

Susan P. James, Ph.D.

Professor, Department of Mechanical Engineering
Professor and Associate Head, School of Advanced Materials Discovery
Professor, School of Biomedical Engineering



Colorado State University

PROFESSIONAL

Leadership and Significant Service Roles:

Co-Chair (2019), Chair (2020) President's Council on Culture Colorado State University (CSU)	2019-present Fort Collins, CO
CSU Faculty Council, Executive Committee Engineering-at-Large Faculty Council representative	2019-present
Associate Director, School of Advanced Materials Discovery, CSU	2018-present
Head, Department of Mechanical Engineering, CSU	2010- 2018
Chair, President's Commission on Women and Gender Equity, CSU Founding member, Standing Committee on the Status of Women Faculty	2015-2018
Member, Vice President for Research Faculty Advisory Committee	2015-present
Founding Director, School of Biomedical Engineering CSU (Founding Director, Biomedical Engineering Program)	2005-2010 (1998-2003, 2004-05)
Associate Department Head for Undergraduate Studies, CSU, Mechanical Engineering	2005-2007 2001-2002

Academic Accomplishments:

Professor, Department of Mechanical Engineering, CSU Assist. Prof: 1994-2000; Assoc. Prof. w/ tenure: 2000-07	2007-present
Professor, School of Biomedical Engineering, CSU	2007-present
Professor, School of Advanced Materials Discovery, CSU	2017-present
Visiting Professor Wolfson School of Mechanical, Electrical and Systems Engineering, Loughborough University, UK	2017-present

Adjunct Professor, Department of Clinical Sciences, CSU	2010-present
Adjunct Professor, Department of Mechanical Engineering University of Canterbury, New Zealand	2010-present Christchurch, NZ
Visiting Research Fellow, Centre for Bioengineering Department of Mechanical Engineering University of Canterbury, New Zealand	July 2007-July 2008 Christchurch, NZ

Research and Discovery:

Director, Biomaterials Research and Engineering Lab (BREL), CSU	2012-present
Co-Director: Orthopaedic Bioengineering Research Lab (OBRL), CSU	2003-2012
Co-Director: Orthopedic Oncology, Cancer SuperCluster, CSU	2007-present
Co-Director: Program of Research and Scholarly Excellence in Musculoskeletal Research, CSU	2004-2010

Private Sector Accomplishments:

Founding Member, YoungHeartValve, LLC	2019-present
Expert Witness/Legal Consultation	1995-present
Founding Member, SyncPhase Labs (SPL), LLC	2002-2003,
Engineer Exponent, Inc. (formerly: Failure Analysis Associates, Inc.)	1993-1994 Menlo Park, CA
Summer Fellow ICI Polyurethanes, Imperial Chemical Industries	Summer 1989 Everberg, Belgium

Community Engagement (selected):

Volunteer Grant Writer, Rist Canyon Volunteer Fire Department	2019-present
Medical Center of the Rockies, Scientific Advisory Board	2014-2018
Board of Directors, Colorado C3E Initiative Clean Energy, Education, and Empowerment,	2013 – 2015
Board of Directors, Africa America Higher Education Partnerships (AAHEP)	2012-2014
Chair, Colorado Alliance for Bioengineering (CAB)	2004-2007
Founding and Executive Board Member	1998-2007

Board Member, Rocky Mountain Bioengineering Symposium

1998-2004

EDUCATION

Ph.D. , Polymers Program in Polymer Science and Technology Department of Materials Science and Engineering Massachusetts Institute of Technology	September 1993 Cambridge, MA
B.S. , Metallurgical Engineering and Materials Science Biomedical Engineering Minor, Certificate in Women's Studies Carnegie Mellon University <i>University Honors, Ranked First in Class</i>	May 1989 Pittsburgh, PA

RESEARCH

Characterization and development of polymeric biomaterials for health care applications, including orthopedic and cardiovascular applications.

160 total: 6 book chapters/edited proceedings, 46 journal articles, 84 conference proceeding abstracts, 24 patents. Google Scholar Profile:

<https://scholar.google.com/citations?user=YTiBqM8AAAAJ&hl=en>

Peer-Reviewed Book Chapters/Proceedings Editor:

6. James, S.P., Oldinski, R., Zhang, M., Schwartz, H., "Chapter 23: UHMWPE/Hyaluronan Microcomposite Biomaterials" in *The UHMWPE Handbook*, 3rd Edition (ed.: Steven Kurtz), Elsevier, 2016.
5. Palmer, R. and James, S.P., Biomechanics of the Appendicular Skeleton. *Mechanisms of Disease in Small Animal Surgery*, 3rd Edition, M. Bojrab & E. Monnet Eds., New Teton Media, Jackson WY, 2010.
4. James, S.P., Oldinski, R., Zhang, M., Schwartz, H., "Chapter 18: UHMWPE/Hyaluronan Microcomposite Biomaterials" in *The UHMWPE Handbook*, 2nd Edition (ed.: Steven Kurtz), Elsevier, 2009.
3. Zhang, M. and James, S.P., Polymeric biomaterials. *Encyclopedia of Medical Devices and Instrumentation*. 2nd ed., ed. J.G. Webster. John Wiley and Sons, Inc. 2006.
2. James, S.P. and Valenta, H., (eds.) Technical Papers Composing the Proceedings of The 41st Annual Rocky Mountain Bioengineering Symposium. *Biomed. Sci. Instrument.* 40, ISA (449), 2004.

1. James, S.P. and Moalli, J.E., Failure Analysis of Polymeric Medical Devices. *Medical Plastics - Degradation Resistance & Failure Analysis*. Portnoy, R.C. ed., William Andrew Publishing/Plastics Design Library/Society of Plastics Engineers, 1998.

Peer-Reviewed Archival Publications:

46. Nivala, P.T., James, S.P. Master sintering curves of nickel-titanium and nickel-titanium open-cell foams fabricated by spark plasma sintering. *J Mater Sci* **55**, 3668–3683 (2020) doi:10.1007/s10853-019-04226-9.
45. Peter T. Nivala, Susan P. James, Metal open-cell foams with periodic topology fabricated by spark plasma sintering, *Materialia*, Volume 8, 2019, 100428, ISSN 2589-1529, <https://doi.org/10.1016/j.mtla.2019.100428>.
44. Bui, Hieu T., Prawel, David A., Harris, Kylee L., Li, Emily, and James, Susan P., *The Development and Fabrication of Vapor Crosslinked Hyaluronan-Polyethylene Interpenetrating Polymer Network as a Biomaterial*, ACS Applied Materials & Interfaces, 2019 *11* (21), 18930-18941 | DOI: [10.1021/acsami.9b03437](https://doi.org/10.1021/acsami.9b03437)
43. Hartje, L. F., Bui, H. T., Andales, D. A., James, S. P., Huber, T. R., & Snow, C. D. (2018). *Characterizing the Cytocompatibility of Various Cross-Linking Chemistries for the Production of Biostable Large-Pore Protein Crystal Materials*. ACS Biomaterials Science & Engineering, 4(3), 826-831.
42. Hieu T. Bui, Aidan Friedrich, Emily Li, David A. Prawel, & Susan P. James, *Hyaluronan Enhancement of Expanded Polytetrafluoroethylene Cardiovascular Grafts*, Journal of Biomaterials Applications 2018, DOI: 10.1177/0885328218776807, Vol. 33(1), 52–63.
41. R. Simon-Walker, J. Cavvichia, D. A. Prawel, L. P. Dasi, S. P. James and *K. C. Popat*. “Hemocompatibility of hyaluronan enhanced linear low density polyethylene for blood contacting applications” *J. of Biomed Mat Sci B*. 2018 106(5) 1964-1975.
40. David A. Prawel, Harold Dean, Marcio Forleo, Nicole Lewis, Justin Gangwish, Ketul C. Popat, Lakshmi Prasad Dasi and Susan P. James, Hemocompatibility and Hemodynamics of Novel Hyaluronan–Polyethylene Materials for Flexible Heart Valve Leaflets, *Cardiovascular Engineering and Technology*, Vol 5(1), pp 70-81, (2014), Print ISSN, 1869-408X, Online ISSN:1869-4098 (<http://dx.doi.org/10.1007/s13239-013-0171-5>).
39. Prawel, D.A., Kipper, M.J., Popat, K.C., James, S.P. *Electrohydrodynamic Atomization Technique for Applying Phospholipid Coatings to Titanium Implant Materials*, Materials Letters, Volume 97, 15 April 2013, Pages 81-85, ISSN 0167-577X, 10.1016/j.matlet.2013.01.091.
38. Case, J.B., Dean, C., Wilson, D.M., Knudsen, J.M., James, S.P., Palmer, R.H. (2012) Comparison of the Mechanical Behaviors of Locked and Nonlocked Plate/Screw Fixation

Applied to Experimentally Induced Rotational Osteotomies in Canine Ilia. *Veterinary Surgery*, 41: 103–113, January 2012.

37. Oldinski, R., Ruckh, T.T., Staiger, M.P., Popat, K.C., James, S.P. Dynamic mechanical analysis and biomineralization of hyaluronan–polyethylene copolymers for potential use in osteochondral defect repair, *Acta Biomaterialia*, Volume 7, Issue 3, March 2011, Pages 1184-1191.
36. Oldinski, R., Cranson, C.A., James, S.P. Synthesis and Characterization of a Hyaluronan-Polyethylene Copolymer for Biomedical Applications, *Journal of Biomedical Materials Research, part B: Applied Biomaterials*, [Volume 94B, Issue 2](#), pages 441–446, August 2010.
35. Ryan, S., Zuehlsdorff, K., Ehrhart N., James, S.P. Comparison of alternate and simultaneous tensioning of wires in a single ring fixator construct, *Veterinary Surgery*, 38: 96-103, 2009.
34. Liptak, J.M., Edwards, M.R., James, S.P., Dernell, W.S., Scott, R. J., Bachand, A.M. Withrow, S.J. Biomechanical characteristics of allogeneic cortical bone pins designed for fracture fixation, *Vet Comp Orthop Traumatol* 2008; 21: 140–146.
33. Zhang, M., Pare, P., King, R., James, S.P. 2006. A Novel Ultra High Molecular Weight Polyethylene-Hyaluronan Micro-Composite for Use in Total Joint Replacements, II: Mechanical and Tribological Property Evaluation. *Journal of Biomedical Materials Research, Part A*, Jul, 2007; Volume 82A, Issue No. 1, p18-26.
32. Liptak, J.M., Edwards, M.R., James, S.P., Dernell, W.S., Scott, R. J., Bachand, A.M. Withrow, S.J. 2006. Mechanical Characteristics of Cortical Bone Pins Designed for Fracture Fixation. *Clin. Orthopaedics Related Res.*, 456:218-225, March 2007.
31. Zhang, M., King, R., Hanes, M., James, S.P. 2006. A Novel Ultra High Molecular Weight Polyethylene-Hyaluronan Micro-Composite for Use in Total Joint Replacements, I: Synthesis and Physical/Chemical Characterization. *J. Biomed. Mater. Res. Part A*, vol. 78A, issue 1, July 2006, p. 86-96.
30. Zhang, M. and James, S.P. 2005. Silylation of Hyaluronan to Improve Hydrophobicity and Reactivity for Improved Processing and Derivatization. *Polymer* 46: 3639-3648.
29. Zhang, M. and James, S.P. 2005. Synthesis and Properties of Melt-Processable Hyaluronan Esters. *J. Mater. Sci.- Mater. Med.* 16:587-593 (same study as #28 – the editors elected to publish it in both journals).
28. Zhang, M. and James, S.P. 2005. Synthesis and properties of melt-processable hyaluronan esters. *J. Mater. Sci.* 40:2937-2943.

27. Lewis, C.W., Williamson, A.K., Chen, A.C., Bae, W.C., Temple, M.M., Wong, V.W., James, S.P., Wheeler, D.L., Sah, R.L., Kawcak, C.E. 2005. Evaluation of Subchondral Bone Mineral Density Associated with Articular Cartilage Structure and Integrity in Normal Equine Joints with Different Functional Demands, *American Journal of Veterinary Research*, October (2005), vol. 66, no. 10, pg. 1823-1829.
26. Skurla, C.P. and James, S.P. 2005. Assessing the Dog as a Model for Human Total Hip Replacement: Analysis of 38 Post-Mortem Retrieved, Canine, Cemented Acetabular Components. *J. Biomed. Mater. Res. B – Appl. Biomater.* 73B(2):260-270.
25. Skurla C.P., Pluhar, G.E., Frankel, D.J., Egger, E.L., James, S.P. 2005. Assessing The Dog As A Model For Human Total Hip Replacement: Analysis Of 38 Postmortem Retrieved Canine Cemented Femoral Components. *J. Bone Joint Surg. (Br)* 87-B:120-127.
24. Frankel, D.J., Pluhar, G.E., Skurla, C.P., Egger, E.L., James, S.P. 2004. Radiographic Evaluation of Mechanically Tested Cemented Total Hip Arthroplasty Femoral Components Retrieved Postmortem. *Vet. Comp. Orthopaedics Traum.* 17:216-224.
23. Zhang, M. and James, S.P. 2004. Novel melt-processable hyaluronan esters for biomedical applications. *Biomed. Sci. Instrument.* 40, ISA.
22. Skurla, C.P. and James, S.P. 2004. The dog as a model for human THR: femoral and acetabular component interaction. *Biomed. Sci. Instrument.* 40, ISA.
21. Zhang, M., James, S.P., King, R., Beauregard, G. 2004. Surface modification of UHMWPE for use in total joint replacements. *Biomed. Sci. Instrument.* 40, ISA:13-17.
20. Kawcak, C.E., McIlwraith, C.W., Norrdin, R.W., Park, R.D., James, S.P. 2001. The Role of Subchondral Bone in Joint Disease: A Review. *Equine Vet. J.* 33(2):120-126.
19. Ruttley, T., Colosky, P., James, S.P. 2001. A gravity-independent constant force resistive exercise unit. *Biomed. Sci. Instrument.* 37, ISA:87-94.
18. Skurla, C.T., and James, S.P. 2001. A comparison of canine and human UHMWPE acetabular component wear. *Biomed. Sci. Instrument.* 37, ISA:245-250.
17. Zhang, M., James, S.P., Rentfrow, E. 2001. The effect of IPN treatment on the mechanical properties of UHMWPE. *Biomed. Sci. Instrument.* 37, ISA:7-12.
16. Lewis, C.W., Schlegel, T.F., Hawkins, R.J., James, S.P., Turner, A.S. 2001. The effect of immobilization on rotator cuff healing using modified mason-allen stitches: a biomechanical study in sheep. *Biomed. Sci. Instrument.* 37, ISA:263-268.
15. Beauregard, G., Hu, Y., Grainger, D.W., James, S.P. 2001. Silylation of Poly-L-Lysine Hydrobromide (PLL-Hbr) to Improve Dissolution in Apolar Organic Solvents. *J. Appl. Polym. Sci.* 79:2264-2271.

14. Skurla, C., Schwarz, P., Egger, E., James, S.P. 2000. Outcome Assessment of 145 Canine THA Cases Through Owner Survey. *J. Am. Vet. Med. Assoc.* 17(7).
13. Wander, K.W., Schwarz, P.D., James, S.P., Powers, B.E., Taylor, B., Wimsatt, J.H. 2000. Fracture Healing Following Stabilization with Intramedullary Xenograft Cortical Bone Pins: A Study in Pigeons. *Vet. Surg.* 29:237-244.
12. James, S.P., Lee, K.R., Beauregard, G.P., Rentfrow, E.D., McLaughlin, J.R. 1999. Clinical Wear of 63 UHMWPE Acetabular Components: Effect of Starting Resin and Forming Method. *J. Biomed. Mater. Res. – Appl. Biomater.* 48(3):374-384.
11. Beauregard, G.P. and James, S.P. 1999. Synthesis and characterization of novel UHMWPE interpenetrating polymer network. *Biomed. Sci. Instrument.* 35, ISA.
10. Green, A.S., O'Connell, M.K., Lyons, A.S., James, S.P. 1999. The design and development of a triaxial wear-testing joint simulator. *Biomed. Sci. Instrument.* 35, ISA.
9. Lewis, C., Schelegel, T., Hawkins, S., James, S.P., Turner, S. 1999. Comparison of tunnel suture and suture anchor methods as a function of time in a sheep model. *Biomed. Sci. Instrument.* 35, ISA.
8. Huber, D.J., Egger, E.L., James, S.P. 1999. The Effect of Knotting Method on the Structural Properties of Large Diameter Nonabsorbable Monofilament Sutures. *Vet. Surg.* 28:260-267.
7. Peterson, M.L., Srinath, S., James, S.P., Norrdin, R.W. 1997. A Waveguide Based Acoustic Microscope With Application to the Evaluation of Bone. *Review of Progress in Quantitative Non-Destructive Evaluation* 16. Plenum Press.
6. Metelman, L.A., Schwarz, P.D., Hutchison, J.M., Alvis, M.R., James, S.P. 1996. A Mechanical Evaluation of the Resistance of Various Interfragmentary Wire Configurations to Torsion. *Vet. Surg.* 25(3):213.
5. Rentfrow, E., James, S.P., Lee, K.R., Beauregard, G.P., McLaughlin, J.R. 1996. Comparison of the in vivo wear rates of 43 surgically retrieved direct compression molded and ram extruded ultra high molecular weight polyethylene acetabular components. *Biomed. Sci. Instrument.* 32, ISA.
4. James, S.P. and Moalli, J.E. 1994. Failure Analysis of Polymeric Medical Devices. *Med. Plastics Biomater.* 1(2).
3. James, S.P., Blazka, S., Merrill, E.W., Jasty, M., Lee, K.R., Bragdon, C.R., Harris, W.H. 1993. Challenge to the Concept that UHMWPE Acetabular Components Oxidize In Vivo. *Biomater.* 14(9):643.

2. James, S.P., Schmalzried, T.P., McGarry, F.J., Harris, W.H. 1993. Extensive Porosity at the Cement-Femoral Prosthesis Interface: A Preliminary Study. *J. Biomed. Mater. Res.* 27:71-78.
1. James, S.P., Jasty, M., Davies, J., Piehler, H., Harris, W.H. 1992. A Fractographic Investigation of PMMA Bone Cement Focusing on the Relationship Between Porosity Reduction and Increased Fatigue Life. *J. Biomed. Mater. Res.* 26:651-662.

Peer-reviewed (except *) Conference Proceedings/Transactions:

84. Fabrication of Vapor Crosslinked Hyaluronan-Polyethylene Interpenetrating Polymeric Network for Flexible Leaflet Heart Valve Replacements, *Material Research Society Meeting*, Phoenix, USA. 2019
83. Vapor Crosslinking of Hyaluronan-Polyethylene Interpenetrating Polymeric Network for Biomedical Applications, *International Materials Science & Engineering Conference*, San Francisco, USA. 2019
82. Katherine V. Lopez-Ambrosio, Gabriel JR. Wham, Richard L. Koch, Hieu T. Bui, Susan P. James, Bernard Séguin, David A. Prawel, Hydroxyapatite Structures Created by Additive Manufacturing with Extruded Photopolymer, Annual Meeting of the Orthopedic Research Society, Austin, TX Feb 2019.
81. Heitkemper M, Hatoum H, Simon-Walker R, Bui H, Popat K, James S, Cheatham J and Dasi LP. Novel Hyaluronan Enhanced Polymeric Transcatheter Aortic Valve Replacement: A proof of concept. World Congress of Biomechanics (WCB), Dublin, Ireland, July 2018.
80. Heitkemper M, Hatoum H, Burton T, Simon-Walker R, Bui H, Popat K, James S, Kelly J, Berman D, Cheatham J, Breuer C, and Dasi LP. A Durable, Hemocompatible, and low-cost polymeric transcatheter aortic heart valve. Transcatheter Cardiovascular Therapeutics (TCT), San Diego, California, September 2018.
79. Heitkemper M, Hatoum H, Simon-Walker R, Bui H, Popat K, James S, Cheatham J, Breuer C and Dasi LP. A Novel Transcatheter Polymeric Heart Valve. Biomedical Engineering Society (BMES), Atlanta, Georgia, October 2018.
78. Hieu Bui, David A. Prawel, Susan P. James, Enhancing Expanded Polytetrafluoroethylene with Hyaluronan for Small Diameter Vascular Grafts, Society for Biomaterials, April 2017, 1030.
77. Hieu Bui, David A. Prawel, Susan P. James, A Novel Approach to Develop Hyaluronic Acid Enhanced Polyethylene Terephthalate, 10th World Biomaterials Congress, Montreal, 2016.

76. Rachael Simon-Walker, John Cavicchia, David A. Prawel Lakshmi Prasad Dasi, Susan P. James, Ketul C. Popat, Hemocompatibility of Hyaluronan-Enhanced Linear Low-Density Polyethylene Surfaces for Heart Valve Leaflet Applications, 10th World Biomaterials Congress, Montreal, 2016.
75. Richard Koch, David A. Prawel, Susan P. James, Improving Silicone Elastomer Hydrophilicity, Society of Biomaterials: 2015 Annual Meeting & Exposition, Charlotte, NC, 2015, 40.
74. Emch, J. Cavicchia, L. P. Dasi, S. James, and K. Popat Hemocompatibility of various heart valve materials, Society of Biomaterials: 2014 Annual Meeting & Exposition, Denver CO, April 16-19, 2014, 28.
73. David A. Prawel, Dustin Williams, Susan P. James, Phospholipid Coatings on PEEK For Enhanced Osseointegration, Society of Biomaterials: 2014 Annual Meeting & Exposition, Denver CO, April 16-19, 2014, 837.
72. Douglas Tait, David A. Prawel, Nicole Ehrhart, Susan P. James, Antibiotic Delivering Phosphatidylserine Coatings for Allograft Bone, Society of Biomaterials: 2014 Annual Meeting & Exposition, Denver CO, April 16-19, 2014, 73.
71. D. Bark, R. Simon, L. Taylor, J. Cavicchia, J. Vaughn, J. Emch, K. Popat, S. P. James, L. P. Dasi, Durability and Performance of Hyaluronan Enhanced Polyethylene Heart Valves, Proceedings of the World Congress of Biomechanics, Boston MA, July 2014
70. Susan P. James, Casey Dean, John Cavicchia, Justin Gangwish, David A. Prawel, Hyaluronic Acid Enhancement of Polyethylene Terephthalate for Blood Contacting Applications, Society of Biomaterials: 2014 Annual Meeting & Exposition, Denver CO, 2014, 619.
69. C. Dean, M. Forleo, N. Lewis, R. Simon, J. Cavicchia, J. Emch, R. Oba, D. Prawel, K. Popat, S.P. James, and L.P. Dasi, "Hyaluronan enhanced synthetic heart valves", Mathematics Guiding Bioartificial Heart Valve Design, Columbus, Ohio, October 28-31st (2013).
68. Lewis N., Dean, C., Gangwish, J., Prawel, D.A., and James, S.P., *Hyaluronic Acid Enhancement of Polyethylene for Cardiovascular Applications*, 2013 Society for Biomaterials, April 10-13, Boston, MA.
67. Dean, H.C., Dasi L.P., and James S.P., *Polyethylene and Hyaluronan Micro-Composites for Use in Prosthetic Heart Valve Replacements*, 9th World Biomaterials Congress, June 1-5, 2012, Chengdu, China.
66. Yonemura, S.S., Wheeler, D.L., and James, S.P. *Dynamic Shear Analysis of a Reinforced Bioartificial Hydrogel for Intervertebral Disc Repair*, 9th World Biomaterials Congress, June 1-5, 2012, Chengdu, China.
65. Rodgers III, W.P., Prawel, D.A., Clark, J., and James S.P. *Roughness and Hydrophilicity of*

Phospholipid Implant Coatings, 9th World Biomaterials Congress, June 1-5, 2012, Chengdu, China.

64. Triffo, T.K., James, S.P., Ehrhart, N., Kamstock, D., and Prawel, D.A. *In Vivo Efficacy of Antibiotic-Eluting Phospholipid Coated Implants*, 9th World Biomaterials Congress, June 1-5, 2012, Chengdu, China.
63. Rodgers III, W.P., Clark, J., Prawel, D.A., and James, S.P. *Scanning White Light Interferometry for use in Characterizing Biomimetic Implant Coatings*, 26th Annual Meeting of the American Society for Precision Engineering, November 13 – November 18, 2011, Denver, CO, USA.
62. Rodgers, W.P., Marini, J.A., and James, S.P. *A Practical Small Punch Test Sample Preparation Method for use with UHMWPE*, 56th Annual Orthopedic Research Society, 2010.
61. Prawel, D. A., Popat, K.C., and James, S.P. *Novel Electro-spray Technique for Applying Phospholipid Coatings to Titanium*, Society for Biomaterials, April 21-24, Seattle, WA, no. 712.
60. Yonemura, S.S., Smith, B.S., Forleo, M.H., James, S.P., Popat, K.C., and Dasi, L.P. *Hemocompatibility of a Novel Hyaluronan-High Density Polyethylene Composite*, Biomedical Engineering Society, October 6–9, 2010, Austin TX, USA.
59. Gleyzolle, B., James, S.P., Orton. C., and Monnet, E. *Correction of Acute Functional Mitral Regurgitation: Development of a New Epicardial Device*, American Heart Association, 2009, no 3551 (in *Circulation*, Volume 120, Issue 18 Supplement; November 3, 2009).
58. Godek, M.L., Cranson, C.N., Prawel, D.A., Oldinski, R.A., and James, S.P. *Characterization of a Novel Hyaluronan-Polyethylene Graft Copolymer for the Delivery of Bioactive Materials*, 2009 Society for Biomaterials, April 22-25, San Antonio, TX, no. 518.
57. Oldinski, R.A., Godek, M.L., Staiger, M.P., and James, S.P. *Biostability, Biocompatibility and Mechanical Properties of a Hyaluronan-Polyethylene Copolymer*, 2009 Society for Biomaterials, April 22-25, San Antonio, TX, no. 68.
56. Staiger, M.P., Eilbracht, S., Lengersdorf, M., Tucker, N., and James, S.P. *Electrospinning of poly(vinylidene fluoride) nanofibre assemblies*, AMN4, The MacDiarmid Institute for Advanced Materials and Nanotechnology, 8-12, Feb. 2009, University of Otago, New Zealand.
55. Oldinski, R.A., Luers, K.A., Godek, M.L., Staiger, M.P., and James, S.P. *A Hyaluronan-Polyethylene Copolymer for Articular Cartilage Repair*, 2009 Orthopedic Research Society.

54. Oldinski, R.A., Harris, J.N., Godek, M.L., and James, S.P. A Novel Hyaluronan-Polyethylene Copolymer for Orthopaedic Applications, 54th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA 2008.
53. Kurkowski, R.A., Godek, M.L., Harris, J.N., and James, S.P. Development of a Novel Amphiphilic Copolymer for Biomedical Engineering Applications, Biomedical Engineering Annual Fall Meeting, September 26-29 2007.
52. Snyder, A., James, S.P., Orton, C., and Monnet, E. A Novel Device for Remediation of Functional Mitral Valve Regurgitation, Biomedical Engineering Annual Fall Meeting, September 26-29 2007.
51. Ryan, S.D., Ehrhart, N., Zuehlsdorff, K., and James, S.P. Simultaneous Versus Alternate Tensioning of Wires in a Single Ring Fixator Construct, Veterinary Orthopedic Society Conference, March 2007.
50. Marini, J.A., Woods, S., Wheeler, D.L., and James, S.P. Fully Dense B-Tricalcium Phosphate Sintered From Nanoparticulate Powder: *In Vitro* Degradation And Mechanical Properties, 53rd Annual Meeting of the Orthopaedic Research Society, San Diego, CA 2007.
49. Kurkowski, R.A., Cranson, C.N., Harris, J.N., Kisiday, J., and James, S.P. Melt-Processable Hyaluronan Ester Scaffolds For Articular Cartilage Tissue Engineering, Transactions of the 2006 ASME Summer Bioengineering Conference, BIO2006.
48. Byrne, Z.S., Baranczyk, M., Johnson, R.M., James, S.P., and El-Hakim, O. Interactive Effects of Organizational Politics and Role Conflict on Turnover, Transactions of the 21st Annual Society for Industrial and Organizational Psychology (SIOP) Conference, May 5-7, 2006.
47. Lewis, C.W., Williamson, A.K., Chen, A.C., Bae, W.C., Temple, M.M., Wong, V.M., Nugent, G.E., Harmel, J.L., Walker, J.E., James, S.P., Wheeler, D.L., Sah, R.L., and Kawcak, C.E. 2005. Relationship Between Functional Demand, Subchondral Bone Mineral Density, and Articular Cartilage Structure and Integrity. Transactions of the 51st Annual Meeting of the Orthopaedic Research Society, Washington, DC, February.
46. James, S.P., Zhang, M., Parè, P., and King, R. 2005. UHMWPE/Hyaluronan Materials for Total Joint Replacements: Tribological and Mechanical Properties. Transactions of the 51st Annual Meeting of the Orthopaedic Research Society, Washington, DC, February.
45. Lewis, C.W., Bae, W.C., Smith, F.W., James, S.P., Kawcak, C.E., Sah, R.L., and Wheeler, D.L. 2004. Strain Distribution in the Cartilage of Articulating Joint Surfaces. Transactions of the 50th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March.

44. Lewis, C.W., Bae, W.C., Smith, F.W., James, S.P., Kawcak, C.E., Sah, R.L., and Wheeler, D.L. 2004. Strain Distribution in Cartilage of Articulating Joint Surfaces. Transactions of the 7th World Biomaterials Congress, Sydney, Australia, May.
43. Skurla, C.P. and James, S.P. 2004. Femoral and Acetabular Component Interaction in 38 Postmortem Retrieved Canine THR Implants: The Dog as a Model for Human THR. Transactions of the 50th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March.
42. Zhang, M., Wheeler, D.L., and James, S.P. 2004. Modification of Hyaluronan to Make it Moldable and to Control its Hydrophilicity. Transactions of the 7th World Biomaterials Congress, Sydney, Australia, May.
41. Skurla, C.P., Pluhar, G.E., Wheeler, D.L., and James, S.P. 2004. Post-Mortem Retrieval of 38 Canine THRs with Implant Durations up to 11.7 Years: The Dog as a Model for Human THR. Transactions of the 7th World Biomaterials Congress, Sydney, Australia, May.
40. Skurla, C.P. and James, S.P. 2004. The Dog as a Model For Human THR: Femoral and Acetabular Component Interaction. Transactions of the 21st Annual Houston Conference on Biomedical Engineering Research, 58.
39. Skurla, C.P., James, S.P., Wheeler, D.L. and Pluhar, G.E. 2003. A Novel Method for Assessing Mechanical Stability of Acetabular Components: Results From 38 Postmortem Retrieved Canine Implants. Transactions of the 49th Annual Orthopaedic Research Society, New Orleans, February.
38. Skurla, C.P., James, S.P. and Pluhar, G.E. 2003. Long-term Wear Damage Analysis of 38 Postmortem Retrieved Canine Total Hip Replacements. Transactions of the 49th Annual Orthopaedic Research Society, New Orleans, February.
37. *Zhang, M. and James, S.P. 2002. A Novel Hydrophobic Material with a Hydrophilic Surface for Biomedical Applications. Transactions of the Colorado Alliance for Bioengineering BIOEXPO, Aurora, CO, December (*not a peer-reviewed conference).
36. *Lewis C.W., Sah, R.L., Smith, F.W., James, S.P., Kawcak, C.E. and Wheeler, D.L. 2002. Strain Distributions within a Synovial Joint Under Ex-Vivo Static Compression Loading. Transactions of the Colorado Alliance for Bioengineering BIOEXPO, Aurora, CO, December (*not a peer-reviewed conference).
35. *Lewis C.W., Sah, R.L., James, S.P., Wheeler, D.L., and Kawcak, C.E. 2002. Tensile and Compressive Properties of Equine Cartilage. 2002. Transactions of the Colorado Alliance for Bioengineering BIOEXPO, Aurora, CO, December (*not a peer-reviewed conference).

34. Wheeler, D.L., Liu, C., James, S.P., Gearen, P., Myers, S., and Pluhar, G.E. 2002. Anti-Microbial Efficacy of Eluted Tobramycin and Vancomycin from Bone Cement: Effects of Antibiotic Particle Size. Transactions of the 28th Annual Society for Biomaterials in Tampa, FL, April.
33. Wheeler, D.L., Liu, C., James, S.P., Gearen, P., Myers, S., and Pluhar, G.E. 2002. Effects of Antibiotic Particle Size on Elution Characteristics from Bone Cement. Transactions of the 28th Annual Society for Biomaterials in Tampa, FL, April.
32. Skurla, C., James, S.P., Wheeler, D.L., and Pluhar, G.E. 2002. Long-Term Wear and Mechanical Stability Analysis of 38 Post-Mortem Retrieved Canine Total Hip Replacements. Transactions of the the Orthopedic Research Society, Annual Meeting, Dallas, TX, February, p. 979.
31. *Burleigh, J., James, S.P., Thompson, M., and Peterson, M. 2001. Passive and Active Devices That Improve Auditory, Speech and Motor Performance in Individuals with Impaired Central Auditory Nervous System Function. Transactions of the Colorado Alliance for Bioengineering BIOEXPO, Aurora, CO, December (*not a peer-reviewed conference).
30. Zhang, M., James, S.P., Rentfrow, E. 2001. The Mechanical Properties of IPN-Modified UHMWPE. Transactions of the ASME Bioengineering Conference, Snowbird, UT.
29. Zhang, M., Rentfrow, E., James, S.P., and Beauregard, G. 2001. The Effect of IPN Surface Modification on the Tensile and Creep Properties of UHMWPE. Transactions of the 26th Annual Meeting of the Society for Biomaterials in Saint Paul, MN, April.
28. *Burleigh, J., Thompson, M., James, S.P., McIntosh, K., Peterson, M., Hubbeling, C., and Boardman, T. 2000. Binaural Asynchronies: Characterization and Optimization for Enhanced Human Performance in Individuals with Central Auditory Nervous System Dysfunction. Transactions of the CAB Day at Fitzsimons, Colorado Alliance for Bioengineering, Aurora CO, December (*not a peer-reviewed conference).
27. *Skurla, C. and James, S.P. 2000. Acetabular Cup Wear in Postmortem Retrieved Canine Total Hip Arthroplasty. Transactions of the CAB Day at Fitzsimons, Colorado Alliance for Bioengineering, Aurora, CO, December (*not a peer-reviewed conference).
26. * James, S.P., Zhang, M., Rentfrow, E., and Beauregard, G. 2000. Engineering Total Joint Replacement Materials to Utilize In Vivo Lubrication Mechanisms. Transactions of the CAB Day at Fitzsimons, Colorado Alliance for Bioengineering, Aurora, CO, December (*not a peer-reviewed conference).
25. Burleigh, J., Thompson, M., James, S.P., Peterson, M., McIntosh, K., and Boardman, T. 2000. Accommodation of Interaural Timing Differences in Central Auditory Processing Disorders. Transactions of the American Speech, Language, and Hearing Association Convention, Washington, DC, November.

24. Burleigh, J., McIntosh, K., Thompson, M., Boardman, T., James, S.P., and Peterson, M. 2000. Impact of Interaural Timing Disruptions on Motor Speech Output. Transactions of the American Speech, Language, and Hearing Association Convention, Washington, DC, November.
23. Beauregard, G.P., Zhang, M., and James, S.P. 2000. Surface Analysis and Coefficient of Friction of UHMWPE-Based, Biomimetically-Inspired IPN. Transactions of the 6th World Biomaterials Congress, Kamuela, Hawaii, May.
22. Schlegel, T.F., Mair, S.D., Gill, T., Lewis, C.W., James, S.P., Mallinckrodt, C.H., Hawkins, R.J., and Turner, A.S. 2000. The Rate of Tendon Healing into a Bone Trough: a Biomechanical Comparison of Suture Anchors and Osseous Tunnel Fixation in a Sheep Model. Transactions of the AAOS/ASES 2000.
21. Beauregard, G.P., James, S.P., Zhang, M., and Skurla, C.S. 2000. Biomimetically-Inspired UHMWPE-Based Interpenetrating Polymer Network for TJR. Transactions of the 46th Annual Orthopedic Research Society, Orlando, FL, March.
20. Skurla, C., James, S.P., Egger, E., Schwarz, P., and Turner, A.S. 1999. Canine Total Hip Arthroplasty Outcome Assessment in 145 Cases. Transactions of the Ninth Annual American College of Veterinary Surgeons Symposium, San Francisco, CA, September 30-October 3.
19. Skurla, C., James, S.P., Egger, E., Schwarz, P., and Turner, A.S. 1999. Acetabular Cup Wear in Retrieved Canine Total Hip Arthroplasty. Transactions of the Ninth Annual American College of Veterinary Surgeons Symposium, San Francisco, CA, Sept. 30-Oct. 3.
18. Beauregard, G.P., Hu, Y., James, S.P., 1999. New Interpenetrating Polymer Network (IPN) to Enhance the Physiologic Lubricity of UHMWPE. Transactions of the 25th Annual Meeting of the Society for Biomaterials, Providence, RI, April 27-May 2.
17. Beauregard, G.P., and James, S.P. 1999. Biomimetic Interpenetrating Polymer Network (IPN) as Orthopedic Biomaterial. Transactions of the Materials Research Society (MRS) Spring Meeting, San Francisco, CA, April 5-9.
16. O'Brien, M.F., Smith, D.A.B, Vraney, R., Lowe, T.G., Fitzgerald, D.G., Franke, C.V., Loyd, B.D., Haher, T.R., Merola, A., Dwyer, A.P., and James, S.P. 1999. Radiographic and Biomechanical Analysis of Multilevel Smith-Robinson vs. Orpectomy Reconstruction of the Cervical Spine: A Human Cadaveric Model. Transactions of the Cervical Spine Research Society Meeting.
15. O'Connell, M.K., and James, S.P. 1997. Design and Evaluation of a Programmable Triaxial Joint Simulator. Transactions of the International Mechanical Engineering Congress and Exposition, Dallas TX, November.

14. O'Connell, M.K., and James, S.P. 1997. Design of a Programmable Triaxial Joint Simulator for Wear Testing Prostheses. Transactions of the American Society of Mechanical Engineers Bioengineering Conference, Oregon, June.
13. James, S.P., Beauregard, G.P., and Cummings, S.M. 1997. Lubricant Viscosity and the Coefficient of Friction Between Total Hip Replacement Components. Transactions of the 23rd Annual Society for Biomaterials, April 30-May 4.
12. Lee, K.R., James, S.P., Beauregard, G.P., Rentfrow, E., and McLaughlin, J.R. 1997. Direct Compression Molded Versus Ram Extruded Bar Stock Polyethylene: A Wear Rate Analysis of Surgically Retrieved Cementless Acetabular Components at 8 Years. Transactions of the American Academy of Orthopaedic Surgeons Annual Meeting, Feb. 13-17.
11. James, S.P. and O'Connell, M.K. 1996. Society of Women Engineers-Beattie Elementary Sled Design Contest, National Women in Engineering Programs Advocacy Network Conference, p. 353.
10. James, S.P., Beauregard, G.P., and Cummings, S.M. 1997. Lubricant Viscosity and the Coefficient of Friction Between Total Hip Replacement Components. Transactions of the 43rd Annual Orthopaedic Research Society, p. 761.
9. James, S.P., Lee, K.R., Beauregard, G.P., Rentfrow, E., and McLaughlin, J.R. 1996. Comparison of the In Vivo Wear Rates of 43 Surgically Retrieved Direct Compression Molded and Ram Extruded Ultra High Molecular Weight Polyethylene Acetabular Components. Transactions of the 5th World Biomaterials Congress, p. 513, May 28-June 2.
8. Jasty, M., James, S.P., Bragdon, C.R., Goetz, D., Lee, K.R., Hanson, A.E., and Harris, W.H. 1994. Patterns and Mechanisms of Wear in Polyethylene Acetabular Components Retrieved at Revision Surgery. 1994. Transactions of the 20th Annual Society for Biomaterials, 103.
7. Jasty, M., James, S.P., Bragdon, C.R., Elder, J., Lowenstein, J., and Harris, W.H. 1994. Microstructural and Ultrastructural Features which May Influence The Wear of Ultra High Molecular Weight Polyethylenes. Transactions of the Orthopaedic Research Society 19, p. 586.
6. James, S.P., Karydas, D., McGarry, F.J. and Harris, W.H. 1993. Reduction of the Extensive Porosity in the Cement at the Femoral Component/Bone Cement Interface. Transactions of the 19th Annual Meeting of the Society for Biomaterials, p. 242.
5. James, S.P., Blazka, S., Merrill, E.W., Jasty, M., Lee, K., and Harris, W.H. 1993. A Challenge to the Concept that UHMWPE Acetabular Components Oxidize In Vivo. Transactions of the 19th Annual Meeting of the Society for Biomaterials, p. 332.

4. James, S.P., Karydas, D., McGarry, F.H., and Harris, W.H. 1993. Reduction of the Extensive Porosity in the Cement at the Femoral Component/Bone Cement Interface. Transactions of the 39th Annual Meeting of the Orthopaedic Research Society, p. 520.
3. James, S.P., and McGarry, F.J. 1992. The Contribution of Incomplete Polymerization and Residual Monomer to the Weakness of PMMA Bone Cement. Transactions of the 38th Annual Meeting of the Orthopaedic Research Society, p. 373.
2. James, S.P., Schmalzried, T., McGarry, F.J. and Harris, W.H. 1991. Porosity Reduction at the Femoral Prosthesis/Cement Interface. 1991. Transactions of the 17th Annual Meeting of the Society for Biomaterials, p. 50.
1. Piehler, H.R., Nufer, N.T., and James, S.P. 1988. Evaluation of Outlet-Strut Fractures in Bjork-Shiley 60° Convexo-Concave Tilting Disc Prosthetic Heart Valves. Symposium on Retrieval and Analysis of Surgical Implants and Biomaterials, Society for Biomaterials, p. 276.

Patents:

*4-8 below show the US Patents that represent my five main patent families as primary inventor that are owned by CSU. These include **21 patents** (US and other countries), one notice of allowance, and three patents currently under review.*

8. James, S.P. *et. al.*, Synthetic Polymeric Materials and Devices Thereof, **U.S. Patent 10,167,387**
7. James, S.P. *et. al.*, Glycosaminoglycan and Synthetic Polymer Material for Blood-Contacting Applications, **US Patent 10,071,186.**
6. James, S.P., Yonemura, S.S., Vartanian, A., *Polymeric Materials Including a Glycosaminoglycan Networked with a Polyolefin-Containing Polymer*, **U.S. Patent 10265440.**
5. James, S.P. and Zhang, M., 2003/2004. *Hyaluronan (HA) Esterification via Acylation Technique for Moldable Devices.* **U.S. Patent 7,692,000 B2**
4. James, S.P., Beauregard, G., Zhang, M., 2001/2002. *Outer Layer Having Entanglement of Hydrophobic Polymer Host and Hydrophilic Polymer Guest.* **U.S. Patent 7,662,954 B2**, and James, S.P., Zhang, M., Beauregard, G., Oldinksi, R.K., *Outer Layer Materials Having Entanglement of Hydrophobic Polymer Host Blended With a Maleated Hydrophobic Polymer Co-Host, and Hydrophilic Polymer Guest*, **US Patent 8,524,884 B2.**
3. Monnet, E., Orton, E.C., James, S.P., Ordway, K.G., Ordway, J., *Remediation of Functional Cardiac Mitral Valve Regurgitation*, **US Patent, US8133168.**

2. Burleigh, J.M., Thompson, M.W., James, S.P., Peterson, M.L., McIntosh, K.W., 2000/2001. *Apparatus and Methods for Mitigating Impairments Due to Central Auditory Nervous System Binaural Phase-Time Asynchrony*. **U.S. Patent 7,120,258**, October 10, 2006. (PCT publication number: WO/2001/26420).

1. James, S.P., Karydas, D., McGarry, F.J., Harris, W.H., 1996. *Method and Apparatus for Reducing Interfacial Porosity in a Cemented Femoral Prosthesis*. **U.S. Patent 08/016,697**.

FUNDED RESEARCH PROPOSALS/GRANTS/GIFTS AND AWARDS (as. PI or Co-PI, ~\$6.5M total since 1994):

40. James, S.P., Hyaluronan enhanced small diameter vascular grafts, CSU Ventures and State of Colorado, Advanced Industries Accelerator Proof-of-Concept Program, January 1, \$50,000. 2019 – January 31, 2020.

39. Dasi, L.P., James, S.P., Orton, C., Popat, K., Prawel, D., *Hyaluronan enhanced polymeric heart valve prosthesis*, NIH R01, \$ 1,779,184, R01HL119824, 8/9/13-5/31/18

38. Dasi, L.P., James, S.P., Orton, C., Popat, K., Cost Effective Trileaflet BioPolymeric Heart Valve for India, NIH R03, \$400,757, 09/30/2015-09/30/2017.

37. James, S.P., Fisher, E.R. and Kipper, M.J., Developing Advanced Polymeric Materials for Grand Challenges Catalyst for Innovative Partnership (CIP), Colorado State University Office of the Vice President for Research, \$195,502, 1/1/2015 – 5/31/2017.

36. Kipper, M.J., Krapf, D., and James, S.P., , *MRI: Acquisition of Combined Spinning Disc Confocal/Atomic Force Microscopy System*, NSF, \$638,997/1/2015 – 6/30/217.

35. Popat, K., James, S.P., and Bailey, T., Novel Silicone-Based Materials for Ocular Lenses, Colorado Office of Economic Development and International Trade, \$50,000, May 2014 – Aug. 2015.

34. Prawel, D.P., James, S.P., Ehrhart, N., Atkinson, B., *Antibiotic Delivery from Phospholipid Coated Allograft Bone for Limb-Salvage*, from CSU Cancer SuperCluster, \$39,000 (+\$15,000 contribution from Allosource), September 2012-September 2013.

33. Prawel, D., James, S.P., Seim, H.B. (Collaborator), Lamborne, A. (Collaborator), *Enhancing Osseointegration of PEEK Implants*, OFFICE OF ECONOMIC DEVELOPMENT & INTERNATIONAL TRADE, Bioscience Discovery Evaluation Grant Program, \$74,737 +\$85,000 from Lanx, March 2012-June 2013.

32. James, S.P., Dasi, L.P., Popat, K., Prawel, D., *Developing the Cardiovascular Applications of BioPoly™*, OFFICE OF ECONOMIC DEVELOPMENT & INTERNATIONAL

TRADE, Bioscience Discovery Evaluation Grant Program \$36,386, February 2011-June 2012.

31. James, S.P., Prawl, D.P., *Penetrating Osseointegrative Coatings for Titanium Lattice Implants*, OFFICE OF ECONOMIC DEVELOPMENT & INTERNATIONAL TRADE, Bioscience Discovery Evaluation Grant Program, \$52,482, January 2011-January 2012.
30. James, S.P., Prawl D.P., *Drug Eluting Osseointegrative Coatings for Reconstruction Implants*, OFFICE OF ECONOMIC DEVELOPMENT & INTERNATIONAL TRADE, Bioscience Discovery Evaluation Grant Program, August 2009-June 2010, \$55,822.
29. Palmer, R., James, S.P., *Comparison of the Mechanical Behaviors of Locked and Non-Locked Plate/Screw Fixation Applied to Experimentally Induced Osteotomies in Canine Illia, New Generation Devices*, \$18,581, August 1, 2009-July 31, 2010.
28. Worley, D., Crans, D., James, S.P., Gustafson, D., *Carboplatin microemulsions for novel intracavitary drug delivery in rat model of breast cancer*, \$45,000 from CSU Cancer Supercluster, April 2009-April 2010.
27. James, S.P., *Initial development and testing of drug eluting osseointegrative coatings for orthopedic implants*. \$50,180, OFFICE OF ECONOMIC DEVELOPMENT & INTERNATIONAL TRADE, Bioscience Discovery Evaluation Grant Program, August 1, 2009-August 1, 2010.
26. James, S.P., Krumdieck, S.P., Ryan, S.D., *Chemotherapeutic and Osseointegrative Coatings for Reconstruction Implants*, \$48,909 from CSU Cancer SuperCluster, April 2008-April 2010.
25. Staiger, M.P., James, S.P., Curnow, O., *HA-Copolymer Intervertebral Disc Implants*, The Brian Mason Scientific and Technical Trust (New Zealand), \$26,000 (New Zealand dollars), January 1 2008 – July 30, 2008.
24. Monnet, E., James, S.P., Orton, C., *Evaluation of a Dynamic External Cardiac Device for the Treatment of Functional Mitral Valve Regurgitation*, State of Colorado, Bioscience Discovery Evaluation Program, July 1, 2007 – March 31, 2009, \$99,533.
23. James, S.P., *Partial Joint Resurfacing with BioPoly RS -- A Hydrophilic Polymer*, Schwartz Biomedical and Indiana 21ST Century Research & Technology Fund, November 30, 2006 –December 31, 2008, \$400,000 (part of a \$2 million award to Schwartz Biomedical to support commercialization of Dr. James' technology).
22. Haussler, K., James, S.P., Puttlitz, C., *In Vitro Sacroiliac Joint Kinematics: Effects of Sacroiliac Ligament Disruption*, Colorado State University, College of Veterinary Medicine and Biomedical Sciences, College Research Council, September 2006-November 2007, College Research Proposal, \$27,432.

21. James, S.P., *General Support for the Orthopaedic Bioengineering Research Laboratory*, Schwartz Biomedical, October 2005, \$20,000.
20. Monnet, E., Orton, C., James, S.P., *Evaluation of Dynamic External Device to Treat Functional Mitral Valve Regurgitation: A Pilot Study*, College of Veterinary Medicine and Biomedical Sciences, College Research Council, August 1, 2005-July 31, 2006, \$18,000.
19. James, S.P., Schwartz, H., *Biologically Enhanced Self-Lubricating Bearing Materials for Total Joint Implants*, Indiana 21ST Century Research & Technology Fund, October 1, 2004-June 30, 2007: Total project costs are \$2,088,647; Total funds provided by 21st Century Fund: \$1,273,778; CSU's subcontract (James, S.P. PI): \$520,678.
18. Burleigh, J.M., James, S.P., *Technology for the Diagnosis and Accommodation of Central Auditory Processing Disorders involving Binaural Asynchronies*. Wallace H. Coulter Award for Medical Innovation and Entrepreneurship Semi-Finalists, Georgia Tech and The Wallace H. Coulter Foundation, October 2002, \$10,000 (while on leave to work in private sector, 2002-2003).
17. Burleigh, J.M., James, S.P., *Development of Acoustic Filters for Management of Binaural Asynchronies in Children and Adults*, Colorado Commission on Higher Education, January 1, 2002-October 31, 2002, \$59,757.
16. James, S.P., Bateman, T., University of Colorado BIOSERVE, *Collaboration to Expand BioServe's Spaceflight Biomedical Testing Program* February 1, 2002-October 31, 2002, \$49,991.
15. James, S.P., Bateman, T., University of Colorado BIOSERVE, *Collaboration to Expand BioServe's Spaceflight Biomedical Testing Program* November 1, 2001-February 1, 2002, \$66,390.
14. Wheeler, D., Pluhar, E., James, S.P., DePuy, Inc., *Antibiotic Impregnated Cement: Elution Characteristics and Particle Size Characterization* October 2000-September 2001, \$69,725.
13. Burleigh, J.M., James, S.P., National Science Foundation Small Grants for Exploratory Research, *The Central Auditory Nervous System and Motor Performance: Management through Binaural Synchronization* June 15, 1998-June 15, 1999, \$49,488 (extended to October 31, 1999).
12. Fitch, R.B., James S.P., Turner A.P., *Biomechanical Evaluation of the Triple Pelvic Osteotomy with and without Plate Stabilization*, Research Council of the College of Veterinary Medicine and Biomedical Sciences, Colorado State University, July 1, 1999-June 30, 2000, \$5,700.

11. James, S.P., Hittle, D., Peterson, M., Radford, D., U.S. Department of Education Graduate Assistance in Areas of National Need, *Graduate Fellowships in Mechanical Engineering*: September 1, 1997-September 1, 2001, \$366,765.
10. James, S.P., Whitaker Foundation Grant, *Engineering Total Joint Replacement Materials to Utilize In Vivo Lubrication Mechanisms*: January 1, 1997-December 31, 1999, \$207,089.
9. James, S.P., National Science Foundation CAREER Award, *Research and Education Career Development Plan*: September 1, 1996-September 1, 2001, \$200,000.
8. McIlwraith C.W., Kawcak, C.E., Norrdin, R.W., Park, R.D., James, S.P., American Quarter Horse Association, *In Vitro and In Vivo Evaluation of Subchondral Bone Microdamage and Remodeling in the Carpal and Metacarpophalangeal Joints of Exercised Horses and Possible Relationships to Severe Injury and Joint Disease*: October 1, 1996-October 1, 1997, \$34,372.
7. James, S.P., Colorado State University Faculty Research Grant, *Novel Materials for Orthopaedic Implants*: May 1, 1996-June 1, 1997, \$4,462.
6. James, S.P., Colorado State University Career Enhancement Fund, *Colorado State University Orthopaedic Implant Retrieval Program*, January 1, 1996-May 10, 1996, \$4,577.
5. James, S.P., Jacobs H.R., National Science Foundation Research Experiences for Undergraduates, *Research Experiences for Undergraduates in Mechanical Engineering at Colorado State University*, February 1, 1996-February 1, 1999, \$127,747.
4. James, S.P., Peterson, M., Egger, E.L., Schwarz, P.D., Norrdin, R.W., Powers, B.E., National Science Foundation Academic Research Infrastructure, *Acquisition and Development of Equipment for Orthopaedic Research at Colorado State University*, September 1, 1995-September 1, 1998, \$270,732 (and \$278,450 in cost sharing from Colorado State University).
3. James, S.P., Coalition to Increase Minority Degrees (CIMD) -- Arizona State University, *Cationic Orthopaedic Implant Materials: Proof-of-Concept*, May 5, 1995-September 18, 1995, \$1,633.
2. James, S.P., Colorado State University Faculty Research Grant, *Colorado State University Orthopaedic Implant Retrieval Program*, November 1, 1994-December 31, 1995, \$4,338.
1. James, S.P., Kennedy Orthopaedic Center, *Comparison of the In Vivo Wear Rates of 43 Surgically Retrieved Direct Compression Molded and Ram Extruded Ultra High Molecular Weight Polyethylene Acetabular Components*: October 19, 1994-August 1, 1995, \$2,500.

PRIMARY ADVISEES GRADUATED (62 total)

Post-Doctoral (3): Bateman, T., Godek, M., Prawel, D.

Ph.D. (14): Beauregard, G., Bui, H., Hubbeling, C., Liu, D.J. (co-advised), Oldinski (formerly Kurkowski), R., Skurla, S., Lewis, C. (co-advised), Nivala, P., Prawel, D., Rodgers, W.T., Santoni, B. (co-advised), Smith, S. (co-advised), Yonemura, S., Zhang, M.

Master of Science (35): Amaden, J., Ambrosio-Lopez, K., Landmann, B., Carnes-Mason, Z., Cavvichia, J., Cranson, C., Dean, H.C., Dietrich, B., George, J.M., Green, A., Harris, J., Hudson, H., Johnson, N., Karspeck, J., Kellet, R. Koch, B., Kurkowski, R., Lewis, N., Marini, J., McKinley, D.J., Mick, S., O'Connell, M., Paravasthu, R., Paravasthu, S., Rentfrow, E., Rodgers, W.T., Santhanam, S., Shellenberger, C., Snyder, A., Ruttley, T., Spooner, E., Sethumadhavan, G., Tait, D., Triffo, T., Yerramilli, A., Young, T.

Master of Engineering (10): Adams, B., Blanchard, M., Borgohain, L., McDaniel, C., Bugbee, K., Hawes, M., O'Brien, M., Patel, B., Stodola, K., Tashkandi, M.

SELECTED AWARDS/HONORS/ACTIVITIES

Invited Speaker, *From Knee Implants to Heart Valves*, Loughborough University, UK 2017

Invited Speaker, *Engineering Research and Education Collaboration Opportunities*, Amrita University, India 2017

Invited Speaker, *Flexible Leaflet Heart Valves*, PSG College of Technology, India 2017

CSU Ventures Innovative Excellence, 2014.

Margaret B. Hazaleus Award, Colorado State University (University-wide), 2013.

Invited Short Course, *From Biomaterials to Tissue Engineering* (with Popat, K. and Prawel, D.), Vaal University of Technology, Vanderbijlpark, South Africa, November 2012.

Invited Speaker, *BioPoly: Hyaluronan Enhanced Biomaterials for Orthopaedic and Cardiovascular Applications*, University of Wyoming, October 2012.

Ethics Infusion Program, Colorado State University, Fall 2011.

Oliver P. Pennock Distinguished Service Award, Colorado State University, 2008-09.

Invited Speaker, Georgia Institute of Technology, *Orthopaedic Biomaterials*, March 2007.

Invited Speaker (Distinguished Alumna), Massachusetts Institute of Technology, Program in Polymer Science and Technology (PPST), *New Frontiers in Polymer Research and Education*, Cambridge, MA, September 8, 2006.

Jack E. Cermak Advising Award, Colorado State University (University-wide), 2006.

George T. Abell Outstanding Teaching and Service Faculty Award, College of Engineering, Colorado State University, 2006.

Advancing the Vision of E2020, Engineering Education Leadership Institute, National Academy of Engineering and Project Kaleidoscope, July 23-28, 2006.

Nominated for *CSU Best Teacher Award* (University-wide), 2006.

Invited Speaker, University of Florida, Department of Orthopaedics and Rehabilitation, Gainesville, FL, March 16, 2006.

Recognition of Support and Commitment to Diversity Efforts in College of Engineering, *Women and Minorities in Engineering Program*, Colorado State University, September 13, 2005.

Invited Speaker, Virginia Tech – Wake Forest University, School of Biomedical Engineering and Sciences, Blacksburg, VA, March 2005.

Co-Chair (w/ Harry Valenta) of the *Front Range Biomedical Engineering Student Research Forum*, Colorado State University, Fort Collins, CO, February 2, 2005.

Invited Speaker, University of Wyoming, Molecular Biology Department, Laramie, WY, January 14, 2005.

Invited Speaker, *First Biotechnology and Bioinformatics Symposium: A Community and Academic Forum (BIOT-04)*, Colorado Springs, CO, September 24, 2004.

Co-Chair (w/ Harry Valenta) of the *41st Annual Rocky Mountain Bioengineering Symposium*, Fort Collins, CO, April 23-25, 2004.

Engineering is Fun, Elementary School outreach, Stove Prairie School, Poudre R-1 School District, Larimer County, CO, 2004-05, and at Lincoln Middle School, 2008.

Lotions and Potions--Engineering Cosmetics, Outreach projects aimed at elementary and middle school students designed to increase the representation of women in science and engineering. Average about two outreach sessions per year with approximately 50 girls per session. 2003-present.

Annual Snow Sled Design Contest, Outreach project for 4th-6th grade girls designed to increase the representation of women in science and engineering. 2005 was the 10th annual contest -- the entire Poudre-R1 School District now participates. 1995-2008.

Drs. Burleigh, James, and Thompson (founding members of SyncPhase Labs) chosen as one of five semifinalists for *Wallace H. Coulter Award for Medical Innovation and Entrepreneurship*, Georgia Tech, Atlanta Georgia, 2002.

Engineering Faculty Award of Excellence, College of Engineering Dean's Council, CSU, 1997.

CAREER Award, National Science Foundation, 1996.

Outstanding Faculty Member, American Society of Mechanical Engineers (ASME), CSU student section, 1996.

Service Information Available Upon Request.