GRADUATE PROGRAM
ACADEMIC ACCOMPLISHMENTS

ANNUAL REPORT
2007-2008

2007 Graduate Student Summary

- Peer Reviewed Publications: 42
- Proceeding Publications: 94
- Abstracts: 88
- Meeting Presentations: 59
- Awards and Fellowships: 42
- Patents: 3

Graduate Student Peer-Reviewed Publications – 2007 (*42 in number*)

Ross EA, Scott WE III, Odukale AA, **Alba NA**, Batich CD, "Transient Acid Exposure Increases Sevelamer HCl Phosphate Binding," *J. Pharm. Sci.*, vol. 96(8), pp. 2154-2160, 2007

Walton, M.M.G., **Bechara, B.P.**, & Gandhi, N.J. (2007). Role of the primate superior colliculus in the control of head movements. *Journal of Neurophysiology*, 98, 2022-2037.

Beschorner, K., Redfern, M.S., Porter, W., & Debski, R.E. (2007). Effects of slip testing parameters on measured coefficient of friction. *Applied Ergonomics*, 38, 773-780.

Candiello J, Balasubramani M, Schreiber EM, Cole GJ, Mayer U, Halfter W, Lin H. Biomechanical properties of native basement membranes. *FEBS J* 274 (11): 2897-908, 2007.

Merryman, W.D., Liao, J., Parekh, A., **Candiello, JE**, Lin, H, & Sacks, M.S. (2007). Differences in tissue remodeling potential of the aortic and pulmonary heart valve interstitial cells. *Tissue Engineering*, 13(9), 2281-2289.

Chambers, A.J., & Cham, R. (2007). Slip-related muscle activation patterns of the stance leg during gait. *Gait and Posture*, 25(4), 565-572.

Clause KC, Tinney JP, Liu LJ, Keller BB, Tobita K. p38 MAP-kinase regulates fetal phenotypic cardiomyocyte proliferation and contractile properties of tissue engineered cardiac tissue. *Tissue Engineering.* (Manuscript in review).

Clause KC, Tinney JP, Liu JL, Gharaibeh B, Huard J, Kirk JA, Shroff SG, Fujimoto KL, Wagner W, Ralphe JC, Keller BB, Tobita K. Cardiomyocyte induction from skeletal muscle derived stem cells using cell aggregates and a three-dimensional gel bioreactor. *FASEB J* (Manuscript in review).

Collinger JL, Boninger ML, Koontz AM, Price R, Sisto SA, Tolerico M, Cooper RA. Shoulder Biomechanics During the Push Phase of Wheelchair Propulsion: A Multi-Site Study of Individuals with Paraplegia. *Archives of Physical Medicine and Rehabilitation*. Accepted Sept. 07 for publication.

Deasy, BM, **Corsi, KC,** & Huard J (2007). Le sexe des cellules souches musculaires: faut-il en tenir compte?. *Sciences/medicines*, 8(23), 36-38.

Corsi, KA, Pollett, JB, Phillippi, JA, Usas, A, Li, G, & Huard, J (2007). Osteogenic potential of postnatal skeletal muscle-derived stem cells is influenced by donor sex. *J Bone Miner Res*, 22(10), 1592-1602.

Corsi, KA, Schwarz, E, Mooney, D, & Huard, J (2007). Regenerative medicine in orthopaedic surgery. *J Orthop Res*, 25(10), 1261-1268. Figures featured on front cover as cover art.

Christopoulos, V, Kagemann, L, Wollstein, G., Ishikawa, H, **Gabriele, ML**, Wojtkowski, M, Srinivasan, V, Fujimoto, JG, Duker, JS, Dhaliwal, DK, & Schuman, JS (2007). In vivo corneal high-speed, ultra high-resolution optical coherence tomography. *Arch Ophthalmol*, 125(8), 1027-1035.

Gabriele, M, Ishikawa, H, Wollstein, G. Bilonick, R, Kagemann, L, Wojtkowski, M, Srinivasan, V, Fujimoto, J, Duker, J, & Schuman, JS (2007). Peripapillary nerve fiber layer thickness profile determined with high speed, ultrahigh resolution optical coherence tomography high-density scanning. *Invest Ophthalmol Vis Sci*, 48(7), 3154-3160.

Gabriele, ML, Wollstein, G, Bilonick, RA. Burgansky-Eliash, Z, Ishikawa, H, Kagemann, L, & Schuman, JS (2007). Comparison of parameters from Heidelberg retina tomographs 2 and 3. *Ophthalmol.*

Mumcuoglu, T, Wollstein, G, Wojtkowski, M, Kagemann, L, Ishikawa, H, **Gabriele, ML.**, Srinivasan, V, Fujimoto, JG, Duker, JS, & Schuman, JS (2007). Improved visualization of glaucomatous retinal damage using high-speed ultrahigh-resolution optical coherence tomography. *Ophthalmol.*

Ishikawa, H, **Gabriele, ML**, Wollstein, G, Bilonick, RA, Kagemann, L. Wojtkowski, M, Srinivasan, VJ, Fujimoto, JG, Duker, JS, & Schuman JS (2007). Peripapillary nerve fiber layer thickness profile determined with high speed, ultrahigh resolution optical coherence tomography high-density scanning. *Invest Ophthalmol Vis Sci*, 48(7), 3154-3160.

van Drongelen S, Boninger ML, **Impink BG**, Khalaf T, Ultrasound Imaging of Acute Biceps Tendon Changes After Wheelchair Sports, *Archives of Physical Medicine and Rehabilitation*, 2007 Mar;88(3):381-5.

Johnson L, Kim HK, Tanabe M, Gorcsan J, Schwartzman D, Shroff SG, Pinsky MR. Differential effects of left ventricular pacing sites in an acute canine model of contraction dyssynchrony. *Am J Physiol Heart Circ Physiol* 293: H3046-H3055, 2007.

Kuxhaus L, Schimoler PJ, Vipperman JS, Baratz ME, Miller MC. "Effects of Camera Switching on Fine Accuracy in a Motion Capture System." Accepted with revision to the *Journal of Biomechanical Engineering*, December 2007.

Zhu, J, Li, Y, Shen, W, Qiao, C., Ambrosio, F, **Lavasani, M**, Nozaki, M, Branca, M, & Huard, J (2007). Relationships between TGF-β1, myostatin, and decorin: Implications for skeletal muscle fibrosis. *J Biol Chem*, 282(35), 25852-25863.

Merryman WD, Lukoff HD, **Long RA**, Engelmayr Jr. GC, Krueger PM, Hopkins RA, and Sacks, MS. "Synergistic effects of cyclic tension, transforming growth factor-B1, and the aortic valve myofibroblast." *Cardiovascular Pathology*. 2007 Sep-Oct;16(5):268-76.

Maul TM, Chew D, Nieponice A, Vorp DA, (2007). A New Experimental System for the Extended /Application of Cyclic Hydrostatic Pressure to Cell Culture. *Journal of Biomechanical Engineering*, 129, 110-6.

Nieponice, A, **Maul, TM**, Cumer, JM, **Soletti, L**, & Vorp, DA (2007). Mechanical stimulation induces morphological and phenotypic changes in bone marrow-derived progenitor cells within a three-dimensional fibrin matrix. *J Biomed Mat Res*, 81(3), 523-530.

Zambidis ET, Sinka L, Tavian M, Jokubaitis V, **Park TS**, Simmons PJ, Péult B, Emergence of human angio-hemopoietic cells in normal development and from cultured embryonic stem cells, *Annals of New York Academy Sciences*, 2007.

Prantil, R., Jankowski, RJ, Kaiho, Y, de Groat, WC, Chancellor, MB, Yoshimura, N, & Vorp, DA. (2007). *Ex vivo* biomechanical properties of the female urethra in a rat model of birth trauma. *Am J PhysiolRenal Physiol*, 292(4), F1229-F1237.

Santelices, LC, Calano, SJ, Erhart, JC, **Prantil, RL**, Vorp, DA, & Ahearn, JM (2007). Experimental system for *ex vivo* measurement of murine aortic stiffness. *Physiol Meas*, 28, N39-N49.

Sellaro, TL, Hildebrand, D, Lu, Q, Vyavahare, N, Scott, M, & Sacks, MS (2007). Effects of collagen fiber orientation on the response of biologically-derived soft tissue biomaterials to cyclic loading. *Journal of Biomedical Materials Research A*, 80(1), 194-205.

Sellaro, TL, Ravindra, AK. Stolz, DB, & Badylak, SF (2007). Maintenance of hepatic sinusoidal endothelial cell phenotype in vitro using organ-specific extracellular matrix scaffolds. *Tissue Eng*, 13(9), 2301-2310.

Rudy, TE, Weiner, DK, Lieber, SJ, **Slaboda, J**, & Boston, JR (2007). The impact of chronic low back pain on older adults: A comparative study of patients and controls. *Pain* 131, 293-301.

Maul TM, Hamilton DW, Nieponice A, **Soletti L**, Vorp DA. A New Experimental System for the Extended Application of Cyclic Hydrostatic Pressure to Cell Culture. *J Biomech Eng*. 2007 Feb;129(1):110-6.

Stankus, JJ, **Soletti, L**, Fujimoto, K, Hong, Y, Vorp, DA, & Wagner, WR (2007). Fabrication of cell microintegrated blood vessel constructs through electrohydrodynamic atomization. *Biomaterials*, 28(17), 2738–2746.

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VanEpps, JS, & Vorp, DA (2007). Mechanopathobiology of atherogenesis: A review. *J Surg Res*, 142, 202-217.

Venkatraman VK, fMRI Activation in Late-Life Anxious Depression: a Potential Biomarker , Nov 2007 - Submitted (Co-Author) Altered Reward Processing in Anorexia Nervosa, *American Journal of Psychiatry*, Dec 2007

Waters JH, **Williams B**, Yazer MH, Kameneva MV. Modification of suction induced hemolysis during cell salvage. *Anesth Analg*. 104(3):684-7, 2007.

Dasse, KA, Gellman, BN, Kameneva, MV, **Woolley, J**, **Johnson, C**, Gempp, T, Marks, JD, Kent, S, Koert, A, Richardson, JS, Franklin, S, Snyder, TA, Wearden, P, Wagner, WR, Gilbert, RJ, & Borovetz, HS (2007). Assessment of hydraulic performance and biocompatibility of a MagLev centrifugal pump system designed for pediatric cardiac or cardiopulmonary support. *ASAIO Journal*, 53(6), 771-777.

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Zou, L, **Jaramillo, M**, Whaley, D, Wells, A, Panchapakesa, V, Das T, & Roy P (2007): Profilin-1 is a negative regulator of mammary carcinoma aggressiveness. *British Journal of Cancer*, 97, 1361-1371.

Graduate Student Proceedings Publications – 2007 (*94 in number*)

Alba, NA, & Cui, X.T. (2007). Novel hydrogel and conducting polymer-based skin surface electrode design. *The Materials Research Society 2007 Fall Meeting*, Boston, MA.

Alba NA, Justin G, Wadhwa R, Sun M, Sclabassi RJ, Cui X: Novel Hydrogel and Conducting Polymer-based Skin Surface Electrode Design, in *Electroactive and Conductive Polymers and Carbon Nanotubes for Biomedical Applications*, edited by X.T. Cui, D. Hoffman-Kim, S. Luebben, C.E. Schmidt (Mater. Res. Soc. Symp. Proc. Volume 1065E, Warrendale, PA, 2007), 1065-QQ03-14

Liao W, Randall B, **Alba N,** Cui X: Conducting Polymer-based Aptamer Biosensor for *in situ* Monitoring of Cytokine, in *Electroactive and Conductive Polymers and Carbon Nanotubes for Biomedical Applications*, edited by X.T. Cui, D. Hoffman-Kim, S. Luebben, C.E. Schmidt (Mater. Res. Soc. Symp. Proc. Volume 1065E, Warrendale, PA, 2007), 1065-QQ05-05

Antaki J, **Arnold D**, Bachman T, Bearnson G, Drummond A, **Johnson C,** Kameneva M, Keller B, Khanwilkar P, Kirk J, Kormos R, Kouretas P, Li, C, Long J, Maher T, Morell, V, Paden, B, Paden, D, Ricci, M, Shaddy, R, Shu, F, Snyder, S, Snyder, T, Vandenberghe, S, Verkaik, J, Wagner, W, Wearden, P, Webber, S, **Woolley, J**, Wu, J, & Borovetz, H. (2007). Development of the PediaFlow™ ventricular assist device for infants and small children. *Third International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion*, Hershey, PA.

Khanwilkar PS, Antaki, JF, Vandenberghe, S, Paden, BE, Wearden, P, Paden, DB, Bearnson, GB, **Arnold, D**, **Bachman, T**, Drummond, A, **Johnson, C**, Kameneva, M., Kirk, J, **Oberdier, M**, Ricci, M, Shu, F, Snyder, S, Verkaik, J., Wagner, W., **Woolley, J**, Miller, P., Kouretas, P., & Borovetz, H.S. (2007). The PediaFlow VAD, A maglev rotary blood pump for neonates and infants: From concept to early animal trials with a prototype. *Artificial Organs 2007*, Osaka.

Vandenberghe, S, Antaki, J, **Arnold, D**, **Bachman, T**, Bearnson, G., Drummond, A, **Johnson, C**, Kameneva, M, Khanwilkar, P, Kirk, J, **Oberdier, M**, Paden, B, Paden, D, Ricci, M, Shu, F, Snyder, Verkaik, J., Wagner, W., **Woolley, J**, Miller, P., Kouretas, P., & Borovetz, H.S. (2007). The PediaFlow VAD, A maglev rotary blood pump for neonates and infants: From concept to early animal trials with a prototype. *Artificial Organs 2007*, Osaka.

Almarza, A, **Augustine, S**, & Woo, S.L-Y. (2007). Changes in gene expression of passaged bone marrow derived cells in culture. *NSF Cell and Tissue Engineering Workshop*, Columbus, OH.

Almarza, AJ, **Augustine, S**, & Woo, S.L-Y. (2007). Comparison of ligament and tendon fibroblast behavior through passages for tissue engineering. *BMES 2007 Annual Fall Meeting*, Los Angeles, CA.

Almarza, AJ, **Augustine, SM,** & Woo, S.L-Y. (2007). Effects of passage on ligament ribroblasts: Implications for functional tissue engineering. *International Symposium on Ligaments and Tendons – VII*, La Jolla, CA.

Augustine, S, Almarza, AJ, & Woo, S.L-Y. (2007). Effects of passages on the gene expression profile of medial collateral ligament fibroblasts. *BMES 2007 Annual Fall Meeting*, Los Angeles, CA.

Brayfield, CA, Marra, KG, Leonard, J, Gobbel, G, Baun, M., Cui, X.T., & Gerlach, J.C. (2007). Development of hollow fiber-based bioreactor systems for 3D neuronal cell cultures. *Tissue Engineering and Regenerative Medicine International Society*, Toronto, Canada.

Marra, KG, Rubin, JP, **Brayfield, CA**, Baun, M., & Gerlach, J.C. (2007). Adipogenic differentiation of adipose-derived stem cells in a novel hollow fiber-based bioreactor. *Plastic Surgery Research Council, 52nd Annual Meeting*, Stanford, CA.

Cham R, **Beschorner K**, Redfern M, 2007, Whole body postural responses to slips. *IEA- Slips Trips and Falls Symposium*, August 22-23, 2007.

Cham, R., **Beschorner, K.**, & Redfern, M.S. (2007). Whole body postural responses to slips. *International Conference on Slips, Trips, and Falls 2007: From Research to Practice*, conference sponsored by the International Ergonomics Association (IEA), Hopkinton, MA.

Liang, R., Nguyen, T, Liu, PC, **Carruthers, C**, Almarza, A, & Woo, S.L-Y. (2007). A bioscaffold induces changes in the fibrillogenesis-related gene expressions in healing ligaments. *53rd Annual Meeting of the Orthopaedic Research Society*, San Diego, CA.

Chambers, A.J., & Cham, R. (2007). The impact of anticipating slippery floors on spatial and temporal variability during gait. *International Society of Posture and Gait Research (ISPGR)*, Burlington, VT.

Cois, CA, Rockot, K., Galeotti, J, Tamburo, R, Gottlieb, D, Mayer, J, Powell, A, Sacks, M, & Stetten, G (2007). Automated segmentation of the right heart using an optimized shells and spheres algorithm. *ISBI 2007*.

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Coley, B., Lenze, E.J., Perera, S., VanSwearingen, J.M., Studenski, S.A., & Cham, R. (2007). Fear of falling, its psychological components and slip-warning induced gait adaptations in older adults with mild mobility impairments. *International Society of Posture and Gait Research (ISPGR)*, Burlington, VT.

Courtney, T, Sacks, MS, Wagner, WR, & Liao, J (2007). Local non-affine deformations and fiber kinematics of elastomeric electrospun scaffolds. *ASME 2007 Summer Bioengineering Conference*, Keystone, CO.

Courtney, T, **Stella, J**, Liao, J, Wagner, WR, & Sacks, MS (2007). Micromechanical deformations of electrospun elastomeric scaffolds for tissue engineering. *Society for Biomaterials 2007 Annual Meeting,* Chicago, IL, CDROM.

DeFail, AJ, Rubin, JP, Rajendran, N, & Marra, KG (2007). Injectable controlled delivery system for adipogenesis of adipose-derived stem cells. *Plastic Surgery Research Council, 52nd Annual Meeting*, Stanford, CA.

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Drury NJ, Ellis BJ, Moore SM, Weiss JA, Debski, RE, "Maximum Principal Strains in the Glenohumeral Capsule During a Clinical Exam: A Validated Finite Element Model." *2007 ASME Summer Bioengineering Conference*.

Ellis BJ, **Drury NJ**, Debski, RE, Weiss, JA, "Effects of Labrum Thickness and Modulus on Glenohumeral Capsule and Labrum Strains." *2007 ASB Conference*.

Drury, NC, Ellis, BJ, Moore, S.M., Weiss, JA, & Debski, RE (2007). Maximum principal strains in the glenohumeral capsule during a clinical exam: A validated finite element model. *2007 Summer Bioengineering Conference*, Keystone, CO.

Ellis, BJ, **Drury, NC**, Debski, RE, & Weiss, JA (2007). The effect of labrum thickness and modulus on glenohumeral capsule and labrum strains. *2007 Annual Meeting of American Society of Biomechanics*, Stanford University, CA.

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El-Kurdi, MS, Hong, Y, Stankus, J, **Soletti, L**, Wagner, W, & Vorp, DA (2007). Engineering vein grafts using an external electrospun biodegradable polymer wrap to gradually impose arterial circumferential wall stress over time. *2007 Summer Bioengineering Conference, ASME*, Keystone, CO.

Jones, K, **Feola, A**, Abramowitch, SD, Moalli, PA: Tensile Testing of Synthetic Meshes Used in Pelvic Organ Prolapse Repair. *28th Annual American Urogynecologic Society Meeting*, Hollywood, FL.

Karaoglu, S, **Fisher, MB**, Liang, R., Fu, YC, Abramowitch, SD, Woo, S. L-Y. A Bioscaffold to Improve Healing of a Patellar Tendon Defect After Graft Harvest for ACL Reconstruction. *International Symposium on Ligaments and Tendons VII*. San Diego, California. 2007.

Abramowitch, SD; **Fisher, MB**; Karaoglu, S; Woo, SL-Y. The mechanical and viscoelastic properties of the healing rabbit patellar tendon. *American Society of Mechanical Engineers Summer Bioengineering Conference*, Vail, Colorado. 2007.

Zhang, X; **Fisher, MB**; Woo, S.L-Y; Jiang, G; Abramowitch, SD. The Assumption of a Negligible Preload on the Determination of Viscoelastic Properties Based on the Quasi-linear Viscoelastic (QLV) Theory. *International Conference on Complex Medical Engineering*. Beijing, China. 2007.

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Dilworth, W, Mumcuoglu, T, Wollstein, G, Kagemann, L, Townsend, K, Bilonickm, R, Ishikawa, H. **Gabriele, M**, & Schuman, J.S. (2007). The long term stability of stratus OCT reproducibility. *Association for Research in Vision and Ophthalmology*.

Gabriele, M, Ishikawa, H. Dilworth, B, Wollstein, G, Bilonick, R, Kagemann, L, Sung, K, Townsend, K, Fujimoto, J, & Schuman, JS (2007). Optical coherence tomography scan circle location affects mean retinal nerve fiber layer thickness measurements. *Association for Research in Vision and Ophthalmology.*

Gabriele, ML, Ishikawa, H, Wollstein, G, Bilonick, R, Kagemann, L, Fujimoto, JG, & Schuman, JS (2007). The effect of sampling location on optical coherence tomography nerve fiber layer measurements. *Biomedical Engineering Society*.

Kagemann, L, Ishikawa, H, Wojtkowski, M, Wollstein, G. Bilonick, RA, **Gabriele, ML**, Townsend, KA, Wei, X, Xu, J, Srinivasan, VJ, Fujimoto, JG, & Schuman, JS (2007). High speed ultra high resolution optical coherence tomography imaging in an extremely small animal model. *International Society for Imaging in the Eye (ISIE) Annual Meeting*, Fort Lauderdale, FL.

Kagemann, L, Townsend, KA. Wollstein, G, Mumcuoglu, T, Bilonick, RA, Ishikawa, H, **Gabriele, ML**, Fujimoto, JG. Duker, JS, & Schuman, JS. (2007). Reproducibility of high speed high resolution optical coherence tomography retinal nerve fiber layer thickness measurements. *Invest Ophthalmol Vis Sci 2007*.

Kagemann, L, Townsend, KA, Wollstein, G, Mumcuoglu, T, Bilonick, RA, Ishikawa, H, **Gabriele, ML,** Fujimoto, JG, Duker, JS, & Schuman, JS (2007). Optic nerve and retinal nerve fibre layer imaging I glaucoma reproducibility of high speed high resolution optical coherence tomography retinal nerve fiber layer thickness measurements. *Association for Research in Vision and Ophthalmology*.

Kim, JS, Ishikawa, H, Wollstein, G, Bilonick, RA, Kagemann, L, Sung, K, **Gabriele, ML.** Xu, J, Townsend, KA, & Schuman, JS (2007). A novel quality parameter for stratus OCT. *Invest Ophthalmol Vis Sci 2007*.

Sung, K, Wollstein, G, Ishikawa, H, Bilonick, RA, Kagemann, L, **Gabriele, ML**, Townsend, KA, Mattox, C, Fujimoto, JG, & Schuman, JS. (2007). Evaluation of optical coherence tomography measurement of glaucoma progression. *Invest Ophthalmol Vis Sci 2007*.

Sung, K, Wollstein, G, Ishikawa, H, Bilonick, RA, Kagemann, L, **Gabriele, ML**, Townsend, KA, Mattox, C, Fujimoto, JG, & Schuman, JS. (2007). Evaluation of optical coherence tomography measurement of glaucoma progression. *Association for Research in Vision and Ophthalmology*.

Townsend, KA, Wollstein, G, Danks, D, Sung, K, Ishikawa, H, Kagemann, L, **Gabriele, ML**, & Schuman, JS (2007). Heidelberg retina tomography 3 machine learning classifiers for glaucoma detection. *Invest Ophthalmol Vis Sci 2007*.

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Wollstein, G, Sung, K, Ishikawa, H, Bilonick, RA, Kagemann, L, **Gabriele, ML**, Townsend, KA, Mattox, C, Fujimoto, JG, & Schuman, JS (2007). Detection of glaucoma progression with optical coherence tomography macular scans. *Invest Ophthalmol Vis Sci 2007*.

Wollstein, G, Sung, K, Ishikawa, H, Bilonick, RA, Kagemann, L, **Gabriele, ML**, Townsend, KA, Mattox, C, Fujimoto, JG, & Schuman, JS (2007). Detection of glaucoma progression with optical coherence tomography macular scans. *Association for Research in Vision and Ophthalmology*.

Xu, J. Ishikawa, H, Wollstein, G, Sung, K, Kagemann, L, Bilonick, RA, Kim, JS, **Gabriele, ML**, Townsend, KA, & Schuman, JS (2007). Automated extraction of optic nerve head parameters from stereoscopic optic nerve head photographs. *Association for Research in Vision and Ophthalmology*.

Cooper, RA, Ding, D, **Grindle, G.**, & Wang, H (2007). Personal mobility and manipulation using robotics, artificial intelligence, and advanced control. *International Conference of the IEEE-EMBS*, Lyon, France.

Grindle, GG, Cooper, RA, Fitzgerald, SG, & Tolerico, M (2007). Real world validation of the caster data logger and pilot measurements of power wheelchair usage during and after the National Veterans' Wheelchair Games. *Annual RESNA Conference*, Phoenix, AZ, CD-ROM.

Wang, H, **Grindle, GG**, Connor, S, & Cooper, RA.(2007). An experimental method for measuring the moment of inertia of an electric power wheelchair. *International Conference of the IEEE-EMBS*, Lyon, France.

Haworth Donna, Hilton Head Engineering Tissues Workshop, Hilton Head, South Carolina, March 2007. Engineering and Urology Society Meeting, Anaheim, California, May 2007.

Haworth Donna, TERMIS North America 2007 Conference and Exhibition, Toronto, Canada, June 2007.

Haworth Donna, *ASME – Summer Bioengineering Conference*, Keystone, Colorado, June 2007.

Lorang, NH, **Hellmann, LA**, Wu, C., & Woo, S.L-Y. (2007). Validation of a high-payload robotic/UFS testing system for studying of joint motion. *ASME 2007 Summer Bioengineering Conference*, Keystone, CO.

Mercer JL, Boninger ML, **Impink BG**, Fullerton BD, Quantitative Ultrasound of the Biceps Tendon in Wheelchair Users and Non-Wheelchair Users, *Proceedings of the 30th Annual RESNA Conference*, Phoenix, AZ, CD-ROM, June 15-19, 2007. Honorable Mention in Student Scientific Paper Competition (podium presentation)

Dasse, KA., Wearden, P, Webber, S, Gempp, T, Marks, JD., Kent, S, Wagner, W, Kameneva, M, Snyder, T, **Johnson, C**, **Woolley, J**, Gilbert, RJ, Gellman, B, Koert, A, Richardson, JS, Franklin, S, & Borovetz, H (2007). Critical considerations contributing to the successful design and clinical utility of a centrifugal pump for pediatric cardiac or cardiopulmonary support. *Third International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion*, Hershey, PA.

Wearden, PD, Snyder, TA. **Johnson, CA, Woolley, JR**, **Marascalco, PJ.**, Koert, A, Richardson, S. Gellman, B, Kameneva, MV. Wagner, WR, Morell, VO, Borovetz, HS, & Dasse, KA (2007). Development and in vivo evaluation of the Levitronix PediVAS® pediatric ventricular assist device. *ASAIO*, 53, 46A, Chicago, IL.

Joyce, EM. Liao, J. Merryman, W.D, & Sacks, MS (2007). The intrinsic durability of the aortic valve extracellular matrix. *Society for Biomaterials 2007 Annual Meeting*, Chicago, IL, CDROM.

Williams, C., **Joyce, EM**, Leach, JB, Sacks, MS, Liao, J, & Wang, JY (2007). Structural properties of extracellular matrix in decellularized rabbit carotid arteries. *BMES Annual Fall Meeting*, Los Angeles, CA, CDROM.

Kokai, LE, Jhunjhunwala, S, Little, S, & Marra, KG (2007). Incorporation of protein delivering microspheres into conduits for peripheral nerve repair. *Tissue Engineering and Regenerative Medicine International Society*, Toronto, Canada.

Schimoler PJ, Vipperman JS, **Kuxhaus L**, Flamm AM, Budny D, Baratz ME, Miller MC. "Control System for an Elbow Joint Motion Simulator*" IMECE 2007*.

Long, R., Parekh, A., & Sacks, M.S. (2007). Strain induced bladder smooth muscle remodeling. *ASME 2007 Summer Bioengineering Conference*, Keystone, CO.

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Marascalco PJ, Thangappan R, Nieponice A, Kameneva MV. Blood-soluble drag-reducing polymers as a novel hemodynamic approach to tissue regeneration. *Tissue Engineering Regenerative Medicine International Society (TERMIS) Conference*, Toronto, Canada, June 13-15, 2007

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Cham, R, **Moyer, BE**, & Redfern, M.S. (2007). Trailing leg postural strategies during slipping. *International Society of Posture and Gait Research (ISPGR)*, Burlington, VT.

Stella J, *11th Annual Hilton Head workshop*, March 2007, Hilton Head, SC, Micromechanical deformations of electrospun elastomeric scaffolds for tissue engineering

Stella J, *Biomaterials annual meeting*, April 2007, Chicago, IL, Micromechanical deformations of electrospun elastomeric scaffolds for tissue engineering.

Stella J, *Society for Heart Valve Disease*, June 2007, The digital leaflet: Quantitative image analysis and 3D digital reconstruction of the aortic valve leaflet.

Stella J, *Society for Heart Valve Disease*, June 2007, Cellular micro-integrated elastomeric electrospun scaffolds under heart valve tissue engineering.

Stella J, *ASME Summer Bioengineering Conference*. June 2007, Keystone, CO, Microintegrated electrospun poly (ester urethane) urea scaffolds under biaxial stretch.

Stella J, *ASME Summer Bioengineering Conference*. June 2007, Keystone, CO, The digital leaflet: Quantitative image analysis and 3D digital reconstruction of the aortic valve leaflet.

Stella, J, & Sacks, MS (2007). The digital leaflet: Quantitative image analysis and 3-D digital reconstruction of the aortic valve leaflet. *ASME 2007 Summer Bioengineering Conference*, Keystone, CO.

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Stella, J, Sacks, MS & Wagner, WR (2007). Local non-affine deformations and fiber kinematics of elastomeric electrospun scaffolds. *44th Annual Technical Meeting, Society for Engineering Science*, College Station, TX, CDROM.

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VanEpps, JS, Chew, DW, Vorp DA, 2007, Biological Markers of Atherogenesis Correlate With Both Shear and Mural Stress in Perfused Arterial Segments Exposed to Cyclic Axial Stretch *Ex Vivo, Proceedings of the ASME 2007 Summer Bioengineering Conference*, 2007. (Poster)

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VanEpps, JS, Chew, D.W., Vorp D.A., Combined Experimental and Computational Study of Remodeling In Arterial Segments Undergoing Dynamic Deformations Consistent With the Coronary Arteries, *44th Annual Meeting of the Society for Engineering Science*, 2007. (Oral Presentation)

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Rainis, E, **Voycheck, CA**, Timcho, E, McMahon, PJ, & Debski, RE (2007). Effects of gender on the mechanical properties of the glenohumeral capsule: Implications for surgical repair techniques. *2007 Summer Bioengineering Conference*, Keystone, CO.

Stehle, J, **Wickwire, AC**, Debski, RE, & Sekiya, J (2007). Biomechanical analysis of Hill-Sachs Defects in a joint compression model: Injury and repair using osteoarticular allograft transplantation. *2007 Closed Shoulder and Elbow Meeting*, Dallas, TX, Paper #11.

Wognum, S & Sacks, MS (2007). A structural model of the urinary bladder wall: Effects of connective tissue remodeling. *Engineering and Urology Society 22nd Annual Meeting*, Anaheim, CA.

Snyder, T, **Woolley, J**, **Marascalco, P**, Antaki, J, Wagner, WR, & Kameneva, MV (2007). Validity of normalized index of hemolysis in pediatric mechanical circulatory assist devices and application to hemolysis testing of five pediatric blood pumps. *The 53rd Annual Conference of American Society for Artificial Internal Organs*, Chicago, IL.

S, Verkaik, J, Wagner, W, Wearden, P, **Woolley, J**, & Borovetz, H. (2007). Initial evaluation of the PediaFlow VAD. *Artificial Organs 2007*, Osaka.

Zubiate, B, & Sacks, MS (2007). In vivo dynamic strains of the MV annulus. *ASME 2007 Summer Bioengineering Conference*, Keystone, CO.

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Graduate Student Abstract Publications – 2007 (*88 in number*)

Augustine, S., Almarza, AJ, Woo S L-Y. (2007). Effects of Passage on Ligament Fibroblasts: Implications for Functional Tissue Engineering. *Biomedical Engineering Society.* September 2007.

Almarza, AJ, **Augustine, S**, Woo S L-Y. (2007). Comparison of Ligament and Tendon Fibroblast Behavior Through Passages for Tissue Engineering. *Biomedical Engineering Society*. September 2007.

Almarza, AJ, **Augustine, S,** Woo S L-Y. (2007). Effects of Passage on Ligament Fibroblasts: Implications for Functional Tissue Engineering. *International Symposium on Ligaments and Tendons VII*, February 2007.

Brown B, Valentin J, Akers AM, Badylak SF. The Effects of a Cellular Component within a Biomaterial Upon Macrophage Polarization and Tissue Remodeling Outcome Oral Presentation – *Tissue Engineering and Regenerative Medicine International Society, Asia-Pacific Chapter Meeting* 2007, Tokyo, Japan. December 3-5, 2007.

Brown B on behalf of Thomas W. Gilbert, Gilbert S, Reynolds D, Povirk K, Rosen C, Badylak SF Extracellular Matrix Scaffolds for Repair of the Trachea and the Vocal Folds Oral Presentation – *Tissue Engineering and Regenerative Medicine International Society, Asia-Pacific Chapter Meeting* 2007, Tokyo, Japan. December 3-5, 2007.

Brown B on behalf of Thomas W. Gilbert, Miller K, Habib A, Jones MR, Wilson, ME, Yates AJ, McHenry ME, Badylak SF. FeCo Nanoparticles for the In Vivo Tracking of ECM Scaffold Degradation Products Oral Presentation - *Tissue Engineering and Regenerative Medicine International Society, Asia-Pacific Chapter Meeting* 2007, Tokyo, Japan. December 3-5, 2007.

Brown B, Stewart-Akers AM, Badylak SF. The Effects of a Cellular Component within a Biomaterial upon Macrophage Polarization and Tissue Remodeling Outcome Oral Presentation – *IT: Inflammation Technology, 10th UWEB Summer Symposium*, University of Washington, Seattle, WA. August 27-28, 2007

Brown B, Stewart-Akers AM, Badylak SF. The Effects of Scaffold Composition Upon Macrophage Polarization and Tissue Remodeling Poster Presentation – *Tissue Engineering and Regenerative Medicine International Society, North American Chapter 2007 International Conference and Exposition*, Toronto, Canada. June 13-16, 2007

Candiello J, Ritch R, Lin H. Atomic force microscopy of the anterior lens capsule on eyes with exfoliation syndrome. *The Association for Research in Vision and Ophthalmology Annual Meeting*, Ft. Lauderdale, FL on May 7, 2007 (poster #1201).

Carruthers C, Sacks MS (2007). The role of physiological biaxial deformations on cellular mechanotransduction in the native pulmonary valve: Implications for heart valve tissue engineering. *3rd Biennial Heart Valve Biology & Tissue Engineering Meeting of Society of Heart Valve Disease*.*

Clause KC, Tinney JP, Li LJ, Burhan G, Fujimoto KL, Wagner WF, Ralphe JC, Keller BB, Huard J, Tobita K, Functioning Engineered Cardiac Tissue from Skeletal Muscle Derived Stem Cells. *4th Annual Symposium of the American Heart Association Council on Basic Cardiovascular Sciences: Cardiovascular Repair and Regeneration: Structural and Molecular Approaches in the Cellular Era*. (Keystone, CO, 2007).

Clause KC, Tinney JP, Li JL, Burhan G, Huard J, Kirk, JA, Shroff SG, Fugimoto, K, Wagner WR, Ralphe JC, Keller BB, Tobita K. Cardiomyocyte induction from skeletal muscle derived stem cells using cell aggregates and a three-dimensional gel bioreactor. *6th International Society for Stem Cell Research Annual Meeting* (Philadelphia, PA, 2008)

Drury, N.J., Ellis, B.J., Moore, S.M., Weiss, J.A., Debski, R.E. "Maximum Principal Strains in the Glenohumeral Capsule During a Clinical Exam: A Validated Finite Element Model." *2007 ASME Summer Bioengineering Conference*.

Ellis BJ, **Drury NJ**, Debski RE, Weiss JA. "Effects of Labrum Thickness and Modulus on Glenohumeral Capsule and Labrum Strains." *2007 ASB Conference*.

El-Kurdi MS, Hong Y, Stankus JJ, **Soletti L**, Wagner WR, Vorp DA, Presented 2007, "Toward an Engineered Vein Graft Using an External Electrospun Biodegradable Polymer Wrap to Gradually Impose Arterial Circumferential Wall Stress", *TERMIS Conference* – Selected in Top 20 Abstracts for Student Poster Competition.

El-Kurdi MS, Hong Y, Stankus JJ, **Soletti L**, Wagner WR, Vorp DA, Presented 2007, "Engineering Vein Grafts Using an External Electrospun Biodegradable Polymer Wrap to Gradually Impose Arterial Circumferential Wall Stress Over Time", *ASME Summer Bioengineering Conference*.

El-Kurdi MS, Hong Y, Stankus JJ, **Soletti L**, Wagner WR, Vorp DA, Presented 2007, "Electrospinning Biodegradable Polymers onto Living Vascular Tissue", *BMES: Biomedical Engineering Society Annual Conference*.

Alperin, Debski, **Feola**, Abramowitch, Moalli, "Pregnancy induced adaptations of rat vaginas" *Conference: American Urogynecologic Society*

Jones, **Feola**, Abramowitch, Moalli, "Tensile Testing of Synthetic Meshes used in POP Repair" *Conference: American Urogynecologic Society*

Freytes DO and Badylak SF. Bioscaffolds Composed of Extracellular Matrix for Regenerative Medicine Applications. *Wound Healing Research Conference*, McGowan Institute for Regenerative Medicine, Pittsburgh, PA, February, 2007. – *Oral Presentation.

Freytes DO, Valentin JE, Pesyna CM, Freund J, and Badylak SF. Characterization of Oxygen Diffusion across a Variety of Extra-cellular Matrix Derived Scaffolds. *Society for Biomaterials Meeting* April 2007. Chicago, IL. – *Poster Presentation.

Freytes DO, Tobita K, Tinney JP, Keller BB, Wainwright JW, Martin J, Velankar SS, and Badylak SF. Extracellular Matrix Derived Gel for Cardiac Tissue Engineering Applications. *Society for Biomaterials Meeting* April 2007. Chicago, IL. – *Oral Presentation. Received a STAR Award

Wainwright JW, **Freytes DO**, Tobita K, Tinney JP, Keller BB, Freund J, and Badylak SF. Cardiac Extracellular Matrix (CECM) as a Left Ventricular Patch. *Hilton Head Workshop 2007*. Hilton Head, South Carolina.

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Wainwright JW, **Freytes DO**, Tobita K, Tinney JP, Keller BB, and Badylak SF. Cardiac Extracellular Matrix (C-ECM) and Urinary Bladder Matrix (UBM) in Lyophilized Sheet and Gel Form for Cardiac Applications. *Regenerate 2007*. Toronto, Canada.

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Freytes DO, Kolman SE, Velankar SS, and Badylak, SF. Rheological Properties of Extracellular Matrix Derived Scaffolds. *Summer Bioengineering Conference 2007*. Keystone, Colorado. – *Poster Presentation – Ph.D. Student paper competition

Freytes DO, Kolman SE, Velankar SS, and Badylak SF. Rheological Properties of Extracellular Matrix Derived Hydrogels. *The Society of Rheology 79th Annual Meeting* 2007. Salt Lake City, Utah.

Haworth DJ, Chew DW, Kaiho Y, Kim DK, Yoshimura N, Chancellor MB, Vorp DA, The Effects of Culture Conditions and Implantation on the Structural and Mechanical Characteristics of a Tissue Engineered Urethral /Wrap in *Hilton Head Engineering Tissues Workshop*, Hilton Head, South Carolina, March 2007.

Haworth DJ, Chew DW, Miyazato M, Kim DK, Yoshimura N, Chancellor MB, Vorp DA, The Effects of Culture Conditions and Implantation on the Structural and Mechanical Characteristics of a Tissue Engineered Urethral Wrap in *Engineering and Urology Society Meeting*, Anaheim, California, May 2007.

Haworth DJ, Chew DW, Miyazato M, Kim DK, Yoshimura N, Chancellor MB, Vorp DA, The Effects of a Tissue Engineered Urethral Wrap in *Engineering and Urology Society Meeting*, Anaheim, California, May 2007.

Haworth DJ, Chew DW, Miyazato M, Kim DK, Yoshimura N, Chancellor MB, Vorp DA, The Effects of Culture conditions and Implantation on the Structural and Mechanical Characteristics of a Tissue Engineered Urethral Wrap in *TERMIS North America 2007 Conference and Exhibition*, Toronto, Canada, June 2007.

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Hokanson J, *Society For Neuroscience Conference*, San Diego, California, November 3 – 7, 2007, Neuronal responses in somatosensory cortex to multichannel microstimulation of primary afferent neurons

Kirk JA, MacGowan GA, **Evans C**, Smith SH, Stewart AFR, Solaro RJ, Shroff SG. Left Ventricular Function is Depressed in Mice Expressing Constitutively Psuedo-Phosphorylated Cardiac Troponin I. *Circulation* 116: II_302-b, 2007 (abstract)

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Kuxhaus L, Schimoler P, Flamm AM, Vipperman JS, Baratz ME, Miller MC. "Moment arm measurement to validate a closed-loop feedback-controlled elbow joint simulator." *American Society of Biomechanics Conference*, Stanford, CA; August 2007.

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Kuxhaus L, Schimoler PJ, Vipperman JS, Miller MC. "Closed-loop control measurement of moment arms during pronation-supination in an elbow simulator." *Northeast American Society of Biomechanics Conference*, Baltimore, MD; March, 2007.

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Kuxhaus L, Schimoler PJ, Vipperman JS, Miller MC. "Closed-loop control measurement of moment arms during pronation-supination in an elbow simulator." *Northeast American Society of Biomechanics Conference*, Baltimore, MD; March 2007.

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LoSurdo JL, Nieponice A, Vorp DA. Mechanical Stimulation of Bone Marrow Progenitor Cells within a Three-Dimensional Fibrin Matrix. *Surgical Research Day*, May, 2007; Pittsburgh, PA. Poster Presentation.

LoSurdo JL, Nieponice A, Vorp DA. Mechanical Stimulation of Bone Marrow Progenitor Cells within a Three-Dimensional Fibrin Matrix. *McGowan Institute for Regenerative Medicine Retreat*, March 9-11, 2007; Farmington, PA. Poster Presentation.

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Maul T, Chew D, Nieponice A, Vorp DA (2007). Morphology, Proliferation, and Gene and Protein Expression Changes in Bone Marrow Mesenchymal Progenitor Cells Following Mechanical stimulation. In *"TERMIS-NA",* Toronto, Canada.

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Hunter O, **Maul T**, Vorp D, Amoscato AA (2007). Mechanical strain induces ceramide generation in endothelial cells. *FASEB J*., 21(6): p. A751.

Mercer J, Boninger M, **Impink B**, Fullerton B. Quantitative Ultrasound of the Biceps Tendon in Wheelchair Users and Non-Wheelchair Users. *30th Annual Rehabilitation Engineering Society of North America Conference Proceedings*. Phoenix, AZ, June 15-19, 2007. Honorable Mention Student Scientific Paper Competition Podium Presentation.

Roche B, Koontz AM, Yarnall M, **Mercer JL**, Cowan R, Boninger ML. Manual Wheelchair Propulsion Patterns on Natural Surfaces. *30th Annual Rehabilitation Engineering Society of North America Conference Proceedings*. Phoenix, AZ, June 15-19, 2007. Podium Presentation.

Zambidis ET, **Park TS**, Tam A, Péault B. The rennin-angiotensin axis regulates the development of a yolk sac-like hemangioblastic progenitor of primitive and definitive hematopoiesis from human pluripotent stem cells. *American Society for Hematology (AHS)*, Atlanta, GA, Oral presentation, December 8-11, 2007.

Park TS, Gavina M, Chen CW, Logar A, Cao B, and Péault B. Migration and skeletal muscle regeneration potentials of human placenta perivacular cells. *Science 2007: Collaborate, Innovate, Transform*, Pittsburgh, PA, Poster presentation, October 2007.

Park TS, Chen CW, Logar A, Cao, B, and Péault B. Myogenic potential of human fetal placenta blood vessels. *5th International Society for Stem Cell Research (ISSCR)*, Cairns, Australia.

Crisan M, Casteilla L, Logar A, Zimmerlin L, Sun B, **Park TS**, Yap S, Huard J, Péault B. A novel population of CD146+CD133+ muscle progenitors in human skeletal muscle and during ontogeny. *Tissue Engineering International & Regenerative Medicine Society* (TERMIS), Toronto, Canada. Poster presentation, June 13-16, 2007.

Teng PN, Heemstra P, **Park TS**, Crisan M, Logar A, Sun B, Péault B, and Sfeir C. Characterization, isolation, and differentiation of pericyte from human dental pulp. ***85th*** *International Association for Dental Research***,** New Orleans, LA, Poster, March, 2007.

Perel S, "Real-time Continuous Neural Control of a 4-DOF Prosthetic Arm" - *SFN 2007*

Soletti L, Nieponice A, Guan J, Hong Y, Stankus JJ, **El-Kurdi MS**, Wagner WR, Vorp DA, Presented 2007, "Assessment of a Biomimetic, Composite, Tubular Scaffold for Vascular Tissue Engineering Applications" , *BMES: Biomedical Engineering Society Annual Conference*.

Stella J, 11th *Annual Hilton Head Workshop*, March 2007, Hilton Head, SC, Micromechanical deformations of electrospun elastomeric scaffolds for tissue engineering

Stella J, *Biomaterials Annual Meeting*, April 2007, Chicago, IL, Micromechanical deformations of electrospun elastomeric scaffolds for tissue engineering.

Stella J, *Society for Heart Valve Disease*, June 2007, The digital leaflet: Quantitative image analysis and 3D digital reconstruction of the aortic valve leaflet.

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Stella J, *ASME Summer Bioengineering Conference*. June 2007, Keystone, CO, Microintegrated electrospun poly (ester urethane) urea scaffolds under biaxial stretch.

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Teng BP, Crisan, M., Logar, A, Robertson, N., Heemstra, P., **Park, T**., Péault B., Sfeir, C. (2007). Multilineage Differentiation of Dental Pulp Stem Cells**.** *Science 2007*, Pittsburgh, PA, USA, October 11-12.

Teng BP, Park CM, Logar T, Robertson A, Péault B, Sfeir C. (2007) Characterization, Isolation, and Osteogenic Differentiation of Human Adult Dental Pulp Perivascular Stem Cells. *9th International Conference on the Chemistry and Biology of Mineralized Tissues*. Austin, TX, November 4-8.

Pieter H, **Teng BP**, Sfeir C. (2007) Characterization and Osteogenic Potential of Dental Pulp Stem Cells. *Hinman Student Research Symposium*, Memphis, TN, USA, September 2-4.

Pieter H, **Teng BP**, Sfeir C. (2007) Characterization and Osteogenic Potential of Dental Pulp Stem Cells. *American Dental Association Annual Session*, San Francisco, CA, USA, September 27-30.

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Teng, BP, Crisan, M., Park, T., Logar, A, Sun, B., Heemstra, P., Péault B., Sfeir, C. (2007). Stem Cells from Human Dental Pulp and Bone Marrow for Potential Use in Craniofacial Regeneration. *Dental School Research Symposium*, Pittsburgh, PA, USA, May 16.

Teng BP, Crisan M, Park T, Logar A, Péault B, Sfeir C. (2007). Isolation and Osteogenic Differentiation of Dental Pulp Perivascular Stem Cells**.** *6th Midwestern Tissue Engineering Consortium Conference*, Ann Arbor, Michigan, USA, April 20-21.

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Teng BP, Crisan M, Park T, Logar A, Péault B, Sfeir C. (2007). Mineralized tissue engineering: cellular therapies and proteomic strategies. *McGowan Institute Scientific Retreat*, Pittsburgh, PA, USA, March 6-7.

Park TS, Zambidis ET, Yap S, **Teng BP,** Crisan M, Sun B, Logar A, Giacobino JP, Casteilla L, Huard J, Péault B. (2007). Differentiating human embryonic stem cells sorted on CD146 expression develop into hematopoietic, myogenic and neurogenic cells. *McGowan Institute Scientific Retreat*, Pittsburgh, PA, USA, March 6-7.

Schmidt B, Schugar R, **Teng BP,** Péault B, Huard J, Deasy B. (2007). Human Umbilical Cord Stem Cells from Wharton's Jelly: Potential for Chondrogenic Differentiation. *53rd Annual Meeting of Orthopedic Research Society*, San Diego, CA, USA, February 11-14.

Venkatraman VK, Characterizing the effect-size of dorsolateral prefrontal cortex activation during an fMRI executive function task; Human Brain Mapping May 2007 The effect of acute citalopram infusion on the BOLD signal during a sensorimotor task in healthy volunteers, *Methods in Bioengineering* Jun 2007.

Rainis EJ, **Voycheck CA**, Elizabeth EA, McMahon PJ, Debski RE. Effects of Gender on the Mechanical Properties of the Glen humeral Capsule: Implications for Surgical Repair Techniques. *Conference Proceedings: ASME*, Keystone, CO 2007.

Wescoe, Kristin E., and B.M. Deasy. 2007. Methods for Application of Compressive Loading of Tissue Engineering Cartilage Constructs. *Orthopaedic Research Society*; San Francisco, California.

Wescoe, Kristin E., R.C. Schugar, D.W. Wilkinson, and B.M. Deasy. 2007. Comparison of Potential 3D Organic Gels for Cartilage Tissue Engineering to Support Growth of Novel Human Umbilical Cord Cells. *American Society for Cell Biology; Washington*, D.C. *Poster*

Wognum S, Sacks MS. A structural model of the urinary bladder wall: Effects of connective tissue remodeling. *Engineering and Urology Society 22nd Annual Meeting*, Anaheim, CA, May, 2007.

Wognum S, Sacks, MS. A structural constitutive model of the connective tissue of the urinary bladder wall. *44th Annual Technical Meeting Society of Engineering Science*, October 21 - 24, 2007, Texas A&M, State College, TX.

Woolley J, Snyder T, **Johnson C**, Wagner W. Ovine Platelet Aggregation Sensitivity to Anticoagulant and Anti-platelet Agents. *ASAIO Conference*; June 2007; Chicago, IL. Oral Presentation.

Woolley J, Antaki J, **Arnold D**, **Bachman T**, Bearnson G, Drummond A, Gardiner J, **Johnson C**, Kameneva M, Keller B, Khanwilkar P, Kirk J, Kouretas P, **Oberdier M**, Paden B, Paden D, Ricci M, Shu F, Snyder S, Vandenberghe S, Verkaik J, Wagner W, Wearden P, Webber S, Wu J, Ye S, Borovetz H. Development and Initial In Vivo Evaluation of the PediaFlow Ventricular Assist Device. *Gordon Research Conference*; September 2007; Big Sky, MT. Poster Presentation.

Zou L, Profilin-1 is a negative regulator of mammary carcinoma aggressiveness. *British Journal of Cancer 2007*, 97;1361-1371

Graduate Student Presentations – 2007 (*59 in number*)

Akins J, *ISO Support Surface Standards Meeting*, October 2007 – Presentation Titled: FSA Shear Sensor Characterization Tests: Part 2, Weber State University, Ogden, UT, USA

Akins J, *Support Surface Standards Initiative Meeting*, September 2007 – Presentation Titled: FSA Shear Sensor Characterization Tests, University of Pittsburgh, Pittsburgh, PA, USA

Beschorner KE, Lovell MR, Redfern MS, Shoe-floor frictional properties for varying sliding speed, pressure and contaminant, *ASME/STLE International Joint Tribology Conference*, October 22-24, 2007.

Beschorner KE, Lovell MR, Higgs CF III, Redfern MS, Modeling shoe-floor-liquid contaminant friction for pin-on-disk experiments, *ASME/STLE International Joint Tribology Conference*, October 22-24, 2007.

Beschorner KE, Cham RE, 2007, Heel acceleration at heel strike and slip outcome. *International Society for Posture and Gait Research,* July 7-11.

Bourbeau D, "A computational model for examining activation of peripheral neurons by electrical microstrimulation", *Society for Neuroscience Annual Conference* in San Diego, November 2007, poster presentation, co-authored by James Hokanson and Doug Weber.

Agrawal V, **Brennan EP**, Reing, J, **Freytes DO**, Badylak SF, "Intestinal Progenitor Cells Preferentially Migrate and Proliferate in Response to Degradation Products of Small Intestinal Submucosa Extracellular Matrix Bioscaffolds," *Tissue Engineering and Regenerative Medicine International Society North America 2007 Conference*, Toronto, Ontario on June 15, 2007 (podium presentation).

Brennan EP, Reing J, Zhang L, Myers-Irvin JM, Badylak SF, "Chemoattractant Degradation Products of Extracellular Matrix Bioscaffolds," *Society for Biomaterials Annual Meeting*, Chicago, IL on April 19, 2007 (podium presentation).

Agrawal V, **Brennan EP**, Reing J, **Freytes DO**, and Badylak SF. Intestinal Progenitor Cells Preferentially Migrate and Proliferate in Response to Degradation Products of Small Intestinal Submucosa Extracellular Matrix Bioscaffolds. *Regenerate 2007*. Toronto, Canada.

Brown B, **Valentin J**, Akers AM, Badylak SF. The Effects of a Cellular Component within a Biomaterial Upon Macrophage Polarization and Tissue Remodeling Outcome Oral Presentation – *Tissue Engineering and Regenerative Medicine International Society, Asia-Pacific Chapter Meeting 2007*, Tokyo, Japan. December 3-5, 2007.

Brown B on behalf of Thomas W. Gilbert, Gilbert S, Reynolds D, Povirk K, Rosen C, Badylak SF Extracellular Matrix Scaffolds for Repair of the Trachea and the Vocal Folds Oral Presentation – *Tissue Engineering and Regenerative Medicine International Society, Asia-Pacific Chapter Meeting 2007*, Tokyo, Japan. December 3-5, 2007.

Brown B on behalf of Thomas W. Gilbert, Miller K, Habib A, Jones MR, Wilson, ME, Yates AJ, McHenry ME, Badylak SF. FeCo Nanoparticles for the In Vivo Tracking of ECM Scaffold Degradation Products Oral Presentation - *Tissue Engineering and Regenerative Medicine International Society, Asia-Pacific Chapter Meeting 2007*, Tokyo, Japan. December 3-5, 2007.

Brown B, Stewart-Akers AM, Badylak SF. The Effects of a Cellular Component within a Biomaterial upon Macrophage Polarization and Tissue Remodeling Outcome Oral Presentation – *IT: Inflammation Technology, 10th UWEB Summer Symposium*, University of Washington, Seattle, WA. August 27-28, 2007

Brown B, Stewart-Akers AM, Badylak SF. The Effects of Scaffold Composition Upon Macrophage Polarization and Tissue Remodeling Poster Presentation – *Tissue Engineering and Regenerative Medicine International Society, North American Chapter 2007 International Conference and Exposition*, Toronto, Canada. June 13-16, 2007

Clause KC, Tinney JP, Li JL, Burhan G, Fujimoto, KL, Wagner WR, Ralphe JC, Keller BB, Huard J, Tobita K. Functioning Engineered Cardiac Tissue from Skeletal Muscle Derived Stem Cells. *4th Annual Symposium of the American Heart Association Council on Basic Cardiovascular Sciences: Cardiovascular Repair and Regeneration: Structural and Molecular Approaches in the Cellular Era*. (Keystone, CO, 2007).

Drury, NJ, Ellis, B.J., Moore, S.M., Weiss, J.A., Debski, R.E. "Maximum Principal Strains in the Glenohumeral Capsule During a Clinical Exam: A Validated Finite Element Model." *2007 ASME Summer Bioengineering Conference*.

El-Kurdi MS, Hong Y, Stankus JJ, **Soletti L**, Wagner WR, Vorp DA. Engineering vein grafts using an external electrospun biodegradable polymer wrap to gradually impose arterial circumferential wall stress over time. *SBC2007*. June 20-24. Keystone, CO.

Freytes DO and Badylak SF. Bioscaffolds Composed of Extracellular Matrix for Regenerative Medicine Applications. *Wound Healing Research Conference*, McGowan Institute for Regenerative Medicine, Pittsburgh, PA, February, 2007. – *Oral Presentation.

Freytes DO, **Valentin JE**, Pesyna CM, Freund J, and Badylak SF. Characterization of Oxygen Diffusion across a Variety of Extra-cellular Matrix Derived Scaffolds. *Society for Biomaterials Meeting* April 2007. Chicago, IL. – *Poster Presentation.

Freytes DO, Tobita K, Tinney JP, Keller BB, **Wainwright JW**, Martin J, Velankar SS, and Badylak SF. Extracellular Matrix Derived Gel for Cardiac Tissue Engineering Applications. *Society for Biomaterials Meeting* April 2007. Chicago, IL. – *Oral Presentation. Received a STAR Award

Freytes DO, Lee AS, Tobita K, Tinney JP, Keller BB, **Wainwright JW**, and Badylak SF. In Vitro Culture of Myogenic Cells on Urinary Bladder Matrix Gels. *Regenerate 2007*. Toronto, Canada. – *Poster Presentation

Freytes DO, Kolman SE, Velankar SS, and Badylak, SF. Rheological Properties of Extracellular Matrix Derived Scaffolds. *Summer Bioengineering Conference 2007*. Keystone, Colorado. – *Poster Presentation – Ph.D. Student paper competition

Freytes DO, Kolman SE, Velankar SS, and Badylak SF. Rheological Properties of Extracellular Matrix Derived Hydrogels. *The Society of Rheology 79th Annual Meeting* 2007. Salt Lake City, Utah.

Haworth DJ, Chew DW, Kaiho Y, Kim DK, Yoshimura N, Chancellor MB, Vorp DA, The Effects of Culture Conditions and Implantation on the Structural and Mechanical Characteristics of a Tissue Engineered Urethral Wrap in *Hilton Head Engineering Tissues Workshop*, Hilton Head, South Carolina, March 2007, poster
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Haworth DJ, Chew DW, Miyazato M, Kim DK, Yoshimura N, Chancellor MB, Vorp DA, The Effects of Culture Conditions and Implantation on the Structural and Mechanical Characteristics of a Tissue Engineered Urethral Wrap in *Engineering and Urology Society Meeting*, Anaheim, California, May 2007, moderated poster.

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Haworth DJ, Chew DW, Miyazato M, Kim DK, Yoshimura N, Chancellor MB, Vorp DA, The Effects of Culture Conditions and Implantation on the Structural and Mechanical Characteristics of a Tissue Engineered Urethral Wrap in *ASME*, Keystone, Colorado, June 2007, oral.

He Y, Role of Src in Pressure-Induced Regulation of Arterial Gap Junctions: An *Ex Vivo* Study. *BMES Annual Fall Meeting 2007*, Los Angeles, CA, September 26-29, 2007 (**Y. He**, S.G. Shroff)

He Y, Effects of Intermittent Hypoxia on Cardiac Muscle Contractile Function in Mice. *BMES Annual Fall Meeting 2007*, Los Angeles, CA, September 26-29, 2007 (S.H. Smith, A.M. Janczewski, J. Naghshin, **Y. He**, C.P. O'Donnell, S.G. Shroff)

He Y, Regulation of Arterial Gap Junctions by Steady and Pulsatile Perfusion: An *Ex Vivo* Study. *Midwest Biomedical Engineering Conference*, Cleveland, OH, February 23, 2007 (**Y. He**, S.G. Shroff)

Johnson L, Kim HK, Pinsky MR, Shroff SG. Poster Presentation: Global LV Performance and Contractility are Increased with LV Apical but not LV Free-wall Pacing in an Acute Canine Model of Contraction Dyssynchrony. *University of Pittsburgh Science 2007: Collaborate, Innovate, Transform*. Pittsburgh, PA, October 11-12, 2007.

Johnson L, Kim HK, Cannesson MP, Gorcsan J, Schwartzman D, Shroff SG, Pinsky MR. Poster Presentation: Differential Effects of Left Ventricular Pacing Sites in a Canine Model of Dyssynchrony. *Midwest Biomedical Engineering Conference (MBEC) 2007*. Cleveland, OH, February 23, 2007.

Kirk J, *Biomedical Engineering Society Annual Meeting*, Los Angeles, CA, October 2007 (Poster)

Kirk J, *American Heart Association Scientific Sessions 2007*, Orlando, FL, November 2007 (Podium)

Ivanova JS, **Long RA**, Parekh A, and Sacks, MS, Mechanical Stimulation and Cytokines Influence Bladder Smooth Muscle Cell Migration on Small Intestinal Submucosa. Presented at the *Biomedical Engineering Society Conference*, Los Angeles, California on September 29, 2007, abstract published in conference proceedings.

Long RA, Parekh A, and Sacks MS, Strain Induced Bladder Smooth Muscle Remodeling. Presented in the PhD competition at the *2007 ASME Summer Bioengineering Conference*, Keystone, Colorado on June 23, 2007, abstract published on CD-ROM.

Long RA, Parekh A, Chancellor MS, and Sacks MS, Bladder Smooth Muscle Cell Responses to Contact Guidance e and Biaxial Mechanical Stretch. Presented at the *Society for Biomaterials 2007 Annual Meeting*, Chicago, Illinois on April 20, 2007, abstract published on CD-ROM.

Long RA, Parekh A, and Sacks, MS. Strain induced bladder remodeling. Poster presented at the *Biomedical Engineering Society Conference*, Los Angeles, California, September 29, 2007.

Long RA, Parekh A, Chancellor MB, and Sacks MS. An Ex Vivo Model for Strain Induced Bladder Smooth Muscle Remodeling. Presented at the *Engineering and Urology Society*, Anaheim, California, May 19, 2007.

Long RA, Parekh A, Chancellor MB, and Sacks, MS. Response of bladder smooth muscle cells to contact guidance and mechanical stimulation. Poster presented at the *Engineering and Urology Society*, Anaheim, California, May 19, 2007.

Parekh A, **Long RA**, Chancellor MB, and Sacks MS. In Vivo Expression of TGF-B1 In Spinal Cord Injury Bladders and in Vitro Effects on Bladder Smooth Muscle Cell Contraction and Remodeling. Presented at the *Engineering and Urology Society*, Anaheim, California, May 19, 2007.

Park TS, *Science 2007: Collaborate, Innovate, Transform*, Pittsburgh, PA. Poster presentation, October 2007 (local).

Park, TS, *5th International Society for Stem Cell Research (ISSCR)*, Cairns, Australia, Poster presentation, June 17-20, 2007 (International).

Park, TS, *Tissue Engineering International and Regenerative Medicine Society (TERMIS)*, Toronto, Canada, Poster presentation, June 13-16, 2007 (International).

Perel S, "Real-time Continuous Neural Control of a 4-DOF Prosthetic Arm" - *Technion* - Israel, Tel Aviv University- Israel

Shukla G, Wu B, Klatzky R, Sumkin J, Stetten G. "Development of a Hybrid Ultrasound Biopsy Phantom to Study The Effect of Tissue Compressibility on Target Identification and Localization," *National MD-PhD Student Conference*, Keystone, Colorado, July 27-29, 2007.

Soletti L, Nieponice A, Guan J, Hong Y, Stankus JJ, **El-Kurdi MS**, Wagner WR, Vorp DA. Assessment of a biomimetic, composite, tubular scaffold for vascular tissue engineering applications. *2007 BMES Annual Fall Meeting*, September 26-29, 2007, Los Angeles, CA.

Soletti L, Nieponice A, Vorp DA. Vacuum Seeding Rotational Device. *2007 BIO International Convention*, May 6-9, 2007, Boston, MA.

Soletti L, Guan J, Hong Y, Stankus JJ, Nieponice A, Wagner WR, Vorp DA. Optimization of a stem cell-based tissue engineered vascular graft with a novel hybrid scaffold. *TERMIS Conference 2007*, June 13-16, Toronto, Canada.

Tengood JE, Dissolvable, Synthetic Vasculature (Poster presentation, *BMES*, 2007)

VanEpps, J.S., Vorp, D.A., Calculation of a Shear Strain Parameter for a Three-Dimensional Fung-Type Exponential Model of the Arterial Wall Under Torsion, Proceedings of the *ASME 2007 Summer Bioengineering Conference*, 2007. (Oral Presentation)

VanEpps, J.S., Chew, D.W., Vorp D.A., Combined Experimental and Computational Study of Remodeling In Arterial Segments Undergoing Dynamic Deformations Consistent With the Coronary Arteries, *44th Annual Meeting of the Society for Engineering Science*, 2007. (Oral Presentation)

Wainwright JW, **Freytes DO**, Tobita K, Tinney JP, Keller BB, Freund J, and Badylak SF. Cardiac Extracellular Matrix (CECM) as a Left Ventricular Patch. *Hilton Head Workshop 2007*. Hilton Head, South Carolina.

Wainwright JW, **Freytes DO**, Tobita K, Tinney JP, Keller BB, and Badylak SF. Cardiac Extracellular Matrix (C-ECM) and Urinary Bladder Matrix (UBM) in Lyophilized Sheet and Gel Form for Cardiac Applications. *Regenerate 2007*. Toronto, Canada.

Wescoe, KE, R.C. Schugar, D.W. Wilkinson, and B.M. Deasy. 2007. Comparison of Potential 3D Organic Gels for Cartilage Tissue Engineering to Support Growth of Novel Human Umbilical Cord Cells. *American Society for Cell Biology*; Washington, D.C. *Poster*

Snyder T, **Woolley J**, Marascalco P, Antaki J, Wagner W, Kameneva M. Validity of Normalized Index of Hemolysis in Pediatric Mechanical Circulatory Assist Devices and Application to Hemolysis Testing of Five Pediatric Blood Pumps. *The 53rd Annual Conference of American Society for Artificial Internal Organs*, Chicago, IL, June 2007

Woolley J, Snyder T, **Johnson C**, Wagner W. Ovine Platelet Aggregation Sensitivity to Anticoagulant and Anti-platelet Agents. *ASAIO Conference*; June 2007; Chicago, IL. Oral Presentation.

Woolley J, Antaki J, **Arnold D**, **Bachman T**, Bearnson G, Drummond A, Gardiner J, **Johnson C**, Kameneva M, Keller B, Khanwilkar P, Kirk J, Kouretas P, **Oberdier M**, Paden B, Paden D, Ricci M, Shu F, Snyder S, Vandenberghe S, Verkaik J, Wagner W, Wearden P, Webber S, Wu J, Ye S, Borovetz H. Development and Initial In Vivo Evaluation of the PediaFlow Ventricular Assist Device. *Gordon Research Conference*; September 2007; Big Sky, MT. Poster Presentation.

Graduate Student Awards & Fellowships – 2007 (*42 in number*)

Akins J, Assistive Technology Commercialization Initiative Grant, 2007, $10,000

Augustine S, National Science Foundation Graduate Research Fellowship

Brown B, Tissue Engineering and Regenerative Medicine International Society - North America 2007 Conference and Exposition Student Travel Award – June, 2007

Brown B, McGowan Trainee Career Advancement Program Travel Scholarship – December, 2007

Carruthers C, NIH T32 Trainee in Biomechanics in Regenerative Medicine Program
George M. Bevier Fellowship Recipient; NSF GRFP 2008 Honorable Mention Recipient

Clause KC, National Institutes of Health Ruth L Kirschstein National Research Service Award (NRSA) Institutional Research Training Grant (T32) Cardiovascular Bioengineering Training Program (CBTP) Fellow

Clause KC, Awarded: Ohio Doctors Interested in Congenital Hearts (ODICH) Best Scientific Abstract Award for: Functioning Cardiomyocyte Induction from Skeletal Muscle Derived Stem Cells using a 3D gel bioreactor for Congenital Heart Disease

Collinger JL, NSF Graduate Research Fellowship ended August 2007.

Collinger JL, Named Bioengineering Research Associate of the Year (2006-2007)

Drury NJ, 2007 NSF Graduate Research Fellowship Program Honorable Mention

Drury NJ, 2007 University of Pittsburgh Musculoskeletal Research Center Graduate Student of the Year

Drury NJ, INNOVATE 2007: selected to attend globalization conference in China and India

Freytes DO, 2007 STAR (Student Travel Achievement Recognition) Award Society for Biomaterials

Haworth D, University of Pittsburgh, Department of Bioengineering Travel Award NIH R13 Travel Award.

Impink B, Pre-Doctoral Associated Health Rehabilitation Research Fellowship (awarded August 2007, began March 2008)

Kanal E, Multimodal Neuroimaging Training Program grant (NIH award # 5R90DA023420)

Kirk JA, Outstanding Teaching Assistant, Department of Bioengineering, University of Pittsburgh, 2007.

Kirk JA, 1st Place Poster Competition, McGowan Institute for Regenerative Medicine Retreat, 2008.

Long RA, Selection of participation in the Second Annual NIH National Graduate Student Research Festival, Bethesda, MD, October 11-12, 2007.

Long RA, Biomedical Engineering Society 2007 Graduate Research Award Finalist in the ASME Summer Bioengineering Conference PhD Competition, Keystone, Colorado, June 23, 2007.

Long RA, McGowan Trainee Career Advancement Program Travel Award to attend the Society for Biomaterials Meeting, Chicago, IL, April 18-21, 2007.

Maul TM, University of Pittsburgh Honors Convocation Graduate Student Representa6tive, 2007.

Maul TM, Hartwell Foundation Postdoctoral Fellowship, 2007

Park TS, Top 3 poster award, Science 2007 conference, Pittsburgh, 2007.

Park TS, Travel grant (NIH R13 grant) for TERMIS 2007 Regenerate Conference, Toronto, 2007

Park TS, People's Choice Award for poster presentation competition, TERMIS 2007 Regenerate Conference, Toronto, 2007.

Park TS, Top 20 poster for TERMIS 2007 Regenerate Conference, Toronto, 2007.

Ruffner M, University of Pittsburgh/Carnegie Mellon Biotechnology Training Program Fellowship, 2006-2008. NIH 5T32GM065100-04

Soletti L, Outstanding TA/RA 2007, Bioengineering Department, University of Pittsburgh.

Teng B, New Investigator Award, *International Conference on the Chemistry and Biology of Mineralized Tissues*, 2007

Teng B, MTCAP Travel Award, *McGowan Institute of Regenerative Medicine*, 2007

Teng B, Dean's Travel Award, School of Dental Medicine, *University of Pittsburgh*, 2007

Tengood JE, Fellowship: Cardiovascular Bioengineering Training Program (University of Pittsburgh)

VanEpps JS, 2007 - Outstanding Teaching Assistant, University of Pittsburgh, Department of Bioengineering

Wescoe, **KE**, 2007 Dean's Fellowship, University of Pittsburgh

Wescoe, **KE**, 2008 Catalyst Fellowship, Clinical and Translational Science Institute, University of Pittsburgh

Woolley J, Recipient of NIH Training Grant, Cardiovascular Bioengineering Training Program, University of Pittsburgh

Woolley J, Recipient of Travel Award, Gordon Research Conference

Woolley J, Recipient of Paul Malcheski Student Award, ASAIO Conference

Woolley J, Treasurer, ASAIO for Young Innovators Executive Committee

Woolley J, Member, Summer Internship Selection Committee for Pittsburgh Tissue Engineering Initiative (PTEI)

Patent Applications (*3 in number*)

Utility Patent Application: "Biodegradable Elastomeric Scaffolds Containing Microintegrated Cells" Serial No.: 11/837,235, Filed August 10, 2007. Inventors: William Wagner, John Stankus, Michael Sacks, **Todd Courtney,** Jianjun Guan, Kazuro Fujimoto, Alejandro Nieponice, **Lorenzo Soletti**, David Vorp.

El-Kurdi MS, Hong Y, Stankus JJ, **Soletti L**, Wagner WR, Vorp DA, Filed January 30, 2007, "Bioerodible Wraps and Uses Therefore". Serial Number: 60/898,356.

Utility Patent Application: "Biodegradable Wraps and Uses Therefore" Serial No.: 60/898,356, Filed January 30, 2007. Inventors: **Mohammed El-Kurdi**, Yi Hong, John J. Stankus, William R. Wagner, David A. Vorp, **Lorenzo Soletti**.