

DAVID C. AYERS, M.D.

Curriculum Vitae

## CURRICULUM VITAE

### DAVID CHRISTOPHER AYERS, M.D.

#### OFFICE:

Department of Orthopaedic Surgery  
University of Massachusetts School of Medicine  
55 Lake Avenue, North  
Worcester, MA 01655  
(508) 334-9750  
[David.Ayers@umassmemorial.org](mailto:David.Ayers@umassmemorial.org)

### EDUCATION

#### UNDERGRADUATE

Tufts University  
Medford, Massachusetts  
Bachelor of Science in Chemistry  
Summa Cum Laude  
1974 - 1978

#### MEDICAL

University of Rochester  
School of Medicine and Dentistry  
Rochester, New York  
Doctor of Medicine  
1978 - 1982

### POST-DOCTORAL

#### INTERNSHIP

Surgical Internship  
University of Rochester  
Strong Memorial Hospital  
July 1, 1982 - June 30, 1983  
William Drucker, M.D., Professor and Chairman

#### RESIDENCY

Assistant Resident General Surgery  
University of Rochester  
Strong Memorial Hospital  
July 1, 1983 - June 30, 1984  
William Drucker, M.D., Professor and Chairman

Orthopaedic Surgery Resident and Chief Resident  
University of Rochester  
Strong Memorial Hospital  
July 1, 1984 - June 30, 1987  
C. McCollister Evarts, M.D. Professor and Chairman

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**FELLOWSHIPS**

UNDERGRADUATE

Chemistry Fellowship  
Tufts University  
Robert Dewald, Ph.D., Coordinator

POST-DOCTORAL

Lord Nuffield Orthopaedic Scholar  
Nuffield Orthopaedic Centre  
University of Oxford  
Oxford, England  
Professor Robert B. Duthie, C.B.E, F.R.C.S.

**CERTIFYING EXAMINATIONS**

National Board of Medical Examiners	1983
American Board of Orthopaedic Surgery	1991
Re-certification ABOS	2001, 2011

**MEDICAL LICENSURE**

New York	1983
Massachusetts	2003 -2013 #217015

**ACADEMIC APPOINTMENTS**

Arthur M. Pappas Professor of Orthopaedics University of Massachusetts Medical School Worcester, Massachusetts	March, 2003- present
Chair Department of Orthopedics and Physical Rehab. University of Massachusetts Medical School Worcester, Massachusetts	March, 2003 - present
Associate Professor of Orthopaedic Surgery State University of New York SUNY Health Science Center at Syracuse Syracuse, New York	July, 1994 - 2003
Director of Adult Reconstruction Division Department of Orthopaedic Surgery SUNY Health Science Center at Syracuse Syracuse, New York	January, 1992 - 2003
Assistant Professor of Orthopaedic Surgery State University of New York SUNY Health Science Center at Syracuse Syracuse, New York	December, 1988- July 1994

### HOSPITAL APPOINTMENTS

Department of Orthopaedic Surgery University Hospital State University of New York Syracuse, New York	1988 - 2003
Attending Surgeon Crouse Irving Memorial Hospital Syracuse, New York	1988 - 2003
Orthopedist-in-Chief UMass Memorial Health Care System Worcester, Massachusetts	2003 - present
Medical Director of Musculoskeletal Center of Excellence UMass Memorial Health Care System and UMASS Medical School Worcester, Massachusetts	2005 - present

### AWARDS AND HONORS

National Honor Society, Mountain Lakes, N.J.	1973
National Presidential Commendation, Mountain Lakes, N.J.	1974
Phi Beta Kappa, Tufts University - Medford, Massachusetts	1977
Durkee Award for Excellence in Chemistry and Chemical Research Tufts University - Medford, Massachusetts	1978
B.S. Summa Cum Laude Tufts University - Medford, Massachusetts	1978
Alpha Omega Alpha University of Rochester -Rochester, New York	1982
Lord Nuffield Orthopaedic Scholar University of Oxford – Oxford, England	1988
Sir John Charnley Award Orthopaedic Research and Education Foundation	1990
North American Traveling Fellowship American Orthopaedic Association	1990
Knee Society Ranawat Award	2008

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**LISTING OF PROFESSIONAL MEDICAL ORGANIZATIONS AND SOCIETIES**

American Academy of Orthopaedic Surgeons	American Association of Hip and Knee Surgeons
American College of Surgeons	The Knee Society
American Medical Association	Orthopaedic Research Society
Girdlestone Orthopaedic Society	American Society For Bone and Mineral Research
American Orthopaedic Association	New England Orthopaedic Society
Arthritis Foundation of Massachusetts	Massachusetts Medical Society
New York State Medical Society	The Hip Society
Arthritis Foundation of Central New York	
Societe Internationale de Recherche en Orthopedie et Traumatologie	

**COMMITTEE APPOINTMENTS**
NATIONAL COMMITTEES
**MEDICARE EVIDENCE DEVELOPMENT & ADVISORY COMMITTEE (MEDCAC)**

Voting Member	2013- present
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**AMERICAN ACADEMY OF ORTHOPAEDIC SURGERY (AAOS):**

Chair; Adult Reconstruction-Hip Program Committee	2013-2017
Member, Adult Reconstruction – Hip Program Committee	2008-2011
Chair; Committee on Arthritis of the Hip and Knee	2004-2009
Committee on the Knee	1993-1995
Committee on Arthritis of the Hip and Knee	1996- 2004
Global Fee Project	1992
AAOS Orthopedic Quality Institute	2011-present

**AMERICAN ASSOCIATION OF HIP AND KNEE SURGEONS (AAHKS):**

Outcome Committee	1996 - 1999
Education Committee	1999 - 2005
Annual Meeting Program Chair	2002
Executive Board	2002 – 2007

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AMERICAN ORTHOPEDIC ASSOCIATION

North American Travelling Fellow	Fall 19900
Academic Leadership Council	2007 – 2013
Resident and Fellow Evaluation Committee	2007 – 2010
Moderator Symposium; Annual Meeting 2010 The Elephant in the Room Impact of Emotional Health on Functional Outcomes Participants: David Ring MD, Pat Franklin MD, MBA, MPH	June 2010
Moderator; Department Chair Forum Building Endowment Funds: Medical Philanthropy for Chairs	June 2011
Moderator: Chair and Prospective Chair Breakfast Negotiating Your Start-up Package	June 2011
Participant Symposium: Annual Meeting 2011 Regis O’Keefe MD, PhD Moderator: Growing Orthopaedic Research Topic: Building Your Local Orthopaedic Research Program	June 2011
AOA Nominating Committee	2012
Participant Symposium: Annual Meeting 2014 Mohit Bhandari MD Moderator: Whoever Holds the Data Holds the Power: What each of Us Should be Collecting Topic: FORCE-TJR; the AHRQ sponsored National Comparative Effectiveness Consortium For Joint Replacements	June 2014
Moderator Symposium: Annual Meeting 2014 Patient Reported Outcomes in Orthopaedic Practice Participants: Sohail Mirza MD, Pat Franklin MD, MBA, MPH	June 2014
AOA Nominating Committee	2014

LOCAL COMMITTEES

## UMass Medical School/ UMassMemorial Medical Center

UMass Medial Group Finance Committee	2004-present
UMMHC Medical Group Board of Directors	2005-2012
Chair, Search Committee for Dean of Univ. of Massachusetts Medical School	2006-2007
Co-Chair Clinical Performance Council	2007-2012
UMass Academic Health Center Strategic Planning	2010, 2015
Co-Chair, Clinical Care Joint Strategic Planning Taskforce	2010, 2015
Member, Faculty Part Time Guidelines Work Group	2013

UMMS Leadership Council	2010-present
Clinical Research Advisory Board	2010-present
Chair Search Committee for Chair of Department of Urology	2012
UMass Memorial Medical Center: Co-Chair, Growth Committee	2013-present
President of University of Massachusetts Committee: 5 Year Review of the Chancellor of UMass Medical Center	2014
Search Committee for Chair Department of Anesthesiology	2014-2015
Search Committee for Chair Department of Neurosurgery	2015-2016
UMassMemorial Medical Center; Co-Chair, Quality and Patient Experience	2016-2018

SUNY Upstate Medical University (University Hospital)

Clinical Research Advisory Board	1992-2003
Pharmacy and Therapeutics Committee	1992-1995
Quality Improvement Committee	1995-2003
Quality Council	1996-2003
Medical Director Orthopaedic Service Line	1996-2003
Orthopaedic Quality Improvement Director	1996-2003
Orthopaedic Perioperative Quality Improvement	1998-2003
Arthritis Foundation - Chairman of Medical and Scientific Committee	2000-2003

## FUNDED RESEARCH ACTIVITY

### FEDERAL FUNDING:

Title: Interface Failure in Total Joint Replacements (PI: K, Mann)  
Sponsor: NIH – (R29)  
Funding Period: Jul 96 – Jun 01                      Role: Co-I  
Funding Amount: \$524,000

Title: Interface Failure in Total Joint Replacements (PI: K, Mann)  
Sponsor: NIH – (R01)  
Funding Period: Jul 2001 – Jun 2003                      Role: Co-I  
Funding Amount: \$862,410

Title: Fatigue Crack Morphology in Cemented Hips (PI: K, Mann)  
Sponsor: NIH – (R03)  
Funding Period: Jul 2001 – Jun 2003                      Role: Co-I  
Funding Amount: \$151,300

Title: Perioperative Intervention to Improve Post-TKR Support and Function (PI: P. Franklin)  
Sponsor: NIH – (R01) National Institute of Arthritis and Musculoskeletal and Skin Diseases  
Funding Period: Sept 2007 – Jun 2012                      Role: Co-I  
Funding Amount: \$1,722,773

Title: Osteogenic Synthetic Bone Grafts for the Repair of Musculoskeletal Defects (PI: J. Song)  
Sponsor: NIH – (R01) National Institute of Arthritis and Musculoskeletal and Skin Diseases  
Funding Period: Jun 2008 – May 2013                      Role: Co-I  
Funding Amount: \$1,444,667

Title: Synthetic Periosteal Microenvironment Enhancing Repair of Critical-sized Long Bone Defects (PI: J. Song)  
Sponsor: DOD – CDMRP Peer Reviewed Orthopaedic Research Program (W81XWH-10-0574)  
Funding Period: 4/1/2009 – 3/31/2010  
Funding Amount: \$50,000

Title: Chondrogenic composite grafts for the repair of cartilage defects (PI: J. Song)  
Sponsor: NIH – (R21) NIAMS/NIBIB (1R21AR056866-A1)  
Funding Period: Jul 2009 – Jun 2012                      Role: Co-I  
Funding Amount: \$406,463

Title: Request for VivaCT 75 High Speed in vivo MicroCT Scanner (PI: J. Song)  
Shared Instrumentation Grant Program  
Sponsor: NIH – (S10) National Center for Research Resources (1S10RR027082-01)  
Funding Period: May 2010 – May 2012                      Role: Co-I  
Funding Amount: \$441,200

Title: Improving Orthopedic Outcomes through a National TJR Registry (PI: P. Franklin)  
Sponsor: NIH – (P50) AHRQ  
Funding Period: Sept 2010 – Sept 2014                      Role: National Co-I, Chair of Steering Committee, Surgical Lead  
Funding Amount: **\$11,987,050**

Refer to [FORCE-TJR.org](http://FORCE-TJR.org) for more information



Title: Bio-inspired Design for Robust Adhesion between Soft Polymers and Hard Minerals  
Sponsor: WPI  
Funding Period: 7/01/13 – 6/30/16  
Funding Amount: \$202,369

Title: Identifying Optimal Arthroplasty Care in Rheumatoid Arthritis Patients (PI: L. Harrold)  
Sponsor: NIH – (R01) National Institute of Arthritis and Musculoskeletal and Skin Diseases  
Funding Period: Apr 2013 – Mar 2015 Role: Co-I  
Funding Amount: \$459,750

Title: Implant Surface Modification Strategies to Prevent Periprosthetic Infections  
Sponsor: NIH (PI: J. Song)  
Funding Period: Nov 2013 – Oct 2018 Role: Co-I  
Funding Amount: \$492,083 submitted

Title: Improving Patient Reported Outcomes/Measures for Total Joint Replacement (Subaward)  
Sponsor: John Ware Research Group  
Funding Period: 12/01/14 – 11/30/16  
Funding Amount: \$1,195,276

Title: Comparative Effectiveness of Pulmonary Embolism Prevention after Hip and Knee Replacement (PEPPER):  
Balancing Safety and Efficacy (Subaward)  
Sponsor: MUSC/NIH/PCORI  
Funding Period: 6/1/15 – 5/31/19  
Funding Amount: \$424,664

#### INDUSTRY GRANTS:

Title: Low Molecular Weight Heparin in the Prevention of Deep Venous Thrombosis Following Total Hip Replacement Surgery (PI: DC Ayers)  
Sponsor: Kabi Pharmacia; Stockholm, Sweden  
Funding Period: Jun 1993 – Dec 1995

Title: Growth Factors and Orthopaedic Surgery (Co-PI: DC Ayers)  
Sponsor: Genentech; Cambridge, Massachusetts  
Funding Period: Nov 1994 – Oct 1995

Title: Failure Mechanics of the Cement-Bone Interface (Co-PI: DC Ayers)  
Sponsor: Whitaker Foundation  
Funding Period: July 1994- June 1997  
Funding Amount: \$178,526

Title: TKR Alignment and Surface Contact Areas: Phase I and Phase II (Co-PI: DC Ayers)  
Sponsor: Johnson & Johnson Orthopaedics  
Funding Period: May 1995 – July 1997  
Funding Amount: \$42,000

Title: The Efficacy of Preoperative Procrit Injections in Inflammatory Arthritis Patients Prior to Total Joint Replacement (PI: DC Ayers)  
Sponsor: Orthobiotech Inc.  
Funding Period: Jul 1997 – Dec 2000

Title: Finite Analysis of Total Joint Replacements (Co-PI: DC Ayers)

Sponsor: Zimmer Corporation

Funding Period: November 1999 – October 2000

Funding Amount: \$42,000

Title: Biomechanics of Cemented Total Hip Replacements (Co- PI: DC Ayers)

Sponsor: Stryker-Howmedica-Osteonics

Funding Period: Dec 1999 – January 2001

Funding Amount: \$109,428

Title: FEA and Experimental Analysis of Tapered Cemented Stems in THR (Co-PI: DC Ayers)

Sponsor: DePuy Orthopaedics; A Johnson and Johnson Company

Funding Period: Feb 2000 – Jan 2001

Title: Evaluation of New Bone Cement Formulations (Co-Investigator: DC Ayers)

Sponsor: Osteonics Howmedica Inc, Rutherford NJ

Funding Period: April 2001 – June 2003

Funding Amount: \$324,503

Title: A Prospective, Randomized Study of Two Tapered Stems with the Same Geometry but Different Metal Alloys in Cementless THR (CO-PI: DC Ayers)

Sponsor: DePuy Orthopaedics; A Johnson and Johnson Company

Funding Period: Jul 2001 – Jun 2002

Funding Amount: \$108,000

Title: A Prospective Randomized Study Comparing the Efficacy and Safety of Dalteparin and Warfarin in the Prevention of DVT after TKR (National PI: DC Ayers)

Sponsor: Pharmacia Upjohn Inc

Funding Period: Jan 2001 – Dec 2002

Title: High Flexion Total Knee Replacement (PI: DC Ayers)

Sponsor: Zimmer Inc.

Funding Period: Jan 2002 – Dec 2002

Title: A Doubly Randomized RSA Comparison of Highly Cross-linked and Conventional Polyethylene Wear and Titanium vs. Tantalum Acetabular Components Following THR in a High Risk Patient Population (PI: DC Ayers)

Sponsor: Zimmer Inc.

Funding Period: Jan 2004 – Jun 2009

Funding Amount: \$889,200

Title: A Multi-Center, Randomized, Double-Blind, Placebo-Controlled, Parallel Design, 2-Arm Study to Investigate the Effect of Aprotinin on Transfusion Requirements and Blood Loss in Patients Undergoing Elective Primary Total Hip Replacement Surgery.

Sponsor: Bayer Corporation

Funding Period: Sept 2005 – Feb 2006      Role: PI

Title: Define implant-related efficiencies and develop software to estimate hospital benefits and costs for the Zimmer PSI (Patient Specific Instruments)

Sponsor: Zimmer Inc.

Funding Period: Oct 2011 – April 2013

Funding Amount: \$59,474

FOUNDATION / OTHER PEER REVIEWED FUNDING

Title: Career Development Award. (PI)  
Sponsor: Orthopaedic Research and Education Foundation Jan 1990 – Dec 1991

Title: Failure Mechanics of the Cement-Bone Interface. (Co-I)  
Sponsor: The Whitaker Foundation Jul 1994 – Jun 1997

Title: How Mental Status Affects Physical Outcome Following TKR. (PI)  
Sponsor: Orthopaedic Research and Education Foundation Jul 2001 – Jun 2003

Title: Patient Outcomes Registry for Clinical and Translational Research. (PI)  
Total Joint, Spine and Hand & Upper Extremity Registries  
Sponsor: UMMHC Jan 2006 – On-Going  
Funding Amount: \$90,000 per year

Title: Geriatric Education for Specialty Residents (PI)  
Sponsor: American Geriatrics Society Jan 2007 – Dec 2008

Title: New therapeutic strategy for the treatment of osteoporotic bony lesions. (Co-I)  
Sponsor: UMMS Clinical and Translational Research Pilot Program Project Jul 2007 - Jun 2009  
Funding Amount: \$150,000

Title: Synthetic Periosteum Promoting the Healing of Cortical Bone Allografts. (Co-I)  
Sponsor: Musculoskeletal Transplant Foundation Jan 2007 – Dec 2008  
Funding Amount : \$124,998

Title: Patient eHealth Tools to Guide Treatment Choice and Assess Outcome. (Co-I)  
Sponsor: Robert Wood Johnson Foundation (Franklin) Jan 2008 - Dec2010  
Funding Amount: \$199,448

Title: Synthetic periosteum promoting the healing of cortical bone allografts. (Co-I)  
Sponsor: Musculoskeletal Transplant Foundation (Song) Jan 2008 - Dec 2009  
Funding Amount: \$124,998

Title: Synthetic Periosteum Promoting the Healing of Cortical Bone Allografts (Co-I)  
Sponsor: Musculoskeletal Transplant Foundation (PI: J. Song) Jan 2008 – Dec 2009

Title: Opportunities and Challenges for Total Knee & Hip Replacement Surgery. - A Collaborative  
Research of University of Massachusetts at Amherst and Worcester (Ayers/Crosby)  
Sponsor: UMass President's Science & Technology Award Jul 2008 – Jun 2010  
Funding Amount: \$150,000

Title: Osteoconductive Elastomeric Synthetic Bone Composite Graft for the Repair of Critical Sized  
Femoral Defects in Rats. (PI: Li; Mentor and Co-PI: Song)  
Sponsor: MTF/Charles H. Herndon Resident Clinician Scientist Training Grant Jul 2009 – Jun 2010  
Orthopaedic Research and Education Foundation / Musculoskeletal Transplant Foundation  
Funding Amount: \$20,000

Title: Osteoconductive Elastomeric Synthetic Bone Composite Graft for the Repair of Critical Sized  
Femoral Defects in Rats. (Co-I)  
Sponsor: OREF/Musculoskeletal Transplant Foundation (Song) Jan 2009 – Jun 2010  
Funding Amount: \$20,000

### ISSUED AND PENDING PATENTS

Composites for Medical Applications. Jie Song, David C. Ayers, Jane B. Lian and Xinning Li. Provisional Application No. 60/963,336, Aug. 3, 2007 (UMASSW-14836); PCT and US conversion filed July 31, 2008 (UMASSW-13709).

### ADMINISTRATION EXPERIENCE

**Medical Director:           Orthopedic Service Line  
University Hospital, Syracuse, New York**

1999/2000 Fiscal Year:   Total Managed Budget: \$ 9 Million

- \$ 6.5 Million Revenue
- \$ 2.5 Million Expense
- 52 FTE's

Negotiation of Strategic Alliance Partnership for TJR implants July 1, 1996

- 35% Savings off List Price for all contracted Prostheses
- (25% increase over previous 10% discount)
- \$ 225,000 Direct Annual Savings; on annual prosthetic budget of \$ 0.9 Million
- \$ 1.35 Million Prosthetic Savings over life of contract
- Standardization of joint replacement prostheses
- Standardization of OR equipment and consumables

Creation of Patient Care Pathways:   Total Joint Replacement and Spine Patients

- Mean LOS Decreased from 12 days to 4 days DRG 209
- Mean Hospital Charge Decreased from \$ 22,000 to \$12,500
- Simultaneous Increase in Volume DRG 209 from 190 to 405
- Initiation of Surgical Outcome Database utilizing SF-36 and WOMAC To Measure Patient Outcomes
- Creation of Patient Education Program

**Chair Department of Orthopedic and Physical Rehabilitation  
Medical Director of Musculoskeletal Center of Excellence**

**University of Massachusetts Medical School  
UMass Memorial Healthcare System**

Currently Manages:   Group Budget of \$ 22.5 Million  
                                  Musculoskeletal Center of Excellence Budget of \$ 265 Million

Directed growth of Orthopedic Outpatient visits from 38,000/year (2003) to 172,000/year (2015)

Developed regional strategy for Orthopaedic services in Central Massachusetts

Growth of Margin of Orthopedic service line from \$5,000,000 to \$55,000,000

Directed Department Research growth from \$0 to top 10 for federally funded research awards

(Total sum of NIH, AHRQ, and Dept of Defense grants)

Directs CMS Bundled Payment programs (BPCI) in TJR, Lumbar Spine Fusion, Cervical Spine Fusion

**PEER REVIEWED PUBLICATIONS**

1. Ayers, D.C. and Bose, A. "Lipid Changes During Nephrotic Syndrome", College of Medicine and Dentistry of New Jersey Quarterly, 1975.
2. Ayers, D.C., Naim, J., Rosier, R., and Evarts, C.M. "The Evaluation of Bone Perfusion Using DCAF Fluorescent Labeling and Instant Photography"; Surgical Forum XXXVI: 525-526, 1985.
3. Evarts, C.M., Ayers, D.C., and Puzas, J.E.: "Low Dose Radiation Therapy in the Prevention of Heterotopic Ossification in the High Risk Patient", The Hip, 70-83, 1986.
4. Ayers, D.C., Evarts, C.M., and Parkinson, J.R.: Journal "The Prevention of Heterotopic Ossification in High Risk Patients by Radiation Therapy", Journal of Bone and Joint Surgery (American), 68A: 1423-1430, 1986.
5. Ayers, D.C., Bromley, L., Francis, M. and Duthie, R. "Prostaglandins in the Inflammatory Membrane Around Hip Prostheses", Bone, 10:151, 1989.
6. Athanasou, N.A., Ayers, D.C., Rajiney, A.J., Oliver, D.O., and Duthie, R.B "Joint Distribution of Dialysis Amyloid"; British Quarterly Journal of Medicine, 287: 205-214, 1991.
7. Ayers, D.C., Pellegrini, V.D., and Evarts, C.M.: "The Prevention of Heterotopic Ossification in High Risk Patients By Radiation Therapy", Clinical Orthopaedics and Related Research, 263: 78-87, 1991.
8. Ayers, D.C., Athanasou, N.A., Woods, C.G., and Duthie, R.D.: "Dialysis Arthropathy of the Hip", Clinical Orthopaedics and Related Research, 290: 216-224, 1993.
9. Ayers, D.C., and Short, W.H. "Arthritis Surgery: A Review Article", Clinical and Experimental Rheumatology, 11: 74-84, 1993.
10. Benedict, M., Adiyaman, S., Ayers, D.C., Thomas, F.D., Calore, J., and Richman, R.: "Dissociation of Bone Mineral Density from Age-Related Decreases in Insulin-Like Growth Factor-I and its Binding Proteins in the Male Rat", The Journal of Gerontology, 49(5): B224-30, 1994.
11. Benedict M., Ayers, D.C. Calore, J., and Richman, R "Differential Distribution of Insulin-like Growth Factors and Their Binding Proteins Within Bone: Relationship to Bone Mineral Density": Journal of Bone and Mineral Research, 9(11):1803-1811, 1994.
12. Reibel, G., Ayers, D.C., Werner, F., and Murray, D.G "Short-Term Failure of a Unicompartmental Knee Replacement: Journal of Arthroplasty, 10(5): 615-622, 1995.
13. "Ayers, D.C., Murray, D.G., and Duerr, D.: Post-Operative Blood Salvage After Total Hip Arthroplasty", Journal of Bone and Joint Surgery (American), 77-A(9): 1347-1351, 1995
14. Ayers, D.C., Dennis, D.A., Johanson, N.A. and Pellegrini, V.D. "Common Complications of Total Knee Replacement" Journal of Bone and Joint Surgery (American), 79-A(2): 278- 312, 1997.
15. Mann, K.A., Ayers, D.C. and Damron, T.A "Effects of Stem Length on Mechanics of the Femoral Hip Component After Cemented Revision THR", Journal of Orthopaedic Research, 15(1): 62-69, 1997.

16. Ayers, David “Supracondylar Fracture of the Distal Femur Proximal to a Total Knee Replacement”, AAOS Instructional Course Lectures. Vol 46(18): 197-203, 1997.
17. Mann, K.A., Ayers, D.C., Damron, T.A. “Tensile Strength of the Cement-Bone Interface Depends on the Amount of Bone Interdigitated with PMMA Cement”, *Journal of Biomechanics* Vol 30 (4): 339-346, 1997.
18. Ayers, David “Polyethylene Failure and Osteolysis Following Total Knee Replacement”, AAOS Instructional Course Lectures, Vol 46(19): 205-213, 1997.
19. Mann, K.A., Werner, F.W., Ayers, D.C. “Modeling the Tensile Behavior of the Cement-Bone Interface Using Non-Linear Fracture Mechanics”, *Journal of Biomechanical Engineering* 119: 175-178, 1997.
20. Pellegrini, V., Francis, C., Ayers, DC., et al “A Prospective Randomized Study Comparing The Safety and Efficacy of Dalteparin and Warfarin in the Prevention of DVT After THR”, *Journal of Bone and Joint Surgery (American)* 79A: 65: 1365-1372, 1997.
21. Mann, K., Bartel, D., Ayers, D. “Influence of Stem Geometry on Mechanics of Cemented Femoral Components With a Proximal Bond”, *Journal of Orthopaedic Research* 15: 700-706, 1997.
22. Mann, K., Allen, M., Ayers, D.: “Pre-Yield and Post-Yield Shear Behavior of the Cement-Bone Interface”, *Journal of Orthopaedic Research* Vol. 16: 370-378, 1998.
23. Mann, K., Werner, F., Ayers, D. “Mechanical Strength of the Cement-Bone Interface is Greater in Shear than in Tension”, *Journal of Biomechanics*, 32 (11): 1251- 1254, 1999.
24. Hull, R., Pineo, G., Francis, C., Ayers, D., et al. “A Double-Blind Randomized Comparison of LMWH Prophylaxis Using Dalteparin in Close Proximity to Surgery Versus Warfarin in Hip Arthroplasty Patients”, *Archives of Internal Medicine*, 160: 2199- 2207, 2000.
25. Ayers, DC “Maximizing UHMWPE Performance in Total Knee Replacement Surgery”, AAOS Instructional Course Lectures, Vol. 50(44); 421-431, 2001.
26. Mann, KA, Damron, LA, Allen, MJ, Ayers, DC. “Mixed-mode Failure Response of the Cement-Bone Interface”, *Journal of Orthopaedic Research*, 19(6); 1153-1161, 2001.
27. Race A, Miller MA, Ayers DC, et al. The influence of surface roughness on stem-cement gaps. *J Bone Joint Surgery (British)*. 2002; 84:1199–1204.
28. Ayers, David C. “Complications Following Total Knee Replacement”, *Orthopaedic Knowledge Update VII*, Invited Submission, Vol. 51, 2002.
29. Ayers, D.C., Setter, K., Jain, R., Bennett, M., Murray, D., Rogers, M., and Franklin, P. “Physical Function After Total Knee and Hip Replacement Equals Age-Matched Norm for Patients Over 65”, *Journal of Arthroplasty*, 2003
30. Ayers, D.C., Mann, K.A. “Why Cemented Femoral Components Occasionally Fail”, AAOS Instructional Course Lectures, Invited Submission Vol. 52, 2003.
31. Race A, Miller MA, Ayers DC, et al. Early cement damage around a femoral stem is concentrated at the cement/bone interface. *J Biomech*. 2003;36:489–496.
32. Ayers DC, Mann K. The importance of proximal cement filling of the calcar region: A biomechanical

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- justification. *J Arthroplasty*. 2003 Oct; 18: 103-109. PMID: 14560418.
33. Ayers DC, Franklin PD, Trief PM, Ploutz-Snyder R, Freund D. Psychological attributes of preoperative total joint replacement patients: Implications for optimal physical outcome. *J Arthroplasty*. 2004 Oct; 19: 125-130. PMID:
  34. Mann KA, Gupta S, Race A, Miller MA, Cleary RJ, Ayers DC. Cement microcracks in thin-mantle regions after in vitro fatigue loading. *J Arthroplasty*. 2004 Aug; 19: 605-612. PMID: 15457431.
  35. Mann KA, Damron LA, Race A, Ayers DC. Early cementing does not increase debond energy of grit blasted interfaces. *J Orthop Res*. 2004 Jul; 22: 822-827.
  36. Ayers DC, Franklin PD, Trief P, Ploutz-Snyder R, Freund D. How preoperative MCS affects postoperative outcome in joint replacement surgery *Journal of Arthroplasty*, Vol. 19, Issue 2, p257
  37. Werner FW, Ayers DC, Maletsky LP, Rullkoetter PJ. The effect of valgus/varus malalignment on load distribution in total knee replacements. *J Biomech*. 2005 Feb; 38: 349-355. PMID: 15598463.
  38. Ayers DC, Franklin PD, Ploutz-Snyder R, Boisvert CB, Trief P. Total knee replacement outcome and co-existing physical and emotional illness. *Clin Orthop Relat Res*. (United States) 2005 Jan; 440: 157-161. PMID: 12578997.
  39. Franklin PD, McLaughlin J, Boisvert CB, Li W, Ayers DC. Pilot Study of Methods to Document Quantity and Variation of Independent Patient Exercise and Activity After Total Knee Arthroplasty. *J Arthroplasty*. 2006 Sep;21(6 Suppl 2):157-63. PubMed PMID: [16950079](#).
  40. Gaur T, Rich L, Lengner CJ, Hussain S, Trevant B, Ayers DC, Stein GS, Lian JB, et al. Secreted frizzled related protein 1 regulates Wnt signaling for BMP2 induced chondrocyte differentiation. *J Cell Physiol*. 2006 Jul; 208: 87-96. PMID: 18498122.
  41. Jager M, Fischer J, Dohrn W, Li X, Ayers DC, Czibere A. Dexamethasone modulates BMP-2 effects on mesenchymal stem cells in vitro. *J Orthop Res*. 2008 Nov; 26(11): 1440-1448. PMID: 18404732.
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  43. Jager M, Urselmann F, White F, Zanger K, Li X, Ayers DC, et al. Osteoblast differentiation onto different biomaterials with an endoprosthetic surface topography in vitro. *J Biomed Mater Res*. 2008 Jul; 86: 61-75.
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## BOOK CHAPTERS

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**PUBLISHED ABSTRACTS FROM PRESENTATIONS TO NATIONAL  
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1. The Evaluation of Bone Perfusion Using Florescent Labeling and Instant Photography" American Orthopaedic Association National Residents Conference New Orleans, Louisiana 1985
2. The Evaluation of Femoral Head Perfusion using DCAF and Instant Photography" American College of Surgeons, 71st Clinical Congress Chicago, Illinois 1985
3. The Prevention of Heterotopic Ossification in High Risk Patients by Radiation Therapy" American Orthopaedic Association National Residents Conference Los Angeles, California 1986
4. The Documentation of Femoral Head Perfusion Following Femoral Neck Fracture Using DCAF and Instant Photography" Orthopaedic Research Society, 32nd Annual Meeting New Orleans, Louisiana 1986
5. The Prevention of Heterotopic Ossification in High Risk Patients by Radiation Therapy Following Total Hip Arthroplasty" American Academy of Orthopaedic Surgeons San Francisco, California 1987
6. The Prevention of Heterotopic Ossification in High Risk Patients by Radiation Therapy Following Total Hip Arthroplasty" American Orthopaedic Association Centennial Meeting Washington, D.C. 1987
7. Prostaglandin Concentrations in the Inflammatory Membrane Around Aseptically Loose Total Hip Replacements" Bone and Tooth Society Cardiff, Wales 1988
8. Prostaglandin Concentrations in the Inflammatory Membrane Around Aseptically Loose Total Hip Replacements" Orthopaedic Research Society Las Vegas, Nevada 1989
9. The Use of Computer Assisted Digitization in the Assessment of the Position of Total Hip Replacements" American Academy of Orthopaedic Surgeons New Orleans, Louisiana 1990
10. Prostaglandins and Aseptic Loosening of Hip Replacements" Societe Internationale de Churogie Ortopedie et Traumatologie Montreal, Canada 1990
11. Contact Surface Areas in Cruciate Sparring Total Knee Replacements" Combined Meeting of the American , Canadian, and Japanese Orthopaedic Research Societies Banff, Canada 1991
12. Long-Term Results of the Variable Axis Total Knee Replacement" American Academy of Orthopaedic Surgeons Washington, D.C. 1992
13. Contact Surface Areas in Total Knee Replacements" Orthopaedic Research Society Washington, D.C. 1992

14. Contact Surface Areas in Condylar Knee Designs" American Academy of Orthopaedic Surgeons Washington, D.C. 1992
15. Postoperative Blood Salvage and Reinfusion of Filtered Unwashed Blood after Total Hip Replacement Surgery" American Academy of Orthopaedic Surgeons San Francisco, California 1993
16. Cytokines and Endosteal Bone Resorption In Cemented Total Hip Replacements" Orthopaedic Research Society San Francisco, California 1993
17. Surface Contact Areas and Wear Debris in Total Knee Replacements" Instructional Course for Orthopaedic Surgeons in Joint Replacement Vail, Colorado 1993
18. Postoperative Blood Salvage in Hip and Knee Replacement Surgery" American Association of Hip and Knee Arthritis Surgery Dallas, Texas 1993
19. Postoperative Blood Salvage Following Knee Replacement" American Academy of Orthopaedic Surgeons New Orleans, Louisiana 1994
20. Cytokines and Bone Resorption in Hip Replacements" Fifth International Meeting on Cytokines and Cells in Bone and Cartilage Davos, Switzerland 1994
21. Mechanical Failure After Total Knee Replacement" "Preoperative Evaluation Before Total Knee Replacement" "Non-Operative Treatment of Knee Arthritis" AAOS Course : Comprehensive Treatment of the Adult Knee San Diego, California 1995
22. Prostaglandin and Cytokine Concentrations in Aseptically Loose Total Hip Replacements" American Academy of Orthopaedic Surgeons Orlando, Florida 1995
23. Loosening of the Femoral Hip Component After Cemented Revision: Effects of Stem Length and Stem-Cement Bonding" American Academy of Orthopaedic Surgeons Orlando, Florida 1995
24. Biologic Contributions to Failure of Implant Fixation" Visiting Professor University Hospital, University of Western Ontario London, Ontario 1995
25. Osteolysis Following Total Knee Replacement" Pennsylvania State Joint Replacement Course Hershey, Pennsylvania 1995
26. Polyethylene Wear and Osteolysis Following Total Knee Replacement" "Supracondylar Fractures After Total Knee Replacement" Instructional Course Moderator and Lecturer American Academy of Orthopaedic Surgeons. Atlanta, Georgia 1996
27. Intramedullary PGE2 Administration at The Bone-Cement Interface" Orthopaedic Research Society Atlanta, Georgia 1996
28. Patello-Femoral Failure After Total Knee Replacement" "Polyethylene Wear and Osteolysis Following Total Knee Replacement" "Non-Operative Treatment of Knee Arthritis" AAOS Course : Comprehensive Treatment of the Adult Knee Boston, Massachusetts 1996
29. Total Hip Replacement in the United States; The Current State of the Art" International Hip Replacement Symposium Hosted by the Japanese Hip Foundation Yokohama City, Japan 1997

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30. Influence of Stem Geometry on Mechanics of Cemented Femoral Hip Components With a Proximal Bond" Orthopaedic Research Society San Francisco, California 1997
  31. Treatment of Polyethylene Wear in Total Knee Replacement With Tibial Insert Exchange" American Academy of Orthopaedic Surgery San Francisco, California 1997
  32. Common Complications Following Total Knee Replacement: Treatment and Prevention" Instructional Course Lecture Moderator and Lecturer American Academy of Orthopaedic Surgery. San Francisco, California 1997 New Orleans, Louisiana 198 Anaheim, California 1999
  33. The Effect of Valgus/Varus Malalignment on Load Distribution in Total Knee Replacements" Symposium of the International Society for Technology in Arthroplasty San Diego, California 1997
  34. The Importance of Stem Surface Finish in Cemented THR" "Long-term Results of the Tri-Lock Cementless THR" Optimizing UHMWPE wear in TKR" Controversies In Total Joint Replacement Lake George, New York 1998
  35. Periprosthetic Fractures Following Total Knee Replacement" AAOS Symposium; Treatment of Complications Following TKR American Academy of Orthopaedic Surgery Anaheim, Ca 1999
  36. Long-term Results of Tapered Cementless Femoral Components in THR" "Polyethylene Wear and Osteolysis in TKR" Supracondylar Fracture Proximal to TKR; Pathophysiology and Treatment" Current Concepts in Total Joint Replacement Surgery Niagara Falls, Ontario, Canada 1999
  37. Womac Scores Improve Prediction of Physical Change Following TJR" "Highlights of the Orthopaedic Research Society Related to TJR" American Association of Hip and Knee Surgeons Dallas, Texas 1999
  38. The Effect of Coronal Malalignment on Load Distribution in Total Knee Replacements" International Symposium for Technology in Arthroplasty Chicago, Illinois 1999
  39. Optimizing UHMWPE in Total Hip Replacement and Total Knee Replacement" Instructional Course Lecture Moderator and Lecturer American Academy of Orthopaedic Surgery Anaheim, California 1999 Orlando, Florida 2000
  40. Coronal Mal-alignment and Surface Contact Area in TKR" Orthopaedic Research Society Orlando, Florida 2000
  41. Maximizing UHMWPE Performance in TKR" Instructional Course Lecturer and Moderator American Academy of Orthopaedic Surgeons Annual Meeting Orlando, Fla. 2000
  42. Outcome Studies In TKR Patients; How They Can Affect Your Practice" "Highlights of the ORS 2000 Annual Meeting Regarding Joint Replacements" American Association Of Hip and Knee Surgeons Dallas, Texas 2000
  43. How Outcome Studies Can Be Useful In Your Knee Replacement Practice" Eastern Orthopaedic Association Orlando, Fla. 2000
  44. Measurement of Contact Area During Trial Reduction Correlate With Physiologic Loading Following TKR" American Academy of Orthopaedic Surgeons San Francisco, CA 2001
  45. Unexpected Gaps at the Stem-Cement Interface in Textured Cemented Femoral Components." American Association of Hip and Knee Surgeons Dallas, Texas 2001

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46. The Effect of TNF Application at the Bone-Cement Interface in an Animal Model” The Knee Society San Diego, CA 2001
  47. Revision Total Knee Replacement” Instructional Course Lecture American Academy of Orthopaedic Surgeons Dallas, Texas 2002 New Orleans, LA 2003
  48. Minimally Invasive Unicompartmental Knee Replacement: A Historical Perspective” Symposium American Academy of Orthopaedic Surgeons Dallas, Texas 2002
  49. The Importance of Proximal Cement Mantle Thickness In Total Hip Replacement” American Association of Hip and Knee Surgeons Dallas, Texas 2002
  50. How Outcome Measures in TKR Surgery Can Effect Your Practices” International Society for the Advancement of Technology in Arthroplasty Oxford, England UK 2002
  51. Total Knee Replacement in the Young Patient” Instructional Course Lecture American Academy of Orthopaedic Surgeons New Orleans, LA 2003
  52. Unicompartmental Arthritis of the Knee: Alternatives to Total Knee Replacement” Instructional Course Lecture and Moderator American Academy of Orthopaedic Surgeons Dallas, Texas 2002 New Orleans, LA 2003
  53. Important Hip Topics: Osteonecrosis, Labral Tears and NSAIDS” Moderator, AAHKS Fall Meeting Texas, November 2004
  54. Total Knee Replacement in the Young Patient” American Academy of Orthopaedic Surgeons Annual Meeting Washington DC 2005
  55. How Pre-operative MCS Effects Post-Operative Outcome In Knee Replacement Surgery” American Academy of Orthopedic Surgeons Annual Meeting Washington, DC 2005
  56. Is There An Association Between Pre-op Emotional Health and Post-op Exercise Adherence After TKR” American Academy of Orthopedic Surgeons Annual Meeting Chicago, IL 2006
  57. Synthetic Grafts Promoting the Healing of Segmental Femoral Defects in Rats. 4th Annual Clinical and Translational Research Retreat: “Patient-Oriented Research - Linking Cells and Society” UMASS Medical School, Worcester, MA, April 25, 2007
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  61. In Vitro Release of Growth Factors and Antibiotics from Elastomeric Osteoconductive Synthetic Bone Grafts. 54th Annual Meeting of the Orthopedics Research Society, San Francisco, CA, March 2-5, 2008

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63. Early Micromotion of a Tapered Femoral Stem in Cementless Total Hip Replacements (THR) in Young, Active Patients” American Association of Hip and Knee Surgeons 18th Annual Meeting
64. Repair of Critical Femoral Defects in Rats by an Osteoconductive Synthetic Bone Graft. 55th Annual Meeting of the Orthopedics Research Society, Las Vegas, NV, Feb. 22-25, 2009
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99. Oatis CA, Li W, Rosal M, Ayers DC, Franklin PD. Associations Between Body Mass Index and Physical Activity Following Total Knee Replacement. American Physical Therapy Association, San Diego, CA. January 2013
100. Oatis CA, Li W, Rosal M, Ayers DC, Franklin PD. Physical Activity and Timing of Discharge From Physical Therapy Following Total Knee Replacement. American Physical Therapy Association, San Diego, CA. January 2013
101. Franklin PD, Allison JJ, Harrold L, Li W, Ayers DC. FORCE-TJR: a new us paradigm for a national TJR registry collecting level 1, 2, and 3 outcomes. International Congress of Arthroplasty Registries, Stratford-Upon-Avon, UK. June 2013
102. Franklin PD, Harrold L, Miozzari H, Ayers DC, Lubbeke A. Differences in patient characteristics prior to TKA between Switzerland and the US. International Congress of Arthroplasty Registries, Stratford-Upon-Avon, UK. June 2013
103. Franklin PD, Harrold L, Ayers DC, Hoffmeyer P, Lubbeke A. Differences in patient characteristics prior to TKA and THA between Switzerland and the US. Swiss Society of Orthopaedic Surgeons and Traumatologist, Lausanne, Switzerland. June 2013

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104. Lubbeke A, Miozzari H, Harrold L, Ayers DC, Franklin PD. Differences in patient characteristics prior to THA between Switzerland and the US. International Congress of Arthroplasty Registries, Stratford-Upon-Avon, UK. June 2013
  105. Franklin PD, Harrold L, Li W, Ayers DC. Has the level of disability at time of TKR changed over the past 10 years? Results from two us cohorts. International Congress of Arthroplasty Registries, Stratford-Upon-Avon, UK. June 2013
  106. Ayers DC, Harrold L, Li W, Allison JJ, Franklin PD. for the FORCE-TJR Investigators. Differences in pre-op characteristics between TKR and THR patients: results from force-TJR a national US cohort. International Congress of Arthroplasty Registries, Stratford-Upon-Avon, UK. June 2013
  107. Franklin PD, Barton BA, Harrold L, Li W, OKeefe R, Allison JJ, Ayers DC. Providing Comprehensive, Comparative Post-TJR Outcome Feedback To Surgeons For Quality Monitoring and Value Decisions. ACR/ARHP American College of Rheumatology, San Diego, CA. October 2013
  108. Franklin PD, Harrold L, Li W, Allison JJ, Ayers DC, Lewis C. Important Predictors Of Patient-Reported Outcomes After TKR and THR Are Not Included In Risk Models Based On Administrative Data. ACR/ARHP American College of Rheumatology, San Diego, CA. October 2013
  109. Porter AJ, Li W, Harrold L, Rosal M, Noble P, Ayers DC, Franklin PD. Musculoskeletal Pain Explains Differences In Function At Time Of Surgery In Black TKR and THR Patients. ACR/ARHP American College of Rheumatology, San Diego, CA. October 2013
  110. Li W, Harrold L, Allison JJ, Bowen T, Franklin PD, Ayers DC. Does Functional Gain and Pain Relief After TKR and THR Differ By Patient Obese Status? ACR/ARHP American College of Rheumatology, San Diego, CA. October 2013
  111. Harrold L, Ayers DC, OKeefe R, Lewis C, Pellegrini V, Franklin PD. The Validity Of Patient-Reported Short-Term Complications Following Total Hip and Knee Arthroplast. ACR/ARHP American College of Rheumatology, San Diego, CA. October 2013
  112. Ayers DC, Harrold L, Li W, Franklin PD. Pre-Op THR Patient Pain and Functional Limitation Profiles Are Consistent Across US Surgeons. American Association of Hip and Knee Surgeons, Dallas, TX. November 2013
  113. Lubbeke A, Ayers DC, Franklin PD. Differences in Patient Characteristics prior to Total Hip Arthroplasty between Switzerland and the US. American Association of Hip and Knee Surgeons, Dallas, TX. November 2013
  114. Harrold L, Ayers DC, Reed G, Franklin PD. Differences in functional gain between rheumatoid arthritis and osteoarthritis patients undergoing arthroplasty: Results from the FORCE-TJR national research consortium. Combined Meeting of Orthopaedic Societies, Venice, Italy. October 2013
  115. Harrold L, Li W, Allison JJ, Noble P, Ayers DC, Franklin PD. Do younger TKR patients have similar disability at time of surgery as older adults? Lessons from FORCE-TJR. Combined Meeting of Orthopaedic Societies, Venice, Italy. October 2013
  116. Ayers DC, Harrold L, Li W, Allison JJ, Noble P, Franklin PD. Differences in pre-op characteristics between TKR and THR patients: results from FORCE-TJR a national us cohort. Combined Meeting of Orthopaedic Societies, Venice, Italy. October 2013

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117. Porter AJ, Snyder B, Ayers DC. A Prospective Randomized Comparison of Patient Specific Instruments with Standard TKR instrumentation. Combined Meeting of Orthopaedic Societies, Venice, Italy. October 2013
  118. Ayers DC, Snyder B, Porter AJ, Walcott ME, Aubin ME, Drew JM, Geene M, Bragdon C. RSA Evaluation of a Cementless Tapered Femoral Stem with Crosslinked vs. Conventional Liners and Tantalum vs. Titanium Acetabular Shells in Young, Active THR Patients. Combined Meeting of Orthopaedic Societies. October 2013
  119. Franklin PD, Allison JJ, Li W, Harrold L, Barton B, Snyder B, Rosal M, Ayers DC. FORCE-TJR: TJR function and outcomes research for comparative effectiveness in US national cohort. Combined Meeting of Orthopaedic Societies, Venice, Italy. October 2013
  120. Ayers DC, Harrold L, Li W, Franklin PD. Pre-Op THR Patient Pain and Functional Limitation Profiles Are Consistent Across US Surgeons. American Association of Hip and Knee Surgeons, Dallas, TX. November 2013
  121. Lubbeke A, Ayers DC, Li W, Franklin PD. Differences in Patient Characteristics prior to Total Hip Arthroplasty between Switzerland and the US. American Association of Hip and Knee Surgeons, Dallas, TX. November 2013
  122. Drew JM, Briggs V, Lange JK, Franklin PD, Ayers DC. Trends in Total Hip Arthroplasty in the United States: The Shift to a Younger Demographic. American Association of Hip and Knee Surgeons, Dallas, TX. November 2013
  123. Ayers DC, Franklin PD. Symposium: Public reporting of complications in TJRs; AAHKS adds important clinical factors and improves CMS risk methodology. American Association of Hip and Knee Surgeons, Dallas, TX. November 2013
  124. Zheng H, Li W, Harrold L, Allison JJ, Ayers DC, Franklin PD. Surgeon-Specific Web Reports to Support Quality Improvement in National Patient-Centered Outcomes Research for Comparative Effectiveness in Total Joint Replacement. Electronic Data Methods Forum, San Diego, CA. June 2014
  125. Franklin PD, Harrold L, Li W, Lewis C, Allison JJ, Ayers DC. Important predictors of patient-reported outcomes after THR and TKR not included in risk models based on administrative data. AcademyHealth Annual Research Meeting (ARM), San Diego, CA. June 2014
  126. Franklin PD, Harrold L, Li W, OKeefe R, Allison JJ, Ayers DC. Providing comprehensive, comparative post-TJR outcome feedback to surgeons for quality monitoring and value decisions. AcademyHealth Annual Research Meeting (ARM), San Diego, CA. June 2014
  127. Harrold L, Snyder B, Li W, Ayers DC, Franklin PD. Poor pre-operative emotional health limits gain in function after Total Hip Replacement. Orthopaedic Research Society, New Orleans, LA. March 2014
  128. Franklin PD, Barton BA, Harrold L, Okeefe R, Allison JJ, Ayers DC. Comprehensive, Comparative Post-TJR Outcome Feedback To Surgeons For Quality Monitoring And Value Decisions. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014
  129. Harrold L, Ayers DC, Okeefe R, Lewis CG, Pellegrini V, Franklin PD. The Validity of Patient-Reported Short-Term Complications following Total Hip and Knee Arthroplasty. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014

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130. Ayers DC, Harrold L, Li W, Franklin PD. Pre-Op THR Pain And Functional Limitation Profiles Are Consistent Across U.S. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014
  131. Franklin PD, Harrold L, Li W, Lewis CG, Allison JJ, Ayers DC. Predictors Of Patient-reported Outcomes After TKR Not Included In Risk Models Based On Administrative Data. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014
  132. Ayers DC. Radiostereometric Analysis of Femoral Head Penetration in Cross-Linked Polyethylene In THR Patients. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014
  133. Ayers DC. Radiostereometric Analysis of Cementless Femoral Stem Stability in Young Total Hip Replacement Patients at 5 years. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014
  134. Franklin PD, Ayers DC. Symposium: Patient-Reported Outcomes in Research. Orthopaedic Research Society, New Orleans, LA. March 2014
  135. Franklin PD, Hoffmeyer, Miozzari H, Ayers DC, Lubbeke A. Differences In patient characteristics prior to TKA and THA between Switzerland and the US. Orthopaedic Research Society, New Orleans, LA. March 2014
  136. Lubbeke A, Miozzari H, Harrold L, Ayers DC, Franklin PD. Differences in Patient Characteristics prior to Total Hip Arthroplasty between Switzerland and the US. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014
  137. Ayers DC, Harrold L, Li W, Allison JJ, Noble P, Franklin PD. Do younger TKR and THR patients have similar disability at time of surgery as older adults? Lessons from FORCE-TJR. Orthopaedic Research Society, New Orleans, LA. March 2014
  138. Drew JM, Lange JK, Briggs V, Franklin PD, Ayers DC. Trends in total knee arthroplasty in the US: Understanding the shift to a younger demographic. American Academy of Orthopaedic Surgeons. March 2014
  139. Drew JM, Lange JK, Briggs V, Franklin PD, Ayers DC. Trends in total hip arthroplasty in the US: Understanding the shift to a younger demographic. American Academy of Orthopaedic Surgeons, New Orleans, LA. March 2014
  140. Franklin PD, Harrold L, Li W, Lewis C, Allison JJ, Ayers DC. Important musculoskeletal predictors of Patient-Reported Outcomes after TKR And THR are not included in risk models based on administrative data. Orthopaedic Research Society, New Orleans, LA. March 2014
  141. Ayers, DC. All Cause 30 Day Readmission Rates Following TKA 2014 Knee Society Annual Meeting October 2014, Charlotte, North Carolina
  142. Ayers DC. Highlight of AAOS Annual Meeting 2015; Adult Reconstructive Surgery of the Hip, AAOS Annual Meeting Las Vegas Nevada March 2015
  143. Harrold, L., Ayers DC, Franklin PD. Location of All Cause 30-Day Readmissions Following Total Joint Replacement: Surgical Versus Outside Hospital, AAOS Annual Meeting, Las Vegas Nevada, March 2015
  144. Franklin PD, Ayers DC. Preoperative Musculoskeletal Comorbidities Limit Improvement in Functional Outcomes and Hip Pain in THA Patients. AAOS Annual Meeting, Las Vegas Nevada, March 2015

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145. Harrold, L, Ayers DC, Noble P, Franklin PD. Differences in THR Outcomes Based on Age. AAOS Annual Meeting, Las Vegas Nevada, March 2015
  146. Ayers DC, Nguyen, U, Franklin PD. Preoperative Pain and Function: Profiles of Selected Total Knee Replacement Patients Among US Surgeons. AAOS Annual Meeting, Las Vegas Nevada, March 2015
  147. Zheng H, Franklin PD, Ayers DC. Risk-adjusted TJR Outcomes to Anticipate Bundled Payment and Public Reporting of Quality Data. AAOS Annual Meeting, Las Vegas Nevada, March 2015
  148. Ayers DC. Does Pain and Function Differ After Primary TKR with Cemented vs. Cementless Fixation? Data from FORCE-TJR. The Knee Society Annual Meeting, San Francisco CA, September 2015
  149. Ayers DC. Pain and Function Profiles in Patients Undergoing THR: Are Readmissions Associated with Poorer Functional Gain? The Hip Society Annual Meeting, Sonoma CA, October 2015
  150. Ayers DC, Franklin PD. Does Pain and Function Differ After Primary Total Knee Replacement with Cemented vs. Cementless Fixation? AAHKS Annual Meeting, Dallas Texas, November 2015
  151. Ayers DC. Patient Reported Outcomes in the Clinical Practice of TJR. The AAOS Quality Institute. Washington DC, November 2015
  152. Ayers DC. Highlights of AAOS Annual Meeting 2016; Adult Reconstructive Surgery of the Hip, AAOS Annual Meeting, Orlando Florida, March 2016
  153. Ayers DC. Symposium: Patient Reported Outcomes; Where do we stand regarding risk adjustment for patient specific comorbidities when evaluating PROMS; the FORCE-TJR experience. AAOS Annual Meeting, Orlando Florida, March 2016
  154. Ayers DC, Franklin PD. Are Post-TJR Readmissions Associated with Poorer Functional Gain After TJR? AAOS Annual Meeting, Orlando Florida, March 2016
  155. Ayers DC Symposium: Improving Patient Outcomes After TKR. The Knee Society Annual Open Meeting, Orlando Florida, March 2016

#### **PRESENTATIONS TO REGIONAL AND LOCAL MEETINGS**

1. Intracapsular Fractures of the Proximal Femur; The Unsolved Fracture University of Rochester Orthopaedic Grand Rounds Rochester, New York 1985
2. Prostaglandins and Prosthetic Component Fixation Nuffield Orthopaedic Centre Research Seminar Oxford, England 1988
3. Prostaglandins of the E and F Series and Aseptic Loosening of Total Hip Replacements" Case Western Reserve University Research Seminar Cleveland, Ohio 1988
4. The Role of Prosthetic Replacement in Femoral Neck Fractures" SUNY Health Science Center AO Course– Operative treatment of Femur Fractures Syracuse, New York 1989
5. The Prevention of Heterotopic Ossification by Low Dose Radiation Therapy in the High Risk Population Following Total Hip Replacement" Nuffield Orthopaedic Centre Grand Rounds Oxford, England 1989

6. Prostaglandins and Aseptic Loosening" University of Rochester Alumni Day Rochester, New York 1989"Controversies in Joint Replacement Surgery" Arthritis Teaching Day Binghamton, New York 1990
7. Total Knee Replacement Surgery" SUNY Rheumatology Grand Rounds Syracuse, New York 1990"Total Hip Replacement Surgery" SUNY Rheumatology Grand Rounds Syracuse, New York 1990
8. Joint Replacement Surgery" Arthritis Teaching Day Syracuse, New York 1990"Revisional Hip Surgery" Mary Imogene Bassett Hospital Symposium Cooperstown, New York 1991
9. Implant Removal Techniques" Capital District Revision Hip Symposium Saratoga, New York 1991
10. The Biologic Response to Wear Debris" Academic Orthopaedic Surgeons Travel Society Palm Beach, Florida 1991"The Biologic Response to Wear Debris" Reconstructive Surgeons Travel Society Chicago, Illinois 1991
11. Dialysis Amyloidosis of the Musculoskeletal System" Nephrology Grand Rounds Syracuse, New York 1991
12. Revision Joint Replacement Surgery" Utica Orthopaedic Grand Rounds Utica, New York 1992"Replacement of the Proximal Femur" AO Course: Operative Care of Fractures Syracuse, New York 1993
13. Revision Hip Surgery" Albany Orthopaedic Teaching Seminar Glens Falls, New York 1995
14. Polyethylene Wear After Total Knee Replacement" Rheumatology Grand Rounds Syracuse, New York 1996
15. Total Hip Replacement: Cemented or Cementless" Rheumatology Grand Rounds Syracuse, New York 1997
16. Total Knee Replacement: Current Issues" Rheumatology Grand Rounds Syracuse, New York 1998
17. How do I Measure Quality in TJR" Rheumatology Grand Rounds Syracuse, New York 1999"The Prevention of DVT Following THR" Utica Orthopaedic Grand Rounds Utica, New York 1999
18. The Prevention of DVT Following THR; the Evolving Role of LMWH" Upjohn National Sales Meeting Nashville, Tennessee 2000
19. The Trilock Cementless Femoral Component; Design Concepts and Long-term Results" Anderson Orthopaedic Learning Center Washington, DC January and March 2000
20. Tapered Cementless Stems In Total Hip Replacements" New England Baptist Hospital Orthopaedic Grand Rounds Boston, Mass. October 2000
21. Gaps at the Stem-Cement Interface with Textured Femoral Components" AORTA Annual Meeting Brewster, Mass. August 2001
22. Prevention of DVT following THR and TKR; the evolving role of LMWH's" Strong Memorial Hospital; University of Rochester Orthopaedic Grand Rounds Rochester, New York December 2002
23. Total Joint Replacement" New England Baptist Hospital: Orthopedic Grand Rounds Boston, MA November 17, 2004

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24. The Department of Orthopedics and Physical Rehabilitation” UMass Memorial Combined Grand Rounds Worcester, MA December 17, 2004
  25. Is it Really Arthritis or Did I Injure Myself” UMass Memorial Foundation Medical Research and Quality Health Care. West Palm Beach, Florida, March 1, 2005
  26. Total Knee Replacement 2005” Informed Women, Healthy Women 2005 Workshop Marlboro, MA
  27. Joint Replacement 2005” Berkshire Medical Center Pittsfield, MA May 20, 2005
  28. Preoperative Patient Factors Effect PostOperative Outcome in Knee Replacement Surgery” 35th Annual Arthroplasty Course Boston, MA September 28, 2005
  29. Tapered Cementless Stems “ 35th Annual Arthroplasty Course Boston, MA September 28, 2005
  30. Knee Arthritis: Total Knee Replacement” Orthopedics for the Primary Care Provider Westboro, MA October 6-7, 2005
  31. Paper Presentation: “Is There An Association between Pre-Op Emotional Health and Post-Op Exercise Adherence after TKR” American Association of Hip and Knee Surgeons 15th Annual Meeting Dallas Texas November 4-6, 2005
  32. Moderator: Session Eight: “Revision TKR” American Association of Hip and Knee Surgeons 15th Annual Meeting Dallas Texas November 4-6, 2005
  33. Guest Speaker: “Arthritis Update” Arthritis Foundation Worcester Support and Education Group
  34. Presenter, Advances in Arthroplasty 36th Annual Arthroplasty Course Boston, MA October 4 – 6, 2006
  35. Moderator: Continuum of Musculoskeletal Research: from cells to society Clinical Translational Research Retreat Worcester, MA April 26, 2007
  36. Pain Relief and Functional Improvement after Total Knee Replacement (TKR) AAHKS 17TH Annual meeting Dallas, Texas November 2-4, 2007
  37. Total Joint Replacement Surgery: State of the Art in 2008 UMass Amherst Polymer Science & Engineering Department Spring 2008Symposium Amherst, MA May 15, 2008
  38. A prediction calculator to support surgical decision-making among diverse populations: The case of TKR. Commonwealth Medicine, Boston, MA. (2009)
  39. Opportunities and challenges for total knee and hip replacement - a collaborative research of University of Massachusetts at Amherst and Worcester. UMass, Amherst, Massachusetts. (June 2008)
  40. A synthetic alternative to structural bone allografts” UMMS DERC Annual Retreat, Hoagland Pincus Conference Center, Sept. 24, 2009, Shrewsbury, MA
  41. Informed Consent. UMass Memorial Grand Rounds October 10, 2012 Worcester MA
  42. FORCE TJR The National Comparative Effectiveness Joint Replacement Registry. Northwestern University Grand Rounds April 12, 2013

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43. FORCE-TJR . The Crawford Campbell Lecture and visiting Professor; Albany Medical Center , Albany New York, May 2013
  44. Public Reporting of Outcomes in TJR; the Role of FORCE-TJR. The Tronzo Lectureship, Philadelphia PA, June 2013

#### **INVITED INTERNATIONAL LECTURES**

1. Biologic Contributions to the Failure of Implant Fixation University of Western Ontario London, Ontario 1995
2. Total Hip Replacement in the United States: The Current State of the Art International Hip Symposium. Hosted by the Japanese Hip Society Yokohama City, Japan 1997
3. Total Knee Replacement in the United States, the Current State of the Art in 2007 Nuffield Orthopedic Centre Hosted by Oxford University Oxford UK
4. TKR patients with prior ipsilateral meniscectomy are younger and have significant pain and disability. Osteoarthritis Research Society International, Montreal, Canada. (September 2009)
5. Bleeding concerns drive practices of orthopedic surgeons in prevention of venous thromboembolism in primary hip and knee arthroplasty. International Society on Thrombosis and Haemostasis, Boston, MA. (July 2009)
6. Ayers DC, Harrold L, Li W, Noble P, Allison JJ, Franklin PD. Pre-op THR and TKR pain and functional limitation profiles are consistent across U.S. surgeons. International Congress of Arthroplasty Registries, Boston, MA. (June 2014)
7. Franklin PD, Harrold L, Li W, Allison JJ, Lewis C, Ayers DC. Are all important predictors of pain and function after TKR and THR included in registry data? International Congress of Arthroplasty Registries, Boston, MA. (June 2014) (Podium)
8. Noble P, Harrold L, Li W, Allison JJ, Ayers DC, Franklin PD. Disability at time of surgery in younger vs. Older THR and TKR patients: lessons from force-TJR. International Congress of Arthroplasty Registries, Boston, MA. (June 2014)
9. Franklin PD, Harrold L, Li W, Ash A, Ayers DC. Improving risk prediction models for readmission: adding clinical variables to administrative data. International Congress of Arthroplasty Registries, Boston, MA. (June 2014) (Podium)

#### **EDITORIAL REVIEW BOARD**

Journal of the American Academy of Orthopaedic Surgery

Journal of Bone and Joint Surgery : Associate Editor 2013

Clinical Orthopedics and Related Research

The Journal of Arthroplasty

Techniques in Knee Surgery



**SCIENTIFIC EXHIBITS**

“Wear Debris and Total Joint Replacement of the Hip and Knee”  
American Academy of Orthopaedic Surgeons  
Committee on Hip and Knee Arthritis  
1996 & 1997

“Economic Aspects of Total Joint Replacement and DRG 209”  
American Academy of Orthopaedic Surgeons  
Committee on Hip and Knee Arthritis  
1998 & 1999

FORCE-TJR; The AHRQ National Joint Replacement Registry  
American Academy of Orthopedic Surgeons  
2012, 2013

**PROGRAM CHAIRMAN**

“Current Issues in Total Joint Replacement Surgery”  
Sagamore Hotel, Bolton Landing, New York  
October 1998

“Controversies in Total Joint Replacement of the Hip and Knee”  
Niagara Falls, New York  
May 1999

American Association of Hip and Knee Surgeons  
Program Chairman, Annual Meeting  
Dallas, Texas  
November 2002

3-2016