveland, Ohio

September - December 1984 Principal Lecturer and Instructor
Functional Anatomy for Biomedical Engineers
School of Engineering
Case Western Reserve University
Cleveland, Ohio

July 1984 - June 1985 Flight Physician (part-time)
Metro Life Flight
Cleveland Metropolitan General Hospital
Cleveland, Ohio

May 1978 - August 1979	Mechanical Engineer Ford Motor Company Dearborn, Michigan
May - August 1978	Biomedical Engineering Research Viscoelastic Properties of Polymethylmethacrylate The University of Michigan Ann Arbor, Michigan
June - August 1977	Mechanical Engineer Ford Motor Company Dearborn, Michigan
September - December 1976	Investigation of Compressive Properties of Wire Reinforced Acrylic Bone Cement Michigan State University East Lansing, Michigan
May - August 1976	National Science Foundation Research Fellowship Engineering and Applied Science Summer Research Program Yale University New Haven, Connecticut

ADDITIONAL TRAINING

May 2006	AOA Leadership Course Module 3, Kellogg School of Management, Northwestern University, Chicago IL
January 2006	AOA Leadership Course Module 2, Kellogg School of Management, Northwestern University, Chicago IL
November 2005	AOA Leadership Course Module 1, Kellogg School of Management, Northwestern University, Chicago IL
September – December 2000	Physicians Executive Institute, Weatherhead School of Management, Case Western Reserve University
August 1999	Radiostereometric Analysis, RSA Biomedical Innovations The Sahlgrenska Hospital, Goteborg, Sweden
March 1992	AO/ASIF Advanced Course Sun Valley, Idaho
August 1989	Midas Rex Course Cleveland, Ohio
October 1987	AO/ASIF Basic Course Ft. Lauderdale, Florida

December 1986 ACLS Provider Recertification

September 1984 ATLS Certification

PUBLISHED PAPERS

1. Saha, S., Kraay, M.J.; Bending Properties of Wire Reinforced Bone Cement for Application in Spinal Fixation. *Journal of Biomaterials Research*, 13: 443-457, 1979.
2. Kraay, M.J., Goldberg, V.M., Figgie, M.P., Figgie, H.E., Sobel, M., Fisher, D.A.; Technical Factors Influencing the Results of Total Condylar III Knee Arthroplasty. *American Journal of Knee Surgery*, 1: 125-133, 1988.
3. Goldberg, V.M., Figgie, H.E., Inglis, A.E., Figgie, M.P., Sobel, M., Kelly, M., Kraay, M.J.; Patellar Fracture Type and Prognosis in Condylar Total Knee Arthroplasty. *Clin. Orthop.* 236: 115-122, 1988.
4. Figgie, H.E., Inglis, A.E., Goldberg, V.M., Figgie, M.P., Kraay, M.J.: "Current Concepts in Snap-Fit, Sloppy Hinge Total Elbow Arthroplasty", in *American Academy of Orthopaedic Surgeons-Instructional Course Lectures*, Vol 40: 61 - 71, 1991.
5. Kraay, M.J., Meyer, S.A., Goldberg, V.M., Figgie, H.E., Conroy, P.A.; "Hybrid" Total Knee Arthroplasty with the Miller-Galante Prosthesis. *Clin. Orthop.* 273, 32-41, 1991.
6. Kraay, M.J., Goldberg, V.M., Figgie, M.P., Figgie, H.E.: Distal Femoral Replacement with Allograft/Prosthetic Reconstruction for Treatment of Supracondylar Fractures in Patients with Total Knee Arthroplasties. *J. Arthroplasty* 7: 7-16, 1992.
7. Figgie, M. P., Inglis, A.E., Figgie, H.E.III, Sobel, M., Burstein, A.H., Kraay, M.J.: Custom Total Shoulder Arthroplasty in Inflammatory Arthritis. *J. Arthroplasty* 7: 1-6, 1992.
8. Kraay, M.J., Goldberg, V.M., Figgie, H.E.: Use of an Antibiotic Impregnated Polymethylmethacrylate Intramedullary Spacer for Complicated Revision Total Hip Arthroplasty, *Journal of Arthroplasty* 7 Suppl.: 35-40, 1992.
9. Kraay, M.J., Goldberg, V.M., Herbener, T.E.: Vascular Ultrasonography for Deep Venous Thrombosis After Total Knee Arthroplasty. *Clin Orthop* 286: 18-26, 1993.
10. Kraay, M.J.: The painful elbow: What causes to consider. *Hospital Medicine* 30: 25-34, 1994.
11. Merritt, K., Panigutti, M.A., Kraay, M.J., Brown, S.A.: Incidence of infection and analysis of contributing factors in revision joint arthroplasty over a two-year period. *J. Applied Biomaterials* 5: 103-108, 1994.
12. Kraay, M.J., Figgie, M.P., Inglis, A.E., Wolfe, S., Ranawat, C.S.: Survivorship Analysis of Primary Total Elbow Arthroplasty with a Semi-Constrained Prosthesis. *J Bone Joint Surg* 76-B: 636-640, 1994.

13. Brown, S.A., Flemming, C.A.C., Kawalec, J.S., Placko, H.E., Vassuax, C., Merritt, K., Payer, J.H., Kraay, M.J.: Fretting Corrosion Accelerates Crevice Corrosion of Modular Hip Tapers. *J. Appl Biomat* 6: 19-26, 1995.
14. Kraay, M.J. and Figgie, M.P.: Wrist arthroplasty with the Trispherical total wrist prosthesis. *Seminars in Arthroplasty* 6: 37-43, 1995.
15. Kraay, M.J., Goldberg, V.M., Brown, S.A., Merritt, K., Retrieval analysis of Ti-6Al-4V Miller-Galante total knee replacements. ASTM Special Technical Publication, Committee F-4, 1995.
16. Goldberg, V.M., Ninomiya, J., Kelly, G., Kraay, M.J.: Hybrid Total Hip Arthroplasty - A 7 to 11 year follow-up. *Clin. Orthop.* 333: 147-154, 1996.
17. Abdul-Karim, F.W., McGinnis, M.G., Kraay, M.J., Emancipator, S.N., Goldberg, V.M.: Frozen section biopsy assessment for the presence of polymorphonuclear leukocytes in patients undergoing revision of arthroplasties. *Mod Pathol* 1998; 11(5):427-431.
18. Ragab, A.A., Kraay, M.J., Goldberg, V.M.: Clinical and radiographic outcome of cementless total hip arthroplasty with an anatomically designed femoral component for primary osteoarthritis: A minimum six-year study. *J Bone Jt Surgery* 81A: 210-218, 1999.
19. Maloney, W.J., Galante, J.O., Anderson, M., Goldberg, V., Harris, W.H., Jacobs, J.J., Kraay, M.J., Lachiewicz, P., Rubash, H. E., Schutzer, S., Woolson, S.T.: Fixation, Polyethylene Wear, and Pelvic Osteolysis in Primary Total Hip Replacement. *Clin Orthop* 369: 157-164, 1999.
20. Won, C-H, Rohatgi, S, Kraay, M.J., Goldberg, V.M., Rimnac, C.M.: Effect of resin type and manufacturing method on wear damage of polyethylene tibial components. *Clin Orthop* 376: 161-171, 2000.
21. Kraay, M.J. and Goldberg, V.M.: Distal Femoral Osteotomy. *Seminars in Arthroplasty*, 11: 212-220, 2000.
22. Kraay, M.J., Darr, O.J., Salata, M., Goldberg, V.M.: Outcomes of Metal-backed Cementless Patellar Components: The Effect of Implant Design. *Clin Orthop* 392: 239-244, 2001.
23. Islam, N., Haqqi, T.M., Jepsen, K.J., Kraay, M.J., Welter, J.F., Goldberg, V.M., Malemud, C.J.: Hydrostatic Pressure Induces Apoptosis in Human Chondrocytes from Osteoarthritic Cartilage through Up-regulation of Tumor Necrosis Factor- α , Inducible Nitric Oxide Synthase, p53, c-myc and bax- α , and suppression of bcl-2. *J Cell Biochemistry* 87: 266-278, 2002.
24. Collier, M.B., Kraay, M.J., Rimnac, C.M., Goldberg, V.M.: Critical Evaluation of Contemporary Software methods for Quantifying Polyethylene Wear following Total Hip Arthroplasty, *J. Bone and Joint Surgery* 85A: 2410-2418, 2003.
25. Taki, N, Goldberg, VM, Kraay, MJ, Rimnac, CM: Backside Wear of Miller-Galante I and Insall-Burstein II Tibial Inserts. *Clin Orthop* 428:198-206, 2004.
26. Goldberg, VM and Kraay, MJ: The Outcome of the Cementless Tibial Component: A minimum 14 year Clinical Evaluation. *Clin Orthop* 428: 214-220, 2004.

27. Kurtz, SM, Rimnac, CM, Hozack, WJ, Turner, J, Marcolongo, M, Goldberg, VM, Kraay, MJ, Edidin, AA: In vivo degradation of polyethylene liners after gamma-sterilization in air. *J Bone Joint Surg* 87-A: 815-823, 2005.
28. Maheshwer CB, Mitchell E, Kraay MJ, Goldberg VM: Revision of the Patella with Deficient Bone Using a Biconvex Component. *Clin Orthop* 440: 126-130, 2005.
29. McGrory B, Callaghan J, Kraay MJ, Jacobs JJ, Robb W, Wasielewski R: Editorial: Minimally Invasive and Small-Incision Joint Replacement Surgery – What Surgeons Should Consider. *Clin Orthop* 440: 251-254, 2005.
30. Kraay MJ, Fitzgerald SJ, Salata MJ, Goldberg VM: Cementless two-stage total hip arthroplasty for deep periprosthetic infection. *Clin Orthop* 441: 243-249, 2005.
31. Kraay MJ, Thomas RD, Rimnac CM, Fitzgerald SJ, Goldberg VM: Early differences in polyethylene wear between CO-CR-MO versus zirconia femoral heads. *Case Orthopaedic Journal* 2005; Vol 2: 37-41.
32. Bukulmez H, Matthews AL, Sullivan CM, Chen C, Kraay MJ, Elston RC, Moskowitz RW, Goldberg VM, Warman ML: Hip joint replacement surgery for idiopathic osteoarthritis aggregates in families. *Arthritis Research and Therapy* 2006; 8: R25.
33. Akhavan S, Matthiesen MM, Schulte L, Penoyar T, Kraay MJ, Rimnac CM, Goldberg VM: Clinical and Histologic results related to a Low-modulus Composite Total Hip Replacement Stem. *J Bone Joint Surg Am.* 2006; 88: 1308-1314.
34. Nalepka JL, Lee MJ, Kraay MJ, Marcus RE, Goldberg VM, Chen X, Greenfield EM: Lipopolysaccharide found in aseptic loosening of patients with inflammatory arthritis. *Clin Orthop.* 2006; 451, 229-235.
35. Kurtz SM, Hozack WJ, Purtill JJ, Marcolongo M, Kraay MJ, Goldberg, VM, Sharkey PF, Parvisi J, Rimnac CM, Edinin AA: 2006 Otto Aufranc Award Paper: Significance of In Vivo Degradation for Polyethylene in Total Hip Arthroplasty. *Clin Orthop Relat Res.*2006; 453:47-57.
36. Kraay MJ, Thomas RD, Rimnac CM, Fitzgerald SJ, Goldberg VM: Zirconia versus Co-Cr femoral heads in total hip arthroplasty: Early assessment of wear. *Clin Orthop Relat Res.*2006; 453: 86-90.
37. Akhavan S, Matthiesen MM, Schulte L, Penoyar T, Kraay MJ, Rimnac CM, Goldberg VM: Clinical and Histologic results related to a Low-modulus Composite Total Hip Replacement Stem. *Case Orthopaedic Journal*, 2006; 3: 48-54.
38. Nalepka JL, Lee MJ, Kraay MJ, Marcus RE, Goldberg VM, Chen X, Greenfield EM: Lipopolysaccharide found in aseptic loosening of patients with inflammatory arthritis. *Case Orthopaedic Journal*, 2006; 3: 99-105.
39. Garcia RM, Kraay MJ, Goldberg VM: Retention of Superficially Damaged Femoral Components following Metal-Backed Patellar Component Failure. *Journal of Arthroplasty* 2008; 23: 850-858.

40. Garcia RM, Kraay MJ, Goldberg VM: Isolated All-polyethylene Patellar Revisions for Metal-backed Patellar Failure. Clin Orthop, 2008; 466:2784-2789
41. Garcia RM, Kraay MJ, Conroy-Smith, PA, Goldberg VM: Management of the Deficient Patella in Revision Total Knee Arthroplasty. Clin Orthop, 2008; 466:2790-2797.
42. Jacobs CA, Greenwald AS, Anderson PA, Kraay MJ, Mihalko WM: Squeaky Hips make media, medical noise. AAOS NOW, Oct 2008, 8-9. www.aaosnow.org
43. Garcia RM, Messerschmitt, PJ, Kraay MJ, Goldberg VM, Rimnac CM: Analysis of retrieved UHMWPE tibial components from rotating platform total knee replacements. Journal of Arthroplasty, 2009; 24: 131-138.
44. Medel FJ, Kurtz SM, Hozack WJ, Parvizi J, Purtill JJ, Sharkey PF, MacDonald DW, Kraay MJ, Goldberg VM, Rimnac CM: Gamma inert sterilization: A solution to polyethylene oxidation? J Bone and Joint Surg Am 2009; 91: 839-49.
45. Garcia RM, Kraay MJ, Hardy BT, Goldberg VM: Revision Total Knee Arthroplasty for Aseptic and Septic Causes in Patients with Rheumatoid Arthritis. Accepted for publication In Clinical Orthopaedics and Related Research.
46. Garcia RM, Kraay MJ, Goldberg VM: Isolated resurfacing of the previously unresurfaced patella in total knee arthroplasty. Accepted for publication in The Journal of Arthroplasty.
47. McAndrew CM, Fitzgerald SJ, Kraay MJ, Goldberg VM: Incidence of Post-thrombotic syndrome in patients undergoing primary total knee arthroplasty for osteoarthritis. Accepted for publication in Clinical Orthopaedics and Related Research.

SUBMITTED FOR PUBLICATION/IN PROGRESS

1. Garcia RM, Kraay MJ, Goldberg VM: Isolated Revision Following Metal Backed Patellar Component Failure: A 2 to 17 year Follow-up Study. Submitted for publication.
2. Kraay MJ, Ott D, Goldberg VM: Hybrid Cruciate Retaining Total Knee Arthroplasty: Long-term Assessment and Survival Analysis. In progress.
3. Kraay MJ, Lehman RD, Martell JM, Rimnac CM. Reassessment of Computerized Wear Measurement for THA with Correction for Projectional Image Distortion: A Brief follow-up Report. Submitted to the Journal of Bone and Joint Surgery.
4. Medel FJ, Kurtz SM, Sharkey P Parvizi J, Austin M, Cohen A, Patel H, Klein G, Hartzband M, Goldberg V, Kraay MJ, Rimnac CM: Post Damage in Contemporary Posterior-Stabilized Tibial Inserts: Influence of Implant Design and Clinical Relevance. Submitted to Journal of Arthroplasty.
5. Murphy JE, Lehman RD, Kraay MJ, Fritz BA, Goldberg VM, Rimnac CM: Comparison of wear resistance of crosslinked UHMWPE in THA: 32mm vs. 28mm CoCr Heads. Submitted to 2009 meeting of the ORS.

6. Kurtz SM, Medel F, Sharkey P, Parvisi J, Klein G, Hartzband M, Kraay M, Rimnac CM: In Vivo oxidation contributes to delamination but not pitting in polyethylene components for total knee arthroplasty. Submitted to Journal of Arthroplasty.
7. Kurtz SM, Medel F, McDonald D, Parvisi J, Sharkey P, Hozack W, Klein G, Hartzband M, Stulberg B, Garino J, Kraay M, Rimnac CM: Wear and Material performance of 1st generation highly cross-linked polyethylene implanted up to Eight years. Accepted for presentation at 2009 AAHKS Annual Meeting. Submitted for Award paper.

BOOKS EDITED

1. Zardiakas, L, Freese, H, and Kraay, MJ: Titanium, Niobium, Zirconium and Tantalum for Medical and Surgical Applications. ASTM International STP 1471, West Conshohocken, PA, 2006.

PUBLISHED BOOK CHAPTERS

1. Kraay, M.J. and Marcus, R.E.: Orthopaedic Disorders of the Hip, in "Orthopedics: Problems in Primary Care". Marcus, R.E. (ed), Medical Economics Co. Oradell, NJ, 1991.
2. Figgie, H.E., Unger, A., Inglis, A.E., Figgie, M.P., Kraay, M.J.: "Total Ankle Replacement", in Total Joint Replacement. Petty, W. (ed), W.B. Saunders, Orlando, FL, 1991.
3. Kraay, M.J. and Figgie, M.P.: "The Shoulder in Rheumatoid Arthritis", in Surgical Treatment of Rheumatoid Arthritis. T. P. Sculco (ed), Mosby Year Books, 1992.
4. Figgie, H.E., Unger, A.S., Inglis, A.E., Kraay, M.J., Figgie, M.P.: Total Ankle Arthroplasty, in Operative Orthopaedics, 2nd Ed. Chapman, M.W.(ed), J.B. Lippincott Co., Philadelphia.
5. Kraay, M.J. and Goldberg, V.M.: Uncemented Total Knee Arthroplasty, Chapter 61, in The Knee. Scott, W.N.(ed), C.V. Mosby Co., Chicago, 1994.
6. Kraay, M.J. and Goldberg, V.M.: Patellar Fracture and Breakage, Chapter 80, in Knee Surgery. Fu, F.H., Harner, C.D., Vince, K.G.(eds), Williams and Wilkins, Baltimore, 1994.
7. Kraay, M.J. and Goldberg, V.M: Arthritis. In American Academy of Orthopaedic Surgeons Orthopaedic Knowledge Update-6th Edition, Beaty, J.(ed), p 205-216, 1999.
8. Kraay, M.J. and Goldberg, V.M.: Surgical Techniques in Total Knee Arthroplasty: Fixation - Hydroxyapatite, in Surgical Techniques in Total Knee Arthroplasty. Tria, A. and Scuderi, G.(eds), Springer-Verlag, New York, 2002.
9. Goldberg, VM and Kraay, MJ: Surgical Treatment of Joint Diseases, Chapter 299, in The Cecil Textbook of Internal Medicine. Goldman, L and Ausiello, D (eds), Saunders-Elsevier, Philadelphia, 2007.

PUBLISHED ABSTRACTS

1. Saha, S., Kraay, M.J.; Bending Properties of Reinforced Polymethylmethacrylate. Proc. 23rd Annual ORS: 267, 1977.
2. Saha, S., Kraay, M.J.; Flexural Properties of Acrylic Bone Cement Reinforced with Stainless Steel Wires. Proceedings of 31st ACEMB: 55, 1978.
3. Saha, S., Kraay, M.J.; Flexural Properties of Metal Wire Reinforced Acrylic Bone Cement. Proceedings of 3rd Annual Society for Biomaterials, 9th Annual International Biomaterials Symposium.
4. Kraay, M.J., Davy, D.T., Shaffer, J.M., Goldberg, V.M., Klein, L., Powell, A.; Influence of Cyclosporin-A Treatment and Sham Surgery on Mechanical Properties in a Canine Fibular Graft Model. Proc. 32nd Annual ORS: 275, 1986.
5. Kraay, M.J., Davy, D.T., Goldberg, V.M., Klein, L., Powell, A., Gordon, N.; Mechanical Behavior of Frozen Osteochondral Allografts in Rats with Known Histocompatibility Barriers. Proc. 32nd Annual ORS: 273, 1986.
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10. Kraay, M.J., Figgie, M.P., Inglis, A.E., Wolfe, S., Ranawat, C.S.: Survivorship Analysis of Primary Total Elbow Arthroplasty with a Semi-Constrained Prosthesis. Orthop Trans :776, 1992.
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21. Darr, O.J., Kraay, M.J., Goldberg, V.M.: Survivorship analysis of Miller-Galante Total Knee Arthroplasty with a metal-backed patellar component. Proc. 57th Annual Ohio Orthopaedic Society, May 10, 1996, Cincinnati, OH.
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27. Ragab, A.A., Kraay, M.J., Goldberg, V.M.: Clinical and radiographic outcome of cementless total hip arthroplasty with an anatomically designed femoral component for primary osteoarthritis: A minimum six-year study. Proc. 60th Annual Ohio Orthopaedic Society Meeting. May 6-8, 1999. Dayton, OH.
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34. Goldberg, VM, Kraay, MJ: The outcome of the cementless tibial component with screw fixation: The incidence of osteolysis at 12 years after surgery. In Proc. 68th Annual Meeting of the American Academy of Orthopaedic Surgeons: PE444, 2001.
35. Nalepka, JL, Kraay, MJ, Marcus, RE, Goldberg, VM, Greenfield, EM: Pseudomembranes from patients with aseptic loosening contain endotoxin. Trans. Annual ORS 27: 1080, 2002.
36. Patel, M, Maheshwar, C, Goldberg, VM, Kraay, MJ: Femoral Remodeling and Clinical Outcome of Hydroxyapatite Coated Patient Matched Total Hip Replacement: Minimum 5 year Follow-up. In Proc. 70th Annual Meeting American Academy of Orthopaedic Surgeons, New Orleans, LA, February 5-9, 2003, p 379.
37. Kraay, MJ, Goldberg, VM, Conroy-Smith, P: Is Surgical Technique or Surface Finish the Variable affecting the Results of Cemented Femoral Fixation in THA? In Proc. 70th Annual Meeting American Academy of Orthopaedic Surgeons, New Orleans, LA, February 5-9, 2003, p 381.
38. Kurtz, SM, Marcolongo, M Rimnac, CM, Hozack, W, Turner, MS, Goldberg, VM, Kraay, MJ, Edinin, AA: Evidence of in-vivo mechanical degradation of UHMWPE acetabular inserts. Trans 29th Annual Meeting of the Society for Biomaterials 26: 317, 2003.

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40. Nalepka, JL, Lee, MJ, Kraay, MJ, Marcus, RE, Goldberg, VM, Greenfield, EM: Detection of bacterial lipopolysaccharide in periprosthetic tissue from patients with aseptic loosening. Trans. ORS 29: 1514, 2004.
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42. Kraay MJ, Thomas R, Rimnac CM, Goldberg VM: Early differences in polyethylene wear between Co-Cr-Mo and Zirconia femoral heads. Trans 72nd Annual AAOS, Washington DC, February 23, 2005.
43. Kraay MJ, Thomas R, Rimnac CM, Goldberg VM: Early differences in polyethylene wear between Zirconia ceramic versus Co-Cr-Mo alloy femoral heads in total hip arthroplasty. Proc. International Hip Society Closed Meeting, Vienna, Austria, September 2, 2005
44. Goldberg VM, Lee, MJ, Skalak AF, Kraay MJ, Cooperman DR: The spectrum of acetabular and femoral version in a population without osteoarthritis 18-35 years of age. Proc. International Hip Society Closed Meeting, Vienna, Austria, September 3, 2005.
45. Goldberg VM, Kraay MJ, Thomas R, Rimnac CM: Early differences in polyethylene wear between Zirconia ceramic versus Co-Cr-Mo alloy femoral heads in total hip arthroplasty. Proc. The Hip Society Summer Meeting, Pittsburgh, PA, September 23, 2005.
46. Kurtz SM, Purtilli J, Sharkey P, Topper J, MacDonald D, Kraay MJ, Goldberg VM, Parvizi J, Rimnac CM: Clinical Significance of In-Vivo oxidation for Gamma sterilized tibial inserts. Proc 52nd Annual Orthop Res Soc, p552, 2006.
47. Kurtz SM, Parvizi J, Purtilli J, Sharkey P, MacDonald D, Shah P, Brenner E, Kraay MJ, Goldberg VM, Rimnac CM: In-Vivo oxidation contributes to delamination but not pitting in TKA. Proc 53rd Annual Orthop Res Soc, poster 1891, 2007.
48. Garcia RM, Messerschmitt PJ, Kraay MJ, Goldberg VM, Rimnac CM: Analysis of retrieved UHMWPE tibial components from rotating platform total knee replacements. Poster at Proc. 53rd Annual ORS, San Diego, CA, February 11-14, 2007.
49. Garcia RM, Messerschmitt PJ, Thomas RD, Kraay MJ, Goldberg VM, Rimnac CM: Analysis of retrieved UHMWPE tibial components from Nexgen TKRs. Society for Biomaterials. Chicago, IL, April 18-21, 2007.
50. Garcia RM, Kraay MJ, Goldberg VM: Isolated Revision Following Metal Backed Patellar Component Failure: A 2 to 17 year Follow-up Study. Accepted for presentation at 2007 Interim Meeting of the Knee Society, Siena, Italy, September 5-9, 2007.
51. SM, Parvizi J, Purtill J, Sharkey P, MacDonald D, Brenner E, Kraay M, Goldberg V, Rimnac CM. In vivo oxidation is a primary contributor to delamination in TKA. 75th Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA, Poster No.

185, March 5-9, 2008.

52. Kurtz SM, Hozack W, Parvizi J, Purtill J, Sharkey P, MacDonald D, Kraay M, Goldberg V, Rimnac CM. Gamma inert sterilization: A solution to polyethylene oxidation? 75th Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA, Scientific Exhibit No. SE06, March 5-9, 2008.

53. Kurtz SM, Hozack W, Parvizi J, Purtill J, Sharkey P, MacDonald D, Kraay M, Goldberg V, Rimnac CM. Gamma inert sterilization: A solution to polyethylene oxidation? 75th Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA, Paper No. 20, March 5-9, 2008.

54. Kraay MJ, Lehman RD, Martell JM, Rimnac CM. Improvements in Computerized Wear Measurement for THA: Is It as Accurate as RSA? 54th Annual ORS, March 5, 2008.

55. Kraay MJ, Lehman RD, Murphy JE, Goldberg VM, Rimnac CM. Wear resistance of contemporary conventional PE versus crosslinked PE in THA: assessment at average 5 years follow-up. Poster at 54th Annual ORS, March 2-5, 2008.

56. Garcia R, Kraay MJ, Goldberg VM : Isolated Resurfacing of the Previously Unresurfaced Patella in Total Knee Arthroplasty. 2009 Annual Meeting of the AAOS, Paper 399, February 25-28, 2009.

SCIENTIFIC PRESENTATIONS (NATIONAL, INTERNATIONAL, REGIONAL)

1. "Biomechanical and Kinematic Considerations Influencing the Natural History of Patella Fractures in Cruciate Sacrificing Total Knee Arthroplasty"; Figgie, H.E., Goldberg, V.M., Inglis, A.E., Figgie, M.P., Kelly, M.A., Sobel, M., Kraay, M.J., at 55th Annual Meeting AAOS, 1988.

2. "Large Segment Allografts in the Reconstruction of Supracondylar Femur Fractures in Patients with Total Knee Arthroplasties"; Kraay, M.J., Goldberg, V.M., Figgie, M.P., at 57th Annual Meeting AAOS, 1990.

3. "Radiographic Evaluation of Uncemented Femoral Components as a Predictor of Early Hip Function"; Goldberg, V.M., Kraay, M.J., Nicholson, G., Mills, M.F., Figgie, H.E., at 57th Annual Meeting AAOS, 1990.

4. "Patellar Complications Following Total Knee Arthroplasty", at Zimmer West Coast Residents Program, Redondo Beach, CA, August 13, 1989.

5. "Current Concepts in Total Knee Arthroplasty", at 1990 Orthopaedic Review Course, Case Western Reserve University/University Hospitals of Cleveland, June 3-9, 1990.

6. "Perioperative Blood Loss in Orthopaedic Surgery" at Seminar on Uses of Recombinant Human Erythropoietin in Orthopaedic Surgery, Ortho-Biotech, Somerville, NJ, October 10, 1990.

7. "Hybrid Total Knee Arthroplasty with the Miller-Galante Prosthesis: A Prospective Clinical and Radiographic Evaluation"; Kraay, M.J., Meyer, S.A., Goldberg, V.M., Figgie, H.E., at 1991 Annual Meeting of The Knee Society, Los Angeles, CA.
8. "A Clinical Kinematic Comparison and a Mechanical Correlation of a Posterior Cruciate Retaining Total Knee Prosthesis"; Figgie, H.E., Goldberg, V.M., Kraay, M.J., Shea, K.P., Davy, D.T., Singerman, R., at 1991 Combined Congress of the International Society of the Knee and the International Arthroscopy Association, Toronto, Canada; May, 16, 1991.
9. "Screening Ultrasonography for Deep Venous Thrombosis Following Total Knee Arthroplasty"; Kraay, M.J., Goldberg, V.M., Herbener, T.E., at 1992 Annual Meeting of the Knee Society, Washington, D.C.
10. "Survivorship Analysis of Primary Total Elbow Arthroplasty with a Semi-Constrained Prosthesis"; Kraay, M.J., Figgie, M.P., Inglis, A.E., Wolfe, S., Ranawat, C.S., at 1992 Annual Meeting of the American Society of Shoulder and Elbow Surgeons, Washington, D.C.
11. "Survivorship Analysis of Total Elbow Arthroplasty with a Semi-Constrained Prosthesis"; Kraay, M.J., Figgie, M.P., Inglis, A.E., Wolfe, S., Ranawat, C.S., at 59th Annual Meeting of the American Academy of Orthopaedic Surgeons, Washington, D.C., 1992.
12. "Perioperative Complications following Total Knee Arthroplasty", participant in Panel discussion at the 1992 Annual Meeting of the Knee Society, Washington, D.C.
13. "Surgery Today - Update on Total Joint Arthroplasty", May 20, 1992
University Hospitals of Cleveland - Case Western Reserve University School of Medicine.
14. "Current Concepts in Total Knee Arthroplasty", at 1992 Orthopaedic Review Course, University Hospitals of Cleveland - Case Western Reserve University, June 1, 1992.
15. "In vivo measurement of hip joint loads - The CWRU Telemetrized Hip Prosthesis", at Zimmer Anatomic THA Workshop, July 18, 1992, Cleveland, OH
16. "Survivorship analysis of wrist arthroplasty with the Trispherical total wrist prosthesis", at 74th Annual Alumni Meeting of the Hospital for Special Surgery, November 6, 1992.
17. "Survivorship analysis of wrist arthroplasty with the Trispherical total wrist prosthesis" at 60th Annual Meeting of American Academy of Orthopaedic Surgeons, San Francisco, CA, February 22, 1993.
18. "Current Concepts in Total Knee Arthroplasty", at 1993 Orthopaedic Review Course, University Hospitals of Cleveland - Case Western Reserve University, May 16, 1993.
19. "Clinical experience with Ti-6Al-4V Miller-Galante total knee replacements", Kraay, M.J., Goldberg, V.M., Brown, S.A., Merritt, K., at Symposium on Medical Applications of Titanium and Its Alloys: The Material and Biological Issues, ASTM Committee F-4, Phoenix, AZ, November 16, 1994.
20. "Surgery Today - Update on Total Joint Arthroplasty", June 9, 1995
University Hospitals of Cleveland - Case Western Reserve University School of Medicine.

21. "Clinical and radiographic outcomes of hybrid total knee arthroplasty", Kraay, M.J., Horton, R., Goldberg, V.M., Petersilge, C. at 57th Annual Meeting of the Ohio Orthopaedic Society, May 10, 1996, Cincinnati, OH.
22. "Arthritis of the Knee: Classification and pathophysiology", at AAOS Contemporary Issues in Treating the Adult Knee: A Comprehensive View, May 23, 1996, Boston, MA.
23. "Chondral Injury: Principles of Healing and Implications for Treatment", at AAOS Contemporary Issues in Treating the Adult Knee: A Comprehensive View, May 23, 1996, Boston, MA.
24. "Implant selection in total knee arthroplasty", at AAOS Contemporary Issues in Treating the Adult Knee: A Comprehensive View, May 23, 1996, Boston, MA.
25. "Total knee arthroplasty: Thromboembolic disease", at AAOS Contemporary Issues in Treating the Adult Knee: A Comprehensive View, May 23, 1996, Boston, MA.
26. "Pre-operative planning and templating for Total Hip Arthroplasty", at Zimmer, Inc. March 13, 1998. Warsaw, IN
27. "Revision total hip replacement", at Charles Herndon Alumni Society Reunion. June 20, 1998, Cleveland, OH.
28. "Clinical and radiographic outcomes of cementless total hip arthroplasty with an anatomically designed femoral component". At Proven Concepts in Joint Replacement, Columbus, OH. September 25, 1998.
29. "LCCK : Short term follow-up and case presentations in revision total knee arthroplasty". At Concepts in Revision Knee Surgery, Case Western Reserve University/University Hospitals of Cleveland. May 22, 1999. Cleveland, OH.
30. "Invasive management of arthritis", at Recent Advances in the Management of Arthritis. October 30, 1999. Case Western Reserve University, Cleveland, OH.
31. "Primary Cementless Total Hip Arthroplasty" at Osaka City University School of Medicine, Osaka, Japan, November 17, 1999.
32. "General Concepts of Revision Total Hip Arthroplasty" at Osaka City University School of Medicine, Osaka, Japan, November 17, 1999.
33. "Primary Cementless Total Hip Arthroplasty" at Fukuoka University School of Medicine, Fukuoka, Japan, November 18, 1999.
34. "General Concepts of Revision Total Hip Arthroplasty" at Fukuoka University School of Medicine, Fukuoka, Japan, November 18, 1999.
35. "Primary Cementless Total Hip Arthroplasty" at Hiroshima University Hospital, Hiroshima, Japan, November 19, 1999.
36. "General Concepts of Revision Total Hip Arthroplasty" at Hiroshima University Hospital, Hiroshima, Japan, November 19, 1999.

37. "Primary Cementless Total Hip Arthroplasty with the Zimmer Anatomic THA" at 8th Annual Regional Hip Study Group Meeting, Yokohama, Japan, November 20, 1999.
38. "Revision Total Hip Arthroplasty – Impaction Grafting and Cementless Revision with the Extensively Porous Coated Stem" at 8th Annual Regional Hip Study Group Meeting, Yokohama, Japan, November 20, 1999.
39. "Surgical management of periprosthetic joint infections" at Northeastern Ohio Infectious Disease Roundtable, Cleveland, OH, May 27, 2000.
40. "Outcome of metal-backed cementless patellar components: The effect of implant design" at The Knee Society Interim Meeting, Boston, MA, September, 2000.
41. "Invasive management of Arthritis", Northeastern Ohio Rheumatology Review Course, Cleveland, OH May, 2001.
42. "Measurement of polyethylene wear in THA", Herndon Society Alumni Meeting Cleveland, OH June 22, 2001
43. "Treatment Options for Hip Arthritis", China Orthopaedic Association Meeting, Shanghai, China, August 27-29, 2001.
44. "Primary THA – General Concepts", China Orthopaedic Association Meeting, Shanghai, China, August 27-29, 2001.
45. "Prevention and Treatment of Infection in Total Joint Replacement" China Orthopaedic Association Meeting, Shanghai, China, August 27-29, 2001.
46. "Complications of Total Hip Replacement", China Orthopaedic Association Meeting, Shanghai, China, August 27-29, 2001.
47. "Revision THA-General Concepts", China Orthopaedic Association Meeting, Shanghai, China, August 27-29, 2001.
48. "Post-op Rehab following Total Hip Replacement", China Orthopaedic Association Meeting , Shanghai, China, August 27-29, 2001.
49. "Primary THA - Video Review of Surgical Techniques", China Orthopaedic Association Meeting , Shanghai, China, August 27-29, 2001.
50. "Revision THA – Video Review of Surgical Techniques", China Orthopaedic Association Meeting , Shanghai, China, August 27-29, 2001.
51. "Neurovascular Structures around the Hip and Knee and Their Significance during Total Joint Arthroplasty", Video Educational Demonstration at 69th Annual Meeting of the American Academy of Orthopaedic Surgeons, Dallas, TX, 2/13-2/17/2002
52. "Total Shoulder Arthroplasty" at Orthopedic Residency Program Advisory Committee Educational Day, Ohio University College of Osteopathic Medicine, Columbus, Ohio, April 12, 2002.

53. "Prevention and Treatment of Infection in Total Joint Replacement" at Orthopedic Residency Program Advisory Committee Educational Day, Ohio University College of Osteopathic Medicine, Columbus, Ohio, April 12, 2002.
54. "Ligament Balancing in Total Knee Replacement" at Zimmer National Residents Program, Chicago, IL, April 27-28, 2002.
55. "Exposure Options for Revision Total Knee Replacement" at Zimmer National Residents Program, Chicago, IL, April 27-28, 2002.
56. "Measurement of Wear in Total Hip Arthroplasty", at 2002 ABC Traveling Fellows Program, CWRU/ Cleveland Clinic Foundation, Cleveland, Ohio, May 10, 2002.
57. "The Zimmer Anatomic Hip" at The Hip and Knee Symposium, Big Sky, Montana, August 16-17, 2002.
58. "Hybrid Total Knee Replacement" at The Hip and Knee Symposium, Big Sky, Montana, August 16-17, 2002.
59. "Cementless Revision THA with Extensively Porous Coated Stems" at The Hip and Knee Symposium, Big Sky, Montana, August 16-17, 2002.
60. "Revision THA with the Zimmer ZMR Stem" at The Hip and Knee Symposium, Big Sky, Montana, August 16-17, 2002.
61. "Revision Total Knee Replacement with the LCCK Prosthesis" at The Hip and Knee Symposium, Big Sky, Montana, August 16-17, 2002.
62. "Bilateral Total Knee Replacement- Who Decides?" at 2002 John Insall Traveling Fellows Program, October 7, 2002, CWRU, Cleveland, OH
63. "Introduction to Minimally Invasive Joint Replacement" at 2003 Orthopaedic Nursing Update, August 1-2, 2003, Chicago, IL
64. "Trabecular Metal Technology", "Radiography of the Knee" at 2003 Orthopaedic Nursing Update, August 1-2, 2003, Chicago, IL
65. "Revision Total Hip Replacement", at 2003 Orthopaedic Nursing Update, August 1-2, 2003, Chicago, IL
66. "Measurement of Wear in THA" at Little Orthopaedic Club Annual Meeting, Cleveland, Ohio, September 2003.
67. "Introduction to Minimally Invasive TJR" at Little Orthopaedic Club Annual Meeting, Cleveland, Ohio, September 2003.
68. "Ceramic on ceramic bearings surfaces for Total Hip Arthroplasty" at New Techniques and Bearing Surfaces in Total Hip Arthroplasty, MERI Labs, Memphis, TN, October 22, 2004.

69. "Modular Femoral Necks in Total Hip Arthroplasty" at New Techniques and Bearing Surfaces in Total Hip Arthroplasty, MERI Labs, Memphis, TN, October 22, 2004.
70. Kraay MJ, Thomas R, Rimnac CM, Goldberg VM: Early differences in polyethylene wear between Co-Cr-Mo and Zirconia femoral heads. Trans 72nd Annual AAOS, Washington DC, February 23, 2005.
71. Kraay, MJ: In-vivo degradation of retrieved gamma-sterilized UHMWPE liners, at The 35th Annual Harvard Arthroplasty Meeting, Boston, MA, September 28, 2005
72. Kraay, MJ: Alternative bearing surfaces in THA: Ceramic on Polyethylene, at The 35th Annual Harvard Arthroplasty Meeting, Boston, MA, September 28, 2005
73. Kraay, MJ: Complications after TKR: The Infected TKR, at The 35th Annual Harvard Arthroplasty Meeting, Boston, MA, September 28, 2005
74. Kraay MJ: Hybrid Cruciate Retaining Total Knee Arthroplasty: Long-term Assessment and Survival Analysis. Cleveland Orthopaedic Society-Insall Fellows Meeting. October 7, 2006.
75. Kraay MJ: Update on Infected TKR, at The 37th Advances in Arthroplasty Meeting, The Harvard Medical School, September 28, 2007.
76. Kraay MJ: Analysis of Retrieved Rotating Platform TKRs. Cleveland Orthopaedic Society-Insall Fellows Meeting, October 5, 2007.
77. Kraay MJ, Lehman RD, Martell JM, Rimnac CM. Improvements in Computerized Wear Measurement for THA: Is It as Accurate as RSA? 54th Annual ORS, March 5, 2008.

INTERNET BASED PUBLICATIONS

- "Regional Analgesia for Orthopaedics", Graber, R, and Kraay, MJ, in e-Medicine, 2002.
- "Custom Total Hip Arthroplasty Case of the Month", April 2002, www.Biomet.com

LOCAL CME / COMMUNITY PRESENTATIONS

- Dealing with Arthritis, Lakewood Office on Aging, January 5, 1993
- Living with Arthritis, University Suburban Health Center, January 19, 1993
- Thromboembolic disease in Orthopaedic surgery: Greater Cleveland Chapter of National Association of Orthopaedic Nurses Annual Fall Conference 1994.
- Thromboembolic disease in Orthopaedic surgery: Greater Cleveland Chapter of National Association of Orthopaedic Nurses Monthly Meeting, March 1994.
- Arthritis and Surgical Treatment of Arthritis, University Hospital of Cleveland Speakers Bureau, West Shore Senior Center, July 8, 1994.

Prevention of Thromboembolism in Orthopaedic Patients, Barberton Citizens Hospital Grand Rounds, April 16, 1994.

Orthopaedic Grand Rounds, St. Lukes Medical Center, Total shoulder arthroplasty. September 15, 1994

Community Talk on Arthritis-“Don’t Let Arthritis Get You Down”, University Suburban Health Center March 21, 1995.

Orthopaedic Grand Rounds, University Hospitals of Cleveland, Complications of Total Joint Replacement, 1995.

Orthopaedic Grand Rounds, St. Lukes Medical Center, Thromboembolic disease in orthopaedic surgery. October 10, 1996.

Arthritic disorders of the hip and knee, Nursing Lecture Series, Wade Park VAMC, October 9, 1996.

Total Joint Replacement Surgery of the Hip and Knee (Invited Lecture), Cleveland State University HSC 492, February 16, 1996.

Understanding Joint Replacement Surgery- University Hospitals Health Series

April 23, 1996

May 2, 1996

April 24, 1997

May 1, 1997

September 25, 1997

October 30, 1997

April 2, 1998

April 9, 1998

April 16, 1998

March 15, 1999

March 23, 1999

April 15, 1999

July 12, 1999

July 22, 1999

April 6, 2000

May 15, 2000

September 18, 2000

October 2, 2000

October 18, 2000

November 2, 2000

March 15, 2001

May 9, 2001

May 25, 2001

November 19, 2002

Arthritis Screening Clinic – University Hospitals of Cleveland

October 25, 1997 - UHHS Westlake

November 6, 1999 - UHHS Landerbrook

November 13, 1999 - UHHS Westlake

Orthopaedic Grand Rounds, University Hospitals of Cleveland, Thromboembolic Disease in Orthopaedic Surgery, September 20, 1997.

Orthopaedic Grand Rounds, University Hospitals of Cleveland, Symposium-Implant Loosening, March, 1998.

Arthritis and Osteoporosis, Senior Connection radio talk show, WELW/ WLDW 1330/1380 AM, March 30, 1998.

Arthritis and Joint Replacement, Geriatric Medicine Fellows Lecture Program, January 7, 1999, University Hospitals of Cleveland.

Rheumatology Grand Rounds, Interventional Management of Degenerative Joint Disease, University Hospitals of Cleveland, February 11, 1999.

Orthopaedic Grand Rounds, Mini-Symposium – Management of Periprosthetic Joint Infections, University Hospitals of Cleveland, September 18, 1999.

Joint Replacement Surgery, on “Golden Opportunities”, WKYC TV-3, October 31, 1999.

Joint Replacement Surgery, at Cuyahoga County Arthritis Foundation Expo, May 16, 2000.

Orthopaedic Grand Rounds, “Thromboembolic Disease in Total Joint Replacement”, University Hospitals of Cleveland, September 16, 2000.

Rheumatology Grand Rounds, “Update on Invasive Management for Arthritis”, University Hospitals of Cleveland, October 25, 2001.

Surgery Seminar-Arthritis Foundation Grand Rounds, “Invasive Management of Arthritis”, Deaconess Hospital, Cleveland, OH, February 20, 2002.

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