BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: David G Simpson, Ph.D.

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Associate Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Ohio University; Athens, OH.	B.S.	1986	Human Nutrition
Northwestern University; Chicago, IL	Ph.D.	1991	Cell, Molecular, & Structural Biology
University of South Carolina School of Medicine; Columbia SC. (NIH-NRSA)	Post Doc	1991-1994	Dynamics of the Cardiac Cytoskeleton
University of South Carolina School of Medicine; Columbia SC. (NIH-NRSA)	Post-Doc	1995-1997	Dynamics of Cardiac Extracellular Matrix

A. Personal Statement

I have worked, and published extensively (50+ manuscripts) in a wide range of areas specifically concerning the electrospinning of natural proteins, including collagen and a variety of synthetic polymers. This work has been directed at the development of tissue engineering scaffolds designed to promote tissue regeneration. Of these publications, 1 exceeds 3,000 citations, this study was the first publication to report the electrospinning of collagen. Of the remaining electrospinning publications, 2 exceed 1,400 citations and 12 others exceed 300 citations. In the course of this work I have developed expertise in defining how the distribution of fibers modulates the biological and material properties of tissue engineering scaffolds. This research has resulted in 9 US Patents, several International Patents and 3 start-up companies through the VCU Intellectual Property Foundation. This patent portfolio includes the very first patent directed at the process and products associated with electrospun collagen as well as various blends of collagen, other natural proteins and synthetic polymers. A subset of this portfolio has been successfully transitioned to St. Teresa Medical Inc., a VCU start-up company devoted to producing a high performance hemostatic bandage. The first hemostatic bandage covered by my patent portfolio has completed 3 clinical trials, is presently approved for us in New Zealand and has achieved CE Marking in the European Union and will be launched in the fall of 2019 for sale in that jurisdiction.

B. Positions and Honors

2018	VCU Chapter of National Academy of Inventors
2014	Billy R Martin Innovation Award, Virginia Commonwealth University Office of Technology Transfer. *Fastclot Hemostatic Technology Platform*
2000-present	VCU School of Medicine, Associate Professor with tenure Department of Anatomy and Neurobiology
1998-1999	VCU School of Medicine, Assistant Professor Department of Anatomy and Neurobiology
1995-1997	Univ. South Carolina School of Medicine - AHA Post-Doctoral Fellow
1991-1994	Univ. South Carolina School of Medicine - NRSA Post-Doctoral Fellow
1985-1991	Northwestern Univ. Medical School - Lucille P. Markey Pre-Doctoral Fellow
1984-1985	Ohio University College of Health & Human Services -Outstanding Senior Award: Human Nutrition and Food Service -Phi Upsilon Omicron Scholarship Senior Award

C. Contributions to Science

Career citations 19,266 Google Scholar H-Index 61

1. Grey CP and Simpson DG. Frontal Cross sectioning: an improved protocol for sectioning large areas of fibrous scaffolds. Journal of NanoMaterials. 4, 2015.
2. Simon, S, Grey CP, Massenzo, T, Simpson DG and Longest PW. . Exploring the efficacy of cyclic vs. static aspiration in a cerebral thrombectomy model: An initial proof of concept study. Journal of NeuroInterventional Surgery doi:10.1136/neurintsurg-2013-010941
3. Grey CP, Newton ST, Bowlin GL, Haas TW, Simpson, DG. Gradient fiber electrospinning of layered scaffolds using controlled transitions in fiber diameter. Biomaterials 34(21) 4993-5006 (2013).
4. Colello RJ, Chow WN, Bigbee JW, Lin C, Dalton D, Brown D, Jha, BS, Mathern BE, Kangmin DL, Simpson, DG. The incorporation of growth factors and chondroitinase ABC into electrospun scaffolds to promote axon regrowth. Journal of Tissue Engineering and Regenerative Medicine. (2013). doi:10.1002/term.1805
5. McClure MJ, Garg K, Simpson DG, Ryan JJ, Sell SA, Bowlin GL. The influence of platelet rich plasma on myogenic differentiation. Journal of Tissue Engineering and Regenerative Medicine. (2013). doi: 10.1002/term.1755
6. Madurantakam PA, Rodriguez IA, Beckman MJ, Simpson DG, and Bowlin GL. Evaluation of biological activity of bone morphogenetic proteins on exposure to commonly used electrospinning solvents. J Bioactive and Compatible Polymers 26(6)578-589 (2011).
7. McClure MJ, Simpson DG and GL Bowlin. Tri-layered vascular grafts composed of polycaprolactone, elastin, collagen and silk: Optimization of graft properties. J Mechanical Behavior of Biomedical Materials 10:48-61 (2012).
8. McClure M, Sell SA, Simpson DG, Walpoth BH and Bowlin GL. Tri-layered electrospinning to mimic native arterial architecture using polycaprolactone, elastin and collagen: A preliminary study. J Vis Exp (47)e2084 DOI 10.3791/2084 (2011).
9. McClure M, Sell SA, Simpson DG and GL Bowlin. The use of air-flow impedance to control fiber deposition patterns during electrospinning. Biomaterials. 33(3)771-779 (2012).
10. Wolf PS, Sell SA, Ericksen JJ, Simpson DG and GL Bowlin. The creation of electrospun nanofibers from platelet rich plasma. J of Tissue Science and Engineering. 2(2)1-7 doi:10.4172/2157-7552.1000107. (2011).
11. Sell SA, Wolfe PS, Ericksen JJ, Simpson DG and GL Bowlin. Incorporating platelet-rich plasma into electrospun scaffolds for tissue engineering applications. Tissue Engineering Part A 17(21-22)2723-2737 doi:10.1089/ten.tea.2010.0663 (2011)
12. Jha BS, Ayres CE, Bowman JR, Telemeco TA, Bowlin GL and DG Simpson. Electrospun collagen: a tissue engineering scaffold with unique functional properties in a wide variety of applications. J of Nanomaterials. doi:10.1155/2011/348268 (2011)

13. Sell SA, McClure MJ Ayres CE, Simpson DG and GL Bowlin. Preliminary Investigation of airgap electrospun silk-fibroin-based structures for ligament analogue engineering. J. Mater. Sci. Mater.in Med. J of Biomaterials Sci Polymer ed. 22(10)1253-1273 (2011).
14. Jha BS, Colello RJ Bowman JR, Sell SA, Lee KD, Bigbee JW, Bowlin GL, Chow WN, Mathern BE, and Simpson. Two pole electrospinning: Fabrication of highly aligned 3D scaffolds for nerve reconstruction. Acta Biomaterials 7:203-215 (2011).
15. McClure MJ, Sell SA, Simpson DG, Walpoth BH and Bowlin GL. A three layered electrospun matrix to mimic native arterial architecture using PCL, elastin and collagen. A preliminary study. Acta Biomaterials. 6:2422-2433 (2010).
16. Rothwell, SW, Settle T, Wallace S, Dorsey J, Simpson DG, Janmey P, and Sawyer E. The long term response of swine after two exposures to a salmon thrombin and fibrinogen hemostatic bandage. Biologicals 38(6):619-628 (2010).
17. Madurantakam PA, Rodriguez IA, Cost, CP, Viswanathan R, Simpson DG, Beckman MJ, Moon PC and Bowlin GL. Multiple factor interactions in the biomimetic mineralization of electrospun scaffolds. Biomaterials 30:5456-5464 (2009).
18. McClure MJ, Sell SA, Simpson DG and GL Bowlin. Electrospun polydioxanone, elastin and collagen vascular scaffolds: Uniaxial Cyclic Distension. JEFF 4(2)18-25 (2009).
19. McClure MJ, Sell SA, Ayres CA, Simpson DG, Bowlin GL. Electrospinning aligned and random polydioxanone polycaprolactone silk fibroin blended scaffolds: geometry for a vascular matrix. Biomedical materials. 4:1-13(2009).
20. Rothwell SW, Sawyer E, Flournoy WS, Settle T, Simpson D, Cadd G, Janmey P, White C, and KA Szabo. Wound healing and the immune response in swine treated with a hemostatic bandage composed of salmon thrombin and fibrinogen. J. Mater. Sci. Mater. Med. 20:2155-2166 (2009).
21. Sell, AS, Francis MP, Garg K, McClure MJ, Simpson, DG and GL Bowlin. Cross-linking methods for electrospun fibrinogen scaffolds for tissue engineering applications. Biomedical Materials 3:(2008).
22. Newton D, Mahajan R, Ayres CE, Bowman JR, Bowlin GL, and DG Simpson. Regulation of Material Properties in Electrospun Scaffolds: Role of Cross-linking and Fiber Tertiary Structure. Acta Biomaterials 5:1:518-529 (2009).
23. McManus MC, Sell SA, Bowen WC, Koo HP, Simpson DG, and GL Bowlin. Electrospun fibrinogen-polydioxanone composite matrix: Potential for in situ urologic tissue engineering. JEFF 3:2:12-21 (2008).
24. Ayres CE, Bowlin GL, Pizinger R, Taylor LT, Keen CA and DG Simpson. Incremental Changes in Anisotropy induce Incremental Changes in the material Properties of Electrospun Scaffolds. Acta Biomaterials 3(5):651-661 (2007).
25. Manis AE, Bowman JR, Bowlin GL and DG Simpson. Electrospun Nitrocellulose and Nylon: Design and Fabrication of Novel High Performance Platforms Protein Blotting Applications. Journal of Biological Engineering 1:2 (2007).
26. Ayres CE, Shekhar Jha B., Meredith H, Bowman JR, Bowlin GL, Henderson SC, and DG Simpson. Measuring Fiber Alignment in Electrospun Scaffolds: A User's Guide to the 2D Fast Fourier Transform Approach. J of Biomaterials Science Polymer Edition. 19:5 603-621 (2008).
27. McManus M, Boland E, Sell S, Bowen W, Koo H, Simpson DG and GL Bowlin. Electrospun nanofiber fibrinogen for urinary tract tissue reconstruction. Biomed. Materials. 2:257-262 (2007).
28. Sell S, Barnes C, Simpson DG, and GL Bowlin. Scaffold permeability as a means to determine fiber diameter and pore size of electrospun fibrinogen. J Biomed Mater Res A. 1:2; 1-11 (2008).
29. Barnes CP, Smith MJ, Bowlin GL, Sell SA, Tang T, Matthews JA, Simpson DG and J Nimtz. Feasibility of electrospinning the globular proteins hemogloblin and myoglobin. J of Engineered Fibers and Fabrics 1:2:16-28. (2006).
30. Smith MJ, McClure MJ, Sell SA, Barnes CP, Walpoth BH, Simpson DG and GL Bowlin. Suture-reinforced electrospun polydioxanone – elastin small-diameter tubes for use in vascular tissue engineering: a feasibility study. Acta Biomaterialia, 3(5):651-661 (2008).
31. McManus MC, Boland ED, Simpson DG, Barnes CP, and GL Bowlin. Electrospun fibrinogen: Feasibility as a tissue engineering scaffold in a rat cell culture model. J Biomed Mater Res A. 21;81A(2):299-309 (2007).

32. Chow W, Simpson DG, Bigbee JW, and RJ Collelo. Evaluating neuronal and glial growth on electrospun polarized matrices: bridging the gap in percussive spinal cord injuries. Neuron Glia Biology 3(2):119-126 (2007).
33. Barnes CP, Pemble CW, Brand DD, Simpson DG, and GL Bowlin. Cross-linking Electrospun Type II Collagen Tissue Engineering Scaffolds with Carbodiimide in Ethanol. Tissue Engineering 13(7):1593-1605. (2007).
34. Ayres CE, Bowlin GL, Henderson SC, Taylor L, Schultz J, Alexander JK, Telemeco TA, and DG. Simpson. Modulation of Anisotropy in Electrospun Tissue Engineering Scaffolds: Analysis of Fiber Alignment by the Fast Fourier Transform. Biomaterials 27:32:5524-5534. (2006).
35. McManus MC, Boland ED, Koo HP, Barnes CP, Pawlowski KJ, Wnek GE, Simpson, DG and GL Bowlin. Mechanical properties of electrospun fibrinogen structures. Acta Biomaterialia 2:1:19-28. (2006).
36. Ramdhanie LI, Barnes CP, Simpson DG, Wnek GE, and GL Bowlin. Thermal and Mechanical Properties of Electrospun Blends of Poly(lactic acid) and Poly(glycolic acid). Polymer Journal 38:1137-1145 (2006).
37. Sell SA, McClure MJ, Barnes CP, Knapp DC, Simpson DG, Walpoth BH, and GL Bowlin. Electrospun Polydioxanone Elastin Blends: Potential for Bioresorbable Vascular Grafts. Biomedical Materials: Materials for Tissue Engineering & Regenerative Medicine, 1:72-80 (2006).
38. Telemeco TA, Ayres CA, Bowlin GL, Wnek G, Boland G, Cohen NM, Baumgarten CM, Mathews JA, and DG Simpson. Regulation of Cellular Infiltration into Tissue Engineering Scaffolds Composed of Submicron Diameter Fibrils Produced by Electrospinning. Acta Biomaterialia 1:377-385. (2005).
39. Boland ED, Coleman BD, Barnes CP, Simpson DG, Wnek GE, and GL Bowlin. Electrospinning polydioxanone for biomedical applications. Acta Biomaterialia 1:115-123. (2005).
40. Boland ED, Pawlowski KJ, Simpson DG, Wnek GE, and GL Bowlin. Electrospinning Collagen and Elastin for Vascular Tissue Engineering. Frontiers in Biosciences 1;9:1422-32. (2004).
41. Boland ED, Telemeco TA, Simpson DG, Wnek GE, and GL Bowlin. Utilizing Acid Pretreatment and Electrospinning to Improve Biocompatibility of Poly (glycolic acid) for Tissue Engineering. J Biomed Mater Res B Appl Biomater 15;71(1):144-52. (2004).
42. Yao L, Haas TW, Guiseppi-Elie A, Bowlin GL, Simpson DG, and GE Wnek. Electrospinning and Stabilization of Fully Hydrolyzed Poly(Vinyl Alcohol) Fibers. Chemistry of Materials 15:1860-1864. (2003).
43. Matthews JA, Boland ED, Wnek GE, Simpson DG, and GL Bowlin. Electrospinning of Collagen Type II: A Feasibility Study. J. Bioactive and Compatible Polymers 18: 125-134. (2003).
44. Wnek, GE, Carr ME, Simpson DG, and GL Bowlin. Electrospinning of Nanofiber Fibrinogen Structures. Nano Letters 2, 213-216 (2003).
45. Price RL, Haley ST, Bullard TA, Goldsmith EC, Simpson DG, Thielen TE, and L Terracio. The Effects of Platelet-Derived Growth Factor AA and BB on Embryonic Cardiac Development. Anatomical Record 272A; 424-433. (2003).
46. Kenawy E, Layman J, Watkins JR, Bowlin GL, Matthews JA, Simpson DG, and GE Wnek Electrospinning of Poly(ethylene-co-vinyl alcohol) fibers. Biomaterials 24(6):907-13 (2003).
47. Sanders EH, R Kloefkorn, GL Bowlin, DG Simpson and GE Wnek. Two-phase electrospinning from a single electrified jet: Microencapsulation of aqueous reservoirs in poly(ethylene-co-vinly acetate) fibers. Macromolecules 36, 3803-5 (2003).
48. Boland ED, Wnek GE, Simpson DG, Pawlowski KJ and GL Bowlin. Tailoring Tissue Engineering Scaffolds Using Electrostatic Processing Techniques: A Study of Poly(Glycolic Acid). J. Macromol. Sci. 38 (12):1231-1243 (2001).
49. Matthews,JA, Wnek GE, Simpson DG and GL Bowlin. Electrospinning Collagen Nanofibers. J. of Macromolecules 11:232-238. (2002).
50. Kenawy, E, Mansfield K, Bowlin GL, Simpson DG, and GE Wnek. New Drug Delivery System: Control Release of Tetracycline Hydrochloride as a Model Drug from Electrospun Fibers of Poly(lactic acid) and Poly(ethylene vinyl acetate). J. Control Release 81, 57 (2002).
51. Yost MT, Simpson DG, Borg TK and L Terracio. 2000. Design and construction of a Uniaxial cell stretcher: Cardiac fibroblast response to stretch. Amer. J Physiol 279:H3124-30. (2000).

52. Stitzel JD, Pawlowski KJ, Wnek GE, Simpson DG and GL Bowlin. Arterial Smooth Muscle Cell Proliferation on a Novel Biomimicking, Biodegradable Vascular Graft Scaffold. J. Biomaterials Applications 15: 1-12 (2001).
53. Simpson DG, Majeski M, Borg TK and L Terracio. Regulation of cardiac protein turnover and myofibrillar structure in vitro by specific directions of stretch. Circ. Res. Ultrarapid communication 85:59E-69E (1999).
54. Sussman MA, Baque S, Uhm CS, Daniels M, Price RL, Simpson DG, Terracio L, and L Kedes. Altered expression of tropomodulin in cardiomyocytes disrupts the sarcomeric structure of myofibrils. Circ. Res. 82:94-105 (1998).
55. Price, RL, Carver W, Simpson DG, Fu L, Zhao J, Borg TK, and L. Terracio. The effects of Angiotensin II and specific angiotensin receptor blockers on embryonic cardiac development and looping patterns. Dev. Bio. 192:572-584 (1997).
56. Shiraishi I, Simpson DG, Carver W, Hirozane T, Terracio L, and TK Borg. Vinculin is an essential component for normal myofibrillar arrangement in fetal mouse cardiac myocytes. J. Mol. Cell. Cardio 29:2041-2052 (1997).
57. Sharp WW, Simpson DG, Borg TK, Samarel AM and L Terracio. Contractile activity and external mechanical load affect focal adhesion formation by cultured neonatal rat cardiac myocytes. Amer. J Physiol 273:H546-H556. (1997).
58. Nakagawa M, Price RL, Chintanawongas C, Simpson DG, Terracio L, Borg TK and M Horacek. Analysis of heart development in cultured rat embryos. J. Mol. Cell. Cardio. 29:369-379. (1996).
59. Simpson DG, Sharp W, Terracio L, Price RL, Borg TK and AM Samarel. Mechanical regulation of cardiac protein turnover and myofibrillar structure. Amer. J Physiol 270:C1075-C1087 (1996).
60. Simpson DG, Terracio L, Terracio M, Price RL, Turner DC and TK Borg. Modulation of cardiac myocyte phenotype in vitro by the composition and orientation of the extracellular matrix. J. Cell Physiol 161:89-105. (1994).
61. Simpson DG, Decker ML, Clark WA and RS Decker. Contractile activity and cell-cell contact regulate myofibrillar organization in cultured cardiac myocytes. J. Cell Bio. 123:323-326 (1993).
62. Clark WA, Rudnick SJ, Simpson DG, LaPres JJ, and RS Decker. Cultured adult cardiac myocytes maintain protein synthetic capacity of intact adult hearts. Amer. J. Physiol. 264:H573-H582. (1993).
63. Terracio L, Simpson DG, Hilenski LH, Carver W, Decker RS, Vinson N, and TK Borg. Distribution of vinculin in the Z-disk of striated muscle: Analysis by laser scanning confocal microscopy. J. Cell Physiol. 145(1):90-97 (1990).
64. Decker ML, Simpson DG, Behnke MB, Cook MG, and RS Decker. Morphological analysis of contracting and quiescent adult rabbit cardiac myocytes in long-term culture. Ana. Rec. 227:285-299. (1990).
65. Atherton BT, Meyer DM, and DG Simpson. Assembly of myofibrils and intercalated disks in cultured neonatal rat heart cells. J. Cell Sci. 86:223-248. (1986).

Book Chapters and Reviews:

1. Ayres CE, Jha SB, Sell SA, Bowlin GL, and DG Simpson. Nanotechnology in the design of tissue engineering scaffolds: innovations in structure and function. Nanomedicine and Nanobiotechnology 2(1):20-34. (2010).
2. Madurantakam PA, Cost, CP, Simpson DG, and GL Bowlin. Science of nanofibrous scaffold fabrication: strategies for next generation tissue-engineering scaffolds. Nanomedicine 4(2):193-206. (2009).
3. Barnes CP, Sell SA, Boland ED, Simpson DG, Bowlin GL. Nanofiber technology: designing the next generation of tissue engineering scaffolds. Adv Drug Deliv Rev. 10;59(14):1413-33. (2007)
4. Simpson, DG. Dermal Templates, The promise of True Tissue Regeneration. In Medical Devices. Expert Reviews of Medical Devices Vol. 3, No. 4:471-484 (2006).
5. Bowlin GL, Pawlowski KJ, Stitzel JD, Boland ED, Simpson DG, Fenn JB, and GE Wnek. Electrospinning of Polymer Scaffolds for Tissue Engineering. In Tissue Engineering and

Biodegradable Equivalents: Scientific and Clinical Applications. D. Wise, et al., Eds. The Humana Press, Inc. (2002).

6. Boland, ED, Pawlowski, KJ, Barnes CP, Simpson DG, Wnek GE and Bowlin GL. Electrospinning of bioresorbable polymers for tissue engineering scaffolds. Polymeric Nanofibers. ACS Symposium Vol. 918 American Chemical Society. Chapter 14 188-194. doi; 10.1021/bk-2006-0918 (2006).
7. Simpson DG. Integrins. In Wnek GE, and Bowlin GL, editors. Encyclopedia of Biomaterials and Biomedical Engineering. New York: Marcel Dekker (2005).
8. Simpson DG and GL Bowlin. Tissue Engineering Scaffolds – Can We Re-engineer Mother Nature? Expert Reviews of Medical Devices. Vol. 3, No. 1:9-15. (2006).
9. Terracio L, Yan W, Price RL, Yost M, Bowlin GL, and DG Simpson. Tissue Engineering of Cardiac and Skeletal Muscle: Lessons Learned from Micro-patterned Collagen and Microgravity. Gravitational and Space Biology Bulletin. 17:67-74 (2004).
10. Telemeco T, Ellis R, Bowman JR, Bowlin GL, and DG Simpson. "Matrix Metalloproteinases in Bioengineering Interventions. In Wnek GE, and Bowlin GL, editors. Encyclopedia of Biomaterials and Biomedical Engineering. New York: Marcel Dekker. (2004).
11. Keen C, Wnek GE, Baumgarten CM, Newton D, Bowlin GL, and DG Simpson. Bioengineered Skeletal Muscle In Wnek GE, and Bowlin GL, editors. Encyclopedia of Biomaterials and Biomedical Engineering. New York: Marcel Dekker. 1639-1651.(2004).
12. Yost MJ, Price RL, Simpson DG, Yan W, and L Terracio. Cardiac Patch Engineering. Encyclopedia of Biomaterials and Biomedical Engineering. Published by Marcel Dekker, Inc. NY. (2004)
13. Stitzel JD, Bowlin GL, Mansfield K, Wnek GE, Simpson DG. Electrospraying and electrospinning of polymers for biomedical applications. Poly (lactic-co-glycolic acid) and poly(ethylene-co-vinylacetate). Revolutionary materials: Technology and Economics Vol. 32. International SAMPE Technical Conference CRC Press (2000). Pp 205-211.
14. Simpson, DG, Reaves TA, Shih D, Burgess W, Borg TK, and L Terracio. Cardiac Integrins: The Ties that Bind. Cardiovascular Pathology.. 7:135-143. (1997).
15. Simpson DG, Sharp WW, Samarel AM, Price RL, Borg TK and L Terracio. Mechanical regulation of cardiac myofibrillar structure. In, Cardiac Growth and Regeneration, eds. W Claycomb and P Di Nardo., Annals of the New York Academy of Sciences. Vol. 752:131-140. (1995).
16. Borg TK, Simpson DG, Carver W and L Terracio. Role of Mechanical Tension in the Heart: In Vitro Analysis. Japan Journal of Biochemistry and Exercise. 7:85-93. (1995).
17. Sharp WW, Simpson DG, Terracio L, and TK Borg. Signal transduction and myofibrillogenesis in isolated neonatal myocytes in vitro. In, Biomechanics of Active Movement and Division of Cells. ed. N Akkas., Springer-Verlag, Berlin Heidelberg pp551-555. (1994).
18. Decker RS, Behnke-Barclay MM, Simpson DG, Borg TK, Terracio L, and ML Decker. Cytoskeletal / Myofibrillar interactions in cultured adult cardiac myocytes. XV International Society for Heart Research, European Section Meeting. Eds. Stig Haunso & Keld Kjeldsen. Pub. by Monduzzi Editori., Copenhagen. 71-81 (1994).
19. Simpson DG, Carver W, Borg TK, and LT Terracio. The role of mechanical stimulation in the establishment and maintenance of muscle cell differentiation. Inter. Rev. Cyto. 150:69-94 (1994).
20. Simpson DG and RS Decker. The Cardiac Cytoskeleton: Functional integration of the contractile apparatus. Heart. Fail. 6:239-254. (1992).
21. Simpson DG, Decker ML, and RS Decker. Subcellular remodeling of adult cardiac myocytes in cell culture. In, Biology of Isolated Adult Cardiac Myocytes. eds. WA Clark, RS Decker and TK Borg., Elsevier Sci. Pub. (1988)
22. Decker RS, Decker ML, Simpson DG, and ML Lesch. Morphological approaches to the study of freshly isolated and cultured adult cardiac myocytes. In, Biology of Isolated Adult Cardiac Myocytes. eds. WA Clark, RS Decker and TK Borg., Elsevier Sci. Pub. (1988).

US Patents Issued

- US Patent # 6,592,623 Engineered Muscle, Bowlin GL, Wnek G, Simpson DG, and Terracio L.
- US Patent # 6,787,357 Plasma-derived fibrin-based matrices & tissue. Bowlin GL, Simpson DG et al.,
- US Patent # 7,615,373 Electrospun Collagen and Tissue Engineering. Simpson DG, et al.,
- US Patent # 7,374,774 Electroprocessed material made by simultaneously electroprocessing a natural protein polymer and two synthetic polymers. Bowlin GL, Wnek G, Simpson DG.
- US Patent #7,759,082 Electroprocessed Fibrin-based Matrices and Tissues. Simpson DG, et al.
- US Patent # 8,586,345 Electroprocessed Collagen and Tissue Engineering. Simpson DG, et al
- US Patent # 10,046,081 Electrospun dextran fibers & devices formed thereform. Simpson, DG et al.
- US Patent # 9,572,909 Electrospun dextran fibers & devices formed thereform. Simpson, DG et al.
- US Patent # 9,572,909 Electrospun Nerve Guides, Simpson DG et al.

Commercial Experience

St. Teresa Medical Inc. Bloomington, MN. (http://www.stteresamedical.com/index.php)
VCU Start-up Company; Co-Founding Inventor

St. Francis Veterinary Medical (sister company of St Teresa). VCU Start-up Company; Co-Founding Inventor

NanoMatrix, Inc. Richmond Va. VCU Start-up Company; Co-Founding Inventor

D. Additional Information: Research Support and/or Scholastic Performance

Teaching

1998- Present	Instructor, Medical Gross Anatomy VCU School of Medicine
2010-2014	Instructor, Occupational Therapy Gross Anatomy
2014-2015	Course Director, Occupational Therapy Gross Anatomy
2015- present	Course Director, Dental Gross Anatomy
2019- present	Course Director, Dental NeuroAnatomy
2019- present	Course Director, SOM Pre-Matriculation Anatomy Program

Study Sections

NIH ACTS Ad hoc member. Arthritis Connective Tissue and Skin. June 6-7 2019 Alexandria, Va. Robert Gersch, Ph.D. SRO.

NYSTEM: New York State Department of Health and the Empire State Stem Cell Board. Musculoskeletal review panel for 09/25/16-09//30/17 Arlington Va. Arati Deshmukh, Ph.D., Program Manager

NYSTEM: New York State Department of Health and the Empire State Stem Cell Board. Musculoskeletal review panel for 10/30/13-11/01/13 Reston Va. David Irwin, Ph.D., Program Manager

NIAID National Institutes of Health Study section ad hoc member. Medical Countermeasures against Radiation Program Project Applications (RFA-09-036). 07/01/2010-06/30/2011

NIAID National Institutes of Health Study Section. Discovery and Development of Biomarkers for Acute and Delayed Radiation Injuries (RFA-A1-11-033). (3/2012) Maja Maric, SRO.

DOD; Pacific Telehealth & Technology; Telemedicine and Advanced Technology Research Center (TATRC) of the US Army Medical Research and Materiel Command (USAMRMC), (2010) Hawaii Federal Health Care Network (HFHCN). Arati Deshmukh, Program Manager

DOD: Armed Forces Institute of Regenerative Medicine (AFIRM 2011) Cooperative Agreements Regenerative Medicine Clinical Trial Awards (11/2011) Administered through American Biological Institute. David Irwin, Program Manager.

DOD; United States Army Medical Research Acquisition Activity: Care for the Critically Injured Burn Patient. (RFA W81XWH-12-MOMJPC-ARATDA) 4/9/2012.Advanced Technology Research Center (ATAC). Administered through American Biological Institute. Elizabeth Kirchner, Program Manager.

Lytmos: James and Esther King Biomedical Research Program NIR Review Invitation (46639). Florida Department of Health administered through SOLIX. 2/13/2012

Solix (formally Lytmos): Patton Trust Research Development Grants Cycle Kansas City Area Life Sciences Institute.(2012). Jennifer Wuebker SRO. 5/15/12)

American Heart Association (1999-2001) Atlantic Affiliate. Chair 2001