

JOHN HARVEY (“JOVE”) GRAHAM, PH.D.

Geisinger Center for Health Research,
100 N. Academy Ave, MC 44-00, Danville, PA 17822-4400

I. EDUCATION

Institution	Major	Degree & Year
Swarthmore College, Swarthmore, PA	Engineering	B.S. 1996
Swarthmore College, Swarthmore, PA	English - Theatre Studies	B.A. 1996
University of California, Berkeley, CA	Mechanical Engineering	M.S. 2000
University of California, Berkeley and San Francisco, CA	Bioengineering	Ph.D. 2002
Johns Hopkins Bloomberg School of Public Health, Summer Institute in Epidemiology & Biostatistics, Baltimore, MD	Longitudinal Data Analysis, Multilevel Modeling, Survival Analysis, Conditional Logistic & Poisson Regression	2011, 2013 [not for degree]

II. PERSONAL STATEMENT

I am a Ph.D. engineer-by-training with a strong math/analytic background who is interested in improving the healthcare system and healthcare outcomes in the United States. I currently work at the Geisinger Center for Health Research as a researcher in the Center for Pharmacy Innovation and Outcomes, a study designer, statistician and a mentor for clinicians who are developing their own research projects. I previously served as Operations Manager for a team of analysts and biostatisticians in the Geisinger Biostatistics & Research Data Core, where one of my key projects was a major rebuilding and streamlining of a distributed research network-based Virtual Data Warehouse of Geisinger electronic health record (EHR) and claims data that conformed to a standard data model used by 15 other health systems. My own research focus has been interdisciplinary, collaborating with Geisinger's insurance plan and many clinical departments to leverage existing data for large-scale observational studies of clinical effectiveness. My specific area of expertise is designing these studies in order to select appropriate comparison groups and reduce the effects of confounding variables and other sources of bias. Prior to joining Geisinger, I worked for the U.S. Food and Drug Administration in the Center for Devices and Radiological Health and have over 10 years of experience evaluating new medical devices and developing standardized evaluation methods. I have over 100 peer-reviewed publications and presentations, and my independent research has been funded by PCORI, AHRQ, FDA, The Commonwealth Fund and the Orthopedic Trauma Association, among many others. I also serve as an adjunct professor in the Biomedical Engineering Department at Bucknell University where I teach biostatistics and design.

II. WORK EXPERIENCE

Geisinger Health System (2016-present), *Assistant Professor, Center for Pharmacy Innovation and Outcomes, Danville, PA.* (1) Independent design and implementation of studies, primarily focused on medication use and adherence using observational electronic health record or administrative data to compare patient outcomes. Providing statistical design and analysis support for projects across the Center. (2) Consulting and mentoring of physicians, fellows and residents to develop research questions into study plans.

Geisinger Health System (2012-16), *Investigator and Director of Clinical Research Project Development, Center for Health Research, Danville, PA.* (1) Independent design and implementation of clinical research studies, primarily using observational electronic health record or administrative data to compare patient outcomes across different surgical & pharmacological treatments. Past work includes study of Patient Centered Medical Home models, home telemonitoring devices, orthopedic surgical options and urological surgical treatments. (2) Consulting and mentoring of physicians, fellows and residents to develop research questions into study plans. (3) Other database design, development of outcome measures, and SAS statistical programming and analysis in support of clinical research studies and infrastructure.

Geisinger Health System (2012), *Operations Manager, Data Coordinating and Analytic Services, Center for Health Research, Danville, PA.* Supervisory responsibility for team that performs clinical data extraction, recoding and biostatistical analysis to support internal and externally-funded research projects at the Geisinger Center for Health Research and Geisinger Clinic. Management of 8 research data analysts/programmers and 4 Ph.D./Master's level biostatisticians on the team, working with EpicCare electronic health record (EHR), billing, claims and other data sources. I also led development of Geisinger's "Virtual Data Warehouse" for collaborative multi-site studies with other health systems in the HMO Research Network. This was a 75% appointment, with the remaining 25% as an independent Research Investigator I (see description below).

Geisinger Health System (2006-12), *Research Investigator I, Center for Health Research, Danville, PA.* Responsibilities include research design, analysis, publishing and authorship of grant proposals to support health services research and comparative effectiveness studies of surgical and medical treatments.

- Longitudinal modeling of outcomes from Patient Centered Medical Home (PCMH) initiatives, and currently investigating how variation in PCMH implementation affects outcomes, and PCMH post-discharge outcomes of hip fracture patients.
- Overseeing and designing studies with clinical and surgical departments within Geisinger Health System to collect functional outcomes from patients and examine effects of patient factors and treatment options on outcomes.
- Analysis of longitudinal, observational data from electronic health records and claims databases for causal inference of treatment effects in non-randomized settings.
- Developing methods to retrospectively measure treatment adherence and examine effects on outcomes in hypertension, diabetes, and multiple sclerosis populations.

Food and Drug Administration and Oak Ridge Institute for Science and Engineering (2006-12), *Research Fellow/Staff Fellow.* Through a fellowship program, I provided consultative services to the Food and Drug Administration (FDA) to review pre-market applications to evaluate safety and effectiveness of new spinal implant devices. This was a part-time (20% appointment) consulting position.

Food and Drug Administration (2003-2006), *Mechanical Engineer, Division of Solid and Fluid Mechanics, Office of Science and Engineering Laboratories, Center for Devices and Radiological Health, Rockville, MD.* Responsibilities included review of medical device pre-market applications to evaluate safety and effectiveness of new devices, evaluation of adverse event reports, development of standard test methods for devices and original laboratory research.

- Member of spine and heart valve review teams, collaborating with surgeons, statisticians, biologists, chemists and engineers to evaluate new devices.
- Provided FDA with technical reviews of over 100 pre-market submissions for spinal fusion and non-fusion devices, orthopedic implants, heart valves and other cardiovascular devices.
- Initiated research program to help agency regulate products related to vertebroplasty, a minimally-invasive treatment for spinal fracture repair, and received \$57,000 grant for this research area.
- Frequent communication with device manufacturers via email, phone and face-to-face meetings regarding safety and effectiveness of their products.
- Liaison to ASTM standards committee for writing standard test methods for medical materials and devices.

University of California, Berkeley (1997-2002), *Graduate Student Researcher, Medical Polymers & Biomaterials Group, Berkeley, CA.* Responsibilities included extensive mechanical testing of materials and medical device products (e.g. total joint replacements) to measure mechanical properties such as strength, elasticity, fracture toughness and creep.

- Member of interdisciplinary research team including orthopaedic surgeons, surgical residents and engineers.

- Managed a retrieval laboratory for failure analysis of explanted orthopaedic devices including shoulder and hip replacements.

San Francisco General Hospital (1998), *Research Assistant, Orthopaedic Biomechanics Laboratory*, San Francisco, CA. Responsibilities included software development and experimental design to operate infrared motion-capture system to measure body positions and joint angles of young and elderly subjects during forward-reaching tasks. Development of biomechanical model to correlate joint strength and flexibility with task performance.

University of California, Berkeley (1998), *Research Assistant, Department of Integrative Biology*, Berkeley, CA. Responsibilities included design and construction of experimental apparatus to measure force-elongation (stress-strain) dynamics of individual muscle fibers during stretching. Software development to control motors and collect real-time stress-strain data regarding physiological and mechanical behavior of single-fiber muscle cells.

NSF Laboratory for Research Into the Structure of Matter (1995), *Research Fellow*, Philadelphia, PA. Responsible for dynamic mechanical testing and analysis of prosthetic finger joints to study physiological effects of implantation on mechanical properties. Conducted viscoelastic testing and assisted with animal implant/explant surgeries.

Swarthmore College (1993-94), *Laboratory Assistant, Department of Engineering*, Swarthmore, PA. Responsible for design and assembly of ultrasonic cavitation equipment testing with the goal of developing a flow-through system for water purification by ultrasonically eliminating *E.coli* bacteria. Machined small components including piezoelectric hydrophonic pressure transducers and conducted experiments by running bacteria through the sonicator under varying input conditions.

III. TEACHING EXPERIENCE

Bucknell University, *Adjunct Professor, Department of Biomedical Engineering*. 2014-present. This part-time teaching position was arranged courtesy of Geisinger Health System and Bucknell University.

- *BMEG 226: Statistical Methods for Biomedical Engineering (2015-present)* – semester-long freshman-level course (12-16 students) to teach important statistical concepts and methods, with a lab using R statistical software. Topics include: descriptive summaries and graphical displays; probability and conditional probability; hypothesis testing; traditional parametric testing (Student t, binomial, z, ANOVA, chi-square); logarithmic transformations and nonparametric testing; presentation of results and critical interpretation of literature; linear regression; logistic regression; experimental design; and advanced topics (confounding, propensity scoring, Monte Carlo simulation).
- Series of seminars and team mentoring activities regarding technical standards and FDA regulation of medical devices to students and faculty in the biomedical engineering program, and to students in junior-level and senior-level design courses.

FDA/CDRH Office of Device Evaluation, *Guest Lecturer, Division of General, Restorative and Neurologic Devices, Orthopedic Devices Branch*, Rockville MD. 2004-2006. Presentations of lectures on spinal implant testing methods, discussing and explaining a number of the most important standards used for spinal devices. Each lecture consists of a two-hour slide presentation giving an overview and technical details of the testing techniques and safety considerations for each category of device, including extensive question-and-answer sessions with device regulators.

University of California, Berkeley, *Graduate Student Instructor, Department of Mechanical Engineering*, Berkeley, CA. January-June 2001. Graduate student instructor for senior-level bioengineering course titled *Structural Aspects of Biomaterials*, focusing on safety testing, mechanical behavior, and characterization of materials used in medical devices. Preparation and presentation of three 90-minute lectures, leadership of group discussion sections, and one-on-one tutoring assistance.

Swarthmore College, *Writing Associate, Department of English Literature*, Swarthmore, PA, 1994-96. Responsible for instructing classes of freshman engineering students in the style and content of engineering reports through review, written critiques and one-on-one conferences to discuss first drafts of reports and techniques for improving their written communication skills.

IV. HONORS AND AWARDS

- Robert E. Fairer Award for service, ASTM International (2016)
- Finalist in Poster Competition representing statistical methods category, HMO Research Network Annual Meeting (2014)
- U.S. Senate Special Committee on Aging, Recognition of Excellence in Aging Research (2009)
- FDA/CDRH Special Recognition Award for innovative research (2006)
- FDA Employee Recognition Award Recipient (Feb 2004, March 2005, July 2005, June 2006)
- The Whitaker Foundation Graduate Fellowship in Biomedical Engineering (1997-2002) – full tuition plus living stipend of \$17,000-\$18,966 per year for graduate studies in biomedical engineering
- Swarthmore College McCabe Achievement Scholarship (full tuition for college) (1992-96)
- Society for Biomaterials Student Travel and Development Award – Honorable Mention (2001)
- Western Orthopaedic Association Alonso J Neufeld Award for best paper (1998)
- National Science Foundation Graduate Research Fellowship (1996) – full tuition plus living stipend of \$14,400 per year for graduate studies in engineering (declined)
- Georgia Institute of Technology President's Fellowship (1996) – full tuition plus living stipend of \$18,500 per year for graduate studies in biomechanical engineering at Georgia Tech (declined)
- University of Pennsylvania Presidential Fellowship (1996) – full tuition plus living stipend of \$16,500 per year for graduate studies in materials science at the University of Pennsylvania (declined)
- Phi Beta Kappa – national academic honor society (inducted 1996)
- Tau Beta Pi – national engineering honor society (inducted 1995)
- Sigma Xi – national scientific research honor society (inducted 1995)
- Rotary Club of Media Scholarship (1992-96) – \$1000 per year
- Pennsylvania State Parks Memorial Fund Scholarship (1993-95) – \$500 per year

V. RESEARCH SUPPORT

Ongoing Research Support

Food and Drug Administration (FDA) <i>1U01FD005476-01 Building UDI Into Longitudinal Data for Surveillance and Research</i> This is a demonstration project with the goal of integrating device-specific information on coronary stents into the inventory and catheterization lab information systems in order to improve device tracking, and to build a distributed research network to examine device performance over time. Role: Site Principal Investigator	1/1/16-12/31/18	\$5,246,838
Patient Centered Outcomes Research Institute (PCORI) <i>Assessing the Value of Including Unique Device Identifiers (UDI) in Claims</i> This is a demonstration project with the goal of integrating device-specific information on cardiac pacemaker devices into billing and claims information systems in order to improve device tracking by health insurers. Role: Site Principal Investigator	11/1/2016-10/31/2019	\$1,250,000
National Association of Chain Drug Stores (NACDS) Foundation <i>Effect of Community Pharmacist Consultative Services and Virtual Connectivity Through the Use of a Health Information Exchange on Readmissions and Medication Adherence Among a High-Risk Patient Population</i>	7/1/14-8/31/15	\$600,000

This is a quasi-experimental trial of pharmacist-provided medication discharge support to a group of high-risk patients following hospital discharge. The aim of our study is to determine the impact of Inpatient-to-Outpatient Pharmacist (IOP) collaboration and pharmacist-provided continuous care follow-up on readmissions among a group of high-risk patients.
Role: Co-Investigator (PI: Eric Wright, PhD)

Purdue Pharma, LLP 7/1/2016-6/30/2018 \$1,123,878

Effect of Wearable Health Technology on the Treatment of Patients With Chronic Pain at Geisinger Health System

This is a prospective study to compare pain, function and psychosocial outcomes among patients in a multidisciplinary pain treatment program with and without the addition of a wearable health technology (AppleWatch and pain app) component.

Role: Co-Investigator (PI: John Han, MD)

Sanofi-Regeneron, Inc. 10/1/2016-3/31/2017 \$293,500

Assessing the Relationship between Eosinophil Results and Asthma Control

This is a retrospective study to examine whether there is a predictive relationship between baseline blood eosinophil levels in moderate-to-severe asthma patients and future asthma-related burden.

Role: Principal Investigator

Completed Research Support

Intarcia Therapeutics, Inc. 12/22/14-12/31/15 \$199,000

Healthcare Burden Among Patients with Uncontrolled Type 2 Diabetes Mellitus

This is a retrospective study to describe the general characteristics, utilization patterns, and the relationship between medication adherence and glycemic control, in a population of patients with Type II diabetes taking oral antidiabetic agents.

Role: Co-Investigator (PI: Eric Wright, PhD)

Glaxo-Smith-Kline, Inc. 1/1/2011-12/31/2015 \$144,562

Impact of Pharmacist-Led Management of Diabetes on Patient Outcomes and Cost of Care

This is a study to test whether Geisinger's pharmacist-led medication therapy management program results in improved clinical and financial outcomes.

Role: Co-Investigator (PI: Daniel Maeng, PhD)

Abbott Nutrition, Inc. 8/1/2015-6/30/2016 \$204,500

Oral Nutrition Supplements in the Community Setting: Patient Characteristics and Outcomes

This is a retrospective study using EHR and claims to characterize the population of patients using Oral Nutrition Supplements (ONS) and to perform a propensity-matched comparative analysis of health utilization and outcomes between ONS users and a group of control patients.

Role: Principal Investigator

Sanofi-Regeneron, Inc. 12/3/14-12/2/15 \$207,750

Clinical and Economic Consequences of Statin Intolerance

This is a retrospective study with propensity score matching of cases and controls to compare the clinical characteristics and major cardiovascular outcomes between patients with statin intolerance and patients who are taking statin medications.

Role: Principal Investigator

Bucknell-Geisinger Research Institute 2013 Seed Grant Program <i>Non-Environmental Health Impacts of Marcellus Shale Development</i> This is a retrospective, methodological study to identify suitable control populations within Pennsylvania for studies of the impact of natural gas development on traffic accidents, alcoholism and depressive disorders. Role: Site Principal Investigator	6/1/13-3/31/15	\$10,000
Biogen Idec, Inc. <i>Multiple Sclerosis (MS) Outcomes in Geisinger Clinic</i> This is a retrospective and prospective study to investigate the relationship between medication adherence and outcomes in multiple sclerosis (MS) patients. Role: Co-Investigator (PI: Gregory Moore, MD, PhD)	2011-15	\$399,375
The Commonwealth Fund Grant #20110214 <i>What Makes Medical Homes Work: Lessons for Implementation and Spread</i> This is a mixed methods study to investigate variation in patient-level outcomes over time and among clinics participating in a Patient-Centered Medical Home, and to examine differences in implementation and model components among sites that explain this variation. Role: Principal Investigator	2011-14	\$170,033
Agency for Healthcare Research and Quality (AHRQ) 1R01HS019912-01 <i>Scalable Partnering Network (SPAN) for Comparative Effectiveness Research</i> This is a retrospective, methodological study to develop improved methods for quality assurance and comparative effectiveness research across multiple health systems. Role: Site Principal Investigator	2011-2013	\$178,954
AbbVie, Inc. <i>Morbidity, Mortality and Economic Burden Associated With Post-Surgical Acute Kidney Injury (PS-AKI)</i> This is a descriptive study to investigate risk factors for post-surgical acute kidney injury, and compare outcomes including mortality, renal replacement therapy and total medical costs between patients with and without kidney injury. Role: Principal Investigator (inherited)	2014	\$193,174
Bon Secours Health System/Hospital Sisters Health System <i>Clinical Excellence Collaborative Project</i> This is a project to guide two external health systems in the implementation of various process improvement strategies and analyze the outcomes of these implementation efforts. Role: Co-Investigator	2010-13	\$131,793
Orthopaedic Trauma Association 2009 Clinical Research Award Competition <i>Decreasing Long Term Complications and Cost Following Hip Fracture using a Medical Home Concept (MHC)</i> This is a prospective, non-randomized controlled study to compare rates of hospital readmissions, healthcare costs, and serious adverse events between hip fracture patients whose post-discharge chronic care is managed using a patient-centered medical home model versus standard care. Role: Principal Investigator	2010-2012	\$97,785

Teva Neuroscience <i>Multiple Sclerosis (MS) Outcomes in Geisinger Clinic</i> This was a retrospective study to describe the Geisinger population of patients with multiple sclerosis (MS) in terms of demographics, diagnoses, healthcare utilization and outcomes. Role: Principal Investigator	2010-11	\$207,675
Daiichi-Sankyo, Inc. <i>Medication Adherence and Outcomes in Hypertension</i> This was a retrospective study to develop and assess three performance metrics for medication adherence using electronic health record (EHR) and insurance claims data, and to test the usability of these metrics and their relationship to hypertension (blood pressure) outcomes. Role: Co-Investigator	2010-11	\$225,000
NYU-Langone Medical Center and Geisinger Health System, 2010 Seed Grant Program <i>Expanding Comparative Effectiveness Research in Orthopedics by Capturing Uniform Measures of Patient-Reported Functional Outcomes at Two Institutions</i> This was a prospective study to design and implement an electronic infrastructure for collecting functional outcome data from patients with osteoarthritis of the knee using a uniform set of questionnaires and touchscreen computers at Geisinger and NYU. Role: Site Principal Investigator	2010-11	\$44,195
Agency for Healthcare Research and Quality HHS #290200500411, Task Order No. 2 <i>Comparative Effectiveness of Common 1st and 2nd Line Antihypertensive Therapies In Moderating Hypertension-related Changes in Renal Function</i> This was an observational study using electronic health record (EHR) data to analyze creatinine and glomerular filtration rate (GFR) outcomes from different antihypertensive medications used as first-line single-drug therapy. Role: Co-Investigator	2009	\$24,403
Agency for Healthcare Research and Quality AHRQ DeCide Task Order HHS # 290200500411, Task Order No. 1 <i>Optimal Second-Line Therapy for Hypertension</i> This was an observational study using electronic health record (EHR) data to analyze blood pressure and adverse event outcomes from antihypertensive medications used as first-line and second-line therapies. Role: Co-Investigator	2006-2008	\$399,874
Geisinger Health Plan <i>Impact of a Medical Home Intervention on Health Care Spending, Utilization, and Quality</i> This was a pre-post observational study with a concurrent control cohort using administrative claims data to compare rates of hospital admissions, readmissions, and healthcare cost data between patients whose chronic care was managed using a patient-centered medical home model versus standard care. Role: Principal Investigator	2006-2007	\$10,164
Pfizer, Inc. Via a Subcontract with University of Pennsylvania <i>Medication Compliance for Hypertension and Hyperlipidemia</i>	2006-2007	\$75,000

This was an observational study using electronic health record (EHR) data to analyze blood pressure and adverse event outcomes from antihypertensive medications used as first-line and second-line therapies.

Role: Co-Investigator

FDA Office of Women's Health

2004-2006

\$57,000

Development of Guidelines for Evaluating the Appropriateness of Vertebroplasty Surgery for Patients with Osteoporosis

This was an ex vivo study to investigate effectiveness of percutaneous vertebroplasty in restoring mechanical integrity of the spinal column following an osteoporotic compression fracture.

Role: Principal Investigator

VI. PROFESSIONAL SERVICE

- **Reviewer:** Journals: *Journal of Biomechanics*, *Journal of ASTM International* (2013), *Journal of Testing and Evaluation*, *Medical Engineering & Physics*, *Journal of Orthopaedic Surgery and Research* (2014-present), *American Journal of Managed Care* (2014), *Preventing Chronic Disease* (2014), *The Spine Journal* (2014), *Pediatrics* (2016); Geisinger Institutional Review Board (IRB) (2010-13); NIH Challenge Grants (2009); NIH Small Business Innovation Research-Orthopedics (2006)
- **Member:** American Society for Testing of Materials (ASTM) International, American Society of Mechanical Engineers (ASME), Tau Beta Pi, Sigma Xi, State of Delaware Association of Professional Engineers, Accredited Standards Committee (ASC) X12 (development of standards for electronic data interchange).
- **Leadership:** Chair, ASTM subcommittee F04.25 on Spinal Devices (2005-present); ASME chapter president (1995-96); Tau Beta Pi chapter president (1995-96); Berkeley Bioengineering Association of Students president (2000-2001)

VII. OTHER RELEVANT SKILLS

- Statistical programming: SAS, R, R Studio, JMP
- Database programming: SQL, SAS/SQL, Microsoft Access, FileMaker Pro
- Other software: Microsoft Excel, Powerpoint, Word, Publisher, Refworks, HTML

VIII. MENTORING EXPERIENCE

a. Nursing Research

1. Ronna Aucker, **Nursing**: "Supplemental lactation system," 2013-14. Completed protocol, IRB application, study in progress.
2. Debra Wantz, **Nursing**: "Selection of preceptors for adult intensive care," 2014. Completed protocol.
3. Alexandra Brock, **Nursing**: "Pilot study strengthening point-of-care shared governance: understanding staff's perception," 2013. Completed protocol, IRB application, analysis.

b. Resident and Fellow Research

4. Eddie Brown, **Internal Medicine**, "PCSK9 inhibitors and STEMI events," 2016. Assistance with study design and protocol.
5. Surya Cooper, **Obstetrics-Gynecology**, "Implantable birth control," 2016. Assistance with study design, protocol, manuscript.
6. Harish Kempegowda, **Orthopedics**, "Intertrochanteric fractures and obesity," 2016. Assistance with study design and protocol.
7. Akhil Tawari, **Orthopedics**, "Orthopedics versus vascular surgery prioritization," 2016. Assistance with study design and protocol.
8. Harish Kempegowda, **Orthopedics**, "Sled vs. screw ankle fractures," 2016. Assistance with study design, protocol.
9. Amrute Borade, **Orthopedics**, "Tibial plateau fractures and subsidence," 2016. Assistance with study design, protocol.
10. Kelsey Siebold and Eric Kowalek, **Pharmacy**, "Duration of anticoagulation after provoked VTE," 2016.

Assisted with study design, protocol, prep to research request and Clinic Research Fund grant application.

11. Jordan Moore, **Pharmacy**, "Efficacy and safety analysis of P2Y12 antagonists in patients with acute coronary syndrome," 2016. Assistance with study design, protocol, IRB application.
12. Katie Karkowski, **Pharmacy**, "Risk factors for development of new onset congestive heart failure with gemcitabine," 2016. Assistance with study design, protocol, IRB application, Clinic Research Fund grant application.
13. Tristan Maiers, **Pharmacy**, "Evaluation of vancomycin-induced renal toxicity in hematology and oncology patients," 2016. Assistance with study design, protocol help, IRB application.
14. Justin Tunis, **Sports Medicine**, "Injury incidence vs. rest in professional hockey," 2016. Assistance with study design, protocol.
15. Roxanna Larsen and Jason Jarinko, **Sports Medicine**, "Measurement of balance to assess return-to-play," 2016. Assistance with study design and protocol.
16. Melissa McGann, **Obstetrics**, "Group B strep and preterm premature rupture of membranes," 2015. Completed study design, protocol, IRB submission.
17. Kara Yakish, **Dermatology**, "Management recommendations after evaluating histologic margins of skin pathology specimens," 2014. Advised on study protocol, IRB pathway.
18. Jonathan Lucas, **Pharmacy**, "Use of oral anticoagulants during direct cardioversion in atrial fibrillation patients," 2014. Advised and re-designed study protocol.
19. Courtney Davis, **Dentistry**, "Student debt in dental school and job placement," 2014. Advised on questionnaire development.
20. Miriam Rodriguez, **Psychiatry**, "Memory training intervention to improve mild cognitive impairment," 2014. Completed protocol.
21. Sarah Brinley, **Pharmacy**, "Assessment of BCR-ABL1 transcript testing in patients with chronic myelogenous leukemia: the ABATT study," 2014. Completed protocol, IRB application.
22. Sean Smithgall, **Pharmacy**, "Impact of the MTM pain pharmacist on pain management," 2014. Completed protocol, CRF funding application, IRB application, study in progress.
23. Amy Speeckaert, **Orthopedics**, "Risk factor for reoperation after trigger finger digit injection," 2014. Completed project, accepted for podium presentation at national meeting.
24. David Ross, **Orthopedics**, "Euflexxa vs. Synvisc for knee osteoarthritis," 2014. Completed protocol, IRB application.
25. Chelsea Fitzgerald, **Pharmacy**, "Improved transitions of care with a pharmacist-managed anticoagulation discharge program," 2013. Completed protocol, IRB application, manuscript.
26. Emily Frederick, **Pharmacy**, "Effect of changing home antihyperglycemic medications upon hospital admission," 2013. Completed protocol, IRB application, manuscript prepared.
27. Jessica Nelson, **Pharmacy**, "Cardiac enzymes in muscular dystrophy," 2013. Completed protocol, IRB application.
28. Sarah Brinley, **Pharmacy**, "Cisplatin and mannitol for hydration in cancer patients," 2013. Completed protocol, IRB application.
29. Sarah Pupo, **Pharmacy**, "Overrides of high-alert medications from emergency department automated dispensing cabinets," 2013. Completed protocol, IRB application, analysis, manuscript prepared.
30. Jyotu Sandhu, **Orthopedics**, "Formal vs. home physical therapy," 2013. Completed protocol, IRB application.
31. Brian Deegan, **Orthopedics**, "Chronic kidney disease and total joint replacement," 2013. Completed analysis, abstract, manuscript published in *Orthopedics*.
32. Amy Speeckaert, **Orthopedics**, "Bone cement vapor exposure during surgery," 2013. Completed protocol, analysis, IRB exemption, manuscript submitted to JBJS.
33. Nate Cafferky, **Orthopedics**, "Obesity threshold in total joint replacement," 2013. Completed protocol, IRB application.
34. Natalie Stinton, **Dentistry**, "Efficacy of the caries risk assessment tool," 2012. Completed protocol, IRB application.
35. Jesna Mathew, **General Surgery**, "Adherence to BCLC guidelines in liver cancer patients," 2012. Completed protocol, IRB application.
36. Travis Webb, **General Surgery**, "Outcomes following presentation for acute cholecystitis," 2012. Completed protocol, IRB application.
37. John Ross, **Maternal Fetal Medicine**, "Umbilical artery Doppler study," 2012. Completed protocol,

IRB application.

38. Adam Lee, **Orthopedics** "EPL rupture in pediatric patients," 2012. Completed analysis, abstract submitted to AAOS.
39. Amy Speeckaert, **Orthopedics**: "Genetic risk factors for pulmonary embolism after total joint replacement," 2012. Completed protocol.
40. Oluwatoyosi Dada, **Pediatrics**: "Strep throat," 2012. Completed protocol.
41. Mazen Roumia, **Cardiology**, "An examination of the bleeding risk associated with the concomitant use of statins and warfarin," 2015. Completed statistical plan, analysis, conference submission.
42. Elie Ghanem, **Orthopedics**, "Postoperative complications for hemiarthroplasty patients with and without Plavix," 2014. Completed protocol, IRB application, analysis, and poster accepted for presentation at national conference.
43. Adam Lee, **Orthopedics**, "Comparison of 2D and 3D images for diagnosing acetabular fractures," 2014. Completed protocol.
44. Nithya Menon, **Pulmonary Medicine**: "Adherence and outcomes of implementing the ProvenCare model in patients admitted for COPD acute exacerbations," 2014. Completed analysis, abstract submitted to national meeting.
45. Christian Basque, **Sports Medicine**: "Tendinopathy as a side effect of fluoroquinone treatment," 2014. Designed questionnaire, completed protocol.
46. Patricia Bornhorst, **Sports Medicine**: "On-field removal of equipment after cervical spine injuries," 2014. Designed questionnaire.
47. John Ross, **Maternal Fetal Medicine**: "The effect of CV4 on uncomplicated pregnancies at term," 2014. Developed protocol, study design.
48. David Kaland, **Pharmacy**: "Analgesic treatment of oral mucositis involving ketamine," 2014. Completed protocol, IRB application.
49. Hemil Maniar, **Orthopedics**: "Sonication of removed hardware," 2014. Completed analysis, abstract submitted to OTA.
50. Kristin McPhillips, **Orthopedics**: "Anticoagulation INR before total hip replacement," 2014. Completed protocol, IRB application, analysis, abstract submitted to OTA.
51. Kristin McPhillips, **Orthopedics**: "Compliance with sequential compression devices," 2014. Completed analysis, abstract submitted to OTA.
52. Kristin McPhillips, **Orthopedics**: "Reoperation rate on varus knees," 2014. Completed protocol, IRB application.
53. Chris Grandizio, **Orthopedics**: "Level of evidence used in trauma residency training exams," 2014. Completed analysis, abstract submitted to OTA.
54. Meike Schuster, **Maternal Fetal Medicine**: "Impact of body mass index on pregnancy complications," 2013. Completed protocol, IRB application.
55. Chris Grandizio, **Orthopedics**: "Trauma-related hospital costs in the Amish and Mennonite populations," 2013. Completed analysis, manuscript prepared.
56. Chris Grandizio, **Orthopedics**: "Trigger finger after carpal tunnel release," 2013. Completed analysis, manuscript published in *J Hand Surgery*.
57. Raveesh Richard, **Orthopedics**: "Epidemiology of clavicle fractures," 2013. Completed analysis, abstract submitted to OTA.
58. Raveesh Richard, **Orthopedics**: "Learning styles in orthopedic training programs," 2013. Completed analysis.
59. Raveesh Richard, **Orthopedics**: "Trimed Sled," 2013. Completed analysis.
60. Zhiyong Hou, **Orthopedics**: "Acromioclavicular joint disruption," 2013. Completed protocol, IRB application, analysis, manuscript submitted to *Orthopedics*.
61. Joe Mlinarich, **Respiratory Care**: "Breath actuated nebulizers," 2013. Completed protocol.
62. Kamell Eckroth-Bernard, **Vascular Surgery**: "SAAAVE Act and abdominal aortic aneurysms," 2013. Completed analysis, manuscript published in *J Vascular Surgery*.
63. Gregory Yost, **Cardiology**: "Readmission after PCI," 2012. Completed analysis, manuscript published in *JACC: Interventions*.
64. Nevin Baker, **Cardiology**, "Radial Catheterization," 2012. Completed protocol, IRB application.

d. Attending Physician Research

65. David Diehl and Alexander Kim, **Gastroenterology**, "Osteopathic manipulation for gastrointestinal problems," 2016. Assistance with questionnaire design, validation study design.
66. Keith Boell, **Internal Medicine**, "Diabetic eye screening," 2016. Assistance with study design, outcomes measurement instruments.
67. John Han, **Interventional Pain**, "Pain medication monitoring," 2016. Assistance with study design, protocol, prep to research request, definition of cohort.
68. Edward Everett and Bryan Snook, **Neonatal Intensive Care Unit**, "Calcium phosphate study," 2016. Assistance with study design and protocol.
69. Adam Lee, **Orthopedics**, "CT diagnosis of acetabular fractures," 2016. Assistance with study design, protocol, internal SRC grant application.
70. Michael Evans, **Pharmacy**, "Brief Risk Questionnaire," 2016. Assistance with survey validation study design.
71. Eric Hossler, **Dermatology**, "Efficacy of curettage alone for cutaneous squamous cell carcinoma," 2015. Completed protocol, IRB application.
72. Beni Verma, **Internal Medicine**, "Correlation of pulse pressure and mean arterial pressure to 30 days readmission in patients with congestive heart failure," 2015. Advisor for protocol, IRB application, internal grant application.
73. Michael Entrup, **Anesthesiology**, "Association of delirium and mortality with type of anesthesia following surgical repair of hip fractures in elderly patients," 2014. Completed protocol.
74. Suresh Basnet, **Critical Care Medicine**, "Hospital readmission rate and mortality outcomes associated with poly-pharmacy and potentially inappropriate medications use in elderly: a cohort analysis," 2014. Completed protocol, IRB application.
75. Allison Ball, **Gynecologic Oncology**, "Provider adherence to current cervical cancer screening guidelines," 2014. Completed protocol, feasibility (PTR) study.
76. Li Zhang, **Anesthesiology**, "Anesthesia risk factors for cerebral palsy," 2014. Completed protocol, IRB application, study in progress.
77. Michael Kordek, **Family Practice**: "Documenting alert fatigue in electronic health records," 2014. Completed protocol, IRB application.
78. Jason Jarinko, **Sports Medicine**: "Balance assessment and return-to-play," 2014. Completed protocol, IRB application.
79. Thomas Schiebele, **Anesthesiology**, "Earlobe glucose measurement," 2013. Completed protocol, IRB application.
80. James Blankenship, **Cardiology**, "Physician radiation exposure," 2013. Completed protocol.
81. Sandy Green, **Cardiology**, "Training in cardiac catheterization," 2013. Grant prepared for AHRQ.
82. Abraham Layon, **Critical Care Medicine**: "Culture of safety and quality," 2013. Completed protocol, grant submission to CMMI/HCIA.
83. Ron Harris, **Endocrinology**: "V-GO Insulin Delivery," 2013. Completed protocol, grant application to sponsor.
84. Timothy Swift, **Family Practice**: "Medication use agreements in narcotics management" 2013. Completed protocol, internal grant submission.
85. Jila Kaberi-Kaberi, **Internal Medicine**: "Probiotics and *C.diff* infection," 2013. Completed protocol, IRB application.
86. Sally Tice, **Pharmacy**: "Duplicate GI prophylaxis after catheter ablation," 2013. Completed protocol, IRB application, analysis, abstract prepared.
87. Eric Newman, **Rheumatology**: "Ask-A-Doc Rheumatology," 2013. Completed grant application to CMMI/HCIA.
88. Robert Garvin, **Vascular Surgery**: "Stroke and GI bleeding following cardiac artery stenting vs. cardiac endarterectomy," 2013. Completed protocol, IRB application, analysis, manuscript submitted to *J Vascular Surgery*.
89. Daniel Horwitz, **Orthopedics**: "AO Outcomes Center," 2013. Completed protocol, prepared grant application to AO.
90. Daniel Horwitz, **Orthopedics**: "FORTEO osteoporosis medication," 2013. Completed protocol, industry grant application, IRB application.
91. James Widmaier, **Orthopedics**: "Driving reaction times after total joint replacement," 2013. Completed protocol, internal grant application, IRB application.
92. John Han, **Interventional Pain**: "Spinal cord stimulation therapy in failed back surgery syndrome,"

2012. Completed protocol, internal grant application.
93. Matthew Eccher, **Neurology**, "Intraoperative monitoring of stimulation," 2012. Completed protocol.
94. Paul Roda, **Oncology**: "GMPN1 colorectal screening," 2012. Protocol development.
95. John Beck, **Orthopedics**: "Improvement in OITE exams," 2012. Completed analysis, manuscript published in *J Graduate Medical Education*.
96. John Beck, **Orthopedics**: "Risk factors for pediatric supracondylar humerus fractures," 2012. Completed analysis, manuscript published in *Orthopedics*.

e. Other Internal Mentoring Support

97. Lyn Boockock-Taylor, **Development**: "Community care," 2013. Grant application to CMMI/HCIA.
98. Michael Evans, **Pharmacy**: "Diabetes telemonitoring and self-management," 2014. Grant application submitted to PCORI.
99. Debra Sanders, **Transplant**: "Cumulative sum control charts for transplant graft rejection," 2013. Built analysis tool for department quality improvement.

IX. PEER REVIEWED PUBLICATIONS

a. Archival Journal Papers – In Press or Published

1. **Graham-J**, Sanchez-RJ, Saseen-J, Mallya-UG, Panaccio-MP, Evans-MA, "Clinical and economic consequences of statin intolerance in the United States: results from an integrated health system," *Journal of Clinical Lipidology* 2016. [ePub ahead of print]
2. Grandizio-LC, **Graham-J**, Klena-JC, "Predictors of recurrence after corticosteroid injection for trigger digits," *Hand* 2016. [ePub ahead of print, DOI: 10.1177/1558944716668862]
3. Wilson-DE, Felt-KD, Campbell-EN, Cohen-OR, Geisel-LE, **Graham-J**, Paliulis-LV, "Resource allocation in food-restricted male *Physocyclus mexicanus* (Banks, 1898) spiders does not favor proportionally larger testes (Araneae: Pholcidae)," *J Arachnology* 2016, 44(3):408-411.
4. Grandizio-LC, Huston-JC, Shim-SS, **Graham-J**, Klena-JC, "Levels of evidence for hand questions on the orthopaedic in-training examination," *Hand* 2016. [ePub ahead of print, DOI: 10.1177/1558944715620793]
5. Kempegowda-H, Maniar-HH, Richard-R, Tawari-A, **Graham-J**, Suk-M, Beebe-MJ, Han-C, Tornetta-P, Kubiak-EN, Horwitz-DS, "Posterior malleolar fractures associated with tibial shaft fractures and sequence of fixation," *J Orthop Trauma* 2016 Oct; 30(10):568-671.
6. Zhang-L, **Graham-JH**, Feng-W, Lewis-MW, Zhang-Z, Kirchner-HL, "No association of labor epidural analgesia with cerebral palsy in children," *J Anesth* 2016 Sep 2; DOI 10.1007/s00540-016-2244-8.
7. Tawari-AA, Kempegowda-H, **Graham-J**, Suk-M, Horwitz-D, "The agreement of level of evidence ratings of articles submitted to JOT from 2012 to 2014," *J Orthop Trauma* 2016 Jul; 30(7):367-369.
8. Maniar-H, Wingert-NC, McPhillips-K, Foltzer-MA, **Graham-J**, Bowen-TR, Horwitz, DS, "Role of sonication for detection of infection in explanted orthopaedic trauma implants," *J Orthop Trauma* 2016 May; 30(5):e175-80.
9. Grandizio-LC, Shim-SS, **Graham-J**, Costopoulos-C, Cush-G, Klena-JC, "Analysis of orthopedic resident ability to apply levels of evidence criteria to scientific articles," *Journal of Surgical Education* 2016; 73(3): 381-385.
10. Slover-JD, Karia-RJ, Hauer-C, Gelber-Z, Band-PA, **Graham-J**, "Feasibility of integrating standardized patient-reported outcomes in orthopedic care," *Am J Manag Care* 2015 Aug; 21(8):e494-500.
11. Speeckaert-A, Brothers-J, Wingert-N, **Graham-JH**, Klena-J, "Airborne exposure of methyl methacrylate during simulated total hip arthroplasty and fabrication of antibiotic beads," *Journal of Arthroplasty* 2015 Aug; 30(8): 1464-9.
12. Grandizio-C, Wagner-B, **Graham-J**, Klena-J, Suk-M, "Orthopaedic trauma in the Anabaptist community: epidemiology and hospital charges," *Journal of Agromedicine* 2015, 20:1-9.
13. Grandizio-C, Klena-J, **Graham-J**, Huston-JC, Parenti-JM, "Levels of evidence have increased for musculoskeletal trauma questions on the Orthopaedic In-Training Examination," *Journal of Surgical Education* 2015 Mar-Apr; 72(2): 258-63.

14. Jubelt-L, **Graham-J**, Maeng-DD, Li-H, Epstein-AJ, Metlay-JP, "Patient ratings of case managers in a medical home: associations with patient satisfaction and healthcare utilization," *Annals of Internal Medicine* 2014, 161(10_Suppl):S59-S65.
15. **Graham-J**, Tang-X, Irving-J, Sellers-S, Crisp-J, Horwitz-D, Muehlenbachs-L, Krupnick-A, Carey-D, "Increased traffic accident rates associated with shale gas drilling in Pennsylvania," *Accident Analysis and Prevention*, January 2015, 74:203-209.
16. **Graham-J**, Spenciner-D, Anderson-P, "Response to 'Comparative analysis of international standards for the fatigue testing of posterior spinal fixation systems,'" *The Spine Journal* 2014-12-01Z, 14(12):3067-3068.
17. Hou-Z, **Graham-J**, Zhang-Y, Strohecker-K, Feldmann-D, Bowen-TR, Chen-W, Smith-W, "Comparison of single and two-tunnel techniques during open treatment of acromioclavicular joint disruption," *BMC Surgery* 2014, 14:53.
18. Deegan-BF, Richard-RD, Bowen-TR, Perkins-R, **Graham-JH**, Foltzer-MA, "Impact of chronic kidney disease stage on lower-extremity arthroplasty," *Orthopedics* 2014 July; 37(7):e613-618.
19. **Graham-J**, Bowen-TR, Strohecker-KA, Irgit-K, Smith-WR, "Reducing mortality in hip fracture patients using a perioperative approach and medical home care: a prospective cohort study," *Patient Safety in Surgery* 2014, 8:7. doi:10.1186/1754-9493-8-7.
20. Grandizio-C, **Graham-J**, Rutter-M, Klena-J, "The incidence of trigger digit after carpal tunnel release in diabetic and non-diabetic patients," *Journal of Hand Surgery* 2014 Feb; 39(2):280-285.
21. **Graham-J**, Irgit-K, Smith-W, Bowen-T, "Diaphyseal femur fractures associated with bisphosphonate use," *Acta Orthop Traumatol Turc* 2013, 47(4):255-60.
22. Karia-R, Slover-J, Hauer-C, Gelber-Z, Band-P, **Graham-J**, "Networking to capture patient-reported outcomes during routine orthopaedic care across two distinct institutions," *Osteoarthritis and Cartilage* 2013, 21 Suppl: S142.
23. Yost-G, Puher-S, **Graham-J**, Skelding-K, Scott-T, Berger-P, Blankenship-J, "Readmission in the 30 days after percutaneous coronary intervention," *JACC: Cardiovascular Interventions* (Mar 2013), 6(3):237-44.
24. Beck-JD, Riehl-JT, Moore-BE, Deegan-JH, Sartorius-J, **Graham-J**, Mirenda-WM, "Risk factors for failed closed reduction of pediatric supracondylar humerus fractures," *Orthopedics* 2012, 35(10):e1492-1496.
25. Maeng-D, **Graham-J**, Bloom-F, Davis-D, Steinberg-E, Tomcavage-J, "Reducing long-term cost by transforming primary care: evidence from Geisinger's Medical Home model," *Am J Managed Care* 2012; 18(3):149-155.
26. Klena-J, **Graham-J**, Lutton-JS, Temple-JL, Beck-JD, "Use of an integrated, anatomic-based orthopaedic resident education curriculum: a five-year retrospective review of its impact on OITE scores," *Journal of Graduate Medical Education* June 2012; 4(2):250-53.
27. **Graham-J**, Tomcavage-J, Salek-DM, Sciandra-J, Davis-DE, Stewart-WF, "Post-discharge monitoring using interactive voice response system reduces 30-day readmission rates in a case-managed Medicare population," *Medical Care* 2012; 50(1):50-57.
28. Gilfillan-RJ, Tomcavage-J, Rosenthal-MB, Davis-DE, **Graham-J**, Roy-J, Pierdon-SB, Bloom-FJ, Graf-TR, Goldman-R, Weikel-K, Hamory-B, Paulus-RA, Steele-G, "Value and the medical home: effects of transformed primary care," *Am J Managed Care* 2010; 16(8):607-614.
29. **Graham-J**, Estes-B, "What standards can and can't tell us about a spinal device," *The Spine Arthroplasty Society Journal* (Dec 2009); 3(4):178-83.
30. **Graham-J**, Hai-N, Buch-BD, Ahn-C, "Effect of bone density on mechanical properties after percutaneous vertebroplasty," *Spine*, 2007, 32(18):E505-E511
31. Bradford-L, Baker-DA, **Graham-J**, Chawan-A, Ries-MD, and Pruitt-LA, "Wear and surface cracking in early retrieved highly cross-linked polyethylene acetabular liners," *Journal of Bone and Joint Surgery*, 86(6):1271-82, 2004.
32. **Graham-J**, Ries-M, Pruitt-L, "Effect of bone porosity on mechanical integrity of the bone-cement interface," *Journal of Bone and Joint Surgery*, 85A (10):1901-1908, 2003.

33. Gunther-SB, **Graham-J**, Norris-TR, Ries-M, Pruitt-L, "Retrieved glenoid components: a classification system for surface damage analysis," *Journal of Arthroplasty*, 17(1):95-100, 2002.
34. **Graham-J**, Pruitt-L, Ries-M, Gundiah-N, "Fracture and fatigue properties of acrylic bone cement: effects of mixing method, sterilization treatment, and molecular weight," *Journal of Arthroplasty*, 15(8):1028-1035, 2000.
35. Klapperich-C, **Graham-J**, Pruitt-L, Ries-M, "Failure of a metal-metal total hip arthroplasty from progressive osteolysis," *Journal of Arthroplasty*, 14(7):877-881, 1999.
36. Naidu-SH, **Graham-J**, Laird-C, "Pre- and post-implantation dynamic mechanical properties of Silastic HP-100 finger joints," *Journal of Hand Surgery, American Volume*, 1997 Mar, 22(2):299-301.

b. Journal Papers and Conference Presentations – in review

37. **Graham-J**, Fan-L, Meadows-ES, Hang-L, Partridge-J, Goates-S, "Addressing malnutrition across the continuum of care: characteristics of patients who receive oral nutritional supplements," *Journal of Community Health* (submitted 2016)
38. Strohecker-K, Gaffney-CJ, **Graham-J**, Irgit-K, Smith-WR, Bowen-TR, "Pediatric all-terrain vehicle (ATV) injuries: an epidemic of cost and grief," *Journal of Safety Research* [submitted 2016]
39. Hao-J, Pitcavage-J, Jones-JB, Hoegerl-C, **Graham-J**, "Measuring adherence and outcomes in treatment of multiple sclerosis," *Journal of Osteopathic Medicine* [submitted 2017]

c. Other peer-reviewed, non-journal publications

40. **Graham-J**, Cooper-S, Mackeen-D, "How safety concerns about Essure reveal a path to better device tracking," *Health Affairs Blog*, October 15, 2015. Available at <http://healthaffairs.org/blog/2015/10/15/how-safety-concerns-about-essure-reveal-a-path-to-better-device-tracking/>

d. Conference Papers - Podium Presentations

41. Kempegowda-H, **Graham-J**, Suk-M, Horwitz-DS, "Treatment of primary ligamentous Lis-franc injuries: comparison between screw fixation and tightrope fixation," *Orthopaedic Trauma Association (OTA) Annual Meeting*, Potomac, MD, October 8-10, 2016.
42. Maniar-HM, Tawari-A, **Graham-J**, Marcantonio-AJ, Bramlett-K, Kempegowda-H, Suk-M, Horwitz-DS, "Role of computed tomography (CT) scan of the head in low energy geriatric femur fractures," *American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting*, Orlando, FL, March 1-5, 2016.
43. McPhillips-K, Tawari-A, Maniar-H, Kempegowda-H, **Graham-J**, Suk-M, Horwitz-DS, "Reversal of anticoagulation prior to hemiarthroplasty," *International Geriatric Fracture Society Annual Meeting*, San Diego, CA, October 7, 2015.
44. Rutter-M, Parrilla-E, Richard-R, **Graham-J**, Bowen-T, Ghanem-E, "Clopidogrel use prior to hemiarthroplasty does not preclude good outcomes," *Eastern Orthopaedic Association Annual Meeting*, Maui, HI, June 17-20, 2015.
45. Rutter-M, Wingert-N, Parilla-E, **Graham-J**, Crofoot-C, Ghanem-E, "Aspirin vs. Potent Anticoagulants for Venous Thromboembolism Prevention After Primary Total Joint Arthroplasty," *Eastern Orthopaedic Association Annual Meeting*, Maui, HI, June 17-20, 2015.
46. Parrilla-E, Richard-R, Rutter-M, **Graham-J**, Bowen-T, Ghanem-E, "Clopidogrel use prior to hemiarthroplasty in the treatment of femoral neck fractures does not preclude good outcomes," *Pennsylvania Orthopaedic Society Annual Meeting*, Harrisburg, PA, April 10-12, 2015.
47. McPhillips-K, Maniar-H, **Graham-J**, Suk-M, Horwitz-D, "Compliance with intermittent pneumatic compression devices in orthopaedic trauma patients," *Eastern Orthopaedic Association (EOA) Annual Meeting*, Amelia Island, FL, October 22-25, 2014.
48. Grandizio-L, Wagner-B, **Graham-J**, Klena-J, "Orthopaedic trauma in the Anabaptist community: epidemiology and hospital charges," *Eastern Orthopaedic Association (EOA) Annual Meeting*, Amelia Island, FL, October 22-25, 2014.

49. McPhillips-K, Maniar-H, **Graham-J**, Horwitz-D, "Post-operative complications following hemiarthroplasty in patients on warfarin," *Eastern Orthopaedic Association (EOA) Annual Meeting*, Amelia Island, FL, October 22-25, 2014.
50. McPhillips-K, Maniar-H, **Graham-J**, Horwitz-D, "Postoperative complications following hemiarthroplasty in patients on warfarin," *Orthopaedic Trauma Association Annual Meeting*, Tampa, FL, October 15-18, 2014.
51. Maniar-H, McPhillips-K, **Graham-J**, Foltzer-M, Bowen-TR, Horwitz-DS, "Sonication has the potential to improve culture yield in patients with clinical infection," *Orthopaedic Trauma Association Annual Meeting*, Tampa, FL, October 15-18, 2014.
52. Maniar-H, Wingert-N, **Graham-J**, McPhillips-K, Bowen-T, Horwitz-DS, "Sonication of clinically infected trauma explants," *Musculoskeletal Infection Society (MSIS) Annual Meeting*, Charleston, SC, August 8-9, 2014.
53. Wagner-AJ, Garvin-RP, Ryer-EJ, Elmore-JR, Berger-AL, **Graham-JH**, Franklin-DP, "Long term results of carotid stenting versus carotid endarterectomy," *Eastern Vascular Society Joint Meeting*, Boston, MA, September 11-14, 2014.
54. Deegan-B, Richard-R, Bowen-T, **Graham-J**, Perkins-R, Foltzer-M, "Acute kidney injuries in patients with chronic kidney disease following total joint arthroplasty," *2014 Western Orthopaedic Association Meeting*, Big Island, HI, July 30-August 2, 2014.
55. Wagner-A, Garvin-RP, Ryer-EJ, **Graham-J**, Elmore-JR, Franklin-DP, "Long term results of carotid stenting versus carotid endarterectomy," *Delaware Valley Vascular Society 36th Annual Meeting*, Philadelphia, PA, April 24, 2014.
56. Deegan-B, Richard-R, Bowen-T, **Graham-J**, Perkins-R, Foltzer-M, "Impact of mild kidney disease stage on outcomes after total hip or knee arthroplasty," *2014 HMO Research Network Annual Meeting*, Phoenix, AZ, April 1-4, 2014.
57. **Graham-J**, Mercer-D, Tusing-L, Stewart-WF, "Development of a provider-level patient centered medical home questionnaire for measuring implementation and impact," *2014 HMO Research Network Annual Meeting*, Phoenix, AZ, April 1-4, 2014.
58. **Graham-J**, Bowen-TR, Strohecker-KA, Irgit-K, Smith-WR, "Reduced mortality in hip fracture patients: combining a perioperative approach and medical home care," *Annual Meeting of the American Academy of Orthopedic Surgeons (AAOS)*, Chicago, IL, March 19-23, 2013.
59. Reid-R, Solberg-L, **Graham-J**, Austin-B, "Case studies in evaluating the patient-centered medical home in the HMO Research Network," *Annual Conference of the HMO Research Network*, Boston, MA, March 23-25, 2011.
60. Pitcavage-J, Leader-J, **Graham-J**, Kirchner-H, Jones-JB, "Overestimation of population level medication adherence: bias in the MPR calculation of hypertensive patients," *Annual Conference of the HMO Research Network*, Boston, MA, March 23-25, 2011.
61. Bloom-F, Langer-RD, **Graham-J**, Townsend-RR, Hennessey-S, "Trends in antihypertensive medication use among incident cases of hypertension, 2002-2006: the Geisinger Clinic population," *25th Annual Meeting of the American Society of Hypertension*, New York, NY, May 1-4, 2010.
62. Langer-RD, **Graham-J**, Hennessey-S, Townsend-RR, "Goal BP is achieved more often with classic compared to newer two-drug antihypertensive regimens," *AHA 50th Cardiovascular Disease Epidemiology and Prevention Conference*, March 2-5, 2010.
63. Langer-RD, **Graham-J**, Hennessey-S, Townsend-RR, Bloom-F, Weber-V, "Outcomes associated with thiazide combinations for 2nd-line treatment of hypertension in older patients," *Annual Conference of the HMO Research Network*, Danville, PA, April 26-29, 2009.
64. Langer-RD, **Graham-J**, Weiner-MG, Eachus-SE, Reardon-J, Blosky-MA, Turner-BJ, "Effects of race and comorbidities on differences in blood pressure control in urban and rural populations," *Annual Conference of the HMO Research Network*, Danville, PA, April 26-29, 2009.
65. Tomcavage-J, **Graham-J**, Roy-J, Gilfillan-R, Goldman-R, Weikel-K, Wolstein-A, "Measuring the effect of a patient-centered health initiative on clinic-level outcomes," *Annual Conference of the HMO Research Network*, Danville, PA, April 26-29, 2009.

66. **Graham-J**, Rukstalis-D, Roy-J, Simmons-S, Bengier-A, "Converting between short and long form versions of a self-reported erectile dysfunction symptom score," *Annual Meeting of the American Urological Association*, Orlando, FL, May 17-22, 2008.
67. Ahn-C, **Graham-J**, "Experimental design for assessing the effect of bone density on mechanical properties after vertebroplasty," *Joint Statistical Meetings*, Salt Lake City, UT, 2007.
68. **Graham-J**, Ries-M, Pruitt-L, "Fracture toughness of the trabecular bone/cement interface sensitive to initial crack length," *Transactions of the 48th Annual Meeting, Orthopaedic Research Society*, 2002.
69. Liu-Q, **Graham-J**, Hall-RS, Robinovitch-SN, "Strength and flexibility influences on age-related changes in functional reach," *Proceedings of the 17th World Congress, International Association of Gerontology*, 2001.
70. Gundiah-N, **Graham-J**, Ries-M, Pruitt-L, "Fatigue life of acrylic bone cement: the relative effects of mixing, sterilization method, and molecular weight," *Transactions of the Sixth World Biomaterials Congress*, 2000.
71. **Graham-J**, Ries-M, Pruitt-L, "Cement penetration depth significantly affects fracture toughness at the trabecular bone/cement interface," *Transactions of the 27th Annual Meeting, Society For Biomaterials*, 2001.

e. Conference Papers – Poster Presentations

72. McPhillips-K, Tawari-A, Maniar-H, Kempegowda-H, **Graham-J**, Suk-M, Horwitz-D, "Reversal of anticoagulation prior to hemiarthroplasty," *American Orthopaedic Association (AOA) Annual Meeting*, Seattle, WA, June 22-25, 2016.
73. Maniar-HM, Tawari-A, **Graham-J**, Marcantonio-AJ, Bramlett-K, Kempegowda-H, Suk-M, Horwitz-DS, "Role of computed tomography (CT) scan of the head in low energy geriatric femur fractures," *American Orthopaedic Association (AOA) Annual Meeting*, Seattle, WA, June 22-25, 2016.
74. **Graham-J**, Meadows-ES, Hang-L, Fang-L, Goates-S, Partridge-J, "Oral nutrition supplements in inpatient and outpatient settings: patient characteristics at time of initiation," *International Society for Pharmacoeconomics and Outcomes Research (ISPOR) 21st Annual Meeting*, Washington, DC, May 21-25, 2016. Abstract published in *Value In Health* May 2016, 19(3):A180.
75. Colaco-M, **Graham-J**, Danella-J, Fluck-M, Rukstalis-DB, "The impact of age on outcomes after bladder outlet procedures," *Annual Meeting of the American Urological Association*, San Diego, CA, May 6-10, 2016.
76. Jones-L, **Graham-J**, Evans-M, Harris-R, Wright-E, "Oral antidiabetic medication adherence and glycemic control associated with fewer hospitalizations and emergency department visits," *Health Care Systems Research Network 2016 Annual Meeting*, Atlanta, GA, April 14-15, 2016.
77. McPhillips-K, Tawari-A, Maniar-H, Kempegowda-H, **Graham-J**, Suk-M, Horwitz-D, "Reversal of Anticoagulation Prior to Hemiarthroplasty," *Pennsylvania Orthopaedic Society*, Boca Raton, FL, April 8-9, 2016.
78. Rutter-M, Wingert-N, Podobinski-M, **Graham-J**, Gotoff-J, Ghanem-E, "Warfarin anticoagulation after primary total joint arthroplasty: does the international normalized ratio matter?," *American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting*, Orlando, FL, March 1-5, 2016.
79. Kempegowda-H, Maniar-H, Richard-R, Tawari-A, **Graham-J**, Han-C, Tornetta III-P, Kubiak-E, Horwitz-D, "Posterior malleolar fractures associated with tibia fractures: incidence and the sequence of fixation," *American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting*, Orlando, FL, March 1-5, 2016.
80. Kempegowda-H, Maniar-HH, Richard-R, Tawari-A, **Graham-J**, Han-C, Tornetta-P, Kubiak-EN, Horwitz-DS, "Posterior malleolar fractures associated with tibia fractures: incidence and the sequence of fixation," *American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting*, Orlando, FL, March 1-5, 2016.
81. Rutter-M, Richard-R, Parrilla-E, **Graham-J**, Murphy-J, Ghanem-E, "Warfarin anticoagulation after primary total joint arthroplasty: does INR matter?" *Eastern Orthopaedic Association Annual Meeting*, Maui, HI, June 17-20, 2015.

82. **Graham-J**, Hao-J, Pitcavage-J, Hoegerl-C, Jones-JB, Taylor-SR, Ryman-A, "Measuring adherence and outcome in treatment of multiple sclerosis in the Geisinger Clinic," *International Society for Pharmacoeconomics and Outcomes Research (ISPOR) 20th Annual Meeting*, Philadelphia, PA, May 16-20, 2015.
83. Menon-N, Evans-R, **Graham-JH**, Vituanc-M, Pogge-C, Francis-D, Francis-CR, Bulger-J, Simonelli-PF, "Adherence and outcomes of implementing the ProvenCare model in patients with COPD admitted for exacerbations," *American Thoracic Society Annual Meeting*, Denver, CO, May 15-17, 2015.
84. **Graham-J**, Sanchez-RJ, Evans-MA, Mallya-UG, Panaccio-MP, Steinhubl-SR, "Clinical and economic consequences of statin intolerance in the U.S.: results from an integrated health system," *2015 AHA/ASA Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke Meeting*, Baltimore, MD, April 29-May 1, 2015.
85. McPhillips-K, Tawari-A, Maniar-H, Kempegowda-H, **Graham-J**, Suk-M, Horwitz-D, "Reversal of anticoagulation prior to hemiarthroplasty," *Pennsylvania Orthopaedic Society Annual Meeting*, Harrisburg, PA, April 10-12, 2015.
86. Parrilla-E, Richard-R, Rutter-M, **Graham-J**, Bowen-TR, Ghanem-E, "Clopidogrel use prior to hemiarthroplasty for femoral neck fracture does not preclude good outcome," *American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting*, Las Vegas, NV, March 24-28, 2015.
87. Wingert-N, Parrilla-E, **Graham-J**, Crofoot-C, Kolessar-D, Ghanem-E, "Aspirin vs. potent anticoagulants for venous thromboembolism prevention after total joint arthroplasty," *American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting*, Las Vegas, NV, March 24-28, 2015.
88. McPhillips-K, Maniar-H, **Graham-J**, Suk-M, Horwitz-D, "Compliance in intermittent pneumatic compression (IPC) devices following educational intervention," *AO North America Annual Meeting*, Las Vegas, NV, February 5-7, 2015.
89. McPhillips-K, Maniar-H, **Graham-J**, Horwitz-D, "Risk for complications following hemiarthroplasty for femoral neck fracture in patients on warfarin," *AO North America Annual Meeting*, Las Vegas, NV, February 5-7, 2015.
90. Parrilla-E, Richard-R, Rutter-M, **Graham-J**, Bowen-T, Ghanem-E, "Clopidogrel Use Prior to Hemiarthroplasty for Femoral Neck Fracture Does Not Preclude Good Outcome," *American Association of Hip and Knee Surgeons Annual Meeting*, Dallas, TX, November 7-9, 2014.
91. **Graham-J**, Horwitz-D, "Sensitivity of patient-reported physician percentile rankings to inter-physician variability and patient sample size," *2014 HMO Research Network Annual Meeting*, Phoenix, AZ, April 1-4, 2014. ***Nominated for 2014 Poster Competition for Statistical Research and Methods category.*
92. Deegan-BF, Richard-RD, Bowen-TR, **Graham-J**, Perkins-R, Foltzer-MA, "Lower stages of chronic kidney disease (CKD) do not affect outcomes after total hip or knee arthroplasty," *2013 American Public Health Association Meeting*, Boston, MA, November 2-6, 2013.
93. Jubelt-L, **Graham-J**, Maeng-D, Metlay-J, "Case management performance in a medical home and associations with patient satisfaction and healthcare utilization," *2013 Society for General Internal Medicine 36th Annual Meeting*, Denver, CO, April 24-27, 2013.
94. Karia-R, Slover-JD, Hauer-C, Gelber-Z, **Graham-J**, Band-PA, "Networking to capture patient-reported outcomes (PROs) during routine orthopaedic care across two distinct institutions," *2013 World Congress on Osteoarthritis, Osteoarthritis Research Society International*, Philadelphia, PA, April 18-21, 2013.
95. Hoegerl-C, **Graham-J**, Jafree-I, Bieniek-A, "Comorbid diseases and medication adherence in a multiple sclerosis population," *Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC)*, Orlando, FL, May 30-June 1, 2013.
96. **Graham-J**, Jones-J, Bieniek-A, Dilley-A, et al., "Medication use and comorbid diseases in a Multiple Sclerosis (MS) population: electronic health record-based data," *28th Int'l Conference on Pharmacoepidemiology and Therapeutic Risk Management*, Madrid, Spain, June 2012.
97. **Graham-J**, Bowen-T, Smith-W, Irgit-K, "Management of hip fracture patients using a standardized perioperative approach combined with a medical home primary care model: a new standard for better

outcomes?" *28th Annual Meeting of the Orthopaedic Trauma Association*, Minneapolis, MN, October 3-6, 2012.

98. **Graham-J**, Rukstalis-D, "Longitudinal bladder health outcomes in men managed with extirpative surgery for prostatic disease," *Annual Meeting of the American Urological Association*, Atlanta, GA, May 19-23, 2012.
99. Hou-Z, **Graham-J**, Feldmann-D, Strohecker-K, Smith-WR, Feltham-G, "Single vs. two-tunnel technique during open treatment of acromioclavicular joint disruption," *Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS)*, San Francisco, CA, February 7-11, 2012.
100. **Graham-J**, Langer-RD, Weiner-MG, Eachus-SE, Reardon-J, Blosky-MA, Turner-BJ, "Differences in prescription adherence vs. blood pressure control: linking electronic health record and claims data," *Annual Conference of the HMO Research Network*, Danville, PA, April 26-29, 2009.
101. Langer-RD, **Graham-J**, Hennessey-S, Townsend-RR, Bloom-F, Weber-V, "Increased incident renal disease with ACE-I + thiazide therapy for hypertension: the Geisinger Clinic population," *Annual Conference of the HMO Research Network*, Danville, PA, April 26-29, 2009.
102. **Graham-J**, Langer-RD, Weiner-MG, Reardon-JE, Eachus-S, Cook-J, Blosky-MA, Turner-BJ, "Prescription adherence differs by gender, age and comorbidity and affects blood pressure control outcomes: linking electronic health record and claims data," *9th Scientific Forum on Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke*. Baltimore, MD, April 30-May 2, 2008.
103. Langer-RD, **Graham-J**, Weiner-MG, Eachus-S, Reardon-JE, Blosky-MA, Turner-BJ, "Differences in blood pressure control in urban and rural populations, effects of race and comorbidities: the Geisinger Clinic and University of Pennsylvania populations," *48th American Heart Association Cardiovascular Disease Epidemiology and Prevention Annual Conference*, Colorado Springs, CO, March 13-15, 2008.
104. **Graham-J**, Hai-N and Buch-BD, "Bone density affects relationship between cement dose and mechanical strength after vertebroplasty," *2006 FDA Science Forum*, Washington, DC, April 18-20, 2006.
105. **Graham-J**, Hai-N and Buch-B, "Bone density affects relationship between cement dose and mechanical strength after vertebroplasty," *52nd Annual Meeting of the Orthopaedic Research Society*, Chicago, IL, March 19-22, 2006.
106. Mudano-AS, Bian-J, Sampsel-S, Elkins-M, Briggs-D, Neal-A, Cope-J, Gross-T, McGunagle-D, **Graham-J**, Ferriter-A, Saag-K, "Characteristics of vertebroplasty patients: an analysis of claims data from a large not-for-profit healthcare insurer," *27th Meeting of the American Society for Bone Mineral Research*, Nashville, TN, September 23-27, 2005.
107. Mudano-AS, Bian-J, Sampsel-S, Elkins-M, Briggs-D, Neal-A, Cope-J, Gross-T, McGunagle-D, **Graham-J**, Ferriter-A, Saag-K, "Characteristics of vertebroplasty patients: an analysis of claims data from a large not-for-profit healthcare insurer," *21st International Conference on Pharmacoepidemiology and Therapeutic Risk Management*, Nashville, TN, August 21-24, 2005.
108. Dermody-NC, **Graham-J**, Woods-TO, "Mechanical Characterization of Calcaneus Bone," *2004 FDA Science Forum*, Washington DC, May 18-19, 2004
109. Collons-L, **Graham-J**, Chawan-A, Ries-M, Pruitt-L, "Mechanisms of fatigue in highly crosslinked UHMWPE," *Proceedings of the 49th Annual Meeting, Orthopaedic Research Society*, New Orleans, LA, 2003.
110. **Graham-J**, Ries-M, Pruitt-L, "Initial crack length and volume fraction effects on fracture toughness at bone/cement interface," *Transactions of the 28th Annual Meeting, Society For Biomaterials*, Tampa, FL, 2002.
111. Bradford-Collons-L., Ries-M, Chawan-A, **Graham-J**, Pruitt-L, "Crosslinked polyethylene shows evidence of wear and fatigue: a retrieval study of Durasul liners," *Transactions of the 28th Annual Meeting, Society For Biomaterials*, Tampa, FL, 2002.
112. **Graham-J**, Ries-M, Pruitt-L, "Trabecular orientation, bone porosity and cement pressure significantly affect fracture toughness at the bone-cement interface," *Proceedings of the 47th Annual Meeting, Orthopaedic Research Society*, San Francisco, CA, 2001.

113. Gunther-S, **Graham-J**, Norris-T, Ries-M, Pruitt-L, "A quantitative evaluation of surface damage in retrieved total shoulder prostheses," *Transactions of the 47th Annual Meeting, Orthopaedic Research Society*, San Francisco, CA, 2001.
114. Hughes-K, Pelletier-B, Stutz-A, **Graham-J**, Lawrence-A, Ries-M, Pruitt-L, "Artificial aging of acrylic bone cements," *Transactions of the Sixth World Biomaterials Congress*, Kona, HI, 2000.
115. **Graham-J**, Gundiah-N, Ries-M, Pruitt-L, "Effect of sterilization and mixing method on fracture properties of acrylic bone cement," *Proceedings of the 46th Annual Meeting, Orthopaedic Research Society*, Orlando, FL, 2000.
116. Ries-M, **Graham-J**, Pelletier-B, Goldman-M, Pruitt-L, "Effect of sterilization method on polymethyl-methacrylate bone cement," Winner of the Alonso J Neufeld Award, Western Orthopaedic Association, 1998.
117. Pelletier-B, **Graham-J**, Goldman-M, Muller-S, Ries-M, Pruitt-L, "The effect of sterilization and aging on the molecular properties of acrylic bone cement," *Transactions of the 24th Annual Meeting, Society For Biomaterials*, San Diego, CA, 1998.
118. Naidu-SH, Pelligrini-VD, **Graham-J**, Norin-S, Laird-C, "Pre and post implantation dynamic mechanical properties of Silastic HP-100 finger joints," *Proceedings of the 42nd Annual Meeting, Orthopaedic Research Society*, New Orleans, LA, 1996.

X. INVITED ARTICLES and BOOK CHAPTERS

119. Rosenthal-MB, Abrams-MK, Bitton-A and the Patient-Centered Medical Home Evaluators' Collaborative (incl. **Graham-J**), "Recommended core measures for evaluating the patient-centered medical home: cost, utilization, and clinical quality," *The Commonwealth Fund Data Brief, Pub. 1601, Vol. 12*, May 2012.
120. Jensen-L, Spenciner-D, **Graham-J** and Anderson-P, eds. *Static and Dynamic Spinal Implants: Are We Evaluating Them Appropriately?* West Conshohocken, PA: ASTM International (2012).
121. **Graham-J**, Graf-T, Stewart-W, "The medical home experience: the patient's role in shared decision making, and team communication " in *Core Value, Community Connections: Care Coordination in the Medical Home*. Vienna, VA: Health2Resources (2011).
122. **Graham-J**, Peck-J, "FDA Regulation of PEEK Implants," *The PEEK Biomaterials Handbook*, S. Kurtz, ed. San Diego: Elsevier Academic Press (2011).
123. **Graham-J**, "Public Sector Research, Development and Regulation," *Careers in Biomedical Engineering*, G. Madhavan, ed. New York: Springer (2008).
124. **Graham-J**, "Standard Test Methods for Spine Implants," *Spine Technology Handbook*, S.M. Kurtz and A.A. Edidin, eds. San Diego: Elsevier Academic Press (2006).

XI. INVITED TALKS

1. "Evidence Generation from the Hospital Perspective: How Do Hospitals Fit Into the National Evaluation System for Health Technologies," guest speaker for 2016 FDA Symposium on the Role of Hospitals in Modernizing Evidence Generation for Device Evaluation, December 5, 2016.
2. "Developing the research question," guest speaker for Resident and Fellow Scholarship Day, Geisinger Medical Center, May 6, 2016.
3. "Real-World Evidence for Medical Devices: Unique Device Identifiers," plenary speaker for 2016 Canadian Agency for Drugs and Technology in Health (CADTH) Symposium, April 12, 2016.
4. "Postmarket Assessment in the U.S. and Unique Device Identifiers (UDI)," guest speaker for 2016 Canadian Agency for Drugs and Technology in Health (CADTH) Symposium, April 11, 2016.
5. "Engineering and Big Data in Healthcare," guest speaker for EGR395 Fall Seminar in Engineering, Elizabethtown College, October 9, 2014.
6. "Developing the research question," guest speaker for Resident and Fellow Scholarship Day, Geisinger Medical Center, May 1, 2014.
7. "Challenges in Embedded Research," invited member of 3-person expert panel, 2014 HMO Research Network Annual Meeting, Research Administrators' Forum, Phoenix, AZ, April 3, 2014.
8. Invited participant in 12-person small-group meeting, "Implementation of Unique Identifiers (UDI) into Providers' Information Systems," The Brookings Institution, Washington, DC, March 10, 2014.

9. "Lessons for PCMH Implementation and Spread: Examining Variation Across Clinics Within a System," invited guest speaker for the Patient Centered Medical Home Evaluators' Collaborative Meeting, Baltimore, MD, June 25, 2013.
10. "Healthcare Transformation Group (HTG) R&D and Unique Device Identifiers," invited guest speaker for the GS1 US Healthcare Provider monthly teleconference, May 16, 2013.
11. "Developing the research question," guest speaker for Resident and Fellow Scholarship Day, Geisinger Medical Center, May 2, 2013.
12. "Observational clinical studies using large electronic datasets," invited speaker to ELEC 402: Genomic Signal Processing, Department of Electrical Engineering, Bucknell University, September 21, 2012.
13. "Using large electronic datasets for observational clinical studies in an integrated health system," invited speaker for Bucknell Institute for Public Policy series, July 17, 2012.
14. "Living in a variable world: why we (unfortunately) need statistics," invited speaker at journal club, Orthopedic Spinal Devices Branch, FDA, Silver Spring, MD. January 10, 2012.
15. "Propensity score methods for estimating treatment effects in observational studies," Geisinger Center for Health Research seminar series, August-November 2011.
16. "Recent Trends in FDA Adverse Reporting for Spinal Implants," *2011 Pittsburgh Spine Summit*, Allegheny General Hospital, Pittsburgh, PA, September 9, 2011.
17. "Diffusing Care Coordination Models: Translating Research Into Policy & Practice," invited discussion facilitator for The Gerontological Society of America's Scientific Summit, Washington DC, September 16, 2010.
18. "The Impact of Medical Home on Patient Outcomes and Costs," invited speaker for webinar on *Medical Homes: How Coordinated Health Care Delivery Can Help Maximize Revenue Growth*, sponsored by Zurich NA, February 24, 2010.
19. "Medical Device Regulation and the FDA," guest lecture to Biomedical Engineering 408 class, Bucknell University, February 8, 2010.
20. "FDA Premarket Review of Medical Devices," guest lecture to Biomedical Engineering 408 class, Bucknell University, February 9, 2007.
21. "Biomedical Engineering at the FDA," Biomedical Engineering guest lecture, Bucknell University, November 10, 2006.
22. "Osteoporosis and Vertebroplasty," Hungry Minds seminar, Geisinger Center for Health Research, October, 19, 2006.
23. "Biomedical Engineering Careers in the Federal Government," 28th Annual International Conference of IEEE/EMBS, New York, August 31, 2006.
24. "Osteoporosis and Vertebroplasty," FDA Division of General, Neurological and Restorative Devices Clinical Grand Rounds Seminar, May 24, 2006.
25. "Evaluating the Effectiveness of Vertebroplasty for Improving the Mechanical Properties of the Spine in Patients with Osteoporosis," Committee for the Advancement of FDA Science seminar, March 10, 2006.
26. "Bioengineering in the Public Health Arena: Life as a P-H-D at the F-D-A," UCSF/UCB Bioengineering Graduate Group Annual Retreat, Tahoe City, CA, October 23, 2004.
27. "Testing and Evaluation of Wear Debris," FDA Orthopaedic and Rehabilitative Devices Panel, June 2-3, 2004, open public forum concerning new device application for the first artificial lumbar disc replacement
28. "Benches, Bedsides, and Better Medical Devices: The Goals and Roles of the FDA," lecture to senior undergraduate course *Bioengineering 117: Structural Aspects of Biomaterials* at University of California, Berkeley, CA, March 4, 2004.
29. "Medical Device Engineering at the FDA: Science, Law Enforcement, and YOU," College of Engineering, University of California, Berkeley, CA, March 11, 2004.
30. "Fracture Resistance of Cemented Total Joint Replacements: Effects of Sterilization, Mixing, Bone Density and Pressure," invited talk to the FDA Division of Mechanics and Materials Science, April 19, 2003.
31. "Fracture Resistance at the Bone-Implant Interface in Total Joint Replacement," invited talk presented to Exponent Inc. (engineering consulting firm), Philadelphia, PA, April 3, 2002.
32. "A History of Synthetic Heart Valve Designs," invited lecture presented to graduate biomaterials course, Department of Bioengineering, University of California, Berkeley, CA, March 17, 1999.

XII. PROFESSIONAL DEVELOPMENT

a. Recent Training Courses in Biostatistics

- *Explore Statistics with R* with Andreas Montelius, Karolinska Institutet (2014)
- *Data Analysis for Genomics* with Rafael A. Irizarry, Harvard University (2014)
- *Longitudinal Data Analysis* with Michael E. Griswold, University of Mississippi Medical Center (2013)
- *Biostatistical Analysis of Epidemiologic Data: Logistic and Poisson Regression* with Steve Selvin, University of California-Berkeley (2013)
- *Multilevel Modeling* with Sandra Eckel, University of Southern California (2011)
- *Biostatistical Analysis of Epidemiologic Data: Semiparametric Methods* with Steve Selvin, University of California-Berkeley (2011)
- *Propensity Score Methods for Estimating Treatment Effects in Observational Studies* with Peter C. Austin, University of Toronto (2010)
- *Intent-to-Treat Analysis and Missing Data Issues* with Chul Ahn, Food and Drug Administration (2006)
- *Basic Concepts of Statistical Inference for Causal Effects in Experiments and Observational Studies* with Donald B. Rubin, Harvard University (2003)

b. Recent Conferences Attended

- Canadian Agency for Drugs and Technology in Health (CADTH) Symposium (2016)
- AcademyHealth Annual Meeting (2011, 2013, 2014)
- ASTM F04 Medical Materials and Devices Committee Biannual Meetings (2004-2016)
- GS1 Connect Global Standards Annual Conference (2014)
- AHRQ Comparative Effectiveness Research Methods Symposium (2009)
- HMO Research Network Conference (2009, 2013)
- American Heart Association Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke Conference (2008)
- American Urology Association Annual Meeting (2008)
- IEEE/EMBS Annual International Conference (2006)
- Orthopaedic Research Society Annual Meeting (2004-2006)
- American Academy of Orthopaedic Surgeons Annual Meeting (2004-2006)
- Federation of Spine Associations Annual Specialty Day Meeting (2004-2006)
- NIH Consensus Development Conference on Total Knee Replacement (December 2003)
- FDA Science Forum, Washington, DC (2004-2006)
- Biomedical Engineering Materials and Applications Roundtable Workshop (2006)

c. Training Courses in Other Topics

- *Overview of AHRQ's Medical Effectiveness Research Initiatives* (2006)
- *Nitinol in Medical Devices* (2005)
- *Finite Element Analysis in Cardiovascular Devices* (2004)
- *Fine-tuning the Medical Device Product Review Process* (2004)
- *Joint Arthroplasty 2004: Issues that Confront Us* (2004)
- *Australian Regulation of Medical Devices, Cellular and Tissue Therapies* (2003)
- *Introduction to Food and Drug Law* (2003)