Curriculum Vitae

Sean S. Kohles, PhD, EIT, FBMES, FAIMBE

Kohles Bioengineering Corp
Oregon Health & Science University
University of Oregon

Portland Office:
1731 SE 37th Avenue
Portland, Oregon 97214-5135
Cape Meares Laboratory:
4520 Meares Avenue NW
Tillamook, Oregon 97141-9325

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Email: ssk@kohlesbioengineering.com (primary)
kohles@ohsu.edu
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Digital Database Biographies/Profiles:
scopus.com/authid/detail.uri?authorId=7006663084
ohsu.pure.elsevier.com/en/persons/sean-kohles
scholar.google.com/citations?hl=en&user=6fZAOYcAAAAJ
ncbi.nlm.nih.gov/myncbi/sean.kohles.1/bibliography/public/
researchgate.net/profile/Sean_Kohles
orcid.org/0000-0002-5869-7715

Birthdate and Citizenship: 2 May 1965; USA
Personal: Children (Orion and Thoreau); Married (Pamela)

EDUCATION:

1990-1994	PhD, Applied Mechanics in Bioengineering (August 1994) Graduate School Special Committee Degree Department of Mechanical Engineering University of Wisconsin-Madison
1988-1990	PhD candidate, Engineering Mechanics University of Wisconsin-Madison
1987-1988	MS, Engineering Mechanics (December 1988) Department of Engineering Mechanics University of Wisconsin-Madison
1983-1987	BS, Engineering Mechanics (December 1987) Dean's List, Pre-Medicine Department of Engineering Mechanics University of Wisconsin-Madison
1979-1983	Diploma, Valedictorian (May 1983) Verona High School, Verona, WI

TECHNICAL INTERESTS:

Biomechanics, Biomaterials/Tissue Engineering, Cellular and Biomolecular Engineering, Biophysics, Composite Materials/Structures, Bioastronautics, Fundamental Solid/Fluid

Mechanics, Biological Transport Phenomena, Biomedical Engineering Design, Medical Device Technology Development/Innovation, Biostatistics, Analytical Modeling, Computational Biology, Synthetic Biology, Forensic Epidemiology, Technical Writing/Editing.

REGISTRATION/LICENSES/CERTIFICATIONS:

Professional Engineer in Training License (EIT), Wisconsin (ET-13401)
USA Track and Field Official (014690)
US Soccer Federation National D, E and F Coaching Licenses
National Federation of State High School Associations (NFHS) Level 1 and Level 2 Interscholastic Coaching Certifications (Soccer)
EXOS Athlete Performance Specialist Certification
Concussion in Sports, Center for Disease Control (CDC) and NFHS
Strangulation Investigation, Training Institute on Strangulation Prevention
Federal Emergency Management Agency (FEMA), Community Emergency Response Team (CERT)
US Federal Communications Commission (FCC), Amateur Radio License, Technician Class (Call Sign N7SSK)
American Red Cross, Lifeguard, First Aid, Cardiopulmonary Resuscitation (CPR), Automated External Defibrillator (AED)
National Outdoor Leadership School (NOLS), Wilderness Medicine First Aid, Epinephrine Auto-Injector
US Government Services Administration (GSA), System for Award Management (SAM), Signing Official and Principal Investigator Designee; Contracting Authority

PROFESSIONAL AND HONOR SOCIETIES:

American Institute for Aeronautics and Astronautics (AIAA), 1984-1989
American Society of Biomechanics (ASB), 1988-present
American Society of Engineering Education (ASEE), 1998-present [Emeritus]
American Society of Mechanical Engineers (ASME), 1990-present (Bioengineering and Applied Mechanics Divisions)
Biomedical Engineering Society (BMES), 1997-present [Fellow, FBMES, Class of 2022]
Orthopaedic Research Society (ORS), 1997-present
Society for Experimental Mechanics (SEM), 1988-present
Sigma Xi Scientific Research Society, 1993-present [Emeritus]
American Institute for Medical and Biological Engineering (AIMBE), 2024-present [College of Fellows, FAIMBE, Class of 2025]
Phi Eta Sigma, Golden Key, and Iron Cross (now Iron Shield) Honor Societies

PROFESSIONAL RECORD:

<u>Owner/Founder, Principal Investigator, and Signing Official</u>:
Kohles Bioengineering Corp (Kohles BioCor), Current: Portland and Tillamook, OR; Previously: Madison, WI; Seattle, WA; Eugene, OR; Worcester, MA;
1987-present

Professional efforts providing engineering and scientific services (Cage Code 341N1) as a registered Oregon Benefit Corporation, a small business entity (S-Corp). Kohles BioCor is dedicated to making a positive impact on society through environmentally sustainable business practices, advancements in health science & engineering, and human safety advocacy. Primary focus in areas of medical device design and evaluation (product and process); experimental design and statistical analysis; medicolegal expert testimony on injury biomechanics, mass and toxic tort, medical malpractice, medical device and consumer product failure, intellectual property, criminal prosecution and defense. Supported by professional contracts and federal/private funding addressing academic, clinical, industrial and legal issues in the fields of mechanical engineering, biomedical/bioengineering, biomechanics, and clinical/medical science.

Full Professor:
Department of Emergency Medicine (Clinical/Research/Adjunct), School of Medicine, Oregon Health & Science University, Portland, OR
2018-present
Department of Oral Rehabilitation & Biosciences, formerly Restorative Dentistry (Clinical/Research/Affiliate), Division of Biomaterials & Biomechanics, Oregon Health & Science University, Portland, OR
2013-present
Department of Human Physiology (Courtesy) and Knight Campus for Accelerating Scientific Impact (Affiliate), University of Oregon, Eugene, OR
2020-present
Department of Biology (Adjunct), Portland State University, Portland, OR
2012-2016

Faculty appointments as a Principal Investigator on federal/private agency funded and proposed research grants and collaborative advisor for undergraduate, graduate, professional, and post-doctoral trainees. Former Director, PSU Regenerative Bioengineering Laboratory, and Co-Director, PSU Microscale Laboratory.

Associate Professor:
Department of Mechanical & Materials Engineering (Research), Portland State University, Portland, OR
2003-2012
Department of Mechanical Engineering (Courtesy), Oregon State University, Corvallis, OR
2002-2009
Department of Surgery (Adjunct), Division of Plastic & Reconstructive Surgery, Oregon Health & Science University, Portland, OR
2002-present

Faculty appointments with Principal Investigator status to facilitate research and educational collaborations with students and faculty in the field of bioengineering. Founding faculty member of the PSU Mechanical Engineering doctoral program.

Assistant Professor:
Departments of Biomedical Engineering (tenure-track), Mechanical Engineering, and Biology & Biotechnology, Worcester Polytechnic Institute, Worcester, MA
1997-2001

Tenure-track and joint faculty positions involved with all aspects of research, teaching, curricular development, and departmental governance with a focus on undergraduate and

graduate level engineering education in the biomechanics, biomaterials, design, and health science specialties. Founding faculty member of the Biomedical Engineering undergraduate program.

Adjunct Assistant Professor:
Department of Clinical Science, Tufts University School of Veterinary Medicine, Grafton, MA
Departments of Physiology and Orthopedics & Rehabilitation, Program in Biomedical Engineering and Medical Physics, University of Massachusetts Medical School (UMMS), Worcester, MA
1997-2001

Joint appointments to facilitate research collaborations with physiologists, surgeons, and technical staff associated with the Musculoskeletal Research Laboratory (TUSVM), the Biomedical Science Program (UMMS), and the Endoscopy Research Center (UMMS).

Visiting Assistant Professor:
Department of Exercise and Movement Science (now Human Physiology), University of Oregon, Eugene, OR
1996-1997

Independent preparation, presentation, and evaluation of undergraduate and graduate level courses in biomechanics of human motion, tissue and joint mechanics, musculoskeletal injury and disease, and statistics. Academic advising of undergraduate and graduate students. Contributed to the development and planning of the departmental undergraduate and graduate programs. Manuscript preparation and grant writing within the areas of human kinesiology and the mechanical evaluation of connective tissues, biomaterials, and composites.

Collaborator:
Departments of Mechanical Engineering & Bioengineering, University of Washington-Seattle
1996

Development and evaluation of tissue engineering and advanced composite research issues. Manuscript preparation and grant writing within the area of mechanical evaluation of connective tissues, biomaterials, and composites.

Honorary Postdoctoral Research Fellow:
Division of Orthopedic Surgery, University of Wisconsin-Madison
1994-1995

Development and evaluation of tissue engineering research issues. Data collection and manuscript preparation within the area of mechanical and structural relationships in soft and hard connective tissues.

Research Assistant:
Division of Orthopedic Surgery & School of Veterinary Medicine, University of Wisconsin-Madison
1987-1994

Assisted in the management, test development, experimentation, data analysis, technical writing, and presentation of biomechanical research. Funded projects included mechanical and histomorphological evaluation of bone and soft tissue adaptation due to total hip replacements, femoral reconstruction, growth hormone, and microgravity effects. Budget and management duties for Orthopedic Research and Education Foundation, Veteran's Administration, and Whitaker Foundation funded projects.

Teaching Assistant/Tutor:
Department of Kinesiology, University of Wisconsin-Madison
1993-1994

Organized the instruction and grading of the laboratory sections of a fundamental course in kinetics and kinematics of human motion.

Department of Athletics, University of Wisconsin-Madison
1989-1994

Tutored collegiate athletes in undergraduate engineering courses and related background subjects.

Department of Engineering Mechanics, University of Wisconsin-Madison
1987-1988

Independently organized the instruction and grading of an experimental 'strength of materials' laboratory course.

Head Coach:
Men's and Women's Cross-Country, Edgewood College, Madison, WI
1988-1991

Organized and managed the athletic preparation, training and performance of male and female collegiate distance runners.

Laboratory Assistant:
Department of Engineering Mechanics, University of Wisconsin-Madison
1985-1987

Assisted in the research and test development for grant projects concerned with experimental stress/strain and fatigue analysis of isotropic and composite materials using advanced testing equipment and techniques.

Assistant Coach:
Boy's and Girl's Track/Cross-Country, Verona High School, Verona, WI
1984-1988

Organized and assisted in the training and performance of prep middle distance/distance runners.

Cabinet Maker:
Holland Woodshop, Holland, NE
1980-1985 summers

Assisted in the design, cost-analysis, and manufacture of cabinets/wood products within a small, independent business.

TECHNICAL ADVISING AND CONSULTING:

Advanced Surfaces & Processes, Cornelius, OR
Arthroplasty Patient Foundation, Inc., Woburn, MA
Biocoll Medical Laboratories, Inc., Seattle, WA
Biofusion, Inc., Portland, OR
Biomet, Inc., Warsaw, IN
Biomet 3i, Palm Beach Gardens, FL
BioModeling Solutions, LLC, Portland, OR
BioTeknica, Inc., Miami, FL
Biscayne BioLabs, Inc., Palm Beach Gardens, FL

Cambridge Scientific, Inc., Boston, MA
Central State University, Wilberforce, OH
Chrysalis Farms, LLC, Damascus, OR
Cordis Corp. of Johnson & Johnson Interventional Systems Co., Miami, FL
Forensic Trauma Consultants, Salem, OR
Forensic Research & Analysis, Portland, OR
Full Circle Development, LLC, Portland, OR
GenSci OrthoBiologics, Inc., Irvine, CA
Implant Innovations, Inc., Palm Beach Gardens, FL
International Cellular Medicine Society, Salem, OR
Keen Mobility, Portland, OR
Liberty Mutual Insurance Group, Hopkington, MA
Lytmos Group, LLC, Lee's Summit, MO
Minimally Invasive Surgery, Legacy Health System, Portland, OR
Molecular Geodesics, Inc., Boston, MA
MX Orthopedics, Corp., Billerica, MA
Promedix, Inc., Portland, OR
Prosthetics Research Study, Seattle, WA
Regenerative Sciences, LLC, Westminster, CO
SternGold ImplaMed, Attleboro, MA
SkeleTech, Inc., Bothel, WA
Spinal Injury Foundation, Boulder, CO
Three Rivers Land Conservancy, Lake Oswego, OR
United States District Court for the District of Massachusetts, Boston, MA
^Medicolegal Expert Witness Testimony, US and Canada (see Federal Rule 26 Disclosure)

APPOINTMENTS, SERVICE, AND ENGAGEMENT:

Departmental:
-Biomedical Engineer, EM Innovative, Disruptive, Emerging Applications for Emergency Medicine, IDEA-EM (2018-present), OHSU-EM
-Mentor, MCECS Undergraduate Research and Mentoring Program (2010-12), PSU-MME
-Steering Committee and Outreach Subcommittee Chair, Regional ASME Human Powered Vehicle Competition (2008-09), PSU-MME
-Staff Technician/Machinist Search Committee (2008, hired Michael Chuning), PSU-MME
-ABET Educational Outcomes Assessment (2008-2012), PSU-MME
-Graduate Workgroup (2005-2009), PSU-MME
-Participant, End of Year Undergraduate Feedback Meetings (2004-12), PSU-MME
-Biomechanical Engineering Development (2002-2012), PSU-MME
-Faculty, Joint WPI/UMass PhD Program, Biomedical Engineering (1997-2001), WPI-BME
-Chair, Undergraduate Program Review Committee (1999-2001), WPI-BME
-Chair, Awards Committee (1999-2001), WPI-BME
-Undergraduate and Graduate Course Development (1997-2001), WPI-BME & ME
-Undergraduate Curriculum and ABET Accreditation Committee (1998-2001), WPI-BME
-Undergraduate and Graduate Student Admissions and Recruitment (1997-2001), WPI-BME
-Faculty Search Committee (1999-2000, hired George D. Pins), WPI-BME
-Faculty Search Committee (1997-98, hired Ross D. Shonat), WPI-BME
-Gordon Library Reference Texts/Periodicals Liaison (1997-2001), WPI-BME
-Advisor, WPI Student Chapter of BMES/IEEE (1998-2001)
-Awards Committee (1998-2001), WPI-BME

-Project Presentation Day Judge (1998-2001), WPI-ME & BME
-Facilities Management Committee (1997-99), WPI-BME
-Co-Webmaster (1997-99), WPI-BME
-MQP Reviewer (1998-2000), WPI-BME
-Undergraduate and graduate employment search assistance (1997-2001), WPI-BME & ME
-Graduate Program Evaluation (1996-97), UO-EMS

University:
-Member, Master's Degree in Biomedical Engineering, Industrial Advisory Board (2013), UP
-Member, MCECS Undergraduate Research and Mentoring Program Leadership Committee (2012), PSU
-Mentor, Apprenticeships in Science & Engineering, Saturday Academy (2011), PSU
-Member, Oregon Nanoscience and Microtechnologies Institute (ONAMI) (2009-12), PSU
-Senator, Faculty Governance, Engineering & Computer Science Division (2008-11), PSU
-Participant, Northwest Commission on Colleges/Universities (NWCCU) site visit (2010), PSU
-Reviewer, University Studies Portfolios (2008), PSU
-Liaison with Oregon Health & Science University (2001-12), PSU
-Member, Engineering Education Roundtable (2002-07), Oregon University System
-Participant, Departmental Chair Search (2002, selected Stephen Hanson), OHSU-BME
-Departmental Head Search Committee (1998-99, selected Christopher H. Sotak), WPI-BME
-Committee on Governance's nominee for the Committee on Academic Operations (1999), Campus Hearing Board (2000), WPI
-Participant, Committee on Graduate Education and Research Retreats (1997-2001), WPI
-Participant, Bioengineering; Aerospace; and Materials Thrust Areas (2000), WPI
-Participant, Departmental Head Search (2000, selected Gretar Tryggvason), WPI-ME
-Participant, Faculty Searches w/Biomedical Interest (1998-2001), WPI-ChE
-Selected as onsite Advisor, Puerto Rico Project Center (D01), Global Studies Program, WPI
-Committee Member, Interdisciplinary Degree, Biophysics (Chris Groves '01), WPI
-Team Member, Corporate and Faculty Running Club, WPI
    -Healthsource 5km team: 1998 - 5th, 1999 - 3rd, 2000 - 4th
    -Intramural Cross-country team/individual: 1997 (1^{st} /1^{st}), 1999 (1^{st}/1^{st}), 2000 (1^{st}/1^{st})
-Participant, Marketing Focus Group, Lipman Hearn Assoc. (2000), WPI
-Participant, Leadership Institution selection, AACU Program (2000), WPI
-Participant, Bioengineering Institute development (2000-01), WPI
-BME ABET Accreditation (1997-2001), WPI
-Consultant, Becker College Kinesiology Program Development (1998-1999), WPI
-Member, Advisory Board, Becker College Kinesiology Program (2000-2001), WPI
-Faculty Consultant, New Student Organization (1998-2001), WPI
-Volunteer Cross-Country Official (1997-2000), WPI
-Faculty representative, NIH & NASA visits (1998-2000), WPI
-Featured in publicity materials:
    -Capital Campaign Video (1998), WPI
    -Discovery and Research Brochure, pp. 4-6 (1999), WPI
    -College Viewbook, pp.10-11 (2000), WPI
    -Graduate Research CD (2000), WPI

Professional Society Officer:
-AIMBE, Secretary pro tem, Academic Council meeting, BMES Conference, October, 2000
-BMES, Member, Board of Directors via Editorial Board (voice but no vote), 2002-present

Professional Society Meetings (Session Chair/Vice-Chair/Co-Chair):
-NASA/USRA, University Advanced Design Program, EVA Discussion Session, Washington D.C., June, 1987
-ASTM, Workshop on Noncontacting Sensors, Atlanta, GA, November, 1988
-ASME, Winter Annual Meeting, Bioengineering Poster Session, Atlanta, GA, December, 1991
-ASME, Summer Bioengineering Conference, Orthopaedic Biomechanics Sessions (Contact and Wear in Prosthesis; Dynamics and Kinematics), Beaver Creek, CO, July, 1995
-ASME, Summer Bioengineering Conference, General Biomechanics Session I, Sunriver, OR, June, 1997
-UMass Memorial Health Care and WPI, Biomedical Engineering and Minimally Invasive Surgery Rounds/Symposia, 1998-2001
-ASB, Annual Meeting, Clinical Orthopaedics Session, Portland, OR, September, 2004
-ASB, NW Biomechanics Symposium, Methodologies Session, Seattle, WA, May, 2005
-ASB, NW Biomechanics Symposium, Instrumentation Session, Eugene, OR, May, 2007
-ASME, International Congress and Exposition, Microfluidics 2007: Fluid Engineering in Micro- and Nanosystems, Biological Applications Session, Seattle, WA, 2007
-ASME, First Global Congress on NanoEngineering for Medicine and Biology: Biological NanoMechanics, Biophysics and Biomechanics of Cells Session, Houston, TX, 2010
-Saturday Academy Student Apprenticeships Symposium, Sessions 1 & 2, Portland, OR, 2011
-ASME, Summer Bioengineering Conference, Cartilage & Disc Mechanics Session, Sun River, OR, 2013.

Meeting/Symposia Organizing Committee:
-Strengthening Hospital Nursing Program, Robert Wood Johnson Foundation/Pew Charitable Trusts, National Meetings: Louisville, KY, Washington, D.C., Portland, OR, and St. Louis, MO, October-November, 1994
-UMass Memorial Health Care and WPI, Biomedical Engineering and Minimally Invasive Surgery Rounds/Symposia, 1998-2001
-IEEE, Engineering in Medicine and Biology Society (EMBS), 25th Annual International Conference, Micro and Nanotechnologies in Medicine and Biology Track, Artificial Organs and Biomaterials Session, Cancun, Mexico, September, 2003
-Scientific Committee, International Conference on Surface Metrology, Worcester Polytechnic Institute, October 2009

Judge:
-SEM, Student Paper Competition, Spring Conference, Milwaukee, WI, June, 1991
-Sigma Xi, Intel International Science and Engineering Fair, Portland, OR, May, 2004
-ASB, Awards Committee, NW Biomechanics Symposium, Eugene, OR, May, 2007
-Intel Northwest Science Expo, Portland, OR, April, 2009-2012
-OES Aardvark Science Expo, Portland, OR, February, 2010
-Portland Public Schools Science Fair, Portland, April, 2012
-ASME, MS Poster Competition, Summer Bioengineering Conference, Sun River, June 2013
-Oregon Bioengineering Symposium, Student/Trainee Poster Session, November 2019, 2023

Corporate Board Directorship:
-Spinal Injury Foundation (SIF), a Colorado Non-Profit, Director and Institutional Review Board (IRB) Member, January 2007-June 2009

-International Cellular Medicine Society (ICMS), an Oregon Non-Profit, Director and Executive Board Member, June 2009-present; Treatment Registry Initiative Chair and IRB Member, June 2009-December 2011
-Cape Meares Community Association (CMCA), an Oregon Non-Profit, Director and Treasurer/Assistant Treasurer, May 2022-present.

REVIEWER AND EDITORIAL SERVICE:

Peer-reviewed Journals (Regular and ad hoc):
-*Journal of Biomechanics, ASB* (1994-present), *Journal of Biomechanical Engineering, ASME* (1995-present), *Annals of Biomedical Engineering, BMES* (1997-present), *Kidney International* (1995), *Journal of Bone and Mineral Research* (2000), *Biomaterials* (2002), *Tissue Engineering* (2002, 2009), *Mathematical Biosciences* (2004), *IEEE Transactions on Biomedical Engineering* (2004, 2007), *Journal of Biomedical Materials Research: Part B Applied Biomaterials* (2004-present), *Clinical Orthopaedics and Related Research* (2005), *Biotechnology and Bioengineering* (2005, 2009), *Medical Science Monitor* (2005), *Acta Biomaterialia* (2007), *Computer Methods and Programs in Biomedicine* (2007), *Strain* (2007), *Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in Medicine* (2007-2011) and *Part J, Journal of Engineering Tribology* (2009), *Journal of Orthopaedic Trauma* (2008, 2009), *Wiener Medizinische Wochenschrift* (2010), *Advanced Drug Delivery Reviews* (2010), *Biotechnology and Applied Biochemistry* (2011), *Materials Performance and Characterization, ASTM* (2013).

Editorial Boards:
-Associate Editor, *Annals of Biomedical Engineering,* BMES (2002-present)
-Editorial Consultant, *Journal of Biomechanics,* ASB (2005-2015)
-Associate Editor, *Journal of Biomechanical Engineering,* ASME (2011-2014, 2014-2017)

Textbooks:
-Strength of Materials, Salzburger & Graham Publishing, Ltd. (1996-97)
-Encyclopedia of Biomedical Engineering, John Wiley & Sons, Inc. (2005)
-Forensic Biomechanics, John Wiley & Sons, Inc. (2010)
-Methods in Epidemiology for Disease Investigation, Jones & Bartlett Learning (2013)

Conference Abstracts:
-ASME and ASB, 7th World Congress of Biomechanics (2014)
-ASME, Bioengineering Division (1988-1995, 2013)
-ASB Regional Meetings, Northwest Biomechanics Symposium (2007-2010)
-ASME, Microfluidics Symposium: Fluid Engineering in Micro- and Nanosystems (2007)
- International Conference on Surface Metrology, Worcester Polytechnic Institute (2009)

Grant Application Review Panels:
-National Science Foundation
Graduate Research Fellowship Program (Jan 2012, Jan 2013, Jan 2015):
Bioengineering and Biomedical Engineering Panels
-National Institutes of Health, Center for Scientific Review
Interdisciplinary Molecular Sciences and Training
IMST-D 29 (Mar 2010) Pre-doctoral Diversity Fellowships Review Panel
Musculoskeletal Tissue Engineering Study Section, Special Emphasis Panel
ZRG1 MOSS D53 (Nov 2009) Biomedical Research, Development, and Growth to

Spur the Acceleration of New Technologies (BRDG-SPAN) Pilot Program and Small Business Catalyst Awards for Accelerating Innovative Research
ZRG1 MOSS G30 (Nov 2009) Shared Instrumentation Grant Program (S10)
Surgical Sciences, Biomedical Imaging and Bioengineering, Special Emphasis Panel/Scientific Review Group
ZRG1 SBIB-V (58) (July 2009) Challenge Grants in Health and Science Research
Reparative Medicine, Special Study Section M:
ZRG1 SSS-M 01, 02, and 03 (July & Nov 2002; March & July 2003) including Bioengineering Research Grants and Bioengineering Research Partnerships

-Department of Defense
National Defense Science and Engineering Fellowship Program (Jan 2013): Bioscience Panel
-United Kingdom Medical Research Council
Career Development Award (Mar 2011)
-International Cellular Medicine Society (2009-2011)
Department of Health & Human Services registered Institutional Review Board (IRB00002637)
-Spinal Injury Foundation (Jan 2007-2009)
Institutional Review Board (IRB00002637)
-Italian Ministry of Health, Directorate for Health and Technologies Research
Innovative Health-Related Grants for Young Investigators (2009)
Scientific Research and Health Innovation (2014-20)
-Florida Department of Health (Mar 2007)
James and Esther King Biomedical Research Program
Bankhead-Coley Cancer Research Program
-Kansas City Area Life Sciences Institute (KCALSI) (Dec 2006)
-National Aeronautics and Space Administration, Peer Review Services
Office of Biological and Physical Research (OBPR):
Cell Sciences and Tissue Engineering Study Section (Jan 2003)
-UW-Madison, Department of Surgery, Research Services (1988-1995)

COURSES TAUGHT AND/OR INSTRUCTOR OF RECORD:

University of Wisconsin-Madison:	Times Taught	Total Students
EngrMech 307: Strength of Materials Lab	2	39
PEPro 218: Kinesiology Lab	1	29
VetMed 875: Biomechanics for Clinicians (co-lecturer)§	1	5
University of Oregon:		
EMS 381: Biomechanics§	1	57
EMS 103: Exercise and Performance (co-lecturer)§	1	104
EMS 405: Undergraduate Reading	1	1
EMS 601: Research*	2	2
EMS 605: Reading*	3	2
EMS 606: Special Problems	3	8
EMS 681: Biomechanics I - Tissue Mechanics§	1	12
EMS 682: Biomechanics II - Joint Mechanics§	1	16
EMS 683: Biomechanics III - Mechanics of Injury and Disease§	1	10
EMS 691: Statistical Methods I§	1	33
EMS 610: Statistical Methods Lab§	1	34

Worcester Polytechnic Institute:

BE 1001: Introduction to Biomedical Engineering (co-lecturer)§	1	55
BE 2300: Biomedical Engineering Design§	3	90
BE 3101: Biological Transport Phenomena§	3	71
BE 3001: Introduction to Biomedical Engineering (co-lecturer)§	2	100
BE/ME 4504: Biomechanics (co-lecturer)§	2	69
BE/ME 4814: Biomaterials (co-lecturer)§	1	54
BE ISP: Independent Study Projects*	2	3
BE IQP: Interactive Qualifying Project*	3	6
BE MQP: Major Qualifying Project*	11	34
BE/ME 554: Composites: Biomedical and Materials Applications§	2	21
BE/ME 550: Tissue Engineering§	2	43
BE/ME 552: Tissue Mechanics§	1	4
BE 598/698: Directed Research*	6	6
BE 599: Thesis Research*	6	6

Portland State University:

EAS 215: Dynamics	1	54
MME 492: Conceptual Design Project Advisorship*	5	19
MME 493: Detailed Design Project Advisorship*	5	19
MME 406: Special Projects	2	2
MME 507: Graduate Seminar Speaker	2	40
MME 405, 505, 605: Bioengineering Journal Club	1	6
BIO 301: Concepts in Bioengineering & Biomimicry (co-lecturer)§	1	30

Oregon State University:

ME 507: Graduate Seminar Speaker	1	30
CHE 507: Graduate Seminar Speaker	1	25
CHE 481/581: Cell Engineering (guest-lecturer)§	1	25

University of Portland:

ME 462: Biomechanics (guest-lecturer)§	1	20

Total Students Taught: 1,194

*See projects and committees below

§Developed original course and/or material

POSTDOCTORAL FELLOWSHIP MENTORING:

Portland State University:

Nilmini Wijeratne, PhD, 2009

"Hydrogel Biomaterials Design and Fabrication for Tissue Engineering"

GRADUATE STUDENT COMMITTEES:

University of Oregon:

Sharna Clark (MS:EMS), Graduated May 1997

"Effects of Locked Ankle Joint Position Using an Ankle-Foot Orthosis"

Shuichi Doi (MS:EMS), Graduated May 1998

Leslie Kindling (MS:EMS), Graduated May 1998
Hae-dong Lee (MS:EMS), transferred to University of Calgary
Laura Mosley (MS:EMS), Graduated May 1997
"Comparison of Ankle ROM to Determine Prophylactic Ankle Brace Performance"
Gregory Sampson (MS:EMS), transferred

Worcester Polytechnic Institute:
Mark Agostino (MEng:BME - Advisor), Graduated October 1998
"Kinetic Evaluation of Horseshoe Padding Materials During Equine Gait"
Samuel Bradshaw (MS:ECE - Committee Member), Graduated May 2001
"Characterization of the Mechanosensitivity of Tactile Receptors using Multivariate Logistical Regression"
Melissa B. Clark (MS:ME - Advisor), Graduated May 2000
"Standardization of Profilometry Measurements in Dental Implants"
Lee Core (MEng:BME - Advisor), Graduated May 1999
"Design and Fabrication of Biomechanical Test Fixtures for an MTS Device"
Daniel J. Gianoli (MS:ME - Advisor), Graduated February 2002
"Osteoblastic adhesion and nanoscale implant surface geometries"
Abdo Kataya (MEng:BME - Advisor), Graduated May 1999
"Educational Laboratory Experiments for an Undergraduate Biotransport Course"
Anand Kulkarni (MS:ME - Committee Member), Graduated May 2000
"Surface Model Creation for Biomedical Applications Using a Marching Cube Technique"
Eric A. Lieberman (MS:BME - Co-Advisor), Graduated October 1998
"Development of a Composite Micromechanical Model of Tendonous Tissue"
Kenneth Morse (MS:BME - Committee Member), Graduated May 1999
"Application of the Correspondence Principle to Soft Tissue Biomechanics"
Amit Bobby Nandi (MEng:BME - Advisor), Graduated February 2000
"Ultrasonic Elasticity Measurement Device"
Karen P. Norton (MS:BME - Advisor), Graduated October 2001
"Shoulder Joint Mechanics During Concentric and Eccentric Rehabilitative Exercise"
Sylvia B. Puchovsky (MS:BME - Advisor), Graduated May 1999
"Design of a Bone Biopsy Device for Harvest of Elastic Measurement Samples"
Julie B. Roberts (MS:BME - Advisor), Graduated October 2000
"Anisotropic Elastic and Transport Properties of Cancellous Bone"
Maria Romano (MEng:BME - Advisor), Graduated May 2000
"Assessing Y2K in a Clinical Health Care System: Investment vs. Outcome"
Rani Roy (PhD:BME – Former Co-Advisor), Graduated May 2005
"Bending behavior of native and engineered, auricular and costal cartilage"
Yurong Sun (MS:ECE - Committee Member), Graduated October 2000
"Ultrasound Characterization of Structure and Density of Coral as a Model for Trabecular Bone"
Hiroshi Toriumi (MS:BME - Committee Member), Graduated October 2000
"Design Modification, Fabrication, Construction, and Performance Evaluation of a Prototype Body Mounted Upper Extremity Orthosis"
Jessica A. Weathers (MEng:BME – Former Co-Advisor), Graduated May 2003
"Biomechanical Testing of Tracheal Tissue"
Christopher G. Wilson (MS:BME - Advisor), Graduated May 2002
"Modeling the Dynamic Composition of Engineered Cartilage"
Daniel Young (PhD:BME – Former Advisor), Graduated May 2005

"Experimental Determination of Bone Anisotropic Poroelasticity Parameters"

Portland State University:
Hank Chiu (MS/PhD:ME – Advisor), Graduated June 2012
"Design and Fabrication of a Bioreactor for Tissue Engineering"
Shelley S. Mason (PhD:Bio – Co-Advisor), Graduated August 2013
"Vitamin D Influence on an Osteoprecursor Cell Line During Bone Development"
James K. Lingwood (MS:ME – Advisor), Graduated June 2008
"Development and Micromechanical Assessment of an Integrated Optical Instrument"
Rachel Moldover (PhD:ME – Former Advisor), on leave
"Electrochemomechanical Microscale Environment Control"
Nathalie (Destrubé, Nève de Mévergnies) Nève, MS (PhD:ME – Committee Member, Former Co-Advisor), Graduated June 2010
"The MicroPIVOT: An Integrated Particle Image Velocimeter and Optical Tweezers Instrument for Microscale Investigations"
Katie Saucier (MS:EnvSci – Former Co-Advisor), on leave
"Water Sampling Along a Tributary of the Clackamas River"
Sophia Trieu (MS:Bio – Committee Member), Graduated June 2010
"Application Techniques of Dental Adhesives and Their Impact on Dentin and Enamel Surface Biomechanics"
Zachary Wilson (PhD:ME – Former Advisor), Graduated June 2012
"Multiscale Mathematical Modeling for Cell and Tissue Engineering"

Oregon Health & Science University:
Konrad M. Dobbertin (MPH – Committee Member), Graduated August 2011
"An Evaluation of the Association Between Roof Crush and Head, Neck and Spine Injury in Motor Vehicle Rollover Crashes: NASS-CDS 1997 through 2007"
Paul Alexandridis (MPH – Committee Member), Graduated August 2011
"Risks and Patterns of Serious Injury in Pole and Car Side Impacts"
Daniel W. Mullee (MD – Research Team Member), Graduates June 2021
"Intraluminal Sensing Device: Smart Stent", Invent Oregon Collegiate Challenge Finalist, August 2020

University of Portland:
Lauren Larocco, Adam Hoiness, Amen Mengistu (MS:BME – Co-Advisor, Industry capstone), Graduated May 2019
"Design of an Easy Ultrasound Guide for Intravenous Access"

Total Advised Graduate Student Projects: Masters = 33, Doctoral = 6

UNDERGRADUATE PROJECTS ADVISOR:

Worcester Polytechnic Institute:
- *Interactive Qualifying Project (IQP)*: *Junior Technology and Society Project*

Advisor, "Biological Fuel Cells," K Giroux (EE), R Sabol (ME), B97, C98, D98, A98, #SQK9701.
Advisor, "Athletic Shoe Cleats and the Relationship with Foot Injuries," EM Baratta (BB), AL DeStefano (BB), A98, B98, C99, #SQK9804.
Advisor, "Surgical Device Design in Engineering Education," CG Wilson (BE), CM O'Rourke (BE), A98, B98, C99, D99, #SQK9807.

- *Major Qualifying Project (MQP): Senior Design/Research Project*

Advisor, "Characterization of Horseshoe Padding Materials," DJ Marcroft (BE), JM Campbell (ME), AL Matzel (BB), D98, A98, B98, #SQK9802 (Capital Campaign Video).
Advisor, "Design of a Tripping Mechanism for Treadmill Gait Studies," H Justiniano (BE), SE Bradshaw (BE), M Ortiz-Serrano (BE), S Castillo (ME), B98, C99, D99, A99, #SQK9806.
Advisor, "Mechanics of Dental Screw Fixation," MB Clark (ME), MA Lewko (BE), TA Castagno (BE), B98, C98, D99, #SQK9809 (1st place 1999 BE Research Day).
Advisor, "Biotransport in Cancellous Bone," LJ Cooper (BE), R Thibeault (ME), JB Roberts (BE), A98, B98, C99, D99, #SQK9808 (1999 BE Provost's Award, ME Honorable Mention).
Advisor, "Evaluation of a Bioreactor for the Growth of Chondrocytes on a Polyglycolic Acid Scaffold," KA Mercier (BE), D Pazzano (BB), A98, B98, C99, D99, #SQK9810.
Co-Advisor, "Deformable Vascular Tissue Model," MJ Griffin (BE), AW Roccisano (BE), EA Hannula (BE), A99, B99, C00, D00, #YXM0199 (2000 BE Provost's Award Honorable Mention).
Advisor, "Biotransport in Cancellous Bone II," CG Wilson (BE), ML Upton (BE), AL Schlichting (BE), A99, B99, C00, D00, #SQK9902 (2000 BE Provost's Award).
Advisor, "Performance of horseshoe padding materials," E Foley (BE), S Ahuja (BE), NJ Buote (BB), A99, B99, C00, D00, #SQK9901.
Advisor, "Surgical Device Delivery of Engineered Nerve Tissue," AL Delisio (BE), AL Woupio (BE), JL Cooper (BE), A99, B99, C00, D00, #SQK9903.
Advisor, "Biomechanical Testing of Normal and Smoke-Inhaled Tracheal Tissue," B Doehr (BE), R Delpaine (BE), J Weathers (BE), A Kight (BE), D00, A00, B00, #SQK9713 (2001 BE Provost's Award).
Advisor, "Performance of Tissue Approximation Techniques," J Flatow (BE), J Salisbury (BE), B Raymond (BE), A00, B00, C01, D01, #SQK9714 (2001 BE Provost's Award Honorable Mention).

- *Independent Study Project (ISP):*

Advisor, "Biotransport phenomena," SS Fong (ChE), T D'Souza (BE), C98, D98.
Advisor, "Kinesiology of an exercise device," CE Bayirili (ME), E98, A98.

Portland State University:

- *Capstone Design Project*

Sponsor-Advisor, "Design of a Cranial Vascular Mechanics Model," R Mangan (ME), N Leech (ME), N Biberic (ME), E Stan (ECE), TJ McKinney (ECE), ML Surdu (ECE), F03, W04, S04.
Advisor, "A Mechanical Device to Influence Skin Wound Healing and Scar Formation," M Kleine (MME), E Hettinger (MME), J Pinkstaff (MME), F04, W05, S05.
Advisor, "A Microscale Device for Assessment of Tissue to Implant Adhesion," K Knudson (MME), K Nelson (MME), B Galpern (MME), F04, W05, S05.
Advisor, "Head and Neck Support Device for Standard Wheelchairs," J Mabrey (MME), K Talton (MME), M Rasidagic (MME), NK Heller (MME), F04, W05, S05.
Advisor, "ASME Human Powered Vehicle Design Competition," B Hays (MME), RM Jackson IV (MME), H Tinnesand (MME), K Braun (MME), C Hertert (MME), F05, W06, S06.
Advisor, "A Device to Investigate Cohesion and Adhesion of Water in Space," J Meyer (MME), E Lovejoy (MME), D Durgan (MME), AD Johnson (MME), F05, W06, S06.
Advisor, "Thermofluid Control of a Microscale Cell Culture Platform," J Zimmerman (MME), P Andrews (MME), N Alandt (MME), J Carlin (MME), F07, W08, S08.

Sponsor-Advisor, "Fluid Perfusion and Nutrient Exchange in a Mechanical Bioreactor for Engineered Tissues," D Respini-Irwin (MME), I Hideaki (MME), J Barnett (MME), S Adib (MME), F09, W10, S10.
Sponsor-Co-Advisor, "An Experimental Flow Tank in for the Study of Fish Behavior in a Controlled Hydrodynamic Environment," B Eggleston (MME), M Malynowski (MME), T Wiese (MME), F09, W10, S10.
Sponsor-Advisor, "A Sled System for Vehicle Crash Simulation and Forensic Biomechanics," J Booren (MME), M Brunhart (MME), S Savas (MME), T Deason (MME), F10, W11, S11.

- *Undergraduate Scholarly Activity*

Advisor, "Skin Mechanics Data Analysis," J Pinkstaff (MME), Summer05.
Advisor, "Mechanical Bioereactor for Engineered Tissue Development," C Janicich (MME), W09, S09.
Advisor, "Computational Fluid Dynamics Modeling of Elastic Biological Cells in Microfluidic Environments," J Zimmerman (MME), W09, S09.
Advisor, "Anisotropic Longitudinal and Transverse Ultrasound Wave Propagation in Native Cartilage Explants," A Adams, R Berg (MME), Summer09.
Advisor, "Hydrogel Biomaterial Designs for Functional Tissue Engineering," F Gibson (MME), F09, W10, S10.
Mentor, "A Functionalized Bioreactor for Cell and Tissue Engineering," T Bamford (MME), and "Scaffold Biomaterials for Engineered Tissue Applications," F Gibson (MME), F10, W11, S11.
Mentor, "Regenerative Bioengineering Internship," I Washington (CSU-Bio), Summer11.
Mentor, "Integrating a Bioengineered Environment for the Assessment of Developmental Vitamin D Deficiency," J Righetti (BIO), and "Optimizing a Mechanical Bioreactor for Cell and Tissue Engineering," F Gibson (MME), F11, W12, S12.

- *High School Internships*

Mentor, "Regenerative Bioengineering Internships," U Duckler and J Blank, Summer11.

- *Middle School Internships*

Sponsor, "Sports Impact Injury Biomechanics," OP Kohles, NW Intel Science Fair, 2014.
Sponsor, "Solar Voltaic Power Performance: Single Family Home, Portland, Oregon." OP Kohles, NW Intel Science Fair, 2015.

Total Advised Undergraduate Students/Projects: 93/34

STUDENT/STAFF EMPLOYEE SUPERVISION:

Anya Adams (BS), PSU via Stanford
Stanley Balish (BS), UW-Madison
Thadeous Bamford (BS), PSU
Robert Berg (BS), PSU via Tufts U
Jessica Blank (HS), PSU
Linda Bogart (DVM), UW-Madison
James Bowers (BS, MS), UW-Madison
Sam Bradshaw (BS, MS), WPI
Sudhakar Chelikani (PhD), UW-Madison
Hyeonki Choi (PhD), UW-Madison
Hank Chiu (MS, PhD), PSU
Melissa Clark (MS), WPI
Jill Crussemeyer (PhD), UO-Eugene
Travis Deason (BS), PSU
Ulysses Duckler (HS), PSU
Jessie Fuh (BS), UW-Madison
Kara Gibbs (MS), WPI
Fay Gibson (BS), PSU
Denise Gravelle (MS), UO-Eugene
Lisa Hartman (BS), UW-Madison
Chris Hinojosa (BS), PSU
Keith Hubbard (MS), WPI
Caleb Janicich (BS), PSU
Alec Johnson (BS), UW-Madison
Leslie Kindling (MS), UO-Eugene
Darin R. Kohles (BS, MS), UW-Madison

Kuo-Li Lin (PhD), UW-Madison
Jimmy Lingwood (MS), PSU
Ryan Mangan (BS), PSU
Shelley Mason (PhD), PSU
John Mercer (PhD), UO-Eugene
Daniel Mullee (MD), OHSU
Jamie Murdock (MS), WPI
Bobby Nandi (MS), WPI
Nathalie Nève (PhD), PSU
Laura Nye (BS), UW-Madison
Frederick Owens (BS), UW-Madison
Andrew Provenza (BS), UW-Madison
Sylvia Puchovsky (MS), WPI
Kevin Rahn (MD), UW-Madison
Blair Rhode (MD), UW-Madison
Johnathan Righetti (BS), PSU
Julie Roberts (MS), WPI
Emily Rusk (MS), WPI
Erin Ryan (MS), WPI
Scott Saiget (BS), PSU via USC
Mohal Sarabhai (BS), UW-Madison
Emily Sielman (DVM), UW-Madison
Edward Stan (BS), PSU
Kathleen Sutter (BS), PSU via CASE
Robert Thielke (BS, MS), UW-Madison
Amanda Thoreson (BS), PSU
Mark Ulm (BS, MS), UW-Madison
Maureen Upton (BS), WPI
Iesha Washington (BS), CSU
Christopher Wilson (BS, MS), WPI
Zachary Wilson (PhD), PSU
Nilmini Wijeratne (Postdoc), PSU
Daniel Young (PhD), WPI
Jeremiah Zimmerman (BS), PSU

AWARDS AND ACHIEVEMENTS:

Professional:

2025 AIMBE Inducted into College of Fellows
2024 AIMBE Election to College of Fellows
2022 BMES Election to Fellow (1st in Oregon);
BMES *Annals of Biomedical Engineering*, Associate Editor Excellence Award for 2021;
2021 BMES *Annals of Biomedical Engineering*, Outstanding Associate Editor for 2020;
2019 BMES *Annals of Biomedical Engineering*, Outstanding Associate Editor for 2018;
2015 Italian Ministry of Health, Directorate General for Research and Innovation in Healthcare, Certificate of Appreciation;
2012 NSF Faculty Fellow, Summer Institute on Nanomechanics, Nanomaterials and Micro/Nanomanufacturing to attend Materiomics-Merging Biology and Engineering in Multiscale Structures and Materials ShortCourse;
2011 BMES *Annals of Biomedical Engineering*, Outstanding Associate Editor for 2010;
2010 Sigma Xi National Grant-In-Aid Student Award (Advised Sophia Trieu);
PSU Leadership in Undergraduate Research Award (Advised Fay Gibson);
2009 Collins Medical Trust, Highlighted Project, "Cell Biomechanics and the Study of Disease States," Annual Report
NSF Graduate Fellowship, Summer Institute on Nanomechanics, Nanomaterials and Micro/Nanomanufacturing to attend ASME's 1st Global Congress on NanoEngineering for Medicine and Biology (Advised Zachary Wilson);
Measurement Science and Technology, Highly Commended Paper 2008;
PSU Faculty Development Awards (Travel and Enhancement Grants);
2008 Maseeh Graduate Fellowship Award (Advised Nathalie Nève);
Sigma Xi Columbia-Willamette Chapter, Outstanding Faculty Researcher Award nominee;
Sigma Xi Columbia-Willamette Chapter, Outstanding Student Researcher Award, tie for 1st Place (Advised Nathalie Nève and Jeremiah Zimmerman);
2007 NIH Academic Research Enhancement Award (R15);

ASB Northwest Biomechanics Symposium Student Podium Presentation Award, 1st Place (Advised Nathalie Nève de Mévergnies);
2006 University of South Australia, Division of Information Technology, Engineering and the Environment, Best Refereed Journal Paper Award (Asit Saha, Lead Author);
2005 NSF Major Research Instrumentation Award;
University of South Australia, Division of Information Technology, Engineering and the Environment, Best Refereed Journal Paper Award (Asit Saha, Lead Author);
2002 NIH Small Grant Award for New Investigators (R03);
2001 ASME Bioengineering Division Masters Student Competition, International Congress and Exposition, 3rd Place, (Advised Rani Roy);
Provost's MQP Awards, Biomedical Engineering Department: 1st, Biomechanical Testing of Normal and Smoke-Inhaled Tracheal Tissue (Advisor); Honorable Mention, Performance of Tissue Approximation Techniques (Advisor);
ASME Y.C. Fung Young Investigator Award nominee;
Orthopaedic Research Society, William Harris Award abstract nominee;
2000 Provost's MQP Awards, Biomedical Engineering Department: 1st, Biotransport in Cancellous Bone II (Advisor); Honorable Mention, Deformable Vascular Tissue Model (Co-Advisor);
IEEE Bioengineering Conference Graduate Student Competition, 3rd place (Advised Julie Roberts);
Biomedical Engineering Society Young Investigator Award nominee;
1999 Provost's MQP Award, Biomedical Engineering Department: 1st, Biotransport in Cancellous Bone (Advisor);
Special Speaker Award, MTS Systems Corporation;
1998 Biomedical Engineering Society Young Investigator Award nominee;
1997 Sigma Xi Young Investigator Award nominee;
1996 American Society of Biomechanics Young Investigator Postdoctoral Award Finalist;
1995 Orthopaedic Research Society New Investigator Recognition Award Semi-Finalist (top 34 out of 323 abstracts).

Collegiate:
1994 Sigma Xi Graduate Student Research Award nominee;
1992 Biomedical Engineering Society National Student Research Award (2nd place);
1991 UW Engineering Expo, Honorable Mention Student Group Category (SEM);
1988 Society for Experimental Mechanics Student Research Award (2nd place);
1987 UW Polygon Council Senior Service Award;
1987 UW Engineering Expo, 2nd Place Small Group Category (Co-Group Leader);
1986 UW Engineering Mechanics Departmental Scholarship;
1984 UW Homecoming Court;
1983, 1984 NCAA Big Ten Conference Champions (Cross-Country & Outdoor Track)

High School:
1983 Class Valedictorian; Senior Physics Award; WIAA Class B All-State 800 m (Co-Captain, Team MVP); Senior Class President; Student Council President;
1982 WIAA Class B State Cross-Country Champions (Co-Captain), Individual State Cross-Country Championships Qualifier; VHS Homecoming King;
1981 Boys Scouts of America Eagle Scout Award; Badger Boys State Attendee (City Mayor, County Chair Party nominee);

1980

UNDERGRADUATE ACTIVITIES:

Wisconsin Alumni Student Board ('86-'88); UW Homecoming Committee: Head Co-Chair, Sub-Committee Chair, Committee Member, Court Member ('84-'87); Phi Eta Sigma Honor Society Co-President ('85-'86); UW NCAA Division I Cross-Country and Track Teams ('83-'86); Taekwon-Do Club ('84-'85); Orienteering Club ('85); Intramural sports ('84-'87); Volunteer Track and Field Official ('84-'87); Dorm Government ('83-'85)

COMMUNITY ACTIVITIES:

Treasurer and Assistant Treasurer, Cape Meares Neighborhood Association, Tillamook, OR
Volunteer, Elks Lodge #1437, Tillamook, OR
Volunteer Cross-Country and Track Official, Portland Interscholastic League, Portland, OR
Volunteer, Abernethy Elementary School, Hosford Middle School, and Cleveland High School: Fieldtrips, After-School Programs, and Guest Lectures, Portland, OR
Former Coach, Cleveland High School Boys Soccer, Portland, OR
Former Coach, Southeast Soccer Club, Portland, OR
Former Coach, Portland Youth Soccer Association, Portland, OR
Former Member, Cleveland High School Boys Soccer Parent Board, Portland, OR
Former Coach, Mt. Tabor Soccer Club, Portland, OR
Former Coach, Powell Little League Baseball, Portland, OR
Certification, Cardiopulmonary Resuscitation (CPR) and FirstAid, Portland, OR
Certification, Neighborhood Emergency Team (NET), Portland, OR
Former Leader, Richmond NET, Portland, OR
Former Executive Board Member, Eastside Family Cooperative, Portland, OR
Former Resource Development Committee, Wholechild Montessori Center, Portland, OR

BIBLIOGRAPHY

REFEREED JOURNAL PUBLICATIONS:

1. R Vanderby Jr, A Vailas, B Graf, RJ Thielke+, M Ulm+, **SS Kohles**, D Kunz+. "Acute Modification of Biomechanical Properties of the Bone-Ligament Insertion to Rat Limb Unweighting," *Federation of American Societies for Experimental Biology [FASEB] Journal*, 4(8):2499-2505, 1990.
PMID: 2335272

2. R Vanderby Jr, PA Manley, DM Belloli, **SS Kohles**, RJ Thielke+, AA McBeath. "Femoral Strain Adaptation after Total Hip Replacement: A Comparison of Cemented and Porous Ingrowth Components in Canines," *Journal of Engineering in Medicine: Proceedings of the Institution of Mechanical Engineers Part H*, 204:97-109, 1990.
PMID: 2095150

3. PA Manley, R Vanderby Jr, S Dogan+, **SS Kohles,** AA McBeath. "Ground Reaction Force Comparison of Canine Cemented and Cementless Total Hip Replacement," *Clinical Biomechanics*, 5:199-204, 1990.
PMID: 23916280

4. S Dogan+, PA Manley, R Vanderby Jr, **SS Kohles**, LM Hartman+, AA McBeath. "Canine Intersegmental Hip Joint Forces and Moments Before and After Cemented Total Hip Replacement," *Journal of Biomechanics*, 24(6):397-407, 1991.
PMID: 1856240

5. KA Rahn+, R Vanderby Jr, **SS Kohles**, BJ Kiratli+, RJ Thielke+, AB Clay, JW Suttie. "Mechanical Effects of Sodium Fluoride on Bovine Cortical Bone," *Clinical Biomechanics,* 6(3):185-189, 1991.
PMID: 23915537

6. R Vanderby Jr, **SS Kohles**. "Thermographic Stress Analysis in Cortical Bone," *ASME Journal of Biomechanical Engineering*, 113(4):418-422, 1991.
PMID: 1762439

7. R Vanderby Jr, PA Manley, **SS Kohles**, AA McBeath. "Fixation Stability of Femoral Components in a Canine Hip Replacement Model," *Journal of Orthopedic Research*, 10(2):300-309, 1992.
PMID: 1740746

8. **SS Kohles**, R Vanderby Jr, RB Ashman, PA Manley, MD Markel, JP Heiner. "Ultrasonically Determined Elasticity and Cortical Density in Canine Femora After Hip Arthroplasty," *Journal of Biomechanics*, 27(2):137-144, 1994.
PMID: 8132681

9. MD Markel, E Sielman+, AJ Rapoff+, **SS Kohles**. "Mechanical properties of long bones in dogs," *American Journal of Veterinary Research*, 55(2):1178-1183, 1994.
PMID: 7978660

10. JP Heiner, PA Manley, **SS Kohles**, M Ulm+, L Bogart+, R Vanderby Jr. "Ingrowth Reduces Implant-To-Bone Relative Displacements in Canine Acetabular Prostheses," *Journal of Orthopaedic Research*, 12(5):657-664, 1994.
PMID: 7931782

11. **SS Kohles**, MD Markel, MG Rock, EYS Chou, R Vanderby Jr. "Mechanical Evaluation of Six Types of Reconstruction Following 25, 50, and 75% Resection of the Proximal Femur," *Journal of Orthopaedic Research*, 12(6):834-843, 1994.
PMID: 7983559

12. PA Manley, R Vanderby Jr, **SS Kohles**, MD Markel, JP Heiner. "Alterations in Femoral Strain, Micromotion, Cortical Geometry, Cortical Porosity, and Bony Ingrowth in Uncemented, Collared and Collarless Prostheses in the Dog," *Journal of Arthroplasty*, 10(1):63-73, 1995.
PMID: 7730832

13. **SS Kohles**, R Vanderby Jr. "On Medial Collars in Total Hip Arthroplasty," *Current Surgery*, 52(5):242-247, 1995.

14. **SS Kohles**, DM Markel, MG Rock, EYS Chou, R Vanderby Jr. "Fixation of Femoral Allograft/Prosthesis Composites After 25%, 50% and 75% Resection," *Medical Engineering & Physics*, 18(2):115-121, 1996.
PMID: 8673317

15. **SS Kohles**, JR Bowers+, AC Vailas, R Vanderby Jr. "Effect of a Hypergravity Environment on Cortical Bone Elasticity in Rats," *Calcified Tissue International*, 59(3):214-217, 1996.
PMID: 8694900

16. **SS Kohles**, GD Cartee, R Vanderby Jr. "Cortical Elasticity in Aging Rats With and Without Growth Hormone Treatments," *Journal of Medical Engineering & Technology*, 20(4-5):157-163, 1996.†
PMID: 8934407

17. **SS Kohles**. "Minimal Dependence of Ultrasonic Propagation Velocity on Frequency," *Ultrasound in Medicine & Biology*, 22(9): 1297-1298, 1996 [letter].
PMID: 9123655

18. **SS Kohles**, DA Martinez+, JR Bowers+, R Vanderby Jr, AC Vailas. "Effect of a Growth Hormone Treatment on Bone Orthotropic Elasticity in Dwarf Rats," *Annals of Biomedical Engineering*, 25(1):77-85, 1997.
PMID: 9124741

19. **SS Kohles**, R Vanderby Jr. "Thermographic Strain Analysis of the Proximal Canine Femur," *Medical Engineering & Physics*, 19(3):262-266, 1997.†
PMID: 9239645

20. **SS Kohles,** JR Bowers+, AC Vailas, R Vanderby Jr. "Ultrasonic Wave Velocity Measurement in Small Polymeric and Cortical Bone Specimens," *ASME Journal of Biomechanical Engineering,* 119(3):232-236, 1997.
PMID: 9285334

21. JP Heiner, **SS Kohles**, PA Manley, R Vanderby Jr, MD Markel. "Stability of proximal Femoral Grafts in Canine Hip Arthroplasty," *Clinical Orthopaedics and Related Research*, 341:233-240, 1997.
PMID: 9269179

22. SL Butler+, **SS Kohles**, RJ Thielke+, CT Chen+, R Vanderby Jr. "Interstitial Fluid Flow in Tendons or Ligaments: A Porous Medium Finite Element Simulation," *Medical & Biological Engineering & Computing*, 35(6):742-746, 1997.
PMID: 9538555

23. **SS Kohles**, RJ Thielke+, R Vanderby Jr. "Finite Elasticity Formulations For Evaluation of Ligamentous Tissue," *Bio-Medical Materials and Engineering*, 7(6):387-390, 1997.†
PMID: 9622106

24. RP McCabe, **SS Kohles**, SV Chelikani+, R Vanderby Jr. "A Device for Measuring Relative Angular Displacement," *ASME Journal of Biomechanical Engineering*, 120(2):299-302, 1998.
PMID: 10412394

25. MG Jenkins, **SS Kohles**. "High-Temperature Performance and Retained Strength of an Oxide-Oxide Continuous Fibre Ceramic Composite," *Ceramic Engineering and Science Proceedings*, 19(3):317-325, 1998.
DOI: 10.1002/9780470294482.ch35

26. TC Phillips+, **SS Kohles**, JF Orwin, L Thein Brody, RP McCabe, R Vanderby Jr. "Instrumentation to Quantify Exercise Using an Impulse Inertial System," *Journal of Applied Biomechanics*, 16(1):60-67, 2000.

27. **SS Kohles**. "Applications of an Anisotropic Parameter to Cortical Bone," *Journal of Materials Science: Materials in Medicine*, 11(4):261-265, 2000.
PMID: 15348041

28. **SS Kohles**, DA Martinez+. "Elastic and Physicochemical Relationships in Cortical Bone," *Journal of Biomedical Materials Research*, 49(4):479-488, 2000.
PMID: 10602081

29. **SS Kohles**, AR Vernino, JA Clagett , JC Yang, S Severson, RA Holt. "A Morphometric Evaluation of Allograft Matrix Combinations in the Treatment of Osseous Defects in a Baboon Model," *Calcified Tissue International*, 67(2):156-162, 2000.
PMID: 10920221

30. D Pazzano+, KA Mercier+, JM Moran+, SS Fong+, DD DiBiasio, J Rulfs, **SS Kohles**, LJ Bonassar. "Comparison of Chondrogenesis in Static and Perfused Bioreactor Culture," *Biotechnology Progress*, 16(5):893-896, 2000.

DOI: 10.1021/bp000082v, PMID: 11027186

31. PF McKinney, **SS Kohles**. "Chip Fractures of the First Metatarsal Head. Primary Fragment Excision vs. Immobilization: A Report of 4 Cases," *Journal of Foot and Ankle Surgery*, 40(1):50-53, 2001.
PMID: 11202768

32. **SS Kohles**, JB Roberts+, ML Upton+, CG Wilson+, LJ Bonassar, AL Schlichting+. "Direct Perfusion Measurements of Cancellous Bone Anisotropic Permeability," *Journal of Biomechanics*, 34(9):1197-1202, 2001.
DOI: 10.1016/s0021-9290(01)00082-3, PMID: 11506790

33. BH Harris+, **SS Kohles**. "Effects of Mechanical and Thermal Fatigue on Dental Drill Performance," *International Journal of Oral and Maxillofacial Implants*, 16(6):819-826, 2001.
PMID: 11769832

34. AR Vernino, **SS Kohles**, RA Holt, HM Lee, RF Caudill, JN Kenealy. "Dual-Etched Implants Loaded after One and Two Month Healing Periods: A Histologic Comparison in Baboons," *International Journal of Periodontics and Restorative Dentistry*, 22(4):399-407, 2002.
PMID: 12212687

35. AR Vernino, **SS Kohles**, RA Holt, HM Lee, RF Caudill, JN Kenealy. "Implantes doblemente grabados y cargados tras períodos de cicatrización histológica en babuinos," *Revista Internacional de Odontología Restauradora & Periodoncia*, 6(4):419-427, 2002.
*Spanish translation of Vernino et al., 2002.

36. AR Vernino, **SS Kohles**, RA Holt, HM Lee, RF Caudill, JN Kenealy. "Belastung von zweifach geätzten Implantaten nach ein- und zweimonatiger Einheilphase - Eine histologische Vergleichsuntersuchung bei Pavianen," *Internationales Journal für Parodontologie & restaurative Zahnheilkunde*, 22(4):389-397, 2002.
*German translation of Vernino et al., 2002.

37. **SS Kohles**, JB Roberts+. "Linear Poroelastic Cancellous Bone Anisotropy: Trabecular Solid Elastic and Fluid Transport Properties," *ASME Journal of Biomechanical Engineering*, 124(5):521-526, 2002.
PMID: 12405594

38. CA Bain, D Weng, A Meltzer, **SS Kohles**, RM Stach. "A Meta-Analysis Evaluating the Risk for Implant Failure in Patients Who Smoke," *The Compendium of Continuing Education in Dentistry*, 23(8):695-708, 2002.
PMID: 12244737

39. CG Wilson+, LJ Bonassar, **SS Kohles**. "Modeling the Dynamic Composition of Engineered Cartilage," *Archives of Biochemistry and Biophysics*, 408(2):246-254, 2002.
PMCID: PMC2654181

40. RM Stach, **SS Kohles**. "A Meta-Analysis Examining the Clinical Survivability of Machined-Surfaced and Osseotite Implants in Poor-Quality Bone," *Implant Dentistry: International*

Journal of Oral Implantology, 12(1):87-96, 2003.
PMID: 12704962

41. R Roy+, **SS Kohles,** V Zaporojan+, GM Peretti, J Xu, MA Randolph, LJ Bonassar. "Analysis of bending behavior of native and engineered, auricular and costal cartilage," *Journal of Biomedical Materials Research*, 68A(4):597-602, 2004.
PMID: 14986315

42. **SS Kohles**, DA Kohles, AP Karp, VM Erlich, NL Polissar. "Time-Dependent Surgical Outcomes Following Cauda Equina Syndrome Diagnosis: Comments on a Meta-Analysis," *Spine*, 29(11):1281-1287, 2004.
PMID: 15167669

43. AK Saha, J Mazumdar, **SS Kohles**. "Prediction of Growth Factor Effects on Engineered Cartilage Composition Using Deterministic and Stochastic Modeling," *Annals of Biomedical Engineering*, 32(6):871-879, 2004.
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127. **SS Kohles**. "A Biomechanical Algorithm: Head-Neck Motions, Forces and Injury Causation During Rear-End Collisions," *JMP Discovery Summit Americas*, October 4-8, 2021, #2021-US-30MP-861.

128. W Kim, EA Vela, **SS Kohles**. "Validation of a Biomechanical Injury and Disease Assessment Platform Applying an Inertial-Based Biosensor and Axis Vector Computation," *PhysBIOPAC Human Physiology-Tools, Trends, Techniques, Technology-Conference*, Santa Barbara, CA, July 17-19, 2023.

129. W Kim, **SS Kohles**, EA Vela, V Huayamave. "Validation of a Biomechanical Performance Assessment Platform Applying an Inertial-Based Biosensor and Axis Vector Computation," *11th International Conference on Sport Sciences Research and Technology Support (icSports 2023)*, Rome, Italy, Nov 16-17, 2023, pp 93-100.
*Candidate, icSPORTS 2023 Best Poster Award

LOCAL AND *INVITED PRESENTATIONS:

1. "A Future So Bright, We've Got to Wear Shades," Valedictory Speech, Verona High School Commencement, Verona, WI, May, 1983.

2. “Biomechanical Application of Thermoelasticity,” Society for Experimental Mechanics, Student Paper Contest, Milwaukee, WI, April, 1988.

3. “Collared versus Collarless Femoral Components in Canine Total Hip Replacement,” University of Wisconsin, Division of Orthopedic Surgery, Visiting Professor Lectureship, Madison, WI, October, 1990.

4. *“Fixation Stability of Collared and Collarless Femoral Prostheses after Canine Implantation,” University of Wisconsin, Biodynamics Seminar, Madison, WI, April, 1991.

5. “Fixation Stability of Collared and Collarless Femoral Prostheses after Canine Implantation,” Wisconsin Orthopedic Society Meeting, Kohler, WI, May, 1991.

6. “Ultrasound Elasticity Characteristics of Cortical Bone after Canine Hip Arthroplasty,” University of Wisconsin, Division of Orthopedic Surgery, Visiting Professor Lectureship, Madison, WI, October, 1991.

7. *“Local and Global Response of Cortical Bone After Total Hip Arthroplasty,” University of Virginia, Department of Orthopaedic Surgery, Research Seminar, Charlottesville, VA, April, 1993.

8. “The Elastic and Crystalline Characteristics of Upregulated, Normal, and Downregulated Cortical Bone,” University of Wisconsin, Doctoral Preliminary Exam/Seminar, Madison, WI, April, 1993.

9. *“Local and Global Response of Cortical Bone After Total Hip Arthroplasty,” Failure Analysis Associates, Research Seminar, Menlo Park, CA, June, 1993.

10. “Mechanical Evaluation of Proximal Femoral Reconstructions Following 25%, 50% and 75% Resection,” University of Wisconsin, Division of Orthopedic Surgery, Visiting Professor Lectureship, Madison, WI, September, 1993.

11. “Elastic and Physicochemical Relationships within Cortical Bone: Growth Hormone Treatment of a Dwarf Rat Model,” University of Wisconsin, Doctoral Defense Exam/Seminar, Madison, WI, May, 1994.

12. *“Local and Global Response of Cortical Bone After Total Hip Arthroplasty,” University of Southern California, Orthopaedic Hospital, Research Seminar, Los Angeles, CA, June, 1994.

13. *“Mesomechanical and Structural Evaluation of the Adaptive Response of Cortical Bone,” Brown University, Departments of Orthopaedic Surgery and Bioengineering, Research Seminar, Providence, RI, August, 1994.

14. *“Elastic and Physicochemical Relationships within Cortical Bone: Growth Hormone Treatment of a Dwarf Rat Model,” University of Florida, Department of Mechanical Engineering and the Center for Advanced Studies in Engineering, Research Seminar, Gainesville and Palm Beach Gardens, FL, December, 1994.

15. *“Elastic and Physicochemical Relationships within Cortical Bone,” New Jersey Medical School and Rutgers University, Research Seminar, Newark, NJ, December, 1994.

16. *“Elastic and Physicochemical Relationships within Cortical Bone: Growth Hormone Treatment of a Dwarf Rat Model,” University of California-San Francisco, Department of Radiology and the Center for Osteoporosis Research, Research Seminar, San Francisco, CA, January, 1995.

17. *“Elastic and Physicochemical Relationships within Cortical Bone,” University of Wisconsin, Biomedical Engineering Seminar, Madison, WI, February, 1995.

18. *“Elastic and Physicochemical Relationships within Cortical Bone,” Angiogenesis Technology, Inc., Research Seminar, Vancouver, BC, Canada, May, 1996.

19. *“Local and Global Response of Cortical Bone After Total Hip Arthroplasty,” University of Oregon, Department of Exercise and Movement Science, Biomechanics Lecture, Eugene, OR, July, 1996.

20. *“Ultrasonic Elasticity of Cortical Bone,” Orthopedic Biomechanics Laboratory, Beth Israel Deaconess Medical Center, Harvard Medical School, Orthopaedic Research Seminar, Boston, MA, October, 1996.

21. *“Local and Global Response of Cortical Bone After Total Hip Arthroplasty,” Children’s Hospital, Harvard Medical School, Orthopaedic Research Seminar, Boston, MA, October, 1996.

22. *“Elastic and Physicochemical Relationships within Cortical Bone,” Texas A&M University, Department of Industrial Engineering, Bioengineering Program Seminar, College Station, TX, February, 1997.

23. “Elastic Measurement of Tissue,” University of Oregon, Material Science Institute Seminar, Eugene, OR, February, 1997.

24. *“Elastic and Physicochemical Relationships within Cortical Bone,” Georgia Institute of Technology, Department of Health & Performance Sciences, Seminar, Atlanta, GA, March, 1997.

25. *“Elastic, Chemical, and Physical Relationships within Cortical Bone,” Worcester Polytechnic Institute, Department of Biomedical Engineering Seminar, Worcester, MA, June, 1997.

26. “The Job Hunter vs. The Hunted,” Worcester Polytechnic Institute, Food For Thought: Job Hunting for Graduate Students, Worcester, MA, February, 1998.

27. “Elastic and Physicochemical Relationships within Cortical Bone,” University of Massachusetts Medical School, Department of Physiology Seminar, Worcester, MA, March, 1998.

28. “Elastic and Physicochemical Relationships Within Cortical Bone,” Brown University, Department of Molecular Pharmacology, Physiology & Biotechnology: Artificial Organs, Biomaterials, & Cellular Technology (ABC) Seminar, Providence, RI, May, 1998.

29. *"Research and Advancements in Biomaterials for Orthopedic Medical Devices," Massachusetts Medical Device Industry Council (MassMEDIC), Advanced Materials Update, Waltham, MA, June, 1998.

30. *"Effective Teaching at WPI," Worcester Polytechnic Institute, Graduate Student Organization, Orientation Seminar, Worcester, MA, August, 1998.

31. *"Structure and Function of Bone," Worcester Polytechnic Institute, Department of Biology and Biotechnology, Seminar, Worcester, MA, October, 1998.

32. "Biomechanical Concepts in Spinal Fusion Devices," University of Massachusetts Memorial Health Care and Worcester Polytechnic Institute, Biomedical Engineering and Minimally Invasive Surgery Rounds, "Mechanics and Materials of Spinal Fusion," Worcester, MA, November, 1998.

33. "Operating Room Setup and Visual Perception," University of Massachusetts Memorial Health Care and Worcester Polytechnic Institute, Biomedical Engineering and Minimally Invasive Surgery Symposia, Worcester, MA, February, 1999.

34. "Ergonomics and Laparoscopic Instrumentation," University of Massachusetts Memorial Health Care and Worcester Polytechnic Institute, Biomedical Engineering and Minimally Invasive Surgery Symposia, Worcester, MA, April, 1999.

35. *"Mechanical Evaluation of Musculoskeletal Tissues and Orthopedic Constructs," MTS Corporation Seminar, Mechanical Testing of Medical Devices, Newton, MA, May, 1999.

36. "Tissue Welding and Hemostasis," University of Massachusetts Memorial Health Care and Worcester Polytechnic Institute, Biomedical Engineering and Minimally Invasive Surgery Symposia, Worcester, MA, October, 1999.

37. "Surgical Applications of Engineered Tissue," University of Massachusetts Memorial Health Care and Worcester Polytechnic Institute, Biomedical Engineering and Minimally Invasive Surgery Symposia, Worcester, MA, December, 1999.

38. *"Biotransport and Poroelasticity of Bone," NASA Ames Research Center, Space Station Biological Research Project (SSBRP), Seminar, Moffett Field, CA, May, 2000.

39. *"Design of Tissue and Joint Replacements: Biological Considerations," University of British Columbia, Department of Orthopaedic Surgery, Grand Rounds, Vancouver BC, Canada, March, 2001.

40. *"Design of Tissue and Joint Replacements: Mechanical Considerations," University of British Columbia, Department of Mechanical Engineering, Seminar, Vancouver BC, Canada, March, 2001.

41. *"Bioengineering for the Space Environment: Anisotropy of Native and Engineered Tissue," University of Colorado, Department of Aerospace Engineering Sciences, Bioastronautics Program, Seminar, Boulder, CO, May, 2001.

42. *"Biomechanical Factors in Tissue Engineering: Composite Modeling, Surgical Device Design, and Functional Evaluation," Department of Mechanical Engineering, Oregon State University, Seminar, Corvallis, OR, April, 2002.

43. *"Biomechanical Factors in Tissue Engineering: Composite Modeling, Surgical Device Design, and Functional Evaluation," Departments of Electrical & Computer Engineering and Biomedical Engineering, OGI School of Science & Engineering, Oregon Health & Science University, Seminar, Beaverton, OR, May, 2002.

44. *"Biomechanical Factors in Functional Tissue Engineering: Bioreactor Designs and Dynamic Composite Constructs," Department of Surgery, Oregon Health & Science University, Seminar, Portland, OR, June, 2002.

45. *"Poroelasticity for Engineered Bone Design," Department of Mechanical Engineering, Portland State University, Seminar, Portland, OR, May, 2003.

46. "Design of a Cranial Vascular Mechanics Model," Department of Mechanical Engineering, Portland State University, Capstone Design Proposal, Portland, OR, November, 2003.

47. "A Micromechanical Device to Influence Skin Healing and Scar Formation," Department of Mechanical and Materials Engineering, Portland State University, Capstone Design Proposal, Portland, OR, November, 2004.

48. "Biomechanical Engineering in Reparative Medicine," Department of Mechanical and Materials Engineering, Portland State University, Seminar, Portland, OR, October, 2005.

49. "Osteochondral Applications of Biomaterials, Tissue, and Cellular Engineering," Department of Biology, Portland State University, Seminar, Portland, OR, October, 2006.

50. "Biomedical and Bioinspired Engineering Design Projects: Microfluidic Cell Culture and In Situ Gelling Biomaterials," Department of Mechanical and Materials Engineering, Portland State University, Capstone Design Proposal, Portland, OR, October, 2007.

51. "Cellular Biomechanical Engineering: Microfluidics and Optical Force Integration," Maseeh College of Engineering & Computer Science, Intel Research & Technology Collaborative Overview, Portland, OR, January, 2008.

52. *"Cell Biomechanics Technique and Theory," Cell Engineering Course Guest Lecturer, School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, OR, May, 2008.

53. *"Integration of Microfluidics and Optical Forces for Osteochondral Cellular Biomechanical Engineering," Graduate Seminar, School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, OR, May, 2008.

54. “Biomedical and Bioinspired Engineering Design: A Mechanical Bioreactor for Engineered Tissue Composites,” Department of Mechanical and Materials Engineering, Portland State University, Capstone Design Proposal, Portland, OR, October, 2008.

55. “Cell Biomechanics and the Study of Disease: Progress Report,” Department of Mechanical and Materials Engineering, Portland State University, Collins Medical Trustees Meeting, Portland, OR, January, 2009.

56. “Biomedical and Bioinspired Engineering Design: Design Optimization of a Mechanical Bioreactor for Engineered Tissues,” Department of Mechanical and Materials Engineering, Portland State University, Capstone Design Proposal, Portland, OR, October, 2009.

57. *“PSU-CSU Cell & Tissue Engineering Research Partnership for Allaying Health Disparities and Promoting Diversity,” The Center for Allaying Health Disparities through Research and Education (CADRE), Central State University, Center Advisory Board Presentation, Wilberforce, OH, March, 2010.

58. *“Engineering Living Tissues: Bioreactor Control and Composite Assessment,” Department of Manufacturing Engineering, Central State University, Seminar, Wilberforce, OH, March, 2010.

59. “Design of a Sled System for Motor Vehicle Crash Simulation and Forensic Biomechanics,” Department of Mechanical and Materials Engineering, Portland State University, Capstone Design Proposal, Portland, OR, October, 2010.

60. *“Cell & Tissue Engineering Research Partnership for Allaying Health Disparities and Promoting Diversity,” The Center for Allaying Health Disparities through Research and Education (CADRE), Central State University, NIH Center Advisory Board Presentation, Wilberforce, OH, October, 2010.

61. “A Novel Multiphysics Bioreactor for Cell and Tissue Engineering,” *Oregon Innovation Showcase*, Portland, OR, Nov 2, 2010.

62. *“Cell & Tissue Engineering Research Partnership for Allaying Health Disparities and Promoting Diversity,” CADRE, Central State University, NIH Center Advisory Board Presentation, Wilberforce, OH, March, 2011.

63. *“Cell & Tissue Engineering Research Partnership for Allaying Health Disparities and Promoting Diversity,” CADRE, Central State University, NIH Center Advisory Board Presentation, Wilberforce, OH, June, 2012.

64. *”Concentric and Eccentric Shoulder Biomechanics,” Undergraduate Biomechanics Course Guest Lecturer, Shiley School of Engineering, University of Portland, Portland, OR, March, 2013.

65. “Multiscale Investigations in Cell and Tissue Engineering,” OHSU Center for Regenerative Medicine, Portland, OR, June 18, 2013.

66. “The Responsible Use of Forensic Injury Biomechanics,” Oregon Trial Lawyers Association,

Annual Motor Vehicle CLE, Portland, OR, November 5, 2013.

67. "Low Speed Crash Mechanics and the Influence on Injury Biomechanics," Oregon Trial Lawyers Association, Motor Vehicle Section Meeting, Portland, OR, January 22, 2015.

68. "Biomechanics Testimony: Appellate Update & Exposing Defense Fallacies with Good Science," with Ben Cox, Oregon Trial Lawyers Association, Annual Motor Vehicle CLE, Portland, OR, October 23, 2015.

69. "Freelance Bioengineer: Professor, Forensic Scientist, Medical Device Designer, and Soccer Coach," Cleveland High School, Health Professions Class, Portland, OR, October 6 & 25, 2016; April 26 & December 8, 2017; April 19, 2018.

74. "Freelance Bioengineer: Professor, Forensic Scientist, Medical Device Designer, and Soccer Coach," Cleveland High School, College and Career Exploration Workshop, Portland, OR, October 10, 2017.

75. "Understanding Crash Reconstruction and Injury Biomechanics Testimony," Oregon Trial Lawyers Association, Annual Motor Vehicle CLE, Portland, OR, October 27, 2017.

76. "Forensic Injury Biomechanics," Saturday Academy, Apprenticeships in Science and Engineering, Midsummer Conference, Corvallis, OR, July 12, 2018.

77. "Bioengineering Workshop: Applied Biomechanics in Academics, Forensic Science, Medical Device Design, and Coaching," Cleveland High School, Career Fair, Portland, OR, October 10, 2018.

78. "Medical Anthropology: Bone Form Follows Biomechanical Function," Hosford Middle School, 8th Grade Integrated Science Class, Portland, OR, December 13, 2018.

79. "Faculty Application: OHSU-PSU SPH," Oregon Health & Science University-Portland State University, School of Public Health, Epidemiology Program, Portland, OR, February 9, 2019.

80. "Civil and Criminal Forensic Biomechanics," Hosford Middle School, Career Day, Portland, OR, April 25, 2019; Cleveland High School, Career Exploration Fair, Portland, OR, October 16, 2019.

81. "Countering the Defense Biomechanical Approach," Oregon Trial Lawyers Association, Annual Motor Vehicle CLE, Portland, OR, October 23, 2020.

82. "Forensic Bioengineering," Benson High School, Engineering Careers Presentation, Portland, OR, January 22, 2021.

83. "IntraMon: A Noninvasive, Adaptive Intraluminal Monitoring System," Oregon Health & Science University, Biomedical Innovation Program, Commercialization Readiness Program (BIP Corp), Portland, OR, March-April, 2021.

84. "Exploring Solar Power in Cape Meares," Cape Meares Community Association and A&R

Solar, Cape Meares, OR, February 2023.

NATIONAL AND INTERNATIONAL PRESENTATIONS:

84. “Design Modifications to the Extravehicular Activity Glove,” 3rd Annual NASA/USRA University Advanced Design Program Summer Conference, Washington D.C., June, 1987.

85. “Thermographical Stress Analysis of a Centrally Loaded Circular Composite Plate," ASTM Workshop on Noncontacting Sensors, Atlanta, GA, November, 1988.

86. “Biomechanical Applications of Thermographical Stress Analysis," ASTM Workshop on Noncontacting Sensors, Atlanta, GA, November, 1988.

87. “A Comparison of Strain Gage Analysis to Differential Infrared Thermography in the Proximal Canine Femur," 35th Annual Meeting, ORS, Las Vegas, NV, February, 1989.

88. “Micromotion after Canine Total Hip Replacement," 24th Annual Meeting, ACVS, Reno, NV, February, 1989.

89. “A Comparison of Strain Gage Analysis to Differential Infrared Thermography in the Proximal Canine Femur," 24th Annual Meeting, ACVS, Reno, NV, February, 1989.

90. “Differential Infrared Thermography: A Correlation with Stress and Strain in Cortical Bone," Biomechanics Symposium, ASCE/ASME, San Diego, CA, July, 1989.

91. "The Mechanical Effects of Sodium Fluoride on Bovine Cortical Bone," First World Congress of Biomechanics, San Diego, CA, August, 1990.

92. “Ultrasound Elasticity Characteristics of Canine Femora after Hip Arthroplasty," Winter Annual Meeting, ASME, Atlanta, GA, December, 1991.

93. “An Ultrasonic Evaluation of Canine Femora Before and After Hip Arthroplasty," 38th Annual Meeting, ORS, Washington D.C., February, 1992.

94. “Structural Evaluation and Comparison of Five Femoral Reconstruction Techniques,” 3rd Annual Fall Meeting, BMES, Salt Lake City, UT, October, 1992.

95. “Stability of Proximal Femoral Allografts After Canine Hip Replacement,” Winter Annual Meeting, ASME, Anaheim, CA, November, 1992.

96. “Canine Hip Replacement With Proximal Femoral Grafts: A Comparison of Cemented Versus Press-Fit Distal Fixation,” 39th Annual Meeting, ORS, San Francisco, CA, February, 1993.

97. “The Response of Cortical Bone in a Growth Disruption Model to Growth Hormone Treatments Using Ultrasonic Velocity,” Summer Bioengineering Meeting, ASME/AICHE/ASCE, Breckenridge, CO, June, 1993.

98. "Mechanical Evaluation of Proximal Femoral Reconstructions Following 25%, 50% and 75% Resection," Winter Annual Meeting, ASME, New Orleans, LA, November, 1993.

99. "Mechanical Evaluation of Six Reconstruction Techniques Following Three Resection Lengths in a Canine Model," 40th Annual Meeting, ORS, New Orleans, LA, February, 1994.

100. "Ultrasonic Measurement of the Elastic Coefficients of Small Orthotropic and Isotropic Specimens," Second World Congress of Biomechanics, Amsterdam, The Netherlands, July, 1994.

101. "Elastic Evaluation of Cortical Bone After Growth Hormone Treatment of a Dwarf Rat Model," 41st Annual Meeting, ORS, Orlando, FL, February, 1995.

102. "Cortical Bone Elasticity in Aging Rats With and Without Growth Hormone Treatments, 20th Annual Meeting, ASB, Atlanta, GA, October, 1996.

103. "Evaluation of the Effect of Early Loading of Dental Implants in the Baboon: A Histologic and Radiographic Study," Table Clinic Presentation, The 3I 1999 International Symposium, Orlando, FL, January, 1999.

104. "Orthotropic Index for Bone," 46th Annual Meeting, ORS, Orlando, FL, March, 2000.

105. "Anisotropic Elastic and Transport Properties of Cancellous Bone," Annual Fall Meeting, BMES, Seattle, WA, October, 2000.

106. "Profilometer Variance in Implant Roughness Characterization," Annual Fall Meeting, BMES, Seattle, WA, October, 2000.

107. "Anisotropic Elastic and Transport Properties of Cancellous Bone," 47th Annual Meeting, ORS, San Francisco, CA, February, 2001.

108. "Modeling the Dynamic Composition of Engineered Cartilage," 48th Annual Meeting, ORS, Dallas, TX, February, 2002.

109. "Enhancement of Non-Viral Gene Uptake and Expression for Bone Regeneration," 50th Annual Meeting, ORS, San Francisco, CA, March, 2004

110. "Response Surface Analysis of Flexural and Membrane Stresses to Characterize Flexible Biologic Materials," ASB, 28th Annual Meeting, Portland, OR, September, 2004.

111. "A Multivariate Logistical Model Describing Compressive Sensitivity of Tactile Receptors," ASB, 28th Annual Meeting, Portland, OR, September, 2004.

112. "A Micro-Mechanical Composite Analysis of Engineered Cartilage," ASB, 28th Annual Meeting, Portland, OR, September, 2004.

113. "Capstone Design of a Cranial Vascular Mechanical Model," ASB, 28th Annual Meeting, Portland, OR, September, 2004.

114. "A Concentric and Eccentric Loading Regime for Shoulder Rehabilitation," ASB, 28th Annual Meeting, Portland, OR, September, 2004.

115. "A Dynamic Composite Spheres Analysis of Engineered Cartilage Mechanics," Society for Experimental Mechanics, Portland, OR, June, 2005.

116. "A Composite Spheres Model for Engineered Cartilage Mechanics," ORS, 52nd Annual Meeting, Chicago, IL, March, 2006.

117. "An Integrated Optical Instrument and Microfluidics for Isolated Chondrocyte, Osteoblast, and Fibroblast Biomechanics," ORS, 54th Annual Meeting, San Francisco, CA, Mar 2-5, 2008.

118. "Local Variation in Surface Stresses Applied to Suspended Single Cells in Microfluidic Environments," ORS, 55th Annual Meeting, Las Vegas, NV, Feb 22-25, 2009.

119. "Mathematical Models Characterizing the Probability of Trigger Event, Ambient-Risk, and Coincidental Influences on Inductive and Abductive Conclusions of Specific Causation," Annual Meeting of the American College of Epidemiology, San Francisco, CA, September 11-14, 2010.

120. "Biomateriomics: Multiscale Investigations in Cell and Tissue Engineering," Biomedicine in 4D, Integrated-omics and Systems Microscopy, Portland, OR, March 21-23, 2012.

121. "The Influence of Vitamin D on Osteogenic Precursor Cell Biokinetics for Bone Tissue Engineering," OHSU Healthy Aging Conference: The Science and Art of Healthy Aging, Portland, OR, October 10, 2012.

122. "Forensic Biomechanical Engineer," American Institute for Medical and Biological Engineering (AIMBE), Annual Event, Research Blitz, Washington DC, March 29, 2025.

122. "The Role of Biomechanical Engineering in Railway Injury Cases," Academy of Rail Labor Attorneys, Annual Convention, Seattle, WA, May 2025.

ADDITIONAL CONFERENCE OR WORKSHOP ATTENDENCE (NO PRESENTATION):

2025 - AIMBE, Annual Event, March
2023 - Oregon Bioengineering Symposium, Eugene, November
- BMES Annual Meeting, Seattle, October
2022 - BMES Annual Meeting, San Antonio, October
2021 - Oregon Bioengineering Symposium, Virtual, November
2020 - Oregon Bioengineering Symposium, Virtual, November
2019 - Oregon Bioengineering Symposium, Corvallis, November
2013 - BMES Annual Meeting, Seattle, September
- ASME Summer Bioengineering Conference, Sun River, June
2012 - NSF ShortCourse, Materiomics-Merging Biology and Engineering in Multiscale Structures and Materials, Boston, May
2010 - ICMS, 2nd Annual International Congress for Regenerative and Cell Based Medicine, Las Vegas, November

- ASME NanoEngineering for Medicine and Biology Congress, Houston, February

2009 - Funding Innovative Research SBIR/STTR Conference, Portland, August
- Tree School, Oregon State University, Clackamas County Extension, Oregon City, March

2008 - Oregon Innovation Showcase: Spotlight on Infectious Disease, Portland, November
- Stem Cell Forum, OHSU and OCTRI, Portland, September
- Federal Laboratory Consortium for Technology Transfer, Portland, May

2007 - ASME International Congress & Exposition, Seattle, November
- Colorado Trial Lawyers Association, Blockbuster Auto Seminar, Denver, January

2006 - Oregon Trial Lawyers Association, Motor Vehicle Continuing Education, Portland, November
- Spinal Injury Foundation, International Whiplash Trauma Congress, Portland, June

2005 - PSU/NSF, Managerial Thinking for Technologists, Oregon's Lab2Market Initiative, Portland, September
- SRISD/CRASH, Human Subjects Testing and Scientific Conference, San Diego, August
- OHSU Nanotechnology and Nanoscience Symposium, Portland, March
- Portland Development Commission, SBIR/STTR Workshop, Portland, March
- OHSU, Surgical Research Seminars and Rounds, Portland, OR

2004 - Oregon Government Contract Assistance Program, Proposal Development Workshop, Portland, March
- OHSU, Surgical Research Seminars, Portland, OR
- Oregon Chapter of IEEE-EMBS, Quarterly Meetings, Portland, OR

2003 - Oregon Chapter of IEEE-EMBS, Monthly Meetings, Portland, OR
- University of Washington, Biomechanics Symposium, Seattle, WA, May
- OHSU, Surgical Research Seminars, Portland, OR
- Orthopaedic Research Society 49th Annual Meeting, New Orleans, LA, February

2002 - Oregon Small Business Fair, Portland, OR, September

2001 - Proposal Writing Workshop, WPI, Worcester, MA, April
- Northeast Bioengineering Conference, Storrs, CT, March

2000 - NIH BECON Symposium: Nanoscience and Nanotechnology, Bathesda, MD, June
- Northeast Bioengineering Conference, Storrs, CT, April
- ABET and Educational Assessment Seminar, Worcester, MA, January.

1999 - Teaching Portfolio Workshop, WPI, Worcester, MA, October.
- Laboratory Safety Workshop, WPI, Worcester, MA, May.
- Doctoral University I by 2010, CGSR Workshop, WPI, Worcester, MA, March.
- Advising Workshop, WPI, Worcester, MA, March.
- Orthopaedic Research Society 45th Annual Meeting, Anaheim, CA, February.

1998 - Grant Writing Workshop, WPI, Worcester, MA, October
- ASEE Annual Meeting, ABET Accreditation, Seattle, WA, June.
- ISMRM Workshop, Magnetic Resonance of Connective Tissues and Biomaterials, Philadelphia, PA, June.
- Teaching and Learning Portfolios Workshop, Worcester Consortium, Worcester, MA, May.
- Orthopaedic Research Society 44th Annual Meeting, New Orleans, LA, March.
- NIH Bioengineering Symposium: Building the Future of Biology and Medicine, Bethesda, MD, February.

1997 - Teaching Effectiveness Workshop, Colleges of Worcester Consortium, Worcester, MA, October.
- ASME/AIChE/ASCE Summer Bioengineering Conference, Sunriver, OR, June.
- Orthopaedic Research Society 43rd Annual Meeting, San Francisco, CA, February.

1996 - Orthopaedic Research Society 42nd Annual Meeting, Atlanta, GA, February.
1995 - ASME/AIChE/ASCE Summer Bioengineering Conference, Beaver Creak, CO, July.
1994 - USC Orthopaedic Visiting Professor Lectureships, Los Angeles, CA, June.
1991 - SEM Spring Conference, Milwaukee, WI, June.
- Orthopaedic Research Society 37th Annual Meeting, Anaheim, CA, March.
1990 - Orthopaedic Research Society 36th Annual Meeting, New Orleans, LA, February.
- NASA Symposium: Influence of Gravity and Activity on Muscle and Bone, Moffett Field, CA, January.
1988 - Orthopaedic Research Society 34th Annual Meeting, Atlanta, GA, February.

RESEARCH SUPPORT:

Current Funding:

"Medicolegal Forensic Biomechanical Engineering and Medical Device Industry Consulting," Over 30 new contracts annually, Kohles Bioengineering Corp, Owner: **SS Kohles**, 1987-present.

Past Grants Awarded:

"Integrated control system for advanced materials characterization," Funding Agency: MTS Systems Corp., $25,000 (in kind donation), PI: MG Jenkins, Co-PI's: **SS Kohles**, M Ramulu, Department of Mechanical Engineering, University of Washington, Summer 1996.

"Servohydraulic system for the mechanical evaluation of tissues, biomaterials, and orthopedic constructs," Funding Agency: MTS Systems Corp., $17,850 (in kind donation), PI: **SS Kohles**, WPI, Winter 1997-98.

"Standardization of profilometry measurements in dental implants: Corporate Graduate Fellowship," Funding Agency: Implant Innovations Inc., $18,940 (stipend and supplies), PI: **SS Kohles**, WPI, Student: M Clark, 1999-2000.

"Mechanosensitivity of tactile receptors," Funding Agency: National Science Foundation (IOS-9800116), 1998-2001, $208,572, PI: FJ Looft, Co-Investigator: **SS Kohles**, WPI, 09/15/98-08/31/02.

"Screw-driven test system support for education-based biomechanical evaluations," Funding Agency: MTS Systems Corp., $4,093 (in kind donation), PI: **SS Kohles**, WPI, Fall 2000.

"Dynamic Composition and Functional Elasticity of Engineered Tissues," Funding Agency: NIH National Institute of Dental and Craniofacial Research R03 (Small Grant Program for New Investigators), $137,000 (total costs), PI: **SS Kohles**, Kohles Bioengineering (score = 183): #DE014288, 09/30/02-08/31/05.

"MRI: Instrument Development: An Integrated Optical Tweezer/micro-PIV System to Investigate Cell Biomechanics," Funding Agency: National Science Foundation, Division of Chemical, Bioengineering, Environmental, and Transport Systems, Major Research Instrumentation Program, $214,226 (total costs), PI: DC Tretheway, Co-PI: **SS Kohles**, PSU (score = 2.17, top 50%): #CBET-0521637, 09/01/05-08/31/07.

"Computational Microfluidic Models Supporting Studies in Cell Biomechanics," Funding Agency: Sigma Xi Scientific Honor Society, Columbia-Willamette Chapter to attend the Annual Meeting & Student Research Conference, Washington D.C., Nov 20-23, 2008, $700, Student: J Zimmerman (PSU), Co-Advisors: **SS Kohles** (PSU-OHSU) and DC Tretheway (PSU).

"Local Variation in Surface Stresses Applied to Suspended Single Cells in Microfluidic Environments," Funding Agency: PSU Travel Grant, Presentation at the 55th Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, Feb 22-25, 2009, $1,000, PI: **SS Kohles** (PSU).

"Maseeh Graduate Fellowship Award," Funding Agency: Maseeh College of Engineering and Computer Science, $19,000 (stipend and tuition), Student: N Nève (PSU), Co-Advisors: **SS Kohles** (PSU-OHSU) and DC Tretheway (PSU), 09/15/2008-06/15/2009.

"Cell Biomechanics and the Study of Disease States," Agency: Collins Medical Trust, $30,000 (total costs), PI: **SS Kohles** (PSU-OHSU), Co-Is: DC Tretheway (PSU), SR Winn (OHSU), 07/01/2008-06/30/2009.

"Modeling NanoMechanical Strains in Healthy and Diseased Single-Cells Due to Applied Fluidic Stresses," Funding Agency: PSU Travel Grant, Presentation at the ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology, Houston, TX, Feb 7-10, 2010, $1,460, PI: **SS Kohles** (PSU).

"Multiaxial Single-Cell Biomechanics for Mechanotransduction," Funding Agency: National Institutes for Biomedical Imaging and Bioengineering, NIH R15 Academic Research Enhancement Award (R15 EB007077, scores = 200 and 159), $219,063 (total costs), PI: **SS Kohles** (PSU-OHSU), Co-Is: DC Tretheway (PSU), R Zelick (PSU), SR Winn (OHSU), 09/01/2007-08/31/2010.

"Biomaterials Engineering for Regenerative Cartilage Strategies," Funding Agency: PSU Undergraduate Leadership Award, $1,000, Student: F Gibson, Advisor: **SS Kohles**, 03/01/10-6/15/2010.

"Engineered Tissue Development & Cell Population Biomechanics," Funding Agency: Portland State University Faculty Enhancement Grant, $6,100 (total costs), PI: **SS Kohles** (PSU-OHSU), Co-I: AK Saha (CSU), 7/01/2009-6/30/2010.

"Three-Dimensional Cell Culture for Tissue Engineering," Funding Agency: Collins Medical Trust, $30,000 (total costs), PI: **SS Kohles** (PSU-OHSU), Co-PI: R Zelick (PSU), 03/01/2010-02/28/2011.

"Undergraduate Research and Mentoring Program," Funding Agency: PSU MCECS, Intel, and the Semiconductor Research Corporation Education Alliance, $8,640, UG Students: F Gibson and T Bamford, Mentor: **SS Kohles**, 10/01/2010-06/15/2011.

"Cell, Tissue, and Biomaterials Engineering Internships," Funding Agency: Saturday Academy, $6,400, HS Students: J Blank and U Duckler, Mentor: **SS Kohles**, 6/20/2011-08/19/2011.

"Materiomics-Merging Biology and Engineering in Multiscale Structures and Materials," Funding Agency: National Science Foundation Short Course Faculty Fellowship, $2,000, PI: **SS Kohles** (PSU-OHSU), 5/29/2012-6/1/2012.

"Undergraduate Research and Mentoring Program," Funding Agency: PSU MCECS and the Semiconductor Research Corporation Education Alliance, $5,184, UG Students: F Gibson and J Righetti, Mentor: **SS Kohles**, 10/15/2011-06/15/2012.

"Engineered Tissue Development and Childhood Vitamin D Deficiency," Funding Agency: Collins Medical Trust, $30,000 (total costs), PI: **SS Kohles** (PSU-OHSU), Co-PI: R Zelick (PSU),

05/27/2011-05/26/2012.

"Enhancing Group Filters for High-Resolution Image Processing," Funding Agency: PSU Research Stimulus Program, $5,000, PI: BW York (PSU), Co-Is: **SS Kohles** (PSU-OHSU), J Jiao (PSU), W Garrick (PSU).

"Computational Methods in Fracture Mechanics," Agency: US Air Force Materials Directorate, subaward from Clarkson Aerospace Co. and Central State University (CSU), (FA8650-05-D-1912), $2,157.60 (subaward costs), PI: Y Liang (CSU), Consultant: **SS Kohles** (Kohles Bioengineering), 03/04/13-08/31/13.

"Cell & Extracellular Matrix Interactions in the Development of Tissue Engineered Cartilage," subproject within "Center for Allaying Health Disparities through Research and Education (CADRE)," Agency: National Institutes of Health, National Center on Minority Health and Health Disparities (NCMHD), Research Infrastructure in Minority Institutions (RIMI), (P20 MD003350), $448,224 (subproject total costs), $225,148 (subcontract total costs), Program PI: JW Garland (Central State University-Ohio), Subproject PI: AK Saha (CSU), Subcontract PI: **SS Kohles** (PSU-OHSU), 09/30/2008-06/30/2014.

"Dental Implant Torque Profile Analysis: Phase 1," Agency: Biomet 3i, $25,000, PI: **SS Kohles** (Kohles Bioengineering), 12/9/14-03/17/15.

"Biomechanical Analysis of Groebner Basis Theory Derived Gait Signatures," subproject within the "Integration of a Sensor Package for Identification of Radical Extremists," Agencies: US Air Force (#AFIT-ENP-13-M-02) and National Science Foundation (#HRD-1240734), subawards from Central State University (CSU) and the University of Nevada-Las Vegas (UNLV), $22,500.00 (subaward costs), PI: K Kendricks (CSU), Consultant: **SS Kohles** (Kohles Bioengineering), 08/01/13-09/30/14.

Pending (Submitted) Applications:

"Deployable Wirelessly Interrogated Pressure Monitoring Device (IntraMon) for Multiple Intraluminal Applications," Funding Agency: Oregon Health & Science University, Biomedical Innovation Program (BIP), $80,000 (total costs), PI: Y Jahangiri (OHSU), Co-PIs: K Farsad, D Mullee, SS Kohles, R Weitzel (OHSU).

"Engineered Bone Development and Childhood Vitamin D Deficiency," Funding Agency: National Institutes of Health, Academic Research Enhancement Award (R15 HD081308-01A1), $437,700 (total costs), PI: **SS Kohles** (OHSU), Co-PIs: SR Winn, J Ferracane (OHSU) and RD Zelick (PSU), 02/01/2015-01/31/2017.

"Optofluidic Single-Cell Mechanotransductive Biomechanics," Funding Agency: National Institutes of Health, Academic Research Enhancement Award (R15 EB019907-01), $435,000 (total costs), PI: **SS Kohles** (OHSU), Co-PIs: SR Winn, J Ferracane (OHSU) and RD Zelick (PSU), 02/01/2015-01/31/2017.

Pending (In-Preparation) Applications:

"Optohydrodynamic Biomechanical Assays of Single Cells and Their Primary Cilia"
"Biomechanics of Single Stem Cells and Their Primary Cilia"
"Biomechanics of Single Cells and Their Primary Cilia for Mechanotransduction"
"Primary Cilia Biomechanics and Mechanotransduction"
"Multiscale Platforms for Stem Cell Mechanotransduction"
"Multiphysiologic Culture System for Assessing Efficacy, Toxicity and Pharmacokinetics"
"Multiphysiologic Culture (MPC) System for Assessing Pharmacological Efficacy, Toxicity and Kinetics"
"Multiphysics Culture (MPC) System for Alternative Toxicity Testing"
"Biomateriomics through Cell and Tissue Engineering"
"Enhanced Mechanobiology for Cell and Tissue Engineering"
"Optimized Bone Wound Healing through an Osteoblast Precursor Cell Line Enhanced with Vitamin D Culture"
"Optimized Cell and Tissue Engineering for Bone Wound Healing"