

CURRICULUM VITAE

J. Gary Bledsoe

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EDUCATION

DEGREE	DISCIPLINE	INSTITUTION	YEAR
Bachelor of Science	Engineering Technology	University of Tennessee, Martin	1989
Master of Science	Biomedical Engineering	University of Memphis	1995
Doctor of Philosophy	Engineering	University of Memphis	1999

EXPERIENCE

POSITION	DEPARTMENT/DIVISION	INSTITUTION/COMPANY	DATES
Associate Engineer	Network Design	Contel of Virginia, Inc.	1989-90
Engineer	Network Design	Contel of Virginia, Inc.	1990-91
Research Assistant	Biomedical Engineering	University of Memphis	1992-99
Assistant Professor	Biomedical Engineering	Saint Louis University	1999-05
Associate Professor	Biomedical Engineering	Saint Louis University	2005-15
Associate Professor	Orthopaedic Surgery (Secondary)	Saint Louis University	2005-15
Associate Dean (Interim)	Parks College of Engineering, Aviation and Technology	Saint Louis University	2006-07
Associate Dean	Parks College of Engineering, Aviation and Technology	Saint Louis University	2007-08
Department Chair (Interim)	Biomedical Engineering	Saint Louis University	2012-14
Program Coordinator	Biomedical Engineering	Saint Louis University	2014-16
Professor	Biomedical Engineering	Saint Louis University	2015-P
Professor	Orthopaedic Surgery (Secondary)	Saint Louis University	2015-P
Department Chair	Biomedical Engineering	Saint Louis University	2016-P

HONORS/AWARDS

HONOR/AWARD	INSTITUTION/COMPANY/ORGANIZATION	YEAR
Herff College of Engineering Internship	University of Memphis	1995
St. Francis of Assisi Fellowship	University of Memphis	1997
Tau Beta Pi		2015
Who's Who in America		2015

TEACHING EXPERIENCE

SUBJECT (<i>Undergraduate</i>)	INSTITUTION
Pre-Algebra, College Algebra, Trigonometry	University of Tennessee, Martin
Pre-Calculus, Calculus I, Calculus II	University of Memphis
Freshman Intro I and II, Mechanics of Materials, Biomechanics, Materials Science, Biomaterials, Tissue Engineering, Transport, Design I and II	Saint Louis University

PROFESSIONAL MEMBERSHIPS

Biomedical Engineering Society
Society for Biomaterials
American Society for Engineering Education

American Association of University Professors
Biomedical Engineering Council of Chairs, 2012 - 14,
2016 - P

RESEARCH/SCHOLARSHIP ACTIVITIES

PUBLICATIONS

REFEREED JOURNAL PUBLICATIONS

1. Huang, W., Yen, R.T., McLaurine, M. and G. Bledsoe, "Morphometry of the Human Pulmonary Vasculature." *Journal of Applied Physiology*, 81: 2123-2133, 1996.
2. Bledsoe, J. Gary and Steven M. Slack, "Tissue Factor Expression by Rat Osteosarcoma Cells Adherent to Tissue Culture Polystyrene and Selected Orthopaedic Biomaterials." *Journal of Biomaterials Science, Polymer Edition*, 9: 1305-1312, 1998.
3. J. Gary Bledsoe, "Determining the Rules: Applying Ethics in a Tissue Engineering Course." *Proceedings of the American Society of Engineering Education*, June 2002.
4. Bledsoe, J. Gary, Turitto, Vincent T. and Steven M Slack, "Cyclic Mechanical Strain Alters Procoagulant Activity by Rat Osteosarcoma Cells Cultured on Titanium Substrates." *Journal of Biomedical Materials Research*, 70A(3): 490-496, September 2004.
5. Skornia, Stacy, Bledsoe, J. Gary and Rebecca Willits, "Tensile and Peel Properties of poly(ethylene glycol)-diacrylate Hydrogels." *Journal of Applied Biomaterials and Biomechanics*, 5: 176-183, September-December 2007.
6. Fissel, Brian, Moed, Berton R. and J. Gary Bledsoe, "Biomechanical Comparison of A 2 And 3 Proximal Screw Configured Antegrade Piriformis IM Nail With A Trochanteric Reconstruction Nail In An Unstable Subtrochanteric Fracture Model." *Journal of Orthopaedic Trauma*, 22:337-341, May/June 2008.
7. Quigley, Kevin, Alander, Dirk and J. Gary Bledsoe, "An In-Vitro Biomechanical Investigation: Variable Positioning of Leopard™ Carbon Fiber Interbody Cages." *Journal of Spinal Disorders and Techniques*, 21(6): 442-447, August 2008.
8. Lenarz, Chris, Bledsoe, Gary and J. Tracy Watson, "Circular External Fixation Frames with Divergent Half Pins: A Biomechanical Study." *Clinical Orthopaedics and Related Research*, 466(12): 2933-2939, December 2008.
9. Zehnder, Scott, Bledsoe, J. Gary and Aki Puryear, "The Effects of Screw Orientation in Severely Osteoporotic Bone: A Comparison with Locked Plating." *Clinical Biomechanics*, 24(7):589-594, August 2009.
10. Otto, Randall, Moed, Berton R. and J. Gary Bledsoe, "Biomechanical Comparison of Polyaxial-Type Locking Plates and a Fixed-Angle Locking Plate for Internal Fixation of Distal Femur Fractures." *Journal of Orthopaedic Trauma*, 23(9):640-644, October 2009.
11. Grisell, Margaret, Moed, Berton R., and J. Gary Bledsoe, "A Biomechanical Study of the Comparison of Proximal Screw Configurations in a Subtrochanteric Fracture Model." *Journal of Orthopaedic Trauma*, 24(6):359-363, June 2010.

12. Wallace, Maegan, Bledsoe, Gary, Moed, Berton and Scott Kaar, "Relationship of Cortical Thickness of the Proximal Humerus and Pullout Strength of a Locked Plate and Screw Construct." *Journal of Orthopaedic Trauma*, 26(4):222-225, April 2012. DOI: 10.1097/BOT.0b013e31822421f7
13. Grimshaw, Charles S., Bledsoe, Gary and Berton R. Moed, "Locked versus Standard Unlocked Plating of the Pubic Symphysis: A Cadaver Biomechanical Study." *Journal of Orthopaedic Trauma*, 26(7):414-421, July 2012. DOI: 10.1097/BOT.0b013e31822c83bd
14. Tabaie, Sean A., Bledsoe, J. Gary and Berton R. Moed, "Biomechanical Comparison of Standard Iliosacral Screw Fixation to Transsacral Locked Screw Fixation in a Type C Zone II Pelvic Fracture Model." *Journal of Orthopaedic Trauma*, 27(9):521-526, September 2013. DOI: 10.1097/BOT.0b013e3182781102
15. Ahmed, M, Young, BT, Bledsoe, G, Cutuk, A and SG Kaar, "Biomechanical Comparison of long head of biceps tenodesis with interference screw and biceps sling soft tissue techniques." *Arthroscopy*, 29(7):1157-63, July 2013. DOI: 10.1016/j.arthro.2013.04.001
16. Davis, Adrian T., Israel, Heidi, Cannada, Lisa K. and J. Gary Bledsoe, "A biomechanical Comparison of One-third Tubular Plates Versus Periarticular Plates for fixation of Osteoporotic Distal Fibula Fractures." *Journal of Orthopaedic Trauma*, 27(9), e201-e207, September 2013. DOI: 10.1097/BOT.0b013e318281a565
17. Cui, S., Bledsoe, J.G., Israel, H., Watson, J.T. and L.K. Cannada, "Locked plating of comminuted distal femur fractures: Does unlocked screw placement affect stability and failure?" *Journal of Orthopaedic Trauma*, 28(2):90-96, February 2014. DOI: 10.1097/BOT.0b013e31829f9504
18. Moed, B.R., O'Boynick, C.P. and J.G. Bledsoe, "Locked versus standard unlocked plating of the symphysis pubis in a Type-C pelvic injury: A cadaver biomechanical study." *Injury*, 45(4):748-751, April 2014. DOI: 10.1016/j.injury.2013.11.017
19. Growney Kalaf, E.A., Sell, S.A. and J.G. Bledsoe, "Developing a mechanical and chemical model of degeneration in young bovine lumbar intervertebral discs and reversing loss in mechanical function." *Journal of Spinal Disorders and Techniques*, 27(5): e168-e175, July 2014. DOI: 10.1097/BSD.0000000000000085
20. Sinatra, P.M., Jernick, M.L., Bledsoe, G. and S.G. Kaar, "No contribution of tension-reducing rotator cuff sutures on locking plate fixation in a 2-part proximal humerus fracture model." *Journal of Orthopaedic Trauma*, 28(8): 458-463, August 2014. DOI: 10.1097/BOT.0000000000000051
21. Salari, Pooria, Moed, Berton R., and Bledsoe, J. Gary, "Supplemental S1 fixation for type C pelvic ring injuries: biomechanical study of a long iliosacral versus a transsacral screw." *Journal of Orthopaedics and Traumatology*, 16(4) :293-300, December 2015, DOI: 10.1007/s10195-015-0357-8
22. Ebersol, G.M., Eckerle, P., Farrow, L.D., Cutuk, A., Bledsoe, J.G. and S.G. Kaar., "Anterior Cruciate Ligament Graft Isometry Is Affected by the Orientation of the Femoral Tunnel." *Journal of Knee Surgery*, 2015, DOI: 10.1055/s-0035-1554926
23. Growney Kalaf, E.A., Flores, R., Bledsoe, J.G. and S.A. Sell, "Characterization of Slow-Gelling Alginate Hydrogels for Intervertebral Disc Tissue-Engineering Applications." *Mater Sci Eng C Mater Biol Appl*, Jun; 63:198-210, 2016, DOI: 10.1016/j.msec.2016.02.067
24. Arvesen, J.E., Gill, S.W., Sinatra, P.M., Eng, M., Bledsoe, J.G. and S.G. Kaar, "Contribution of tension-reducing rotator cuff sutures in 3 part proximal humerus fractures." *Journal of Orthopaedic Trauma*, 2016, DOI: 10.1097/BOT.0000000000000575
25. Okoroafor, U.C., Saint-Preux, F., Gill, S.W., Bledsoe, G. and S.G. Kaar, "Nonanatomic Tibial Tunnel Placement for Single-Bundle Posterior Cruciate Ligament Reconstruction Leads to Greater Posterior Tibial Translation in a Biomechanical Model." *Arthroscopy: The Journal of Arthroscopic & Related Surgery*, 2016, DOI: 10.1016/j.arthro.2016.01.019

26. Jones, D.A., Cannada, L.K. and J.G. Bledsoe, "Are Hook Plates Advantageous Compared to Antiglide Plates for Vertical Shear Malleolar Fractures?" *Am J Orthop*, 45(3):E98-102, 2016.
27. Growney Kalaf, E.A., Pendyala, M., Bledsoe, J.G. and S.A. Sell, "Characterization and restoration of degenerated IVD function with an injectable, in situ gelling alginate hydrogel: An in vitro and ex vivo study." *Journal of the Mechanical Behavior of Biomedical Materials*, 2017, DOI: 10.1016/j.jmbbm.2017.05.014
28. Metz, R.M., Bledsoe, J.G. and B.R. Moed, "Does Posterior Fixation of Partially Unstable Open-Book Pelvic Ring Injuries Decrease Symphyseal Plate Failure? A Biomechanical Study." *Journal of Orthopaedic Trauma*, 2018, DOI: 10.1097/BOT.0000000000001083
29. Shakir, I., Israel, H., Bledsoe, G., Cannada, L., "Biomechanical Study of Olecranon Plate Fixation in Comminuted Osteoporotic Fracture Model: Locking Compression Plates vs. Dynamic Compression Plates." *Current Orthopaedic Practice*, 2018, DOI: 10.1097/BCO.0000000000000602
30. McNamara, A., Bledsoe, J.G. and Dirk Alander, "Biomechanical stability of various screw configurations in percutaneously instrumented lumbar burst fractures." *Journal of Spinal Disorders and Techniques*, Submitted, In Review.

REVIEWER RESPONSIBILITIES BY JOURNAL

Journal of Orthopaedic Trauma
 Journal of Biomechanical Engineering
 Journal of Osteoporosis and Physical Activity (Editorial Board Member)
 Journal of Biomedical Materials Research: Part A
 Medical Engineering and Physics
 Journal of Engineering Entrepreneurship
 PLOS ONE

PRESENTATIONS and CONFERENCE PROCEEDINGS

INVITED PRESENTATIONS

1. J. Gary Bledsoe. "The Effects of Mechanical Loading on Osteoblast-like Cells." Presented at the NSF Industry/University Center for Biosurfaces Meeting in Memphis, February 6-7, 1997.
2. J. Gary Bledsoe. "Functional Biomaterial Coatings: Where Do I Go from Here?" Presented at the UM/UT Joint Program Seminar Series, University of Memphis, Memphis, TN, February 25, 2005.
3. J. Gary Bledsoe. "Improving the Surface of Orthopaedic Implants: Undergrads Pursuing Novel Technologies." Presented at the Illinois Institute of Technology, Department of Biomedical Engineering Graduate Seminar Series, Chicago, IL, March 31, 2006.
4. J. Gary Bledsoe. "Biomedical Engineering History, Instrumentation, Research and Careers." St. Charles Community College, St. Charles, Missouri, Recurring Guest Lecture presented six times between September 28, 2012 and February, 21, 2014.
5. J. Gary Bledsoe. "From Washing Dishes to Winning a Nobel Prize, Undergraduate Researchers Change the World." Southeast Missouri State University, Cape Girardeau, Missouri, April 18, 2018.

CONFERENCE PROCEEDINGS (Presenter underlined; undergraduate participants denoted with *.)

1. Huang, Wei, McLaurine, Matt, Bledsoe, Gary and Michael R. T. Yen, "Morphometry of the Human Pulmonary Arterial and Venous Trees." Podium Presentation at the Annual Meeting of the Biomedical Engineering Society, Memphis, TN, October 21-24, 1993.

2. Huang, W., McLaurine, M., Bledsoe, G., Headrick, M. and R.T. Yen, "Morphometry of the Human Pulmonary Vasculature." Podium Presentation at the Annual Meeting of the Federation of American Societies for Experimental Biology, Atlanta, GA, 1995.
3. Bledsoe, J.G., Slack, S.M., Turitto, V.T. and J. Furgeson, "Expression of Tissue Factor by Rat Osteosarcoma Cells Adherent to Tissue-culture Polystyrene and Selected Orthopedic Biomaterials." Podium Presentation at the Annual Meeting of the American Chemical Society, San Francisco, CA, April 15-19, 1997.
4. Bledsoe, J.G. and S.M. Slack, "Expression of Tissue Factor by Rat Osteosarcoma Cells Adherent to Tissue-culture Polystyrene and Selected Orthopedic Biomaterials." Podium Presentation at the First Tennessee Conference on Biomedical Engineering, Memphis, TN, April 4-5, 1998.
5. Bledsoe, J. Gary and Steven M. Slack, "Cyclic Mechanical Strain Alters the Expression of Procoagulant Activity by Rat Osteosarcoma Cells cultured on Titanium Substrates." Presented at the First Joint Meeting of BMES and EMBS, Atlanta, GA, October 13-16, 1999.
6. Bledsoe, J. Gary, Willits, Rebecca K., Elmer, Lucas*, Strube, Chris* and Patricia Arauz*, "Tensile Properties of Randomly Oriented Collagen Gels of Varying Concentration." Presented at the Annual Meeting of the Biomedical Engineering Society, Durham, N.C., October 4-7, 2001.
7. J. Gary Bledsoe, "Determining the Rules: Applying Ethics in a Tissue Engineering Course." Podium Presentation at the Annual Meeting of the American Society of Engineering Education, Montreal, Quebec, Canada, June 16-19, 2002.
8. J. Gary Bledsoe, "Ethical Discussions in an Undergraduate Tissue Engineering Course." Podium Presentation at the 2nd Joint Conference of the IEEE Engineering in Medicine and Biology and the Biomedical Engineering Society. Houston, TX, October 2002.
9. Kelso, Bret G.*, Bledsoe, Gary and Rebecca K Willits, "Between the Sheets-Mechanical Properties at the Interface of Two Polymer Gels." Podium Presentation at 2003 Summer Bioengineering Conference, Key Biscayne, FL, June 25-29, 2003.
10. Kelso, B.*, Arauz, P.*, Bledsoe, J.G. and R. Kuntz Willits, "Fabricating Composite Hydrogels for Orthopedic Tissue Engineering Applications." Presented at the 2003 Annual Fall Meeting of the Biomedical Engineering Society, Nashville, TN, October 1-4, 2003.
11. Bledsoe, J. Gary and Rebecca K. Willits, "Interfacial Strength of Layered Composite Poly(ethylene glycol) Hydrogels." Presented at the 20th Annual Fall Meeting and Exposition of the Society for Biomaterials, Memphis, TN, April 2005.
12. Fissel, Brian, Moed, Berton R. and J. Gary Bledsoe, "Biomechanical Comparison of A 2 And 3 Proximal Screw Configured Antegrade Piriformis IM Nail With A Trochanteric Reconstruction Nail In An Unstable Subtrochanteric Fracture Model." Podium Presentation at the 2005 Annual Meeting of the Mid-America Orthopaedic Association, Amelia Island, FL April 2005.
13. Sridharan, M.*, Peterson, M.*, Kokenyesi, R. and G. Bledsoe, "Mechanical Properties of Mouse Fetal Membranes: Effect of Thrombospondin-2." Presented at the 2005 Annual Fall meeting of the Biomedical Engineering Society, Baltimore, MD, September 29-October 1, 2005.
14. Quigley, Kevin, Alander, Dirk and J. Gary Bledsoe, "An In-Vitro Biomechanical Investigation: Variable Positioning of LeopardTM Carbon Fiber Interbody Cages." Podium Presentation at the 2006 Annual Meeting of the Mid-America Orthopaedic Association, San Antonio, TX, April 19-23, 2006.

15. Grisell, Meg, Moed, Roy and Gary Bledsoe, "Biomechanical Study of the Comparison of Proximal Screw Configurations in a Subtrochanteric Fracture Model." Orthopaedic Research Society, Boca Raton, FL, February 11-14, 2007.
16. Lenarz, C.J., Bledsoe, J.G. and J.T. Watson, "Divergent Half Pin Frames: A Biomechanical Comparison to Traditional Ring Fixator Fixation." Podium Presentation at the 2007 Annual Meeting of the Mid-America Orthopaedic Association, Boca Raton, FL, April 11-15, 2007.
17. Grisell, M.K., Moed, B.R. and J.G. Bledsoe, "Biomechanical Comparison of Proximal Screw Construction, Subtrochanteric Fractures of the Femur." Podium Presentation at the Annual Meeting of the Mid-America Orthopaedic Association, Boca Raton, FL, April 11-15, 2007.
18. Phillips MT, Alander DH, Oliver D and JG Bledsoe, "Biomechanical Study of the Leopard Carbon Fiber Interbody Cage in Variable Positions under Shear Stress." Podium Presentation at the Annual Meeting of the Mid-America Orthopaedic Association, Boca Raton, FL, April 13, 2007.
19. Ghobadi, Comerón*, Patel, Harsh* and J. Gary Bledsoe, "Methods for Loading Multilevel Lumbar Spine Segments: Force vs. Displacement." Presented at the 2008 Annual Fall meeting of the Biomedical Engineering Society, St Louis, MO, October 1-4, 2008.
20. Zehnder, Scott W, Puryear, Aki S and JG Bledsoe, "The Effects of Screw Orientation in Severely Osteoporotic Bone: A comparison with locked plating." Podium Presentation at the Annual Meeting, Mid-America Orthopaedic Association, Amelia Island, FL, April 2009.
21. Otto, Randall J, Moed, Berton R and J. Gary Bledsoe, "Biomechanical Comparison of Polyaxial Type Locking Plates and a Fixed-Angle Locking Plate for Internal Fixation of Distal Femur Fractures." Podium Presentation at the Annual Meeting, Mid-America Orthopaedic Association, Amelia Island, FL, April 2009.
22. Brown, Emily* and J. Gary Bledsoe, "Biomechanical Properties of Formalin Fixed Lumbar Intervertebral Discs." 2009 Annual Fall meeting of the Biomedical Engineering Society, St. Louis, MO, October 7-10, 2009.
23. Mudd, Christopher T., Watson, J. Tracy and Gary Bledsoe, "Role of the Proximal Tibio-Fibular Joint and Interosseous Membrane on Lateral Tibial Plateau Fracture Stability: A Biomechanical Evaluation." Orthopaedic Trauma Association 25th Anniversary Annual Meeting, October 7-10, 2009.
24. Zehnder, Scott W., Bledsoe, J. Gary and Aki S. Puryear, "Screw Orientation and Locked plating in severely Osteoporotic Bone." Orthopaedic Trauma Association 25th Anniversary Annual Meeting, October 7-10, 2009.
25. Grisell, Margaret K., Moed, Berton R. and J. Gary Bledsoe, "Comparison of Trochanteric Nail Proximal Screw Configurations in a Subtrochanteric Fracture Model." Orthopaedic Trauma Association 25th Anniversary Annual Meeting, October 7-10, 2009.
26. Otto, Robert J., Bledsoe, J. Gary and J. Tracy Watson, "Circular External Fixator Frames Using Perpendicular versus Divergent Half-Pins: A Biomechanical Study." Podium Presentation at the Mid-America Orthopaedic Association, Austin, TX, April 21-25, 2010.
27. Bellard, Cody, Watson, J. Tracy and J. Gary Bledsoe, "SIGN Nail Versus Standard Stainless Locked Nail Using a Subtrochanteric Fracture Model: A Mechanical Comparison." Podium Presentation at the Mid-America Orthopaedic Association, Austin, TX, April 21-25, 2010.
28. Grimshaw, Charles S., Bledsoe, J. Gary (omitted from published abstract) and Berton R. Moed, "Cadaver Pelvic Biomechanical Study: Locked versus Standard Unlocked Plating of the Symphysis Pubis." Podium Presentation at the Mid-America Orthopaedic Association, Austin, TX, April 21-25, 2010.

29. Bledsoe, J. Gary, Buchheit, James*, Owen, Sean and Lisa Cannada, "Effect of Plate Size on the Stability of Surgically Repaired Humeri in Simulated Crutch Ambulation." Presented at the 2010 Annual Meeting of the Biomedical Engineering Society, Austin, TX, October 6-9, 2010.
30. Cannada, Lisa K., Watson, J. Tracy, Fahnhorst, Courtney B., Owen, Sean, Buchheit, James and J. Gary Bledsoe, "Immediate Weight Bearing After Fixation of Humeral Shaft Fractures with Small Fragment Hybrid Plating: A Clinical and Biomechanical Study." Podium Presentation at the Orthopaedic Trauma Association, Baltimore, MD, October 13-16, 2010.
31. Warlick, Bradley Q., Watson, J. Tracy and J. Gary Bledsoe, "Monolateral External Fixation Frames with Divergent Half Pins: A Biomechanical Study," Podium Presentation at the 29th Annual Meeting, Mid-America Orthopaedic Association, Tucson, AZ, April 6-10, 2011.
32. Davis, Adrian T., Cannada, Lisa K., Israel, Heidi and J. Gary Bledsoe, "A Biomechanical Comparison of Periarticular versus One-Third Tubular Plates for Fixation of Osteoporotic Distal Fibula Fractures." Podium Presentation at the 29th Annual Meeting, Mid-America Orthopaedic Association, Tucson, AZ, April 6-10, 2011.
33. O'Boynick, Christopher P., Bledsoe, J. Gary and Berton R. Moed, "Cadaver Pelvic Biomechanical Study: Locked versus Standard Unlocked Plating of the Symphysis Pubis in a Type-C Pelvic Injury Model." Presented at the 29th Annual Meeting, Mid-America Orthopaedic Association, Tucson, AZ, April 6-10, 2011.
34. Humphery, Mark P., Organ, Jason M., Bledsoe, J. Gary and Mackinnon, Katherine C., "What is the relationship between mandibular corpus cross-sectional geometry and molar microwear enamel surface texture?" Presented at the 80th Annual Meeting of the American Association of Physical Anthropologists, Minneapolis, MN, April 11-16, 2011.
35. Cardin, Rebecca and J. Gary Bledsoe, "An Annular Tear Model and the Effect on Intradiscal Pressure." Presented at the 2011 Annual Meeting of the Biomedical Engineering Society, Hartford, CT, October 12-15, 2011.
36. Tabaie, Sean A., Moed, Berton R. and J. Gary Bledsoe, "Comparison of Standard Iliosacral Screw Fixation to Trans-Sacral Locked Screw Fixation in a Type C-Zone II Pelvic Fracture Model." Podium Presentation at the 30th Annual Meeting at the Mid-America Orthopaedic Association, Bonita Springs, FL, April 18-22, 2012.
37. Nijssure, G*, Kalaf, E., Espinosa, G and JG Bledsoe, "Bovine Model for Degenerative Disc Disease in Lumbar Intervertebral Discs." Presented at the 2012 Annual Meeting of the Biomedical Engineering Society, Atlanta, GA, October 24-27, 2012.
38. Luetkemeyer, C.M*, Kalaf, E.A., Bledsoe, J.G. and S.A. Sell, "The compressive mechanical properties of PRGF-eluting candidate materials for a tissue engineered nucleus pulposus." Presented at the 2013 Annual Meeting of the Biomedical Engineering Society (BMES), Seattle, WA, September 25-28, 2013.
39. Growney Kalaf, Emily and J Bledsoe, "Height Restoration Therapy in Enzymatically Degraded Young Bovine Lumbar Intervertebral Discs." Presented at the 2013 Annual Meeting of the Biomedical Engineering Society (BMES), Seattle, WA, September 25-28, 2013.
40. Cui, Shari, Bledsoe, J. Gary, Israel, Heidi, Watson, J. Tracy and Lisa K. Cannada, "Locked Plating of Comminuted Distal Femur Fractures: Does Unlocked Screw Placement Affect Stability and Failure?" Podium Presentation at the Mid-America Orthopaedic Association, Amelia Island, FL, April 17-21 2013.

41. Ahmed, Mohammed M, Kaar, Scott G, Bledsoe, J. Gary and Adnan Cutuk, "Biomechanical Comparison of an All Soft-Tissue Technique vs. Interference Screw Fixation for Subpectoral Tenodesis of the Long Head of the Biceps." Podium Presentation at the Mid-America Orthopaedic Association, Amelia Island, FL, April 17-21 2013.
42. Jones, Daniel A, Cannada, Lisa K and J. Gary Bledsoe, "Are Hook Plates Advantageous Compared to Antiglides Plates for Vertical Shear Malleolar Fractures?" Podium Presentation at the Mid-America Orthopaedic Association, Amelia Island, FL, April 17-21 2013.
43. Traver J, Bledsoe G (omitted from conference abstract), Kaar S and LK Cannada, "Is the Axillary Nerve at Risk during a Deltoid-Splitting Approach?" Podium presentation at the American Academy of Orthopaedic Surgeons Meeting, New Orleans, LA, March 14, 2014.
44. Growney Kalaf, E.A.; Bledsoe, J.G.; Sell, S.A. "Intervertebral disc cellular response to platelet-rich plasma for alginate-based nucleus pulposus regeneration." Poster presentation at the Regenerative Medicine Workshop at Hilton Head, Hilton Head, SC, March 26-29, 2014.
45. Traver J, Bledsoe G (omitted from conference abstract), Kaar S and LK Cannada, "Is the Axillary Nerve at Risk during a Deltoid-Splitting Approach for Proximal Humerus Fractures?" Podium presentation at the Mid America Orthopaedic Association, San Antonio, TX, April 26, 2014.
46. Solari, P, Moed, BR and JG Bledsoe, "Supplemental S1 Fixation for Type-C Pelvic Fracture: Biomechanical Study of Long Iliosacral vs. Trans-sacral Screw." Podium presentation at the Mid America Orthopaedic Association, San Antonio, TX, April 26, 2014.
47. Ebersole, Gregg M, Eckerle, Paul, Farrow, Lutul D., Cutuk, Adnan, Bledsoe, J. Gary and Scott G. Kaar, "Anterior Cruciate Ligament Graft Isometry is Affected by the Orientation of the Femoral Tunnel." Podium presentation at the Mid America Orthopaedic Association, San Antonio, TX, April 26, 2014.
48. McNamara, Andrew R, Bledsoe, J. Gary, and Dirk H. Alander, "Biomechanical Stability of Uniplanar, Monoaxial, and Polyaxial Pedicle Screw Configurations in a Porcine Single-Level Lumbar Burst Fracture Model." Podium presentation at the Mid America Orthopaedic Association, San Antonio, TX, April 26, 2014.
49. Growney Kalaf, E.A., Bledsoe, J.G. and S.A. Sell, "The effect of platelet-rich plasma on intervertebral disc cells." Podium presentation at the SLU Graduate Student Association Research Symposium, April 11, 2014.
50. Growney Kalaf, Emily, Feltz, Kevin*, Temofeew, Niko*, Bledsoe, J. Gary and Scott Sell, "Incorporation of Intervertebral Disc Cells into Candidate Materials for Nucleus Pulposus Regeneration." Poster Presentation at the Biomedical Engineering Society, San Antonio, TX, October 22-25, 2014.
51. Jacobsen, K.A., Whiting, J.B., Israel H., Bledsoe, J.G. (omitted from conference abstract) and Cannada, L.K., "A Comparison of Standard vs. MotionLoc Diaphyseal Screws Following Periprosthetic Fracture Fixation." Podium presentation at the Mid America Orthopaedic Association, Hilton Head Island, SC, April 22-26, 2015.
52. Busel, G.A., Bledsoe, J.G. (omitted from conference abstract) and Watson, J.T., "Plating of Pilon Fractures Based on the Orientation of the Fibular Shaft Component: A Biomechanical Study Evaluating Plate Stiffness in Cadaveric Fracture Models." Podium presentation at the Mid America Orthopaedic Association, Hilton Head Island, SC, April 22-26, 2015.

53. Growney Kalaf, E.A., Flores, R., Feltz, K.P.*, Bledsoe, J.G. and S.A. Sell, "Design and Characterization of an Injectable Scaffold with Controlled Gelation for Nucleus Pulposus Therapy." Poster presentation at 2015 4th TERMIS World Congress, Boston, MA, September 8-11, 2015.
54. Zustiak, S. and J.G. Bledsoe, "Encouraging Curiosity, Connections and the Creation of Value in a Materials/Biomaterials Sequence: Part II Biomaterials." Poster presentation at the Biomedical Engineering Society 2015 Annual Meeting, Tampa, Florida, October 7-10, 2015.
55. Bledsoe, J.G. and S. Zustiak, "Encouraging Curiosity, Connections and the Creation of Value in a Materials/Biomaterials Sequence: Part I Materials Science." Poster presentation at the Biomedical Engineering Society 2015 Annual Meeting, Tampa, Florida, October 7-10, 2015.
56. Okoroafor, U.C., Saint-Preux, F., Gill, S.W., Bledsoe, J.G. and S.G. Kaar, "Does Proximal-Distal Tibial Tunnel Placement for PCL Reconstruction Matter?", Podium presentation at the Mid America Orthopaedic Association, Bonita Springs, FL, April 13-16, 2016.
57. Zustiak, S. and J.G. Bledsoe, "Encouraging Curiosity, Connections and the Creation of Value in a Materials/Biomaterials Sequence: Part II Biomaterials." Poster presentation at the Biomedical Engineering Society 2016 Annual Meeting, Minneapolis, MN, October 5-8, 2016
58. Bledsoe, J.G. and S. Zustiak, "Encouraging Curiosity, Connections and the Creation of Value in a Materials/Biomaterials Sequence: Part I Materials Science." Podium presentation at the Biomedical Engineering Society 2016 Annual Meeting, Minneapolis, MN, October 5-8, 2016.
59. Patel, J.H., Moed, B.R. and J.G. Bledsoe, "One vs. Two Screw Fixation for Medial Malleolus Fractures: Evaluation Using a More Realistic Biomechanical Model." Poster presentation at the Mid America Orthopaedic Association, Amelia Island, FL, April 19-23, 2017.
60. Sacksteder, N.J., Alander, D.H. and J.G. Bledsoe, "What Are the Distractive Forces Applied During Percutaneous Reduction of a Single Level Lumbar Spine Burst Fracture?" Poster presentation at the Mid America Orthopaedic Association, San Antonio, TX, April 18-22, 2018.
61. Kopydlowski, N.J., Bledsoe, J.G. and J.T. Watson, "Hoffa Fracture Fixation: Comparison of Lag Screws and Lag Screws Plus Anti-Glide Plate Fixation." Poster presentation at the Mid America Orthopaedic Association, San Antonio, TX, April 18-22, 2018.

PATENTS (Undergraduate Participation denoted with *.)

1. Bledsoe, John Gary, Moed, Berton Roy and Dongfa Li, 2012. Method for controlling phase transformation temperature in metal alloy of a device. US patent 8,216,398 B2. Filed May 17, 2010, and issued July 10, 2012.
2. Bledsoe, John Gary, Moed, Berton Roy, Condoor, Sridhar, Shields, Kevin Anthony*, Alford, Timothy Patrick* and Robert J Miller IV*, 2012. Intramedullary nail device for repairing long bone. European patent EP 1 804 698 B1. Filed April, 04, 2004, and issued April 07, 2012.

RESEARCH FUNDING (Primary Investigator Underlined.)

1. J. Gary Bledsoe, “Surface Tissue Factor Activity of Rat Calvarial Osteoblasts: Effect of Cyclic Mechanical Strain.” Beaumont Faculty Development Fund of Saint Louis University, February 2000. (\$5,000.00) **FUNDED**
2. J. Gary Bledsoe, “Comparison of a 3 Proximal Screw Femoral Intramedullary Nail with a Reconstruction Nail in a Subtrochanteric Fracture Model.” DePuy ACE, Inc., October 2003 (\$20,454.00) **FUNDED**
3. J. Gary Bledsoe, “Sticking it to Medical Implants: Is Polymer Coated Titanium Strong Enough?” Summer Research Award of Saint Louis University, January 2004 (\$7,759.00) **FUNDED**
4. J. Gary Bledsoe, “An In-Vitro Biomechanical Investigation: Variable Positioning of Leopard™ Carbon Fiber Interbody Cages.” DePuy Spine, Inc., January 2005 (\$15,000.00) **FUNDED**
5. J. Gary Bledsoe, “Effects of Annular Tears on Intradiscal Pressure.” DePuy Spine, Inc., November 2009 (\$26,861.25) **FUNDED**
6. Daniel E. Warren, J. Gary Bledsoe and Jason Organ, “Mechanical Properties of Bone and Shell from Overwintering Turtles.” SLU Presidential Research Fund, January 2012 (\$24,775.00) **FUNDED**
7. J. Gary Bledsoe and Berton R. Moed, “Biomechanical Comparison of Iliosacral Screw to Transsacral Screw Fixation in a Type C - Zone II Pelvic Fracture Model.” AO Foundation., July 2014 (\$62,446.00) **FUNDED**

PROPOSAL REVIEWS AND PANELS

National Science Foundation
Graduate Research Fellowship Program

Saint Louis University
Beaumont Faculty Development Fund
Presidential Research Fund

POSTDOCTORAL FELLOWS SUPERVISED

1. Dongfa Li, Ph.D., “Method for controlling phase transformation temperature in metal alloy of a device.” 2006-2008.

GRADUATE STUDENTS MENTORED (* Primary Mentor, ** Project Mentor, *** Reader/Committee member)

1. Paul M. Halgren, M.S. Dentistry, “The Influence of Mandibular Deformation on Chin Form,” 2005.**
2. Cris W. C. Liu, M.S. Biomedical Engineering, “Mechanical Properties of Polyethylene Glycol Diacrylate,” 2007.*
3. Jonathan S. Likarish, M.S. Biomedical Engineering, “A Method for quantifying Load Redistributions During Compressive And Torsional Testing of the Lumbar Spine,” 2010*
4. James Buccheit, M.S. Biomedical Engineering, “How Plate Size Affects Humeral Stability,” 2010.*
5. Rebecca Cardin, M.S. Biomedical Engineering, “Design and Validation of a Radial Tear Model,” 2011.*
6. Megan Fessenden, M.S. Biomedical Engineering, “Springs to Stabilize Muscle Force in Spine,” 2011.*

7. Colleen S. Steinkoenig, M.S. Anatomy, "A comparison of mechanical properties of the human knee ligaments with differing preservation techniques," 2011.**
8. Lisa M. Moore, M.S. Biomedical Engineering, "AFM Analysis of Collagenous Tissue," 2012.***
9. Emily Growney Kalaf, M.S. Engineering, "Enzymatic Degradation and Subsequent Nucleus Pulposus Replacement Therapy in Young Bovine Lumbar Intervertebral Discs," 2013.*
10. Gabriela Espinosa, M.S. Engineering, "The effects of extracellular matrix protein insufficiency and treatment on the stiffness of arterial smooth muscle cells," 2013.***
11. Rhys James, M.S. Engineering, "The critical buckling pressure of elastin and fibulin-5 mouse carotid arteries," 2013.***
12. Hillary Griffith, M.S. Engineering, "Therapeutic ion additions to borate bioactive glass to increase vascular endothelial growth factor production for wound healing," 2013.*
13. Aditya Nath, M.S. Engineering, "Simulation and analysis of elastin haploinsufficiency in a developing mouse aorta using a constrained mixture model," 2014.***
14. Emily G. Kalaf, Ph.D. Engineering, "Response of Nucleus Pulposus Cells to Various Stimuli," 2017.***
15. Sheila Buswell, M.S. Engineering, "FEA Model of Degeneration of a Human Intervertebral Disc," 2015.*
16. Keval Shah, M.S. Engineering, "Hydrogels for Drug Delivery," 2015.***
17. Reynaldo Flores, M.S. Engineering, "The macrophage inflammatory response to composite materials of bioactive glass and polycaprolactone," 2015.***
18. Prashanth Somasundaram, M.S. Engineering, "Effects of Electrospun Bioglass on Living Cells," 2015.***
19. Ajit George, Ph.D. Engineering, "Development of a Methodology for Visualization and Geometric Characterization of Myelinated White Matter Neural Fibers," 2015.*
20. Dean Odegard, M.S. Biology, "The Effects of Anoxic Submergence on Bone Mechanical Properties in Painted Turtles," 2015.**
21. Stephen W. Gill, M.S. Engineering, "Biomechanical Assessment of the Osteoporotic Cadaver Model for Use in Evaluating Sacral Fracture Fixation Methods." 2016.*
22. Chris Storer, M.S. Anatomy, "Fracture Patterns in the Femur from Blunt Force Trauma." 2017.**
23. Gabriella N. Figueroa, M.S. Anatomy, "The Effect of Bone Density on Fracture Patterns in Lateral Acute Ankle Injuries." 2017.**
24. Alexandria Wellman, M.S. Anatomy, "Bone Density and Fracture Patterns in the Female Humerus." 2017.**
25. Katherine Hixon, Ph.D. Engineering, "Cryogel structures for bone regeneration," In Progress.***
26. Shwetang Patel, M.S. Engineering, "Device for Recreation of *in vitro* IVD Conditions." In Progress.*
27. Aaron Memar, M.S. Anatomy, "Effect of Preservation Methods on the Mechanical Properties of Bone." In Progress.**

ORTHOPAEDIC SURGERY RESIDENTS MENTORED

1. Brian Fissel, MD, "Biomechanical Comparison of A 2 And 3 Proximal Screw Configured Antegrade Piriformis IM Nail With A Trochanteric Reconstruction Nail In An Unstable Subtrochanteric Fracture Model," 2005.
2. Jason Joice, MD, "Anti-Fouling Coatings for Titanium: Interfacial Strength of Polyethylene Glycol," 2005.
3. Kevin Quigley, MD, "An In-Vitro Biomechanical Investigation: Variable Positioning of Leopard™ Carbon Fiber Interbody Cages," 2005.
4. Chris Lenarz, MD, "Circular External Fixation Frames with Divergent Half Pins: A Biomechanical Study," 2006.
5. Matthew Phillips, MD, "Investigation of a Realistic Model of the Spine in Fusion Cage Evaluations," 2006.
6. Margaret Grisell, MD, "A Biomechanical Study of the Comparison of Proximal Screw Configurations in a Subtrochanteric Fracture Model," 2006.
7. Scott Zehnder, MD, "The Effects of Screw Orientation in Severely Osteoporotic Bone: A comparison with locked plating," 2007.
8. Randall Otto, MD, "Biomechanical Comparison of Polyaxial-Type Locking Plates and a Fixed-Angle Locking Plate for Internal Fixation of Distal Femur Fractures," 2007.
9. David Ajibade, MD, "A Biomechanical Analysis of Variable Interbody Cage Positioning on Adjacent Intervertebral Levels," 2007.
10. Sean Owen, MD, "Humeral Stability in Crutch Walking: Effect of Plate Size," 2007.
11. Chris Mudd, MD, "Role of the Proximal Tibio-Fibular Joint and Interosseous Membrane on Lateral Tibial Plateau Fracture Stability: A Biomechanical Evaluation," 2008.
12. Cody Bellard, MD, "SIGN Nail Versus Standard Stainless Locked Nail Using a Subtrochanteric Fracture Model: A Mechanical Comparison," 2008.
13. Robert Otto, MD, "Circular External Fixator Frames Using Perpendicular versus Divergent Half-Pins: A Biomechanical Study," 2009.
14. Charles Grimshaw, MD, "Cadaver Pelvic Biomechanical Study: Locked versus Standard Unlocked Plating of the Symphysis Pubis," 2009.
15. Bradley Warlick, MD, "Monolateral External Fixation Frames with Divergent Half Pins: A Biomechanical Study," 2010.
16. Adrian Davis, MD, "A Biomechanical Comparison of Periarticular versus One-Third Tubular Plates for Fixation of Osteoporotic Distal Fibula Fractures," 2010.
17. Chris O'Boynick, MD, "Cadaver Pelvic Biomechanical Study: Locked versus Standard Unlocked Plating of the Symphysis Pubis in a Type-C Pelvic Injury Model," 2010.
18. Meghan Wallace, MD, "Relationship of Cortical Thickness of the Proximal Humerus and Pullout Strength of a Locked Plate and Screw Construct," 2010.
19. Sean Tabaie, MD, "Comparison of Standard Iliosacral Screw Fixation to Trans-Sacral Locked Screw Fixation in a Type C-Zone II Pelvic Fracture Model," 2011.

20. Shari Cui, MD, "Locked Plating of Comminuted Distal Femur Fractures: Does Unlocked Screw Placement Affect Stability and Failure?" 2011.
21. Mohammed Ahmed, MD, "Biomechanical Comparison of an All Soft-Tissue Technique vs. Interference Screw Fixation for Subpectoral Tenodesis of the Long Head of the Biceps," 2012.
22. Phillip Sinatra, MD, "No contribution of tension-reducing rotator cuff sutures on locking plate fixation in a 2-part proximal humerus fracture model," 2012.
23. Dan Jones, MD, "Are Hook Plates Advantageous Compared to Antiglides Plates for Vertical Shear Malleolar Fractures?" 2012.
24. Greg Ebersol, MD, "ACL Graft Isometry is Affected by Orientation of the Femoral Tunnel," 2013.
25. Andrew McNamara, MD, "Biomechanical Stability of Mono and Polyaxial Pedicle Screw Configurations in a Porcine Single Level Burst Fracture Model," 2013.
26. Pooria Salari, MD, "Biomechanical Comparison of Standard Iliosacral Screw Fixation to Unlocked Transsacral Screw Fixation in a Type C-Zone II Pelvic Fracture Model," 2013.
27. Jessica Traver, MD, "Is the Axillary Nerve at Risk During a Deltoid Splitting Approach for Proximal Humerus Fractures?" 2013.
28. Gene Busel, MD, "Plating of Pilon Fractures Based on the Orientation of the Fibular Shaft Component: A Biomechanical Evaluation of Plate Stiffness in Cadaveric Fracture Models," 2014.
29. Kimberly Jacobsen, MD, "Periprosthetic Distal Femur Fractures: Motionloc vs. Traditional Locking Screws," 2014.
30. Irshad Shakir, MD, "Biomechanical Study of Olecranon Plate Fixation in Comminuted Osteoporotic Fracture Model: Locking Compression Plates vs. Dynamic Compression Plates," 2014.
31. Scott Vizzi, MD, "The External Rotation Ankle Fracture: Is Single Screw Fixation of Medial Malleolus Fracture Enough?" 2014.
32. John Arvesen, MD, "Contribution of Tension-reducing Rotator Cuff Sutures on Plate Fixation in 4-part Proximal Humerus Fractures," 2015.
33. Ugochi Okoroafor, MD, "Effects of Tibial Tunnel Placement on PCL Reconstruction," 2015.
34. Stephen Plachta, MD, "Dynamization Potential of Circular External Fixation Frames with Divergent Struts," 2015.
35. Thiran Udawatta, MD, "The Effect of PCL Injury Grade on Tibiofemoral Joint Loading," 2016.
36. Jay Patel, MD, "Evaluating a More Realistic Ankle Fracture Model," 2016.
37. Nickolas J. Sacksteder, MD, "What are the distractive forces applied by percutaneous reduction of a single level lumbar spine burst fracture?" 2016.
38. Robert M. Corey, MD, "Biomechanical Evaluation of Medial Malleolus Fractures Treated with Headless Compression Screws," 2016.
39. Rachelle M. Metz, MD, "Does Posterior Fixation of Partially Unstable Open-Book Pelvic Ring Injuries Decrease Symphyseal Plate Failure? A Biomechanical Study." 2017.

40. Derly O. Cuellar, MD, "Hybrid Screw Fixation for Femoral Neck Fractures: Does it prevent mechanical Failure?" 2017.
41. Nate J. Kopydlowski, MD, "Hoffa Fracture Fixation: Comparison of Lag Screws and Lag Screws Plus Anti-Glide Plate Fixation." 2017.
42. John Capelle, MD, "Instrumentation-free Intra-articular Proximal Phalanx Fixation." In Progress.
43. Philip Shaheen, MD, "Transcuneiform Screw Fixation in Lisfranc Injuries." In Progress.

SERVICE ACTIVITIES

BME Faculty Search Committee (for BME chair, 2001, 2002, committee chair 2003)

SLU 2000 New Faculty Positions Review Committee, member 2000

Science Fair Judge at University City Middle School, February 2000

Wildwood Park Neighborhood Association

 Neighborhood Watch Volunteer 1999–**Present**

 Secretary/Treasurer 2003–2007.

Summer Research Award, Review Committee Member 2002

Calculus Coordinating Committee, member 2001-2003

Parks Faculty Affairs Committee, member 2000-2003

Biology Faculty Search Committee, member 2001

Parks Academic Affairs Committee, member 2001-2003, Chair 2001-2003

Parks Assessment Council, member 2002

Habitat for Humanity, volunteer 2002–2007

Alpha Chi Honor Society, Sponsor, 2003–2006

Orthopedic Surgery Research Committee, BME representative 2003–**Present**

Parks College of Engineering, Aviation and Technology Executive Committee (Secretary, Fall 2003; Vice-Chair, Spring 2004; Parliamentarian, 2004- 2005; Chair, 2005-2006, 2009-2010)

Reviewer, Journal of Orthopaedic Trauma, 2004–**Present**

SLU Undergraduate Initiatives Committee, 2005-2006

Center for Orthopaedic Biomechanics and Related Applications, Associate Director, 2006–**Present**

Sigma Xi Poster Competition Judge, 2006

Saint Louis University Board of Graduate Studies, 2006-2010

Parks College of Engineering, Aviation and Technology Assessment Coordinator 2006-2009

SLU Integrated Advising System Leadership Committee, 2007-2010

 Communication Sub-committee, 2007-2010

Aviation Science Department, Department Chairperson Search Committee, Chair 2007-2008

BMES Annual Meeting Planning Committee (for 2008 meeting in St Louis) 2006-2008

Higher Learning Commission Criterion 4 Subcommittee (at SLU) 2009-2012

Parks College of Engineering, Aviation and Technology, Rank and Tenure Committee 2009-2014, Chair, 2015-

Present

Faculty Senator, 2009-2016

SLU Chat Volunteer, 2010-2012

Invited Lecturer in SLU Introduction to Helping Professions, 2010-2014

Invited Lecturer at St Charles Community College, 2012-2014

Biomedical Engineering Council of Chairs, 2012-2014, 2016-**Present**

Biomedical Engineering Department Faculty Search Committee, Chair, 2011-2012, 2013-2014, 2015

Aerospace and Mechanical and Biomedical Engineering Joint Faculty Search Committee, Chair, 2012-2014

Biomedical Engineering Department Chairperson Search Committee, 2013-2014

Faculty Senate Academic Affairs Committee, 2013-2014

Parks College of Engineering, Aviation and Technology, Academic Affairs Committee, 2012-2015

Committee A of AAUP SLU Chapter, 2014-**Present**

Faculty Senate Professional Relations Committee, 2014-**Present**

Reviewer for PLOS ONE, 2015-**Present**

BMES 2015 Annual Meeting Reviewer: Biomechanics, Engineering Education, and Tissue Engineering Tracks

BMES 2015 Annual Meeting Platform Session Chair: Biomechanics, Injury II: Spine