

CURRICULUM VITAE AND BIBLIOGRAPHY

DATE PREPARED: December 28, 2011

Name: Martha Meaney Murray

Office Address: Children's Hospital, Boston
Department of Orthopaedic Surgery
300 Longwood Avenue, Hunnewell 2
Boston, MA 02115

Education:

1987	BS	University of Delaware	Mechanical Engineering
1990	MS	Stanford University	Materials Science and Eng
1994	MD	University of Pennsylvania	

Postdoctoral Training:

07/94-06/95	Intern	General Surgery, Massachusetts General Hospital
07/95-06/98	Resident	Harvard Combined Orthopaedic Residency Program
07/98-12/00	Clinical Fellow	Harvard Medical School
07/00-07/01	Fellow	Orthopaedic Research Laboratory
08/01-06/02	Fellow	Pediatric and Adult Sports Medicine, Children's Hospital
07/02-01/03	Fellow	Pediatric Orthopaedic Surgery, Children's Hospital

Faculty Academic Appointments:

1/01-6/02	Instructor	Harvard Medical School
01/03-12/05	Instructor	Harvard Medical School
01/06-2010	Assistant Professor	Harvard Medical School
2010-present	Associate Professor	Harvard Medical School

Hospital/Affiliated Institution Appointments:

12/99-09/07	Orthopaedic Surgeon	Brigham and Women's Hospital
11/00-03/02	Orthopaedic Surgeon	New England Surgicare
03/01-01/02	Orthopaedic Surgeon	Faulkner Hospital
11/03-present	Orthopaedic Surgeon	Beth Israel Deaconess Medical Center
11/02-present	Orthopaedic Surgeon	Children's Hospital of Boston
07/03-01/06	Orthopaedic Surgeon	New England Baptist Hospital

Other Professional Positions:

2007	Advisory Board Member, Department of Mechanical Engineering External Advisory Board Member
2007	National Institutes of Health, NIAMS, Invited Consultant; "Roundtable Discussion on Musculoskeletal Trauma" Focus Group; 1/2007
2007	National Institutes of Health; Conference on Functional Tissue Engineering, Invited Group Leader - Ligament Section

- 2008 NIH/NIAMS Working Group Meeting, SBIT/STTR Grants: Stimulating and Commercializing Tissue Engineering and Regenerative Medicine (TE/RM) Applications to Musculoskeletal Diseases and Disorders
- 2008 NIH-NIAMS Workshop on Translational Models for Musculoskeletal Tissue Engineering and Regenerative Medicine
- 2008 Tissue Engineering and Regenerative Medicine International Society (TERMIS), Soft Tissue Repair, Invited Session Chair
- 2010 ACL Study Group, Invited Session Chair
- 2010 Gordon Research Conference, Musculoskeletal Tissue Engineering, Invited Session Chair
- 2010 Data and Safety Monitoring Board, NIAMS, "Single- vs. Double-Bundle ACL Reconstruction", University of Pittsburgh
- 2011 International Society for Tendon and Ligament, invited session moderator.
- 2011 Orthopaedic Research Society, invited session moderator.

Major Administrative Leadership Positions:

Local

- 2002-2004 Faculty Selector, Residency Selection Committee
Harvard Combined Orthopaedic Residency Program
- 2002-2005 Grand Rounds Speaker Coordinator for Orthopaedic Surgery at Children's Hospital Boston
- 2004 - 2012 Director, Children's Sports Medicine Foundation Board
- 2008 -2012 Site Miner for Children's Hospital Boston, CIMIT

Committee Service:

- 2010 Executive Committee, ACL Study Group, Organizer of the ACL Traveling Fellows Program
- 2008-2012 Chairman, ACL Study Group Research Committee
- 2008 Honors Thesis Committee Member for Tony Sung,
Harvard Medical School Health Sciences and Technology Program
- 2008-2010 PhD Thesis Committee Member, Megan Bowers
Warren Alpert Brown School of Medicine
- 2008-2012 Standing Permanent Member National Institutes of Health;
"Musculoskeletal Tissue Engineering (MTE)" Study Section
- 2009-2011 Orthopaedic Research Society Nominating Committee
- 2010-2012 Tissue Engineering and Regenerative Medicine International Society (TERMIS) North America Membership Committee member

Professional Societies:

- 1996- Member American Academy of Orthopaedic Surgeons
- 1999-2010 Member Ruth Jackson Orthopaedic Society
- 2000- Member Orthopaedic Research Society
- 2002-2009 Member American College of Sports Medicine
- 2002-2009 Member FORUM Study Group

2005-	Member	Multicenter Orthopaedic Outcomes Network
2005-2010	Member	Pediatric Orthopaedic Society of N. America
2005-	Member	Anterior Cruciate Ligament Study Group
2006-	Member	American Orthopaedic Society for Sports Medicine
2006-	Active Fellow	American Academy of Orthopaedic Surgeons
2008-	Member	Tissue Engineering and Regenerative Medicine International Society (TERMIS)

Grant Review Activities

2000	Ad Hoc Grant Reviewer	Research Funding and Policy Division Health Research Board in Ireland
2001	Ad Hoc Grant Reviewer.	ARC
2002-2006	Ad Hoc Grant Reviewer.	NIH/NIAMS
2007	National Institutes of Health; “Musculoskeletal Tissue Engineering (MTE)” Study Section;	06/2007.
2007	National Institutes of Health; “Musculoskeletal Tissue Engineering (MTE)” Study Section;	10/2007.
2008	National Institutes of Health; “Musculoskeletal Tissue Engineering (MTE)” Study Section;	2/2008.
2008	National Institutes of Health; “ZRG1 MOSS-L (03)” Study Section;	6/2008.
2008	National Institutes of Health; “Skeletal Biology Structure and Regeneration (SBSR)” Study Section;	6/2008.
2008	National Institutes of Health; “Musculoskeletal Tissue Engineering (MTE)” Study Section;	10/2008.
2009	National Institutes of Health; “Musculoskeletal Tissue Engineering (MTE)” Study Section;	02/2009. Standing Member Election.
2009	CIMIT Clinical Science Investigations Grant Program.	Grant Reviewer.
2010	National Institutes of Health; “Musculoskeletal Tissue Engineering (MTE)” Study Section;	02/2010, 06/2010 and 9/2010. Standing Member.
2010	CIMIT Review Panel for Annual Grants.	
2011	National Institutes of Health; “Musculoskeletal Tissue Engineering (MTE)” Study Section;	02/2011, 06/2011 and 9/2011. Standing Member.
2011	Musculoskeletal Transplant Grant Reviewer.	

Editorial Activities:

2001	Musculoskeletal Medicine Editorial Board	American Academy of Orthopaedic Surgeons
2001-2011	Ad Hoc Reviewer	Journal of Orthopaedic Research

2001, 2002	Ad Hoc Reviewer Journal of Bone and Joint Research (Am)
2004	Abstract reviewer for 5 th Combined Meeting of the Orthopaedic Research Societies of the USA, Canada, Japan and Europe, Banff, Alberta, Canada
2005-2007	Ad Hoc Reviewer Clinical Orthopaedics and Related Research
2006	Reviewer Tissue Engineering
2007	Abstract Reviewer for 2008 Annual Meeting of the Orthopaedic Research Society
2007	Abstract Reviewer for 2008 International Society of Ligaments and Tendons Annual Meeting
2008	Abstract Reviewer for the 2008 Tissue Engineering and Regenerative Medicine Conference
2008-2009	Ad Hoc Reviewer, Journal of Biomedical Materials and Research Part A
2008	Ad Hoc Reviewer, Wound Repair and Regeneration
2009	Ad Hoc Reviewer, Veterinary Surgery
2009	Ad Hoc Reviewer, Tissue Engineering
2010	Abstract Reviewer for the Tissue Engineering and Regenerative Medicine International Society (TERMIS) North America Meeting
2010	Ad Hoc Reviewer, Arthritis and Rheumatism
2011	Ad Hoc Reviewer, The Journal of Musculoskeletal Medicine
2011	Ad Hoc Reviewer, The Journal of Bone and Joint Surgery
2011	Abstract Reviewer for 2012 Annual Meeting of the Orthopaedic Research Society

Awards and Honors:

1987	University of Delaware Mechanical Engineering Faculty Award
1987	First Prize, Senior Mech Eng'g Design Competition, U Delaware
1993	NCMPA Nomination as one of top two students in Internal Medicine at University of Penn
1994	Alpha Omega Alpha Election
2000	Charles H. Herndon Residency Research Award (funded by the Musculoskeletal Transplant Foundation)
2001	Harvard Medical School 50 th Anniversary Scholar in Medicine
2001	Cabaud Award for Orthopaedic Sports Medicine Research (AOSSM)
2002	Kilfoyle Award, New England Orthopaedic Society
2004	Basic Science Poster Prize, German Academy of Orthopaedic Surgeons.
2006-08	ACL Study Group Traveling Scientist
2008	University of Delaware Distinguished Career Award
2009	Cabaud Award for Orthopaedic Sports Medicine Research (AOSSM)

2009	Best Paper Prize, Meeting of the German Speaking Association of Arthroscopy (AGA)
2010	Charlton Poster Competition Winner, Tufts University
2011	Inaugural Mentor, Wowster's Program, Governor's STEM Advisory Council, Massachusetts

Report of Funded and Unfunded Projects:

Funded Grants

Past

2000	OREF	Principal Investigator Growth Factor Optimization of Collagen Production by Human ACL Cells
2000-2001	CIMIT	Principal Investigator Development of a Tissue Scaffold for Intra-articular Use
1999-2002	NIH R03 AR 46356-01	Principal Investigator Scaffold Optimization for Healing of the Ruptured Human ACL
2002-2003	NFL	Principal Investigator Growth Factor Delivery Systems for Stimulation of ACL Healing
2003-2004	CIMIT	Principal Investigator Delivery System for Enhanced Primary Repair of the ACL
2004-2006	NFL	Principal Investigator Stimulation of Intra-articular Defect Healing
2005-2007	OREF	Principal Investigator Enhanced Anterior Cruciate Ligament Repair Using Collagen-PRP Scaffolds
2005-2006	CIMIT/DoD	Principal Investigator (Proof of Principle Grant) Enhanced Arthroscopic Repair of Meniscal Injuries
2006-2007	MTTC	Principal Investigator Enhanced Arthroscopic Repair of Knee Injuries
2006-2007	CIMIT/DoD	Principal Investigator (Bridge Grant) Enhanced Arthroscopic Repair of Joint Injuries
2006-2007	MTF	Principal Investigator The Effect of Storage Conditions on the Collagen Composition of Soft Tissue Allografts
2006-2007	CIMIT/DoD	Principal Investigator (AD Award) Arthroscopic Joint Repair System
2008	OREF	Project Mentor (Brian Haus) The Effect of Skeletal Maturity on Anterior Cruciate Ligament Healing
2004-2009	NIH K02 AR049346	Principal Investigator

2006-2010	NIH R01 AR053684	Enhanced Primary Healing of the ACL Co-Investigator (R01 – Spindler) Site Principal Investigator (CHB Subcontract) Prognosis and Predictors of ACL Reconstruction: A Multicenter Cohort Study
2006-2010	NIH R01 AR052809	Co-Investigator (R01 – Evans) Site Principal Investigator (CHB Subcontract) A Biologic Basis for ACL Repair
2007-2011	NIH RO1 AR052772-01	Principal Investigator Total Direct Costs: \$860,000 A Novel Mechanism for Intra-articular Nonunion
Present		
2006-2014	NIH R01 AR054099-01	Principal Investigator Total Direct Costs: \$2,685,000 The Effect of Age on Functional ACL Healing
2009-2013	NIH R01 AR056834-01	Principal Investigator Total Direct Costs: \$1,277,000 Biologically Enhanced Healing of Autograft ACL Reconstruction
2009-2012	NIH R01 AR056834-S1	Principal Investigator – ARRA Supplement Total Direct Costs: \$1,370,000 Biologically Enhanced Healing of Autograft ACL Reconstruction

Local Invited Presentations

2003

Gene therapy for delivery of BMP-2 to bone defects
Orthopaedic Resident Thesis Day
Paper Discusser
50 orthopaedic residents and fellows
30 orthopaedic surgeons

2004

Common Sports Medicine Problems in the Young Athlete
Audience: 30 Pediatricians
Contact time: 1.5 hours
Prep time: 6 hours

2004

Children's Hospital of Boston
Harvard Combined Orthopaedic Residency Program
Grice Day Speaker
Intra-articular tissue Non-union

2004

Children's Hospital of Boston
Cellular, Molecular and Clinical Research in Surgery
First Annual Symposium
Enhanced Primary Repair of the ACL
Invited Speaker
60 Surgeons, Researchers and Students
2 hours prep time, 1 hour contact time
Boston, MA

2004

Children's Hospital, Boston
Invited Speaker, Enhanced Primary Repair of the ACL
Cellular, Molecular and Clinical Research in Surgery
First Annual Symposium

2005

Massachusetts General Hospital
CIMIT Forum
Enhanced Primary Repair of Intra-articular Tissues
Lecturer
20 Physicians, 35 Scientists
5 hours prep time, 1 hour contact time

2005

Children's Hospital of Boston
Inaugural Marino Lecture and Sports Medicine Symposium
ACL Injuries in the Adolescent Female Athlete
Invited Speaker
100 Physicians, Physical Therapists and Athletic Trainers
5 hours prep time, 1 hour contact time

2005

Children's Hospital of Boston, Radiology Conference
Enhanced Primary Repair of the Anterior Cruciate Ligament
Speaker
25 Radiology Attendings, Fellows and Residents

2005

Children's Hospital, Boston
Medical Grand Rounds – Bone Day
Why Tissues in Joints Don't Heal
Speaker
60 Attendings, Fellows and Residents

2005

Children's Hospital, Boston
Annual Grice Day Lecture
Enhanced Primary Repair of the Anterior Cruciate Ligament
Lecturer
80 Attendings, Fellows and Residents

2006

Children's Hospital, Boston
Sports Medicine/Radiology Conference
Imaging Aspects of ACL Repair
Lecturer
30 Residents, Fellows and Attendings

2006

Children's Hospital, Boston
Deficiencies in Joint Tissue Healing
Dept of Ortho Surg Data and Journal Club
Lecturer
40 Scientists, Fellows and Residents

2006

Children's Hospital of Boston
Inaugural Marino Lecture and Sports Medicine Symposium
Case Studies Session
Invited Speaker
100 Physicians, Physical Therapists and Athletic Trainers
5 hours prep time, 1 hour contact time

2006

Massachusetts General Hospital
Importance of Funding Clinically Relevant Research
CIMIT Forum
Invited Speaker
60 Physicians, Attending Physicians and MIT faculty
2 hours preparation time, 1 hour contact time

2007

Children's Hospital, Boston

Inventor's Day Symposium
Invited Speaker
The Clinician Scientist as Inventor

2007

Children's Hospital, Boston, Department of Radiology
Invited Grand Rounds Speaker
Imaging of ACL repair

2007

Children's Hospital, Boston
Department of Orthopaedic Surgery, Grice Day
Invited Speaker
Primary Repair of the ACL

2008

Children's Hospital, Boston
Department of Orthopaedic Surgery, Grice Day
Invited Speaker
Primary Repair of the ACL

2009

Children's Hospital, Boston
Invited Speaker
Cellular, Molecular and Clinical Research in Surgery
Primary Repair of the ACL: Should we go there again?

2010

Children's Hospital Boston
Invited Speaker
Department of Sports Medicine
Outcomes of ACL Surgery

2010

Children's Hospital, Boston
Invited Marino Lecturer
Biologic Enhancement of Ligament Healing

2010

Children's Hospital Boston
Lecture for Animal Care Technicians
Biologic healing of ligament injuries

2010

Children's Hospital Boston

Grice Day Invited Lecturer
Biologic Enhancement of ACL Healing

Regional, National or International Contributions: Invited Presentations

Regional

1999

Center for Integration of Medicine and Innovative Technology
Development of a Scaffold for Intra-articular Use
Lecturer
10 graduate students, 10 physician-scientists, and 20 independent researchers
10 hours preparation, 1-hour contact time

2002

MetroWest Pediatricians
Knee injuries in the young athlete
Invited Lecturer
30 pediatricians
4 hours preparation, 1-hour contact time

2002

Kilfoyle Award Lecture
New England Orthopaedic Society

2003

Center for Integration of Medicine and Innovative Technology
Enhanced Primary Repair of the ACL
Lecturer
10 graduate students, 10 physician-scientists, and 20 independent researchers
10 hours preparation, 1-hour contact time

2004

Invited Speaker, Novel Approaches to Ligament Repair
3rd International Meeting on Gene Therapy in Rheumatology and Orthopaedics
Boston, Massachusetts.

2004

Invited Speaker, Enhanced Primary Repair of the ACL
Gordon Research Conference
Proctor Academy, NH

2006

Invited Speaker, ACL Injury Prevention

MAPHERD Conference, Worcester, MA

2007

International Symposium on Innovations in Veterinary Surgery
Innovations in ACL surgery: why bother
Invited Speaker
160 veterinary surgeons
6 hours prep, 4 hours contact time
Boston, Massachusetts

2007

Brown University, Department of Orthopaedic Surgery
Invited Grand Rounds Speaker
Primary Repair of the ACL
80 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Northeastern University Distinguished Lectures
Primary Repair of the ACL: Advances and New Directions
Invited Lecturer
150 physicians, athletic trainers and students
4 hours prep, 2 hours contact time

2009

ACL Injury Prevention Program, Norton MA
Prevention of ACL Injury
Invited Faculty/Lecturer
50 Certified Athletic Trainers and Physical Therapists

2010

Society for Pediatric Radiology
Ligament Repair
Invited Speaker
100 Radiologists
Boston, MA

National

2001

Visiting Professor
Grand Rounds Speaker
Vanderbilt University, Department of Orthopaedics and Rehabilitation

2002

Invited Lecturer, Tissue Engineering of the ACL
Forum Meeting, Palm Springs

2003

Session Moderator, Knee Papers
Orthopaedic Research Society Annual Meeting

2003

Session Moderator, Ligament Session
Orthopaedic Research Society Annual Meeting

2003

Session Moderator, Pathophysiology Section
International Symposium on Tendon and Ligament Annual Meeting

2005

Invited Speaker, Regenerative Medicine: Clinical Needs, Barriers and Opportunities
NIH/NIAMS Annual Extramural Retreat, Bethesda, MD
30 NIH Staff, Extramural PhD/MD researchers
6 hours prep time, 8 hours contact time

2005

Invited Symposium Speaker, Basic Science Considerations for Primary Repair of the ACL
The American Orthopaedic Society For Sports Medicine Annual Meeting
Keystone, Colorado
200 physicians
6 hours prep time, 30 min contact time

2006

Invited Symposium Leader, Primary Repair of the ACL: Past, Present and Future
ACL Study Group Meeting, Hawaii.
(Presented by Dr. Kurt Spindler as I was unable to travel due to bed-rest restrictions.)

2007

Vanderbilt University School of Medicine
Department of Orthopaedic Surgery
Invited Grand Rounds Speaker
Repair of Intra-articular Injuries
40 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2007

Invited Member of the Program Committee
7th International Symposium on Ligaments and Tendons

San Diego, CA

2007

Invited Grand Rounds Speaker
Primary Repair of the ACL: Should we go there again?
UCLA Department of Orthopaedic Surgery
Los Angeles, CA
60 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2007

Invited Lecturer
Primary Repair of the ACL: Should we go there again?
UC Davis, Bioengineering Department
Davis, CA
12 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2007

Invited Group Leader - Ligament Section
NIH Conference on Functional Tissue Engineering
Hilton Head, SC
30 NIH Principal Investigators
12 hours preparation time, 30 hours contact time

2007

University of Iowa
Department of Orthopaedic Surgery
Invited Lecturer
Basic Science of ACL Repair
50 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2007

University of Minnesota
Department of Orthopaedic Surgery
Invited Grand Rounds Speaker
Primary Repair of the ACL: Should we go there again?
40 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2007

Duke University
Department of Orthopaedic Surgery
Invited Grand Rounds Speaker
Primary Repair of the ACL: Should we go there again?
60 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Stanford University
International Society of Ligaments and Tendons, VIII
Invited Keynote Lecture
Clinical Outcomes after ACL Reconstruction
80 physicians, researchers, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Stanford University
International Society of Ligaments and Tendons, VIII
Invited Speaker
Collagen-PRP Hydrogel Enhances Primary Repair of the Porcine ACL
80 physicians, researchers, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Hospital for Special Surgery
Multicenter Orthopaedic Outcomes Network Meeting
Invited Speaker
Advances in Primary Repair of the ACL
10 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Invited Speaker
Primary Repair of the ACL
University of Cincinnati, Department of Orthopaedic Surgery, Cincinnati, OH
20 physicians, researchers, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Invited Speaker
Advances in ACL Biology
University of Cincinnati, Department of Biomedical Engineering, Cincinnati, OH

20 physicians, researchers, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Invited Speaker
New Horizons in ACL Repair
Symposium: The Female Athlete
Cincinnati Children's Hospital, Cincinnati, OH
80 physicians, physical therapists, and athletic trainers
4 hours prep time, 1 hour contact time

2008

Invited Speaker
Soft Tissue Repair: Bench to Bedside
Tissue Engineering and Regenerative Medicine International Society
Annual Meeting, San Diego, California
100 physicians, scientists and researchers
4 hours prep time, 1 hour contact time

2009

Faculty Participant
Orthopaedic Research Society
Meet the Mentors Luncheon – Forty Young Scientists
Las Vegas, NV

2009

Invited Grand Rounds Speaker
Primary Repair of the ACL: Should we go there again?
The Mayo Clinic
Rochester, MN
50 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2009

Visiting Professor
Why Tissues in Joints Don't Heal
The Mayo Clinic
Rochester, MN
40 scientists, researchers and students
4 hours prep time, 1 hour contact time

2009

The Ruth Jackson Lecture

Primary Repair of the ACL
University of Iowa Hospitals and Clinics
Iowa City, IA
80 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2009

Grand Rounds Lecture
ACL Reconstruction: Can we make a great operation better?
University of Pittsburgh
Pittsburgh, PA
80 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2010

Visiting Professor
Biologic Enhancement of ACL Repair and Reconstruction
University of Pennsylvania School of Medicine
Philadelphia, PA
40 scientists, researchers and students
4 hours prep time, 1 hour contact time

2010

Instructional Course Speaker
Tissue Engineering of Ligaments
AAOS Annual Meeting
New Orleans, LA
80 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2010

Invited Lecturer
The future of biologic restoration of the ACL
POSNA Specialty Day
New Orleans, LA
80 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2011

Invited Symposium Speaker
AOA Society Annual Meeting
“The Use of Scaffolds and PRP for Tendon and Ligament Healing”
Boston, MA
500 Orthopaedic Surgeons, Residents and Staff

2011

Invited Lecturer
The Perry Initiative: Delaware
“A Day in the Life of an Orthopaedic Surgeon-Scientist”
Newark, DE
33 female high school students interested in orthopaedic surgery and engineering

2011

Grand Rounds Speaker
Yale Department of Orthopaedic Surgery
“The Biology of ACL Injury and Repair”
New Haven, CT
40 Orthopaedic Surgeons, Residents and Staff

2011

Grand Rounds Speaker
Columbia Department of Orthopaedic Surgery
“Primary Repair of the ACL: Should we go there again?”
New York, NY
80 Orthopaedic Surgeons, Residents and Staff

2012

Invited Speaker
Forum Society, Sports Medicine Meeting
“The Biology of ACL Injury and Repair”
Park City, UT
50 orthopaedic surgeons

International

2004

Invited Speaker, Enhanced Primary Repair of the ACL
ACL Study Group Meeting, Sardinia

2007

University of Calgary
Department of Orthopaedic Surgery
Invited Lecturer
Primary Repair of the ACL: Basic Science Considerations
15 physicians, fellows, residents and students
4 hours prep time, 1 hour contact time

2008

Invited Speaker
Use of Tissue Engineering Concepts to Enhance ACL Reconstruction and Primary Repair

ACL Study Group Meeting, Engleberg, Switzerland
80 physicians
4 hours prep time, 1 hour contact time

2008

Invited Symposium Speaker
Causes of Failure After the Well-Performed ACL Reconstruction
ACL Study Group Meeting, Engleberg, Switzerland
80 physicians
4 hours prep time, 1 hour contact time

2008

Invited Speaker
Biomechanical Validation of the Porcine ACL Transection Model
Use of Tissue Engineering Concepts to Enhance ACL Reconstruction and Primary Repair
ACL Study Group Meeting, Engleberg, Switzerland
80 physicians
4 hours prep time, 1 hour contact time

2010

Invited Lecturer
The Effect of Age on Ligament Healing
ACL Study Group Meeting
Phuket, Thailand
60 physicians
4 hours prep time, 1 hour contact time

2011

Invited Speaker
"The effect of Age on ACL functional healing"
ISAKOS Meeting
Rio de Janeiro, Brazil
200 Orthopaedic surgeons
6 hours prep time, 10mins contact time

2011

Visiting Professor
Kobe University
"The Biology of ACL Injury and Repair"
Kobe, Japan
60 Orthopaedic Surgeons, Residents and Medical Students

2011

Visiting Professor
Hiroshima University
“Primary Repair of the ACL”
Hiroshima, Japan
120 Orthopaedic Surgeons, Residents and Medical Students

2011

Invited Keynote Lecturer
JOSKAS Annual Meeting
“The Biology of Ligament Injury and Repair”
Sapporo, Japan
2000 Orthopaedic Surgeons, Residents, Staff

Report of Clinical Activities and Innovations

Licensure and Certification:

1994	Advanced Trauma Life Support, American College of Surgeons
1995	Diplomate, National Board of Medical Examiners
1999	Medical License/Massachusetts
2000	Board Eligible, Orthopaedic Surgery
2000	Human Research Certification/Partners HealthCare System
2005	Board Certified, Orthopaedic Surgery
2010	Subspecialty Certification, Sports Medicine

Practice Activities

1. Orthopaedic Surgeon, specializing in Sports Medicine, teaching hospital-based practice (at Children’s Hospital of Boston).
2. Patient load: Approximately 100 surgical cases per year, 100% sports (pediatric, adolescent and adult). The majority of my adult practice is the care of physicians and nurses from Children’s Hospital.
3. Clinical contributions: local educational programs for knee injury prevention, research focused on developing new and improved treatments for knee ligament, meniscal and cartilage injury.

Report of Current Research Activities

Enhancing healing of the ACL using a large animal in vivo model	Principal Investigator
Optimization of in-situ cellular healing responses using scaffolds and blood components	Principal Investigators
The effect of age on ligament healing	Principal Investigator

Report of Technological and Other Scientific Innovations Patents:

1. **Murray, M. M.**, Inventor. Brigham and Women's Hospital assignee. Biologic Replacement for Fibrin Clot for Intra-articular Use, Provisional application . 60/140,197 filed June 22, 1999, and 60/182,972 filed February 16, 2000.
2. **Murray, M. M.**, Inventor. Brigham and Women's Hospital assignee. Biologic Replacement for Fibrin Clot for Intra-articular Use, US patent application number 09/594,295 filed June 15, 2000.
3. **Murray, M. M.**, Murray, M. F., Marler, J. M., Inventors. Children's Hospital of Boston assignee. Biologic Replacement for fibrin clot. US patent application number 09/917,058 filed July 27, 2001.
4. **Murray, M. M.**; Murray, Michael F.; Marler, Jennifer; Spindler, Kurt P.; Sawyer, Aenor J. inventors. Children's Hospital of Boston assignee. Biologic replacement for fibrin clot. US patent application number 10/378,285 filed March 3, 2003. Associated PCT: PCT/US04/006392.
5. **Murray, M. M.**, Slocum, A., Wang, Y-C, Walker, D., Carvey, M., Salamini, A., inventors. Children's Hospital of Boston assignee. Delivery Device for tissue repair. US patent application number 60/651,329 filed 2/9/05. International PCT filed 2/7/06.
6. **Murray, M. M.**; Murray, Michael F.; Marler, Jennifer; Spindler, Kurt P.; Sawyer, Aenor J. inventors. Children's Hospital of Boston assignee. Biologic replacement for fibrin clot. US patent application number 11/092,992, filed on 3/29/05.
7. **Murray, M.M.** inventor. Children's Hospital, Boston Assignee. Methods and Procedures for Ligament Repair, Provisional patent 60/761,951, filed 1/2006.

Bibliography

Original Articles

1. **Murray, M. M.**, Spector, M. Fibroblast distribution in the anteromedial bundle of the human anterior cruciate ligament: The presence of α -smooth muscle actin-positive cells. J Orthop Res 1999; 17:18-26.
2. **Murray, M.M.**, Martin, S. D.,and Spector, M. The migration of cells from human anterior cruciate ligament explants into three dimensional collagen-glycosaminoglycan scaffolds *in vitro*. J Orthop Res 2000; 18: 557-64.
3. **Murray, M. M.**, Martin, S. D., Martin, T. L., and Spector, M. Histologic changes in the human anterior cruciate ligament after rupture. J Bone Joint Surg 2000; 82A:1387-1397.

4. Qiu, W., **Murray, M. M.**, Shortkroff, S., Lee, C. R., Martin, S. D., and Spector, M. Outgrowth of chondrocytes from human articular cartilage explants and expression of α -smooth muscle actin. *Wound Repair and Regeneration* 2000; 18:383-391.
5. Premdas, J., Tang, J.-B., Warner, J. P., **Murray, M.M.**, and Spector, M. The presence of smooth muscle actin in fibroblasts in the torn human rotator cuff. *J Orthop Res*, 2000; 19(2): 221-228.
6. Ahluwalia S., Fehm M., **Murray M. M.**, Martin S.D., and Spector, M. Distribution of Smooth Muscle Actin-Containing Cells in the Human Meniscus. *J Orthop Res*, 2000; 19(4): 649-654.
7. **Murray, M. M.** and Spector, M. The migration of cells from the ruptured human anterior cruciate ligament into collagen-glycosaminoglycan regeneration templates in vitro. *Biomaterials* 2001; 22:2393-2402.
8. **Murray, M. M.**, Bennett, R. L., and Spector, M. S. Cell Outgrowth from the human ACL in vitro: Regional variation and response to TGF- β 1. *J Orthop Res* 2002; 20:875-880.
9. Spindler, K. P., **Murray, M. M.**, Detwiler, K. B., Tarter, J. T., Dawson, J. M., Davidson, J. M., Nanney, L. B., The biomechanical response to doses of TGF-b2 in the healing rabbit medial collateral ligament. *J Orthop Res*, 2002; 21(2): 245-249.
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Reviews, Chapters and Editorials

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Selected Abstracts

1. Palmer, R, Fleming, BC, Murray, MM “Primary Repair of the Anterior Cruciate Ligament Using a Bio-Active Scaffold In a Mature Ovine Model: A Preliminary Study”, Podium Presentation, Veterinary Orthopaedic Society Meeting, Snowmass, CO, 2011.
2. Chao, L, Zurakowski, D and Murray MM. Platelet-Rich Plasma Suppresses TNF-alpha Secretion by Peripheral Blood Mononuclear Cells, Poster Presentation, Orthopaedic Research Society Annual Meeting, Long Beach, CA 2011.
3. Yoshida, Ryu, Vavken, P and Murray, M.M. Decellularization of Porcine ACL Eliminates Immunogenic Reactions to Alpha-gal Epitope by Human Peripheral Blood Mononuclear Cells, Podium Presentation, Orthopaedic Research Society Annual Meeting, Long Beach, CA 2011.
4. Cheng, Ming-Yu, Murray, MM, The effects of age and platelet-rich plasma on the ACL cell viability and collagen production, Poster Presentation, Orthopaedic Research Society Annual Meeting, Long Beach, CA 2011.

NARRATIVE

I am a surgeon-scientist with a strong interest in injuries of the anterior cruciate ligament (ACL) of the knee. I spend half of my time treating patients with these injuries and the other half in the laboratory, trying to devise better solutions for patients with these injuries. I have made some progress in this area over the last twenty years, and am increasingly invited to share what we have found with others who are interested in improving patients with these and similar injuries.

I have over 60 peer-reviewed publications in the area of musculoskeletal injuries, with the majority concerning the ACL and methods to encourage its regeneration after injury. I am currently the principal investigator on three R01 grants and an ARRA supplement, with total direct costs for these grants at over \$6 million dollars. With this support, we have been able to identify and optimize new treatment methods for patients with ACL injuries. We are currently working on defining the effect of age on the capacity for ligament healing, and how to help older patients heal as effectively as young patients seem to. It is our hope that the discoveries we have made to date, and those we have yet to define, will reshape the way patients with musculoskeletal injuries are treated in the future.

I am also involved in the teaching of medical students, residents and fellows. I participate annually in the physical examination for medical students at Harvard Medical School and have also taught in the Musculoskeletal Pathophysiology Course as well as HST 906 – The Role of Physicians and Scientists in the Business world. I also teach orthopaedic residents and fellows – with formal lectures two to three times a year on aspects of sports medicine and ACL injuries – as well as weekly in the office and in the operating room. I also mentor and teach the undergraduate, graduate and post-doctoral students in my laboratory on varied aspects of research – from the practicalities of conducting large animal surgeries to writing effective papers and grants. I also teach regularly on a national level, as a visiting professor or invited lecturer, and have been serving on the Executive Committee for the ACL Study Group for the past four years, where I hope to have the opportunity to teach an even wider audience about what we have learned about ACL injuries and their treatment.

I truly enjoy being a surgeon scientist. I enjoy caring for my patients, enjoy teaching others what I have learned about improving the surgical care of our patients, and I feel honored to be able to also spend time working toward finding novel solutions for people who sustain knee injuries. Working at the junction between clinical care and research has been extremely rewarding and I hope to continue this path.