

# Curriculum Vitae

## Anthony J McGoron: Department of Biomedical Engineering

<http://bme.fiu.edu/people/anthony-mcgoron/>

### EDUCATION

Degree	Institution	Field	Dates
PostDoc	University of Cincinnati	Pharmacology/Cell Biophysics	1991-1994
PhD	Louisiana Tech University	Biomedical Engineering	1988-1991
MSE	Wright State University	Systems/Biomedical Engineering	1986-1988
BSE	Wright State University	Biomedical Engineering	1983-1986

### FULL-TIME ACADEMIC EXPERIENCE

Institution	Rank	Department (College)	Dates
Florida International U	Associate Dean	College of Engineering and Computing	2015-present
Florida International U	Professor	Biomedical Engineering	2013-present
Florida International U	Interim Chair	Biomedical Engineering	2007-2010
Florida International U	Associate Professor	Biomedical Engineering	2005-2013
Florida International U	Assistant Professor	Biomedical Engineering	1999-2005
University of Cincinnati	Research Assist Prof	Nuclear Medicine/Medical Physics	1994-1999

### OTHER ACADEMIC APPOINTMENTS

STEM Transformation Institute's Founding Faculty Fellow 2015

Founding member of the Biomolecular Sciences Institute (BSI) in the School of Integrated Sciences and Humanities (SISH), FIU 2014-present

Honors College Fellow, FIU 2011-present

Courtesy Professor of Radiology, Herbert Wertheim College of Medicine, FIU 2010-Present

Courtesy Assistant Professor of Radiology, Miller College of Medicine, University of Miami, 2001-2006

Courtesy Assistant Professor of Radiology, University of Cincinnati College of Medicine, 1999-2002

### PUBLICATIONS IN DISCIPLINE

#### a. Regular Refereed Articles (\*corresponding author, \*student)

- 1 S. Srinivasan\*, V. Bhardwaj\*, A. Nagasetti\*, A. Fernandez-Fernandez, A.J. McGoron<sup>‡</sup>. Multifunctional silver nanoparticles for targeted cancer therapy. *Journal of Biomedical Nanotechnology*. Vol. 12, 2202–2219, 2016
- 2 Sagar V; Atluri VSR; Tomitaka A; Shah P; Nagasetti\* A; Pilakka-Kanthikeel S; El-Hage N; McGoron A; Takemura Y; Nair M. Coupling of transient near infrared photonic with magnetic nanoparticle for potential dissipation-free biomedical application in brain. *Scientific Reports*. 6 article number 29792, 2016, doi:10.1038/srep29792
- 3 A. Nagasetti\* and A.J. McGoron<sup>‡</sup>. Multifunctional Organically Modified Silica Nanoparticles for Chemotherapy, Adjuvant Hyperthermia and Near Infrared Imaging. *Colloids and Surfaces B: Biointerfaces* 147:492-500, 2016
- 4 Senait Aknaw Debebe\*, Mohammed Goryawala\*, Malek Adjouadi, Anthony J. McGoron, Seza A. Güleç. 18F-FLT Positron Emission Tomography/Computed Tomography Imaging in Pancreatic Cancer: Determination of Tumor Proliferative Activity and Comparison with Glycolytic Activity as Measured by 18F-FDG Positron Emission Tomography/Computed Tomography Imaging. *Mol Imaging Radionucl Ther* 2016;25:32-38.
- 5 Bhardwaj\*, V., S. Srinivasan\*, A.J. McGoron<sup>‡</sup>. Efficient intracellular delivery and improved biocompatibility of colloidal silver nanoparticles towards intracellular SERS immuno-sensing. *Analyst* 140, 3929-3934, 2015.
- 6 Gill, P., V. Musaramthota, N. Munroe, A. Datye, R. Dua, W. Haider, R. Rokicki, A. McGoron and S Ramaswamy. Surface Modification of Ni-Ti Alloys for Stent Application after Magnetoelectropolishing, *Material Science and Engineering C*. 50:37-44, 2015

- 7 Fernandez-Fernandez\*, A., D. Carvajal, T.L. Lei\*, A. McGoron<sup>‡</sup>. Chemotherapy-Induced Changes in Cardiac Capillary Permeability Measured by Fluorescent Multiple Indicator Dilution. *Annals of Biomed Eng.* 42:2405-2415, 2014 (DOI: 10.1007/s10439-014-1110-9).
- 8 Fernandez-Fernandez\*, Alicia, Romila Manchanda, Denny Carvajal, Tingjun Lei\*, Supriya Srinivasan\*, Anthony J. McGoron<sup>‡</sup>. Covalent IR820-PEG Diamine Nanoconjugates for Theranostic Applications in Cancer. *International Journal of Nanomedicine.* 2014:9, 4631-4638, 2014  
<http://dx.doi.org/10.2147/IJN.S69550>
- 9 Mohammed Goryawala, Seza A. Gulec, Ruchir Bhatt\*, Anthony J. McGoron, and Malek Adjouadi. A Low-Interaction Automatic 3D Liver Segmentation Method using Computed Tomography (CT) for Selective Internal Radiation Therapy (SIRT). *BioMed Research International.* vol. 2014, Article ID 198015, 12 pages, 2014. doi:10.1155/2014/198015.
- 10 Srinivasan\*, S. R. Manchanda, T. Lei\*. A. Nagesetti\*. A. Fernandez-Fernandez, A. J. McGoron<sup>‡</sup>. Targeted PLGA nanoparticles for simultaneous delivery of chemotherapeutic and hyperthermia agents - an in vitro study. *Journal of Photochemistry & Photobiology, B: Biology* 136C (2014), pp. 81-90 DOI: 10.1016/j.jphotobiol.2014.04.012
- 11 Bhardwaj\*<sup>‡</sup>, V., A.J. McGoron. Biosensor Technology for Chemical and Biological Toxins: Progress and Prospects. *Photon. Photon Journal of Biomedical Engineering.* 112 (2014) 380-392
- 12 Lei\*, T., R. Manchanda, A. Fernandez-Fernandez\*, Y.C. Huang, D. Wright, A.J. McGoron<sup>‡</sup>. Thermal and pH Sensitive Multifunctional Polymer Nanoparticles for Cancer Imaging and Therapy. *RSC Advances.* 2014, 4, 17959-17968. DOI:10.1039/C4RA01112K
- 13 Alejandro Amor-Coarasa\*, Andrew Milera, Denny Carvajal, Seza Gulec, and Anthony J. McGoron<sup>‡</sup>. Lyophilized Kit for the Preparation of the PET Perfusion Agent [<sup>68</sup>Ga]-MAA. *International Journal of Molecular Imaging*, vol. 2014, Article ID 269365, 7 pages, 2014. doi:10.1155/2014/269365
- 14 Lei\*, T., A. Fernandez-Fernandez\*, R. Manchanda, Y.C. Huang, A.J. McGoron<sup>‡</sup>. Near-infrared dye loaded polymeric nanoparticles for cancer imaging and therapy and cellular response after laser-induced heating. *Beilstein J. of Nanotechnology.* 2014, 5, 313-322
- 15 Alejandro Amor-Coarasa\*, Andrew Milera, Denny Carvajal, Seza Gulec, and Anthony J. McGoron<sup>‡</sup>, <sup>90</sup>Y-DOTA-CHS Microspheres for Liver Radiomicrosphere Therapy: Preliminary In Vivo Lung Radiochemical Stability Studies, *Journal of Radiotherapy*, vol. 2014, Article ID 941072, 6 pages, 2014. doi:10.1155/2014/941072
- 16 Alejandro Amor-Coarasa\*, Andrew Milera, Denny Carvajal, Seza Gulec, Jared Leichner, and Anthony J. McGoron<sup>‡</sup>, "68Ga-NOTA-CHSg and -CHSg Labeled Microspheres for Lung Perfusion and Liver Radiomicrospheres Therapy Planning," *International Journal of Molecular Imaging*, vol. 2013, Article ID 279872, 9 pages, 2013. doi:10.1155/2013/279872
- 17 Bhardwaj\*, V., S. Srinivasan\*, A.J. McGoron. AgNPs-Based Label-Free Colloidal SERS Nanosensor for the Rapid and Sensitive Detection of Stress-Proteins Expressed in Response to Environmental-Toxins. *Biosensors and Bioelectronics* S12: 005. doi: 10.4172/2155-6210.S12-005 (2013)
- 18 Srinivasan\*, S. R. Manchanda, A. Fernandez-Fernandez\*, T. Lei\*, A. J. McGoron<sup>‡</sup>. Near-Infrared Fluorescing IR820-Chitosan Conjugate for Multifunctional Cancer Theranostic Applications, *Journal of Photochemistry and Photobiology B: Biology* 119:52-59, 2013.
- 19 Tang\*, J., A.J. McGoron<sup>‡</sup>. Increasing the Rate of Heating: A Potential Therapeutic Approach for Achieving Synergistic Tumor Killing in Combined Hyperthermia and Chemotherapy. *Int J of Hyperthermia.* 29(2):145-155, 2013.
- 20 Gill\*, P., N. Munroe, and A.J. McGoron. Characterization and Degradation Behavior of Anodized Magnesium-Hydroxyapatite Metal Matrix Composites. *Journal of Biomimetics, Biomaterials, and Tissue Engineering.* 16:55-69, 2012.
- 21 Persaud-Sharma\*, D, N. Budiansky, A.J. McGoron. Mechanical Properties and Tensile Failure Analysis of Novel Bio-absorbable Mg-Zn-Cu and Mg-Zn-Se Alloys for Endovascular Applications. *Metals.* 3:23-40, 2012 doi:10.3390/met3010023
- 22 Goryawala\* M., M.R. Guillen, S. Gulec, T. Barot, R. Suthar, R. Bhatt\*, A. McGoron and M. Adjouadi, An Accurate 3D Liver Segmentation Method for Selective Internal Radiation Therapy Using a Modified K-Means Algorithm and Parallel Computing. *Int. J. of Innovative Computing Information and Control.* 8(10):6515-6538, 2012.

- 23 Bhatt\*, R. M. Adjouadi, M. Goryawala\*, S. Gulec, and A. McGoron<sup>‡</sup>. An algorithm for PET tumor volume and activity quantification: Without specifying camera's point spread function (PSF). *Medical Physics*. 39(7):4187-4203, 2012.
- 24 Manchanda, R., A. Fernandez-Fernandez\*, D.A. Carvajal\*; T. Lei\*, Y. Tang\*, A.J. McGoron. Nanoplexes for Cell Imaging and Hyperthermia: In vitro Studies. *J of Biomedical Nanotechnology*. 8:699–707, 2012.
- 25 Goryawala\* M., M.R. Guillen, M. Cabrerizo, A. Barreto, S. Gulec, T. Barot, R. Suthar, R. Bhatt\*, A. McGoron, M. Adjouadi. A 3D Liver Segmentation Method with Parallel Computing for Selective Internal Radiation Therapy. *IEEE - Transactions on Information Technology in Biomedicine*. 16(1):62-69, 2012.
- 26 Fernandez-Fernandez\*, A, R. Manchanda, T. Lei\*, D. Carvajal\*, Y. Tang\*, S. Kazmi\*, A.J. McGoron<sup>‡</sup>. A Comparative Study of Optical and Heat Generation Properties of IR820 and Indocyanine Green. *Mol Imaging*. 11(2):99-113. 2012. DOI 10.2310/7290.2011.00031
- 27 Persaud-Sharma,\* D., A. McGoron Biodegradable Magnesium Alloys: A Review of Material Development and Applications. *Journal of Biomimetics Biomaterials and Tissue Engineering*; 12:25-39, 2012. DOI: 10.4028/www.scientific.net/JBBTE.12.25
- 28 Persaud-Sharma\*, D., N. Munroe, A. McGoron. Electro and Magneto-Electropolished Surface Micro-Patterning on Binary and Ternary Nitinol. *Trends Biomater Artif Organs*. 2012; 26(2): 74–85.
- 29 Goryawala\*, M., M.R. Guillen, A. Barreto, R. Bhatt\*, A. McGoron, M. Adjouadi. Design and Evaluation of Parallel Processing Techniques for 3D Liver Segmentation and Volume Rendering. *Journal on Software Engineering*. 5(4):12-27, 2011.
- 30 Fernandez-Fernandez\*, A., R. Manchanda, A.J. McGoron<sup>‡</sup>. Theranostic Applications of Nanomaterials in Cancer: Drug. Delivery, Image-Guided Therapy, and Multifunctional Platforms. *Appl Biochem Biotechnol*. 165(7-8):1628-51, 2011.
- 31 Haider\*, W., N. Munroe, V. Tek, P. K. S. Gill\*, Y. Tang\*, A. J. McGoron. Cytotoxicity of Metal Ions Released from Nitinol Alloys on Endothelial Cells. *Journal of Materials Engineering and Performance*. 2011. DOI: 10.1007/s11665-011-9884-5.
- 32 Lei\*, T., S. Srinivasan\*, Y. Tang\*, R. Manchanda, A. Nagesetti\*, A. Fernandez-Fernandez, A.J. McGoron<sup>‡</sup>. Comparing Cellular Uptake and Cytotoxicity of Targeted Drug Carriers in Cancer Cell Lines with Different Drug Resistance Mechanisms. *Nanomedicine: Nanotechnology, Biology and Medicine*. 7(3):324-332, 2011 doi:10.1016/j.nano.2010.11.004. NIHMS 254071
- 33 Pulletikurthi\*, C., N. Munroe, P. Gill\*, S. Pandya\*, D. Persaud\*, W. Haider\*, K. Iyer\*, and A. McGoron Cytotoxicity of Ni from Surface-Treated Porous Nitinol (PNT) on Osteoblast Cells. *Journal of Materials Engineering and Performance*. 2011. DOI: 10.1007/s11665-011-9930-3
- 34 Zhang\*, Z. A.J. McGoron, ET Crumpler, and CZ Li. Co-culture based blood-brain barrier in vitro model, a tissue engineering approach using immortalized cell lines for drug transport study. *Appl Biochem Biotechnol* (2011) 163:278–295 DOI 10.1007/s12010-010-9037-6.
- 35 Tang\*, Y., T. Lei\*, R. Manchanda\*, A. Nagesetti\*, A. Fernandez-Fernandez\*, S. Srinivasan\*, A.J. McGoron<sup>‡</sup>. Simultaneous Delivery of Chemotherapeutic and Thermal-Optical Agents to Cancer Cells by a Polymeric (PLGA) Nanocarrier: an In Vitro Study. *Pharm Res* (2010) 27:2242–2253. DOI 10.1007/s11095-010-0231-6.
- 36 Wang\*, Q., A.J. McGoron, R. Bianco, Y. Kato, L. Pinchuk, and R.T. Schoepfoerster. *In Vivo* Assessment of a Novel Polymer (SIBS) Trileaflet Heart Valve. *Journal of Heart Valve Disease*. 2010, 19(4):499-505
- 37 Manchanda, R., A. Fernandez-Fernandez\*, A. Nagesetti\*, and A.J. McGoron, Preparation and characterization of a polymeric (PLGA) nanoparticulate drug delivery system with simultaneous incorporation of chemotherapeutic and thermo-optical agents. *Colloids and Surfaces B: Biointerfaces*, 2010, 75:260–267.
- 38 Wang\*, J., M. de Valle\*, M. Goryawala\*, J. Franquiz and A. McGoron<sup>‡</sup>. Computer Assisted Detection and Quantification of Lung Tumors in Respiratory Gated PET/CT Images: Phantom Study. *Med Biol Eng Comput*. 2010, 48:49–58.
- 39 Tang\*, Y. and A.J. McGoron<sup>‡</sup>. Combined Effects of Laser-ICG Phototherapy and Doxorubicin Chemotherapy on Ovarian Cancer Cells. *Journal of Photochemistry and Photobiology B: Biology* 2009, 97:138-144.
- 40 Wang\*, Q., A.J. McGoron, L. Pinchuk, R.T Schoepfoerster. A Novel Small Animal Model for Biocompatibility Assessment of Polymeric Materials for Use in Prosthetic Heart Valves. *Journal of*

*Biomedical Materials Research Part A*. 2009 (<http://dx.doi.org/10.1002/jbm.a.32562>)

- 41 Gulec, S.A., R. Selwyn, R. Weiner, P. Flamen, G. Mesoloras, D. Lamonica, J. Machac, G. Hiatt, O. Ugur, A. McGoron. Radiomicrosphere Therapy: Nuclear Medicine Considerations, Guidelines and Protocols. *J International Oncology*. 2009, 2(1):26-39.
- 42 McGoron<sup>†</sup>, A.J., M. Capille\*, M.F. Georgiou, P. Sanchez, J. Solano, M. Gonzalez-Brito, and J.W. Kuluz. Brain Perfusion SPECT Analysis using Reconstructed ROI Maps of Radioactive Microsphere derived Cerebral Blood Flow and Statistical Parametric Mapping. *BMC Medical Imaging*, 2008, 8:4.
- 43 Wang\*, J., J. Byrne, J. Franquiz, A. McGoron<sup>†</sup>. Evaluation of an amplitude-based sorting algorithm to reduce lung tumor blurring in PET images using 4D NCAT phantom. *Comput Meth Programs Biomed*. 2007, 87(2):112-122.
- 44 McGoron<sup>†</sup>, A.J., M. Xuming\*, M.F. Georgiou, and J.W. Kuluz. Computer Phantom Study of Brain PET Glucose Metabolism Imaging Using a Rotating SPECT/PET Camera. *Computers in Biology and Medicine*. 2005, 35:511-531.
- 45 Kassing\*, W.M., A.J. McGoron, S.R. Thomas, H.R. Elson, D.W. Pipes. Monte Carlo Calculations of Dose Distribution for Intramural Delivery of Radioisotopes Using a Direct Injection Balloon Catheter. *Cardiovas Rad Med (continued as Cardiovascular Revascularization Medicine)*. 2002, 3:44-48.
- 46 McGoron<sup>†</sup>, A.J., C.H. Joiner, M. Palascak, W.J. Claussen\* and R.S. Franco. Dehydration Of Mature And Immature Sickle Red Blood Cells During Fast Oxygenation/Deoxygenation Cycles: Role Of KCl Cotransport And Extracellular Calcium. *Blood*. 2000, 95:2164-2168.
- 47 McGoron<sup>†</sup>, A.J., W.M. Kassing\*, S.R. Thomas, R.C. Samaratinga, R.G. Pratt, H.R. Elson, D.W. Pipes. Intravascular Irradiation Using Re-186 Liquid-Filled Balloon Catheters: Correlation Between Experimental and Theoretical Studies. *Cardiovas Rad Med (continued as Cardiovascular Revascularization Medicine)*. 1999, 1:368-375.
- 48 McGoron<sup>†</sup>, A.J., D. Biniakiewicz, R.W. Millard, A. Kumar, S.C. Kennedy, N.J. Roszell\*, M. Gabel, C. Huth, R.A. Walsh and M.C. Gerson. Myocardial Kinetics of <sup>99m</sup>Tc-Technetium-Q Agents: Studies in Isolated Cardiac Myocyte, Isolated Perfused Rat Heart and Canine Regional Myocardial Ischemia Models. *Investigative Radiology*. 1999, 34:704-717.
- 49 Lenihan, D.J., A.J. McGoron<sup>†</sup>, M. Gabel, R.A. Walsh, and M.C. Gerson. Reliability of Technetium-99m Q12 and Thallium-201 Myocardial Activity Measurements after Triphenyl Tetrazolium Chloride Myocardial Staining by Perfusion. *Investigative Radiology*. 1999, 34:276-291.
- 50 Rosenbaum, A.F., A.J. McGoron<sup>†</sup>, R.W. Millard, M. Gabel, D. Biniakiewicz, R.A. Walsh and M.C. Gerson. Uptake of Seven Myocardial Tracers During Increased Myocardial Blood Flow by Dobutamine Infusion. *Investigative Radiology*. 1999, 34:91-98.
- 51 Thomas, S.R., L. Gradon, S.E. Pratsinis, R.G. Pratt, G.P. Fotou, A.J. McGoron, A.L. Podgorski and R.W. Millard. Perfluorocarbon Compound Aerosols for Delivery to the Lung as Potential F-19 NMR Reporters of Regional Pulmonary pO<sub>2</sub>. *Invest Radiol*. 1997, 32:29-38.
- 52 Pratt, R.G., J. Zheng, B.K. Stewart, Y. Shiferaw, A.J. McGoron, R.C. Samaratinga and S.R. Thomas. Application of a 3D Volume Protocol for Mapping Oxygen Tension (pO<sub>2</sub>) in Perfluorocarbons at Low Field. *Mag Res Med*. 1997, 37:307-313.
- 53 Meleca, M.J., A.J. McGoron<sup>†</sup>, M.C. Gerson, R.W. Millard, M. Gabel, D. Biniakiewicz, N.J. Roszell and R.A. Walsh. Unique Flow versus Uptake Characteristics of Tc-99m Q3: Comparisons of Perfusion Tracers in a Canine Model of Myocardial Ischemia. *J Nuc. Med*. 1997, 38:1847-1856.
- 54 McGoron<sup>†</sup>, A.J., P.K. Nair, R.W. Schubert. Michaelis-Menten Kinetics Model of Oxygen Consumption by Rat Brain Slices Following Hypoxia. *Annals Biomed Eng*. 1997, 25:565-572.
- 55 Lee, M.T.B., C.J. Seliskar, W.R. Heineman and A.J. McGoron. Microelectrode Sensors for *In Vivo* Detection of Radiopharmaceuticals. *J Am. Chem Soc*. 1997, 119:6434-6435.
- 56 McGoron<sup>†</sup>, A.J., M.C. Gerson, D.S. Biniakiewicz, N.J. Roszell, L.C. Washburn, and R.W. Millard. Extraction and Retention of <sup>99m</sup>Tc Q12, <sup>99m</sup>Tc Sestamibi and <sup>201</sup>Tl in Isolated Rat Heart During Coronary Acidemia. *Eur J Nuc Med*. 1997, 24:1479-1486.
- 57 McGoron<sup>†</sup>, A.J., D.S. Biniakiewicz, L.C. Washburn, R.W. Millard and M.C. Gerson. Effects of Ouabain on <sup>99m</sup>Tc Q12 and <sup>201</sup>Tl Uptake and Retention by Isolated Rat Hearts. *J. Nucl. Med*. 1996, 37:752-756.
- 58 Gerson, M.C. and A.J. McGoron. <sup>99m</sup>Tc Glucarate: What Will Be Its Clinical Role? *J Nucl Cardiol*. 1997, 4:336-340.

- 59 Thomas, S.R., R.G. Pratt, R.W. Millard, R. C. Samaratunga, Y. Shiferaw, A.J. McGoron and K.K. Tan. In Vivo pO<sub>2</sub> Imaging in the Porcine Model with Perfluorocarbon F-19 NMR at Low Field. *Mag Reso. Imaging*. 1996, 14:103-114.
- 60 Stern, S.A., S.C Dronen, A.J. McGoron, X. Wang, K. Chaffins, R. Millard, P.E. Keipert and N.S. Faithfull. The Effect of Supplemental Perfluorocarbon Administration on Hypotensive Resuscitation of Severe Uncontrolled Hemorrhage. *A. J Emergency Med*. 1995, 13:269-275.
- 61 Gerson, M.C., R.W. Millard, A.J. McGoron, M. Gabel, L.C. Washburn, D. Biniakiewicz, R.C. Elder, E. Deutsch and R.A. Walsh. Myocardial Uptake and Kinetic Properties of <sup>99m</sup>Tc Q3 in Dogs. *J Nucl Med*. 1994, 35:1698-1706.
- 62 Gerson, M.C., R.W. Millard, N.J. Roszell, A.J. McGoron, G. Gabel, L.C. Washburn, D. Biniakiewicz, D. Blankenship, W.H. Mallin, R.C. Elder, E. Deutsch and R.A. Walsh. Kinetic Properties of <sup>99m</sup>Tc Q12 in Canine Myocardium. *Circulation*. 1994, 89:1291-1300.
- 63 McGoron<sup>†</sup>, A.J., R. Pratt, J. Zhang, Y. Shiferaw, S. Thomas and R. Millard. Perfluorocarbon Distribution to Liver, Lung and Spleen of Emulsions of Perfluorotributylamine (FTBA) in Pigs and Rats and Perfluoro Octylbromide (PFOB) in Rats and Dogs by <sup>19</sup>F NMR Spectroscopy. Vth International Symposium on Blood substitutes, San Diego, CA, 1993. Full paper published in *Artificial Cells, Blood Subs.& Immob Biotech*. 1994, 22:1243-1250.
- 64 Millard, R.W. and A.J. McGoron. Lung Functions After Intravenous or Intraperitoneal Administration of Perfluoro Octylbromide (PFOB) or Perfluorotributylamine (FTBA). Vth International Symposium on Blood substitutes, San Diego, CA, 1993. Full paper published in *Artificial Cells, Blood Subs & Immob Biotech*. 1994, 22:1251-1258.
- 65 He, P. and A. McGoron. Parameter Estimation For Nonlinear Frequency Dependent Attenuation In Soft Tissue. *Ultrasound Med Biol*. 1989, 15:757-763.

## **b. Conference Proceedings Papers/Abstracts**

### **(1) Refereed Conference Proceeding Papers (multiple pages)**

1. Senait A Debebe, Juan Franquiz, Anthony J McGoron. 3D dosimetry estimation for selective internal radiation therapy (SIRT) using SPECT/CT images: a phantom study. 2015 *Proc. SPIE* 9412, Medical Imaging 2015: Physics of Medical Imaging, 941234 (March 18, 2015); doi:10.1117/12.2082383.
2. Vinay Bhardwaj, Supriya Srinivasan, Anthony J. McGoron. On-chip surface enhanced Raman spectroscopy (SERS)-linked immuno-sensor assay (SLISA) for rapid and global environmental surveillance of chemical-toxins. *Proc. SPIE* 9486, Advanced Environmental, Chemical, and Biological Sensing Technologies XII, 948611 (May 13, 2015); doi:10.1117/12.2182591
3. Szejnberg, M., McGoron, A., Amor-Coarasa, A., Gulec, S. AVANCES EN INVESTIGACIÓN Y DESARROLLO DE LA TERAPIA POR RADIOMICRO-ESFERAS DE 90Y: DOSIMETRÍA NUMÉRICA PARA EXPERIMENTOS CON RADIOQUÍMICOS NOVEDOSOS. AATN 2014. December 1-5. Buenos Ares, Argentina.
4. Alicia Fernandez-Fernandez, Romila Manchanda, Denny A Carvajal, Tingjun Lei and Anthony J McGoron. Multifunctional Covalent Nanoconjugate for Near-Infrared Imaging and Hyperthermia. Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference. Miami, FL, May 3-5, 2013. Sponsored by IEEE EMBS.
5. Tingjun Lei, Romila Manchanda, Alicia Fernandez-Fernandez, Yen-Chih Huang, Anthony J McGoron. Theranostic Nanoparticles for Imaging and Therapy and Cellular Response after Laser-Induced Heating. Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference. Miami, FL, May 3-5, 2013. Sponsored by IEEE EMBS.
6. Vinay Bhardwaj, Supriya Srinivasan, Rupak Dua and Anthony J McGoron. SERS Biosensor for Label Free Monitoring of Environmental Stress. Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference. Miami, FL, May 3-5, 2013. Sponsored by IEEE EMBS.
7. Alejandro Amor Coarasa, Andrew Milera, Denny A. Carvajal, Anthony J McGoron. <sup>99m</sup>Tc-MAA vs. <sup>68</sup>Ga-MAA as Perfusion Agents. Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference. Miami, FL, May 3-5, 2013. Sponsored by IEEE EMBS.
8. Senait Debebe, Ruchir Bhatt and Anthony McGoron. Web Based Interactive Medical Imaging Applications for Teaching Nuclear Medicine. Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference. Miami, FL, May 3-5, 2013. Sponsored by IEEE EMBS.

9. Alicia Fernandez-Fernandez, Romila Manchanda, Denny Carvajal, Tingjun Lei, Anthony J. McGoron. Covalent IR820-PEG diamine conjugates: characterization and in vivo biodistribution, Proc. SPIE 8596, Reporters, Markers, Dyes, Nanoparticles, and Molecular Probes for Biomedical Applications V, 859605 (February 21, 2013); doi:10.1117/12.2004869
10. Anthony J. McGoron, Supriya Srinivasan, Tingjun Lei, Yuan Tang, Romila Manchanda Combined photothermal therapy and chemotherapy in cancer using HER-2 targeted PLGA nanoparticles. SPIE Proceedings Volume 8582: Biophotonics and Immune Responses VIII. San Francisco, CA. February 21, 2013 doi: 10.1117/12.2005500
11. Fernandez-Fernandez, A., R. Manchanda, T. Lei, S. Srinivasan, and A. J. McGoron. IR820 Conjugates for Image-Guided Cancer Therapy. IFMBE Proceedings 39, pp. 1636–1639, 2012.
12. Goryawala M., R. Bhatt, S. Gulec, A. McGoron and M. Adjouadi, A low-interaction automatic 3D liver segmentation method for selective internal radiation therapy. 2012 IEEE International Conference on Image Processing.
13. Tang, Y. and A.J. McGoron. The Role of Temperature Increase Rate in Combinational Hyperthermia Chemotherapy Treatment. Proc. SPIE, Vol. 7565, doi:10.1117/12.842587. 2010
14. Fernandez-Fernandez, A., D.A. Carvajal and A.J. McGoron. Measuring In Vivo Effects of Chemotherapy Treatment on Cardiac Permeability. IFMBE Proceedings 32, p. 126-129. 2010.
15. Lei, T., S. Srinivasan, Y. Tang, R. Manchanda, A. Fernandez-Fernandez, A.J. McGoron. Targeted Delivery of Doxorubicin by PLGA Nanoparticles Increases Drug Uptake in Cancer Cell Lines. IFMBE Proceedings 32, p. 224-227. 2010.
16. Manchanda, R., T. Lei, Y. Tang, A. Fernandez-Fernandez, A.J. McGoron. Cellular Uptake and Cytotoxicity of a Novel ICG-DOX-PLGA Dual Agent Polymer Nanoparticle Delivery System. IFMBE Proceedings 32, p. 228-231. 2010.
17. Goryawala, M., M. Guillen, R. Bhatt, A. McGoron, M. Adjouadi. A comparative study on the performance of the parallel and distributing computing operation in MatLab. Proceedings - International Conference on Advanced Information Networking and Applications, AINA, pp. 150-157, 2010.
18. Tang, Y. and A. J. McGoron Interaction of dye-enhanced photothermotherapy and chemotherapy in the treatment of cancer: an in vitro study, Proc. SPIE 7164, Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XVIII, 71640X (February 18, 2009); doi:10.1117/12.808448.
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## **(2) Refereed Conference Abstracts (single page)**

1. Abhignyan Nagesetti, George Dulikravich & Anthony McGoron. Multifunctional Organically Modified Silica Nanoparticles for Image Guided Chemotherapy with On-demand Drug Release and Deep Tumor Drug Delivery Properties. World Molecular Imaging Congress, New York, New York, September 7-10, 2016
2. Abhignyan Nagesetti & Anthony McGoron. Multifunctional Ormosil Nanoparticle Platform for Image Guided Chemotherapy with Adjuvant Hyperthermia. Society for Personalized Nanomedicine. Miami, FL, May 19-29, 2016.
3. M. Szejnberg, S. Gulec, A.J. McGoron. Radiation dosimetry of degradable polymer microspheres labeled with 99mTc and 68Ga intended for radiomicrosphere therapy planning. World Molecular Imaging Congress, Honolulu, HI. September 2-5, 2015
4. A. Nagesetti, G. Dulikravich, and A. McGoron Silica Nanoparticle Transport in Simulated Tumor Microenvironments: The Role of Surface Functionalization and Cellular Autophagy. Biomedical Engineering Society Annual Meeting, Tampa, FL. October 7-10, 2015.
5. Bhardwaj, V., S. Srinivasan, A.J. McGoron. Towards Development of First LF-CBB-SIST (Label-Free Cell-Based Biosensor using SERS Immuno-Sensor Technology) For Intracellular Proteins detection. Biomedical Engineering Society Annual Meeting, Tampa, FL. October 7-10, 2015.
6. S. Srinivasan, V. Bhardwaj, A.J. McGoron. Multifunctional silver nanoparticles for targeted cancer therapy. Biomedical Engineering Society Annual Meeting, Tampa, FL. October 7-10, 2015.
7. A. Nagesetti, D. Estumano, H. Orlande, M. Colaço, G. Dulikravich, and A. McGoron. The Effect of Surface Functionalization and Temperature on Nanoparticle Penetration into Tumor Spheroids. Biomedical Engineering Society Annual Meeting, San Antonio, TX. October 22-25, 2014.
8. Lei, T., A. Fernandez-Fernandez, R. Manchanda, Y.C. Huang, A.J. McGoron. Theranostic Polymeric Nanoparticles for Cancer Diagnosis and Therapy and Cellular Response after Laser/NPs Heating. Biomedical Engineering Society Annual Meeting, Seattle, WA. September 25-28, 2013.
9. Jonathan Siikanen, Hector Francisco Valdovinos, Reinier Hernandez, Alejandro Amor Coarasa, Anthony McGoron, Anders Sandell, Todd Barnhart, Robert Jerome Nickles. Cyclotron produced Ga-66/68 with thermal diffusion-assisted bulk separation and AG50W-X8/UTEVA purification. Radiometals 2013. Santa Rosa CA 13-16 June.
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11. Bhardwaj, V., S. Srinivasan, J.F. John, A.J. McGoron Label free SERS based biosensor for monitoring environmental stress. IEEE-EMBS Micro and Nanotechnology in Medicine Conference. Maui, HI. December 3-7, 2012.
12. Amor-Coarasa, A., A. Milera, A.J. McGoron. Microspheres for SIRT PET/CT Planning and Lung Perfusion. IEEE-EMBS Micro and Nanotechnology in Medicine Conference. Maui, HI. December 3-7, 2012.
13. McGoron, A., Nagesetti, A. The Effect of Hyperthermia on Penetration of Nanoparticles in Extracellular Matrix Gels and Tumor Spheroids. Biomedical Engineering Society Annual Meeting, Atlanta, GA. Oct 24-27, 2012.
14. Fernandez-Fernandez, A., Lei, T.; Manchanda, R., McGoron, A. Preparation and Characterization of Covalent IR820-PEG Diamine Conjugates. Biomedical Engineering Society Annual Meeting, Atlanta, GA. Oct 24-27, 2012.
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- c. Refereed Papers and Conference Proceedings for Curriculum Development Activities**
1. McGoron, A.J., H. Shahrestani, M Brown, J Byrne. Delivery and Assessment of the Biomedical Engineering Capstone Senior Design Experience. Proceedings of the 120<sup>th</sup> American Society of Engineering Education (ASEE) Conference and Exposition. June 23-26, 2013. Atlanta GA. Paper ID #7956 (14 pages)
  2. Zhao, W., A.G. Bessell, N. Erdol, A.J. McGoron, W.T. Rhodes. Collaborative Development of Internet-Accessible, Interactive, Medical Imaging Teaching Courseware and Application to Undergraduate Curricula. Proceedings of the 120<sup>th</sup> American Society of Engineering Education (ASEE) Conference and Exposition. June 23-26, 2013. Atlanta GA. Paper ID #6716 (8 pages).
  3. Weeks, O.I., E. Villamor, M. Tracey, P. Stoddard, S. Shapiro, J. Makemson, R. Garcia, S. Gavassa, T. Philippi, T. Pitzer, B. Dewsbury, G. Narasimhan, A. McGoron, A. Tashakkori. QBIC, an interdisciplinary and quantitative biological sciences curriculum: concept to implementation. *Journal of Science Education*. 12(1):11-14, 2011.
  4. McGoron, A.J. and R.T Schoephoerster. Defining Quantifiable Primary Verification Metrics of Program Outcomes in Biomedical Engineering at Florida International University. International Conference for Engineering Education (ICEE), San Juan, Puerto Rico; 2006; in: "*Proceedings of the ICEE 2006*", International Network for Engineering Education and Research, (2006), ISBN 1-58874-648-8; pages T1A-1-T1A-6.
  5. Brown, M. McGoron, A.J., and R.T. Schoephoerster. Adapting courses in Physiology to Meet the Needs of Biomedical Engineering. Proceeding of the Biomedical Engineering Society. October 2005.
  6. Schoephoerster, R.T. and A.J. MCGoron. The FIU BME Partnership Program: An Integrated Educational Approach to Biomedical Innovation and Entrepreneurship. The Whitaker Foundation Biomedical Engineering Educational Summit. Lansdowne, VA. March 3-6, 2005.
  7. Byrne, J., A.J. McGoron, and R.T. Schoephoerster. Development of an Undergraduate Biomedical Engineering Laboratory Curriculum and Facilities. Proceeding of the Biomedical Engineering Society. Nashville, TN. October 1-4, 2003.
  8. McGoron, A.J. Clinical Rotations for Biomedical Engineers: Introducing The End-User of Medical Products Development. The Whitaker Foundation Biomedical Engineering Educational Summit. Lansdowne, VA. December 7-10, 2000.
- d. Book Chapters and Journal Special Issue Guest Editing**
- 1 McGoron, A.J. Theranostic nanopreparations for medicine. in Vladimir Torchilin (Ed). *Frontiers of Nanobiomedical Research*. World Scientific Publishing Co. Volume 3, Chapter 7, pp195-241, 2014.
  - 2 Manchanda, R, AJ McGoron. Drug Delivery through Multifunctional Polymeric Nanoparticles. In: *Drug Delivery*. Nova Science Publishers, Inc. Maria A. Popescu (ed). ISBN 978-1-61324-538-5, 2011.
  - 3 Li, C.Z, A McGoron. "Special Issue on Biomedical Engineering in the American Journal of BioMedical Science", NWPII Publications. 2009. ISSN: 1937-9080
  - 4 McGoron, A, C.Z. Li, W.C. Lin (eds). IFMBE Proceedings 24. Springer, 2009.
  - 5 McGoron, A.J., J Franquiz. Emission Imaging: SPECT and PET. In *Biomedical Technology and Devices Handbook*. J. Moore and G. Zouridakis (eds). 2004.

- Gerson, M.C., A.J. McGoron, N.J. Roszell, D. Biniakiewicz and R.W. Millard. Myocardial Perfusion Imaging: Radiopharmaceuticals and Tracer Kinetics. In: M.C. Gerson (ed): *Cardiac Nuclear Medicine (third edition)*. McGraw-Hill, Inc, New York, 1997, pp 3-27.

## WORK IN PROGRESS

A. Nagesetti\* and A.J. MCGoron<sup>‡</sup>, S. Srinivasan. Polyethylene Glycol Modified ORMOSIL Nanoparticles for Chemotherapy, Adjuvant Hyperthermia and Near Infrared Imaging. *Nanomedicine: Nanotechnology, Biology, and Medicine*

## PRESENTED PAPERS AND LECTURES (since 2000)

- Invited Lecture to Florida Memorial University, Miami, FL. September 15, 2015
- Targeted Theranostic Nanoparticles for Cancer: Combined Imaging and Therapy. 2<sup>nd</sup> Personalized Nanomedicine Symposium. Miami, FL, January 28-29, 2015.
- Nanoparticle-based Drug Delivery Systems Can Overcome the Challenge of the Blood-Brain Barrier. Miami Neuro Symposium. Miami, FL. December 3-5, 2014.
- Invited Lecture to Florida Institute of Technology, Melbourne FL, November 14, 2013
- Theranostic Polymeric Nanoparticles for Cancer Diagnosis and Therapy and Cellular Response after Laser/NPs Heating. Biomedical Engineering Society Annual Meeting, Seattle, WA. September 28, 2013.
- Polymers and Particles for Optical Imaging. World Molecular Imaging Congress. Savannah, GA. September 18, 2013.
- Delivery and Assessment of the Biomedical Engineering Capstone Senior Design Experience. Proceedings of the 120<sup>th</sup> American Society of Engineering Education (ASEE) Conference and Exposition. June 23-26, 2013. Atlanta GA
- Invited Lecture to University of Limerick, Limerick, Ireland, February 4, 2013.
- The Effect of Hyperthermia on Penetration of Nanoparticles in Extracellular Matrix Gels and Tumor Spheroids. Biomedical Engineering Society Annual Meeting, Atlanta, GA. Oct 24-27, 2012.
- Theranostics: Combined Molecular Imaging and Therapy in Cancer. BioFlorida Conference. Miami FL, October 9, 2012.
- Invited lecture to the University of Science & Technology, Bioengineering and Biosensor Research Center, Beijing, China, May 29, 2012
- Invited lecture to the Capital Normal University, Department of Chemistry, Beijing, China, May 31, 2012
- Invited lecture to the National Center for Nanoscience and Technology of China, Beijing, China, June 4, 2012
- Invited lecture to the National Institute of Radiological Sciences, Molecular Imaging Center, Tokyo, Japan, June 6, 2012
- Invited lecture to Keio University, Department of Chemistry, Yokohama, Japan, June 6, 2012
- IR820 Conjugates for Image-Guided Cancer Therapy. World Congress 2012 Medical Physics and Biomedical Engineering, May 26-31, 2012, Beijing, China.
- Invited lecture to the HWCOM Department of Cellular Biology and Pharmacology, September 2011.
- Novel Biodegradable PGD Polymeric Nanoparticles: Preparation and Characterization. Biomedical Engineering Society Annual Meeting, Austin, TX. Oct 6-9, 2010.
- Multimodal drug delivery for imaging and therapy of cancer using PLGA nanoparticles. Particles 2010. Buena Vista, FL. May 22-25, 2010.
- Innovative Research in Liver Cancer- Future Directions. Advances in Minimally Invasive Treatments: Y-90 Radiomicrosphere Radiotherapy Workshop. Miami, FL, June 30, 2010.
- PET/CT: New Agents, New Software, and new Technology for Improved Y-90 Microsphere SIRT. Y-90 Radiomicrosphere Therapy: Treatment Planning and Dosimetry Workshop. Miami, FL. October 24, 2009.
- Ovarian Cancer Therapies Combining the Modalities of Hyperthermia and Chemotherapy. Proceeding of the Biomedical Engineering Society. Hollywood, CA, 2007.
- Invited talk at the University of Puerto Rico at Mayaguez July 2006.
- FDG Kinetics Imaging in Piglet Brain Using a Dual-Head Rotating SPECT/PET Camera. Proceeding of the Biomedical Engineering Society. Nashville, TN. October 1-4, 2003.

25. FDG Kinetics and Perfusion Imaging with a Dual-Head Rotating SPECT/PET Camera: Preliminary Animal Studies. Proceedings of the 2003 Summer Bioengineering Conference. Key Biscayne, FL. June 25-29, 2003.
26. PET Imaging with a Dual-Head Rotating SPECT/PET Camera: Phantom Studies of Brain Glucose Metabolism. Proceedings of the 21st Southern Biomedical Engineering Conference, p. 201-202. Washington, DC, September 28 – 29, 2002.
27. Radioisotopes in Nuclear Medicine. Proceedings of the 2002 Americas Nuclear Energy Symposium. Miami, FL, October 16-18, 2002.
28. Modeling of Tracer Kinetics in Nuclear Medicine. Set of Lectures to Nuclear Medicine Medical Residents at the University of Miami School of Medicine, 2002.
29. Cardiac Radiopharmaceuticals: What is the Ideal Agent? Southeastern Chapter of the Society of Nuclear Medicine 4th Annual Meeting. Clearwater, FL, 2000.

## RESEARCH FUNDING

### a. Grant Proposals Pending

(McGoron 20%) 3/01/2017  
 Source: NIH R21 \$382,395  
 Title: Near-infrared 2-deoxy-glucose targeted near-infrared-Cisplatin molecule Imaging, Chemotherapy and Hyperthermia therapy of Melanoma

(McGoron 20%) 3/01/2017  
 Source: FL DOH Bankhead-Coley Program \$1,378,421  
 Title: Near-infrared labeled 2-deoxy-glucose for Cancer Imaging and Hyperthermia Therapy

Role: Partner: Workforce Development and University Education 7/31/2018 – 7/30-2022  
 Source: National Science Foundation – Engineering Research Center \$2,678,100 (FIU portion)  
 Title: Center for Autonomic Neural Engineering (CANE)  
 University of Florida is Lead Institution. Partners are FIU and Georgia Institute of Technology.

### b. Active Funded Research

(Gulec) 6/1/2016 – 5/31/2017  
 Role (Collaborator) \$45,000  
 Source: Rinker Family Foundation  
 Title: Liver Cancer Research

### c. Completed During FIU Appointment

(McGoron 10%) 8/01/2013 – 8/31/2016  
 Source: National Institute of Health (R15) \$200,000  
 1 R15 CA167571-01A1

Title: Novel Polymeric nanoparticles for drug delivery applications  
 The objective of this proposal is to develop a new polymeric drug carrier combining imaging and chemotherapy with triggered and controlled release of chemotherapeutic drug and subsequent degradation of polymer vehicle.

(McGoron 10%) 6/01/2011-5/31/2014  
 Source: National Institute of Health (R21-EBRG) \$340,000  
 1 R21 CA159073-01A1

Title: Imaging for Y-90 Microsphere SIRT Planning  
 The goal of this study is to develop PET and SPECT imaging agents that more closely resemble microspheres used in Y-90 Selective Internal Radiation Therapy (SIRT). The agents are polymer microspheres with controlled biodegradation labeled with Ga-68 or Tc-99m. Studies are conducted in cell culture and rats.

(Simpson) 11/2010-10/2013  
 Role (PI of Subaward, 20%)

Source: US Army Medical Research Acquisition Activity \$1,400,000 (Subaward amount-\$777,600)  
W81XWH-10-1-0732

Title: Mass Scale Biosensor Threat Diagnostic for In-Theater Defense Utilization

The goal of this multidisciplinary grant is to develop and validate sensor technology to detect the biological response to biological or chemical toxins to predict their effect on military personnel in the field. My role is PI for developing optical SERS based sensors.

(McGoron)

10/2010-9/2013

Source: NSF (via subcontract from the University of Miami, PI W Zhao) \$90,000

DUE1022750

Title: Collaborative Development and Application of Distributable, Internet Accessible, Interactive Medical Imaging Teaching Software and Dynamic Tracking System

The goal of this grant is to develop web-based educational software for teaching medical imaging. My role is developing and evaluating modules for Nuclear Medicine imaging. Funds support a graduate student.

(Murray, Louisiana Tech U)

Role (Co-I)

8/27/12 – 8/26/2013

Grant # 1261495

\$19,000

Source: NSF

Title: AEMB 2012 Broader Impacts Educational Sessions at BMES, October 24-27, 2012, Atlanta, GA

Supported travel grants for AEMB members to attend BMES conference and for videotaping AEMB sessions at the conference.

(Weeks)

7/1/2008-6/30/2013

Role (Collaborator)

\$1,250,000

1 T36 GM078004-01/M2OTAT

Source: NIH/NIGMS

Title: MARC Curricular Improvement Implementation-Phase II (Quantifying Biology in the Classroom)

(Munroe)

7/1/2008 - 6/30/2012

Role (Co-PI)

\$420,000

1SC3GM084816-01

Source: NIH

Title: Enhanced Biocompatibility of NiTi via Surface Treatment and Alloying

(Gulec)

1/12/2009 – 1/11/2011

Role (Collaborator)

\$200,000

Source: Rinker Family Foundation

Title: Liver Cancer Research

McGoron (PI)

7/1/2008-9/30/2009

08BB-11

\$200,000

Source: Florida Department of Health

Title: Image Guided Intervention for Breast Cancer: Combined Hyperthermia and Chemotherapy with Reduced Cardiotoxicity

McGoron (PI)

2/2009-1/2010

Source: NSF

\$10,000

Title: 25<sup>th</sup> Southern Biomedical Engineering Conference

McGoron (PI)

4/2006-3/2009

R15 AREA: 1R15CA118284-01

\$150,000

Source: National Institutes of Health

Title: Respiratory Motion Compensation in PET Molecular Imaging

McGoron (PI) Source: Florida Department of Health (SBTR) 065B-02 Title: A micro-fabricated <i>in vivo</i> bubble oxygenator for the treatment of induced severe pulmonary disease Collaborative project with Oxylation, LLC	7/2006-6/2007 \$95,000
McGoron (PI) Source: HeartWare Inc Title: Hemocompatibility Testing of Polymers for the Driveline of the HeartWare Next Generation LVAD This study was to conduct <i>in vivo</i> materials compatibility testing in rabbits.	8/1/2006-8/1/2008 \$104,500
McGoron (PI) Source: Innovia, Inc Title: Biocompatibility Evaluation of Composite Polymeric Materials This study was to conduct <i>in vivo</i> materials compatibility testing in rats	7/01/2007-6/30/2008 \$15,000
McGoron (PI) Source: FIU Foundation – Faculty Research Award Title: Image Guided Targeted Therapeutics for Cancer: Experimental Protocol Development	7/2007-6/2008 \$23,000
McGoron (PI) Source: Lary Foundation Title: Development of a bubble oxygenator	8/2007-7/2008 \$10,000
Lin (PI) Role (Co-I) Source: American Heart Association In vivo Differentiation of Normal Stunned, Hibernating, and Scarred Myocardium using Optical Spectroscopy.	7/2006-6/2008 \$260,000
Jones (PI) Role: (Co-I) Source: Air Force Office of Scientific Research Title: Research in Nanoelectronics and Bio-Nano Sensors	3/2005-2/2007 \$3,000,000
Crumpler (PI) Role (Co-I) Source: Nanomaterials Co. Title: Nanoparticles to Detect and Neutralize Biological Agents	06/2007-01/2008 \$109,400
McGoron (PI) Source: Lary Foundation Title: Development of a bubble oxygenator	8/2006-7/2007 \$10,000
McGoron (PI) Independent Investigator Award Source: American Heart Association Title: Cerebral Perfusion and Quantitative Glucose Metabolism Imaging in a Piglet Model of Pediatric Brain Injury using Hybrid SPECT/PET	7/2001-6/2005 \$225,000
Weeks (PI) Role: (Co-I) Source: NIH Title: Quantifying Biology in the Classroom (The Q'BIC Plan)	6/2004-5/2005 \$49,300
Jain, Sandhya (PI), Nanomat, Inc. FIU portion (Crumpler, PI)	8/2004-7/2006 \$340,000

Role: Co-I  
 Source: DOD Army SBIR/STTR Biotechnology Program Phase II  
 Title: Nanocapsule Coatings Utilizing Biomolecules to Detect Nano MgO-Cl<sub>2</sub> Adduct to Neutralize the Biological Agents

Jain, Sandhya (PI), Nanomat, Inc.  
 FIU portion (Crumpler, PI) 10/2003 – 5/2004  
 Role: Co-I \$50,000  
 Source: DOD Army SBIR/STTR Biotechnology Program  
 Title: Nanocapsule Coatings Utilizing Biomolecules to Detect Nano MgO-Cl<sub>2</sub> Adduct to Neutralize the Biological Agents

Crumpler (PI) 2/2004 – 1/2005  
 Role: Co-I \$100,000  
 Source: FIU Foundation (CTIP, PHASE II) and Bioheart, Inc.  
 Title: Development and Implementation of Matrix System Technologies (MSTs) for Cardio Regeneration

Anit Giri, (PI), Nanomat, Inc 7/2002-6/2003  
 FIU Portion (McGoron, PI) \$50,000  
 Source: NSF STTR Phase I  
 Title: Coupled Labeling for Cancer Diagnosis and Therapy

McGoron (PI) 1/2003-12/2003  
 Source: FIU Collaborative Technology Innovation Program (CTIP) \$10,000  
 Title: *In Vitro* Blood Brain Barrier Model for Analysis of Anti-Epilepsy Drugs

McGoron (PI) 3/2002-7/2002  
 Source: Summer 2002 Provosts Mini-Research Competition \$5,000  
 Title: Heat Generating Photosensors

McGoron (PI) 1/2002-12/2002  
 Source: FIU Biomedical Partnership Research Initiation Program \$10,000  
 Title: In Vivo Monitoring of Myocardial Retention of Skeletal Myoblasts

Franquiz (PI) 1/2002-12/2002  
 Role: CO-I \$10,000  
 Source: FIU Biomedical Partnership Research Initiation Program  
 Title: Three-dimensional Probabilistic Integration of Neuroimaging Modalities for Identification and Surgery of the Seizure Focus.

Crumpler (PI) 1/2002-12/2002  
 Role: CO-I \$10,000  
 Source: FIU Biomedical Partnership Research Initiation Program  
 Title: Myoblast Localization via Hydrogel Encapsulation/Delivery

Crumpler (PI) 1/2002-12/2002  
 Role: CO-I \$10,000  
 Source: Bioheart Inc.  
 Title: Myoblast Localization via Hydrogel Encapsulation/Delivery

McGoron (PI) 6/2000-1/2001  
 Source: SMLX Technologies, Inc. \$44,500  
 Title: Feasibility Study to Measure Antibody/Antigen Concentration by Electrical Methods

McGoron (PI) 4/2000-6/2000

Source: FIU Provost's Office Summer Research Competition	\$12,900
Title: Microelectrode sensors for detection of anti-cancer drugs	
Scheophoerster (PI)	1/2000-12/2000
Role: CO-I	\$44,000
Source: Bioheart, Inc	
Title: Evaluation of Technology and Design Considerations for a Myocardial Implant and Its Delivery System	
McGoron (PI)	12/2001-06/2002
Society of Nuclear Medicine	\$5,000
18-FDG Kinetics in Traumatic Brain Injury Using Hybrid SPECT/PET Coincidence Imaging.	

**d. Completed During Previous Appointment**

Franco (PI) 11/1997-11/1999	
Role: Co-I	\$180,000
Source: EntreMed, Inc.	
Title: Incorporation of IHP into Red Blood Cells by Electroporation	

McGoron (PI)	2/1998-12/1998
Title: Transport Kinetics of 99mTc-labeled Tumor Imaging Agents	\$8,000
Source: Department of Radiology (UC) Seed Grant	

McGoron (PI)	7/1997-6/1998
Source: Mallinckrodt Medical, Inc	\$99,800
Title: Development of Second Generation Perfusion Agents Which More Closely Resemble 201Thalium.	

Biniakiewicz (PI)	7/1997-6/1998
Role: Co-I	\$75,800
Source: Mallinckrodt Medical, Inc.	
Title: Development of a Metabolic Heart Imaging Agent Based on Q Chemistry	

Thomas (PI) 7/1996-6/1998	
Role: Co-I	\$130,000
Source: Mallinckrodt Medical, Inc.	
Title: Radiation Dosimetry of Intracoronary Radiation Therapy	

McGoron (PI)	7/1996-6/1997
Source: Mallinckrodt Medical, Inc	\$49,900
Title: Assessment of Myocardial Uptake of New Tc-99m Q Complexes	

**PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS**

- ❖ Fellow of the American Institute of Medical and Biological Engineering (AIMBE) 2015
- ❖ Faculty Award for Excellence in Advising and Mentorship 2013
- ❖ FIU Top Scholars 2011
- ❖ FIU College of Engineering and Computing Outstanding Service Award 2011
- ❖ Outstanding Faculty Mentor Award at the 2010 National Alpha Eta Mu Beta (AEMB) Biomedical Engineering Honor Society meeting.
- ❖ Fellow of the FIU Honor's College 2011-present
- ❖ FIU Operational Excellence Award 2009
- ❖ FIU Faculty Research Award Grant 2007
- ❖ American Heart Association Initial Investigator Award 2001-2004
- ❖ FIU Provost's Office Summer Research Competition 2000 and 2002
- ❖ Louisiana Board of Regents Graduate Fellow, 1988-1991
- ❖ Outstanding Biomedical Engineering Student Award, 1986
- ❖ Tau Beta Omega Engineering Honor Society (now Tau Beta Pi)

❖ PhD GPA 4.0/4.0 - MSE GPA 3.6/4.0 - BSE. with High Honors (GPA 3.7/4.0)

## **OFFICES HELD IN PROFESSIONAL SOCIETIES**

- ❖ National President Alpha Eta Mu Beta Biomedical Engineering Honor Society 2010-2014
- ❖ Board of Directors Alpha Eta Mu Beta Biomedical Engineering Honor Society 2014-present
- ❖ BMES Ethics Subcommittee member since 2015-
- ❖ Society of Personalized Nanomedicine Committee Member 2015-

## **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE**

### **a. Service to Profession and Public**

- ❖ Society Membership
  - Biomedical Engineering Society
  - Sigma Xi Scientific Research Society
  - American Society for Engineering Education
  - IEEE EMBS
  - World Molecular Imaging Society
- ❖ Conference Organizing Committees
  - Session Chair. Society of Personalized Nanomedicine. Miami, FL. May 19-20, 2016
  - Florida Undergraduate Research Conference (FURC) Organizing Committee, Miami, FL, 2014
  - 25th (Chair) and 29th (Co-Chair) Southern Biomed Engineering Conference. Miami, FL, 2009, 2013
  - Conference President for PAHCE (Pan American Health Care Exchange) Miami, FL. 2012.
  - Organized AEMB sponsored sessions at the BMES conferences in 2011, 2012, 2013, 2014.
  - Symposium Co-Chair. NanoFlorida 2011. Miami, FL,
  - Organizing committee for the BME Council of Chairs Educational Workshop at the BMES Conference in Austin TX. October 6, 2010.
  - Program committee member International Conference on Engineering Education (ICEE) 2011, 2013
  - Reviewer for International Network for Engineering Education and Research ("iNEER) 2006, 2011
  - Session Chair: 26th Southern Biomedical Engineering Conference. College Park, MD, 2010
  - Session Chair. 24th Southern Biomedical Engineering Conference. El Paso, TX, 2008
  - Steering Committee for EDC BioTech 2004 and 2012 meetings held at FIU
  - Session Co-Chair, American's Nuclear Energy Symposium (ANES), Miami Beach, FL, 2004: Isotopes in Medicine
  - Session Co-Chair: 21st Southern Biomed Engineering Conference, Washington, DC, 2002.
- ❖ Grant Reviewing
  - NIH NIBIB Mentored Career Development Award (K) Review ZEB1 OSR-B (J2) S 2016
  - NIH ETTN-50 Pediatric Formulations SEP. 2016
  - ISERM France: Physics, Mathematics and Engineering Sciences Grant Review, 2015 and 2016
  - NSF Graduate Research Fellowship Program Reviewer 2014
  - NIH Gene and Drug Delivery Systems review panel 2013-2014
  - DOD Congressionally Directed Medical Research Programs Grant Review Committee 2010-2016
  - Innovation and Technology Commission (ITC), Hong Kong, grant reviewer 2014
  - Multidisciplinary Research Grant (MRG) Program: North Carolina Biotechnology Center 2010, 2011
  - Reviewer. Kentucky Science and Engineering Foundation. R&D Excellence Program 2004-2007
  - American Heart Association Grant Peer Review Committee 2002-2004 and 2007
- ❖ Wayne State University – Evaluator of BME programs 2015
- ❖ U. Arkansas Biological and Agricultural Engineering MSBME Academic Advisory Board 2009-2013
- ❖ U. Arkansas Biomedical Engineering Academic Advisory Board 2014-present
- ❖ Dissertation Evaluator – Indian Institute of Science 2015
- ❖ Member American Institute of Medical and Biological Eng. (AIMBE) Academic Council 2007-2010
- ❖ Statewide Course Numbering System Committee Advisor 2007-present
- ❖ American Heart Association Miami Community Board, 2004-2005
- ❖ Technical Committee – Engineering World Health 2004
- ❖ Editorial Boards
  - Nanomedicine & Nanotechnology Open Access (NNOA) 2016-present

- Am J BioMedical Sciences 2009-present
- Hindawi Journal of Medical Engineering 2013-present
- Journal of Biomedical Engineering and Systems (JBES) 2014-present
- The Austin Journal of Biomedical Engineering 2014-present
- Science Postprint (SPP) 2014-present
- Journal of Molecular Biology and Molecular Imaging 2014-present
- Guest editor of special Biomedical Engineering issue of American J of Biomedical Sciences 2009.
- ❖ Journal Reviewer:
  - Annals of BME
  - Analytical Chemistry
  - Applied Biochemistry and Biotechnology
  - ASC Applied Materials and Interfaces
  - ASEE Conference
  - Biomedical Devices
  - BMES Conference
  - Chemical Science
  - Comp Med and Biol.
  - Contrast Media and Molecular Imaging
  - Current Cancer Drug Targets
  - Drug Delivery
  - FASEB
  - IEEE Trans Medical Imaging
  - Int J Pharmaceutics
  - J Drug Targeting
  - Molecular Pharmaceutics
  - Nanomaterials
  - Nanomedicine
  - Organic and Biomolecular Chemistry,
  - PAHCE Conference
  - RSC Advances
- ❖ K-12 Outreach Activities
  - Boy Scouts of America Merit Badge College (Engineering), 2012 - 2014
  - Judge. Miami Dade STEM Expo's S. Florida Regional Science and Engineering Fair 2011, 2012, 2015, 2016.
  - Organized mentoring program at TERRA High School and West Dade Middle School with AEMB Chapter.
  - Regularly provide presentations on STEM at area middle and high schools.
  - Supervise groups of High School students in research during numerous summers.

## **b. University Service**

### **(1) to the Department**

- ❖ Undergraduate Program Director for Biomedical Engineering 2003-2016
- ❖ BME Committee on Academic Standing 2009-2016
- ❖ Chair Tenure and Promotion committee 2006-2007, 2011, 2012, 2016
- ❖ Major contributor for preparation of successful ABET submission in 2005, 2008, 2014
- ❖ Faculty Advisor to BMES Student chapter 2002-2007
- ❖ Faculty Advisor to Alpha Eta Mu Beta Biomedical Engineering Honor Society since 2007
  - Awards to AEMB from Council of Student Organizations, FIU
    - 2013 Outstanding Overall Student Society (out of over 200 student organizations)
    - 2012 Outstanding Organization In The Honors Community
    - 2011 Most Active Chapter Modesto Maidique Campus
    - 2010 Most Active Chapter Modesto Maidique Campus
  - Awards from the National AEMB Society
    - 2016 Most Active Chapter
    - 2014 Most Active Chapter

- 2013 Most Active Chapter
- 2012 Most Active Chapter
- 2011 Most Active Chapter
- 2011 Outstanding Chapter Officer: Rupak Dua
- 2011 Outstanding Chapter Member: Sridevi Nagaraja
- 2010 Most Active Chapter
- 2010 Outstanding Advisor: Anthony McGoron
- 2010 Outstanding Officer: Alicia Fernandez-Fernandez
- 2009 Most Active Chapter
- 2009 Outstanding Community Event
- ❖ Organized Senior Design weekly lectures and Senior Design Expo 2007-2016.
- ❖ Recruiting at Miami Dade College in 2005 and 2006
- ❖ MBRS RISE and MARC U\*STAR Mentor 2001-present
- ❖ Chair Search and Screen Committees 2000, 2002, 2004, 2005, 2014
- ❖ Curriculum committee to develop BS program in Biomedical Engineering 2001-2002
- ❖ Curriculum committee for Mechanical Engineering 2001-2003
- ❖ United Way Ambassador 2000

## **(2) to the School/College**

- ❖ Advanced Materials Engineering Institute (AMERI) Steering Committee 2013-
- ❖ Faculty Council Chair 2014-2015
- ❖ Faculty Council Vice Chair 2013-2014
- ❖ Chair Search and Screen Committee for SCIS Director in 2010-2011
- ❖ Chair College IT Committee 2011-2015
- ❖ Curriculum Committee 2010-2011
- ❖ Faculty Council on Governance 2003-2005, 2013-2015
- ❖ Introduction to the Profession Committee (IPC) 2004-2008
- ❖ Trends in Engineering Technologies and Education Workshop, 2004 and 2006
- ❖ Tenure and Promotion Committee 2005-2007, 2011-2012, 2013-2014, 2014-2015
- ❖ Tenure and Promotion Committee Chair 2014-2015

## **(3) to the University**

- ❖ Member of the Strategic Enrollment Planning Committee (SEP) 2016
- ❖ Member Search and Screen Committee for University Associate Dean of Graduate School in 2016
- ❖ Biomolecular Sciences Institute Steering Committee 2014-
- ❖ Honors College Fellow – May 2011-present
- ❖ STEM Transformation Institute's Founding Faculty Fellow
- ❖ University Faculty Mentor 2012-present
- ❖ Dissertation Status Evaluation Committee 2013-2015
- ❖ Faculty Senate Technology Committee 2014-2016
- ❖ Inter-professional Health Sciences and Ethics Course Development Committee 2013-2014
- ❖ Undergraduate Academic Student Grievance and Misconduct Committees 2012-present (Chair since 2013)
- ❖ Faculty Senate 2013-2014
- ❖ Core Facilities & Recharge Centers Advisory Committee. 2010-2012
- ❖ Strategic Planning Committee Member and Faculty Member of the School of Integrated Science and Humanity 2010-present
- ❖ Search and Screen Committee School of Integrated Science and Humanity 2011-2012
- ❖ Research Advisory Council 2012-present
- ❖ Radiation Safety Committee 2000-present
- ❖ Organize Advanced Research and Creativity in Honors (ARCH) conference 2012-present
- ❖ Animal Care and Use Committee (IACUC) 2002-2009
- ❖ Undergraduate Medical Education and Support Services Committee 2005-2007
- ❖ Participating in the Q'BIC (Quantitative Biology in the Classroom) program since 2004.
- ❖ FIU Graduate Research Day Judge 2005, 2011, 2012, 2016

- ❖ Serve on PhD committees in Engineering, Computer Science, Chemistry, and Biological Sciences

## **PROFESSIONAL DEVELOPMENT**

- ❖ American Society of Engineering Education Conference and Exposition, Atlanta GA. June 23-26, 2013.
- ❖ National Conference on Undergraduate Research (NCUR), La Crosse, Wisconsin, April 11-13, 2013
- ❖ IEEE EMBS Forum on Grand Challenges in Biomedical Imaging. March 1-2, 2012. Bethesda, MD.
- ❖ Workshop to Enhance Proposal Development Skills and Promote Research Collaborations. NSF, Arlington, VA. February 23-24, 2010.
- ❖ BME-IDEA Workshop on Innovation, Design and Entrepreneurship. Pittsburg, PA. October 7, 2009 and Los Angeles, CA September 26, 2007.
- ❖ 3<sup>rd</sup> Biomedical Engineering Education Summit Meeting. St Charles, IL. 2008
- ❖ Workshop on Disease Models for Drug Discovery in Philadelphia, PA, 2006
- ❖ International Conference on Engineering Education in San Juan, Puerto Rico, 2006
- ❖ Whitaker Foundation Biomedical Engineering Educational Summit. Washington, DC, 2000 and 2005
- ❖ ABET Workshop at the Biomedical Engineering Society meeting. Philadelphia, PA, 2004
- ❖ Kinetics Transport Modeling Workshop. National Simulation Resource, University of Washington, 1996
- ❖ Creating a Successful Biomedical Company: Short Course, May 10-27, 1993, U. of Cincinnati.

## **POST-DOC, GRADUATE, UNDERGRADUATE AND HIGH SCHOOL STUDENT MENTORING**

### **a. post-Doctoral Fellow Supervision:**

1. Romila Manchanda (W.H Coulter Young Inventor, 2007-2011). - Research Assistant Professor in BME at FIU. Associate Professor, KR Mangalam University, Gurgaon, India
2. Joshy John, 2011-2012. Postdoctoral Fellow at University of Minnesota, Department of Chemistry.
3. Anil Kumar, M.D., Cardiology Fellow, University of Cincinnati, 1997-1998
4. Abbe Rosenbaum, M.D., Cardiology Fellow, University of Cincinnati, 1996-1997
5. Michael Meleca, M.D., Cardiology Fellow, University of Cincinnati, 1995-1996
6. Daniel Lenihan, M.D., Cardiology Fellow, University of Cincinnati, 1994-1995
7. Joseph Olonzo, M.D., Internal Medicine Resident, University of Cincinnati, 1994

### **b. PhD Student Major Advisor**

#### **Graduated:**

1. Jiali Wang, PhD, 2005-2009. Motion Correction Algorithm of Lung Tumors for Respiratory Gated PET Images (supported by AHA) – Medical Physicist at West Physics Consulting, LLC and is ABR (American Board of Radiology) certified
2. Yuan Tang, PhD, 2005-2010. Image Guided Targeted Therapeutics for Cancer: Combined Hyperthermia and Chemotherapy. (Supported by FLDOH, awarded Outstanding CEC PhD Graduate spring 2010) – Postdoctoral fellow in the Department of Mechanical Engineering at Temple University
3. Ruchir Bhatt, 2007-2012. A novel algorithm for PET tumor volume and activity quantification: Without specifying camera's point spread function (PSF). (supported by NSF)- GE Healthcare, Milwaukee, WI
4. Alicia Fernandez, PhD, 2006-2013. Design and Synthesis of anthracycline-peptide-conjugates targeted to nuclear DNA with less cardiotoxicity. (MBRS RISE fellowship, awarded Outstanding CEC PhD Graduate spring 2013, recognized as a World's Ahead student at graduation) – Assistant Professor Nova SE University
5. Tingjun Lei. 2008-2013. Multifunctional nanoparticles and their therapeutic application in cancer therapy: In vitro cellular studies and cellular response after laser induced heating within the cancer cell. Biomedical Scientist I at Cirile.
6. Dharam Persaud. 2010-2013. An assessment of biodegradable and bioabsorbable materials for the treatment of cerebral aneurysms. (MBRS RISE fellowship) Received grant from American Aneurysm Foundation. Attending FIU Medical School starting fall 2013.
7. Alejandro Amor-Coarasa 2010-2013. Microspheres for Selective Internal Radiation Treatment (Supported by NIH). Post-Doc for Shankar Vallabhajosula at Weill Cornell Medical College of Cornell University. NY
8. Supriya Srinivasan. 2009-2015. Development of a surface enhanced Raman spectroscopy (SERS) based sensor for detection of apoptotic proteins for evaluation of therapeutic efficiency of drug loaded polymeric nanoparticles (Supported by DOD and NIH). Post-Doctoral Fellow, University of Miami.

9. Vinay Bhardwaj 2010-2016. Label-free whole-cell SERS biosensor for monitoring stress response to environmental toxins (supported by DOD). Postdoc under Dr. Prabhas Moghe in Rutgers University Biomedical Engineering.

#### **Passed into PhD Candidacy**

10. Abhignyan Nagesetti. 2009-present. Optimization of drug distribution during the combination of hyperthermia and chemotherapy in an in vitro 3D tumor model: A study in multicellular spheroids (supported by Global Learning Initiative assistantship).
11. Senait Debebe 2011-present. (Supported by NSF)

#### **PhD Students not yet passed into Candidacy**

**None**

#### **c. MS Student Major Advisor:**

1. Xuming Mao, MS (Thesis), 1999-2001. Interpolation Methods for Dynamic Imaging and Tracer Kinetic Modeling for Emission Tomography using Rotating Detectors. (Earned PhD in Pharmacology from the University of Texas, Health Science Center. Later postdoc training at the University of Pennsylvania)
2. Min Zhou, MS (Thesis), 2000-2002. Image Processing and Tracer Kinetics Modeling for The Rotating PET Study of Cerebral Glucose Metabolism
3. Danny Gonzalez, MS (Thesis), 2002-2004. Creation of a Novel Magnetic Drug Delivery Complex. (Research Associate, University of Miami, Miller School of Medicine).
4. Michael Capille, MS (Thesis), 2003-2005. SPECT CBF Validation using Radioactive Microspheres. (Systems Analyst ADT/Tyco)
5. Jiali Wang, MS (Thesis), 2004-2005. Respiratory Gated PET for Lung Cancer Imaging. Device Development (Continued in PhD program at FIU).
6. Kealoha Young, MS (project), 2005-2006. A micro-fabricated in vivo bubble oxygenator for the treatment of induced severe pulmonary disease.
7. Raquibul Chowdhury, MS (Thesis), 2005-2007. Image Guided Targeted Therapeutics for Cancer: Combined Hyperthermia and Chemotherapy. (Research Associate, University of Miami, Miller School of Medicine)
8. Mohammed Goryawala, MS (Thesis), 2006-2007. Respiratory Gated PET for Lung Cancer Imaging. (FIU PhD student)
9. Laura Causey, MS (Thesis), 2006-2008. A micro-fabricated in vivo bubble oxygenator for the treatment of induced severe pulmonary disease. (CCNY PhD student)
10. Misael de Valle, MS (project), 2007-2008. Respiratory Gated PET Lung Phantom for Lung Cancer Imaging. (Georgetown School of Medicine)
11. Karin Hsiao, MS (project), 2007-2008. Implant Retrieval Database Analysis.
12. Rupak Dua, MS (Project), 2007-2008. To evaluate the use of electrical cell substrate impedance scanning system for investigating the cytotoxic effect of doxorubicin on ovarian cancerous cells (FIU PhD student)
13. Abhignyan Nagesetti. MS (Project), 2007-2008. Design Strategy to Formulate Biodegradable Nanoparticles to entrap Fluorescent Drugs (FIU PhD student)
14. Chetan Potdar. MS (project). 2007-2009. Spectrofluorometer based Optical Imaging System for fluorescence imaging of Molecular Fluorophores sodium fluorescein and Texas-Red conjugate dextran (Product Specialist -- Transfusion at Terumopenpol Ltd).
15. Segar Shah. MS (project) 2007-2009. To test the biocompatibility of Nitinol using endothelial cells and to investigate its cytotoxic effects
16. Supriya Srinivasan. MS (project). 2007-2009. Preparation and characterization of doxorubicin loaded PLGA nanoparticles decorated with monoclonal antibodies for targeted chemotherapy of ovarian cancer. (FIU PhD student)
17. Syed Kazmi. MS (project). 2007-2009. CCD camera imaging setup and in vivo hyperthermia (Assistant Process Engineer at BRR LTD. CO.)
18. Duriem Calderin, MS (Thesis), 2008-2010. Modeling of Loose Contamination Scenarios to Predict the Amount of Contamination Removed. (Nuclear Engineer at Columbia Energy & Environmental Services)
19. Dharam Persaud, MS (Project). 2009-2010. Nitinol Biomaterials: Topographical Analysis using Atomic Force Microscopy. (received PhD in BME at FIU and currently MD student at FIU)

20. Denny Carvajal, MS (Thesis). 2010-2011. Understanding the role of bacteria isolated from the Hanford site soil on the fate and transport of uranium (Research Associate at Mount Sinai Medical Center).
21. Parija Gumaste, MS (Project). 2011-2012. Optical imaging of thyroid cancer.
22. Paola M. Sepulveda, MS (Thesis). 2012-2014. Evaluation of bacterial dissolution of autunite.

**d. Dissertation/Thesis Committees:**

PhD (Graduated or have passed into PhD Candidacy)

1. William Kassing (1998-2001). Department of Mechanical, Industrial and Nuclear Engineering, University of Cincinnati. A Monte Carlo Investigation of the Radiation Dose distribution in Intravascular Brachytherapy.
2. David Holtzclaw (1998-2001). Department of Aerospace Eng and Eng Mechanics, University of Cincinnati. Characterization of Light Sickle Erythrocytes Derived from Dense Erythrocytes In vitro.
3. Zhizhong Wang (2004-2005). Chemistry, An Improved Synthetic Route to Tryprostatins and their Applications in Natural Product Synthesis.
4. Jose Iragorry (2004-2005). Mechanical Engineering. Development in Frost Measurement Techniques and Mathematical Models.
5. N. Andres Parra (2005-2009) Computer Science, Rigid and Non-Rigid-Based Medical Image Registration
6. Liza Merly (2005-2011) Biological Sciences, In Vitro Study of the Effects of Shark Cartilage on Communication Between Immune Cells and Gut-Derived Epithelial Cells.
7. Lucy Yehiayan (2006-2010) Chemistry/Biochem, The Interactions of Different Arsenic Species with Tilos: Chemical and Biological Implications.
8. Xi Chen (2006-2010) Chem/Biochem. Synthesis and Characterization of Photochromic Indolyl Substituted Fulgides and Fulgimides.
9. Siobhain Gallocher (2006-2007). BME. Polymer Leaflet Artificial Heart Valves
10. Qiang Wang (2007-2008). BME. Biocompatibility evaluación of composite polymeric materials and preclinical test of a novel artificial heart valve.
11. Ronald Gutierrez (2007-2010). BME. Computational modeling of a tissue engineered heart valve.
12. Waseem Haider (2007-2010). MME. Enhanced biocompatibility of NiTi (Nitinol) via surface treatment and alloying.
13. Po-Ching Chen (2009-2011). BME. In Vivo Tissue Diagnosis for Myocardial Infarction Using Optical Spectroscopy with Novel Spectral Interpretation Algorithms
14. Shadab Saddiqui. (2009-2011). MME. Vacuum brazing of alumina ceramic titanium for biomedical implants using pure gold as the filter metal.
15. Shabnam Namin (2009-2012). BME. An experimental and theoretical analysis of nitric oxide availability in the microcirculation
16. Yalin Ti. (2009-2010). BME. In-vivo characterization of myocardial infarction using fluorescence and diffuse reflectance spectroscopy.
17. Jesse Pulido (2010-2014). Chem/Biochem. Synthesis of 4-Amino Modified Arabino-Cytidine and Gemcitabine Analogues for PET-based Imaging.
18. Puneet Gill (2011-2012). MME. Assessment of Biodegradable Magnesium Alloys for Enhanced Mechanical and Biocompatible Properties
19. Shradha Prabhulkar (2010-2011). BME. Development of micro immunosensors to study genomic and proteomic biomarkers related to cancer and Alzheimer's disease.
20. Changjun Fan (2011-2015). Chem/Biochem. Synthesis of doubly-substituted indolylfulgimides for incorporation into polymers and modulation of biological systems
21. Evangelia Hondroulis (2012-2014). BME. Real-Time Biosensor for the Assessment of Nanotoxicity and Cancer Electrotherapy.
22. Ujwal Chaudhary. (2012-2013). BME. Functional Near Infrared Spectroscopy Study of Joint Attention and Motor Skills.
23. Yinchen Song (2012-2015). BME. Development of a hybrid imaging and spectroscopy system for in vivo brain studies.
24. Tereza Vokata (2012-2015). Chem/Biochem. Synthetic approaches to biodegradable fluorescent polymers with white-light absorption/emission profile.
25. Chandan Pulletikurthi (2012-2014). MME. Biocompatibility assessment of biosorbable polymer nitinol alloys.

26. Megan Towmey (2012-2016). Chem/Biochem. Improved delivery efficiency of small interfering RNA using controlled aggregation of fluorescent conjugated polymers.
27. Jaimit Parikh (2013-2015). BME. Theoretical investigation of intra- and inter-cellular spationtemporal calcium patters in microcirculation.
28. Xizi Dai (2013-2015). BME. Fiber scaffolds poly (glycol-dodecanoate) and its derivatives via electrospinning for neural tissue engineering.
29. Mingwei Yang (2013- present). Chemistry/Biochemistry. In situ arsenic speciation using surface-enhanced Raman spectroscopy.
30. Xuena Zhu (2013-2015). BME. Development of a Point-of-Care Testing Sensor for Biomarker Detection.
31. Ling Wang (2014-present). Chemistry/Biochemistry.
32. Juliano Freitas. (2013-present). Biological Sciences. Endothelin 3 as Main Regulator of Lung and Brain Premetastatic Niche Formation in Melanoma
33. Sushma Amruthaluri (2012-2014). MME. An investigation on biocompatibility of bio-absorbable polymer coated magnesium alloys.
34. Thaddeus Mostowtt (2014- present). Chemistry/Biochemistry. The analysis of synthetic cannabinoids and cathinones via Surface Enhanced Raman Spectroscopy
35. Zhiwei Wen (2014- present). Chemistry/Biochemistry. Aptamer-based sensors for on-site rapid screening of controlled substances
36. Daniel Roncancio (2014- present) Chemistry/Biochemistry. Label free screening of cocaine in biofluids.

#### MS Thesis

1. Yanran Liu (2002). BME, A Three-Dimensional Model of a Polymer Composite Trileaflet Aortic Valve Using Finite Element Analysis
2. Alejandra Caceras (2003). BME, A Dosimetry and Radiobiological Model for Intravascular Brachytherapy Treatment Planning with Radioisotope Emitting Stents.
3. Madhu Durai (2003). BME, Statistical Characterization of Positron Emission Tomography Standardized Uptake Values in Simulated Malignant Tumors.
4. Martha Vallejo (2004). BME, Development and Implementation of Biodegradable Matrix for Cardio Regeneration
5. Brijesh Kadam (2004). BME, Site-specific Delivery of Growth Factors Using Polymer Nanoparticles
6. Fernando Jaramillo (2005). BME, Catheter Based Heart Valves.
7. Manu Kumar (2005). BME, In Vitro Study and Quantification of Nitric Oxide and Calcium Interactions in Micro vessels obtained from Rat Mesentery using Fluorescent Microscopy.
8. Qiang Wang (2006). BME, Catheter Based Heart Valves, In Vivo and In Vitro Evaluation
9. Ange Marie Patricia Fièvre (2006), Electrical and Computer Eng, Nanoscale Optical Waveguides.
10. David Saez (2006). BME, MCNP5 Monte Carlo Calculation of Radial Dose Distributions ion Water from Isotropic Sources of Beta Emitters used in Radionuclide Therapy.
11. Alex Pena (2006). BME, Posture-Sensing Back Belt for the Encouragement of Proper Lifting Techniques.
12. Juan Pizarro (2006). BME, Nitric Oxide Supplying Dendrimers Characterization and Detection of Release
13. Rafael Oliver (2006). BME, In vivo Differentiation of Normal Stunned, Hibernating, and Scarred Myocardium using Optical Spectroscopy.
14. Zhicong Huang (2007). BME. Design and Development of a Testing Mechanisms for QA in Cyberknife
15. Michael Becker (2008). BME. Liposome Processing Optimization.
16. Soliany Pardo Ruiz (2008). BME. Development and Characterization of a Human Lung Tissue Co-Culture System using a Bioadhesive Hydrogel Matrix.
17. Erika McKinney (2008). BME. COMSOL Multi-physics Used to Model Mercury Hydrology Contamination in Soil and Blood Flow-Through a Partially Occluded Vessels
18. Parikshat Sirpal (2008). BME. Experimental Characterization of Near-Infrared Laser Energy Absorption, Scattering, and Transmittance in Biological Tissue.
19. Thomas Claiborne (2008). BME. Development and Evaluation of a Catheter Deliverable Artificial Aortic Heart Valve Prosthesis and Delivery system.
20. Avani Mulchandani (2008), BME. Nanomaterials functionalized device for redox studies of cytochrome P450cam L246K
21. Bradley Fernald (2008), BME. Diffuse reflectance spectroscopy in biomedicine.

22. Amardeep Mann (2008). BME. Exercise Evaluation from Photoplethysmographic Blood Volume Pulse Signals Analyzed by Parametric Auto-Regressive Modeling
23. Chandan Pulletikurthi (2009). MME. Enhancement of Biocompatibility of Porous Nitinol.
24. Rakesh Guduru. (2011). BME. In situ AFM Imaging of nanoparticle-cellular membrane interaction for a drug delivery study.
25. Jean Gonzalez (2012). BME. Development and testing of a second generation hand-held optical imager.
26. Dnisha Hamblin (2016). Chem/Biochem. Exhaled Breath Analysis of Smokers using CMV-MS

**e. Undergraduate Students Mentored at FIU**

1. Zoe Bernard 2016-present (BME, volunteer)
2. Peterson Etienne summer 2016 (BME, McNair)
3. Juanpablo Olguin (BME, volunteer) 2016-present
4. Nour Alawad, 2016-present (BME, volunteer)
5. Matthew Chacko (Biology, volunteer) 2015 – 2016
6. Pedro de Costa (BME, volunteer) 2015 – present
7. Cacia Monteiro (BME, volunteer) summer 2015
8. Diego Cordero (BME Volunteer) summer 2015
9. Leandro Coelho (exchange student from Brazil) summer 2015
10. Ashley Juan (Biology volunteer) 2014 - 2015
11. Marais Brown (BME, volunteer) 2014 - 2016
12. Tanja Goldipour (visiting student from Germany) fall 2014
13. Anna Cabrera (volunteer, MDC) 2014
14. Claudia Valle (BME, volunteer) 2014
15. Astrid Rodriguez (BME, volunteer) 2014
16. Munir Iskandarani (Physics volunteer) 2014
17. Stephanie Delgado (ARCH Honor's Scholar) 2013-2014
18. Alisha Drayton (BME supported by NIH R15) 2013-2015
19. Johanna Arab (BME volunteer, Biological Sciences) 2013-2014
20. Jayleen Messina (BME supported by NIH R15) 2014-2015
21. Elizabeth Solis (BME supported by NIH R15) 2013-2014
22. Dorybel Irias (ARCH Honor's Scholar, Chemistry) 2013-2014
23. Sai Hemchandra (BME volunteer) 2013-2014
24. Juliana Duboc (volunteer, Biological Sciences) 2013-2015
25. Azael Sarmiento (ARCH Honor's Scholar) 2012-2013
26. John Goolcharan (ARCH Honor's Scholar) 2012-2013
27. Christopher Emerson (ARCH Honor's Scholar, H2G Scholarship) 2012-2013
28. Douglas Wright (ARCH Honor's Scholar, H2G Scholarship) 2012-2014
29. Andrew Milera (volunteer) 2012-2013 (now at FIU Medical School)
30. Karina Bunetska (Work-Study, Norman Weldon Summer Research Intern) 2011-2013
31. Anisley Valenciaga (ARCH Honor's Scholar) 2010-2011
32. Vinay Bhardwaj. Visiting Research Scholar. March 2009-September 2009
33. Annie Nunez (volunteer), 2009
34. Manuel Romero (Supported by MBRS RISE), 2008-2010
35. Vanessa A. Scagliati (Supported by MBRS RISE), 2008-2009
36. Andres Ramos (ARCH Honor's Scholar) 2008-2009
37. Denny Carvajal (Supported by the Norman Weldon Summer Research Internship), 2007-2008
38. Kevin Li (Honor's Scholar), 2008
39. Jose Matteo (Supported by NIH R15 grant), 2007-2008
40. Mohammed Khan (Summer Intern volunteer from U Penn), 2007
41. Rosa Ramirez (Supported by MBRS RISE), 2007-2008
42. Jose Villar (Supported by MBRS RISE), 2007-2008
43. Cristina Rodriguez (Supported by FLDOH and Oxylation, LLC), 2007
44. Sean Chislett (Supported by the Norman Weldon Summer Research Internship), 2007
45. Genevieve Knowles (Supported by NIH Grant, MBRS RISE Fellowship), 2007
46. Barbara Traub (Supported by NIH Grant), 2007
47. Jennifer Soto (Supported by NIH Grant), 2006

48. Anat Aviram (Supported by MBRS RISE fellowship), 2005-2007
49. Sandy Emile (Supported by the Norman Weldon Summer Research Internship), 2005
50. Sarah Lowe (Honor's Scholar), 2005
51. Adrian Romero (Supported by a Ronald E. McNair Research Fellowship), 2004-2006
52. Alicia Fernandez (Supported by CTIP), 2004
53. Delhy Arias (Supported by MBRS MARC fellowship), 2003-2005
54. Mahwish Ahmed (Supported by CTIP), 2003-2004
55. Karym Urdaneta (Supported by CTIP), 2003
56. Jackeline Martinez, 2002-2003
57. Juan Marquez, 2003
58. Yenny Vargas (Supported by MBRS MARC fellowship), 2001-2002
59. Joseph Manguno (Supported by SMLX grant), 2000-2001
60. Danny Acero (Supported by SMLX Grant), 2000-2001
61. Luis Ruiz, 2000

#### **f. Senior Design Project Mentoring**

1. Image Guided Therapy - Nanoparticle Drugs. Spring 2006
2. Langendorff Fraction Collector. Summer 2006
3. Supporting Catheter for Oxygenation System. Spring 2007
4. Development of a shape memory polymer material suitable for an artificial AAA stent graft. Summer 2007
5. PET/CT Dynamic Respiratory Phantom Prototype. Spring 2008
6. StarCath. To Facilitate Oxygen Delivery into the Vena Cava. Spring 2008
7. Image Guided Therapy: Combined Imaging and Hyperthermia. Summer 2008.
8. *Xetris*: The Un-Clumped Radiated Microsphere, Spring 2009
9. Pulsatile Circulatory Loop System for LVAD Testing. Summer 2012 (1<sup>st</sup> place)
10. Pin to Bar: External Fixation for Tibia Fractures, Spring 2013 (1<sup>st</sup> place)
11. Improvement for the Palpebral Spring, Summer 2013
12. Mineralized Bone Matrix and Stem Cell Mixing Syringe, Summer 2013
13. Microfilter Slide Auto-Scanner, Spring 2014
14. CMV Coupled Breath Collector for VOCs Measurement, Spring 2014
15. Pressure Map Sensor Device For Syntheon Knot TyerMechanism, Fall 2015 (1<sup>st</sup> place)
16. Multi-Sample Device for FT-IR Spectroscopy, Fall 2015
17. Tension-Standardized Soft Tissue Measuring Device, Spring 2016 (1<sup>st</sup> place)

#### **g. High School Students Mentored**

1. Brandon Dinner (American Heritage Homestead) 2016
2. Ari Bell (David Posnack Jewish Day School) 2016
3. Sergio Rodriguez (Medical Academy for Science and Technology Homestead) 2016
4. Sheris Johnnet (Archimedes Academy) 2016
5. Harrison Riggott (University School, Nova SE University) 2015
6. Milton Logo (MAST Academy) 2015
7. Joaquin Morales (MAST Academy) 2015
8. Srishti Chopra (TERRA) (repeated) 2015 and 2016
9. Peri Smith (MAST Academy) (Repeated) 2015 and 2016
10. Heeral Patel 2014 (Deerfield Beach High School)
11. Jazmine Gladney 2014 (TERRA Biomedical Research Institute)
12. Alejandro Perez 2014, 2015 and 2016 (TERRA Biomedical Research Institute) (repeated)
13. Devi Lakhlani 2014 (University School, Nova SE University)
14. Simon Santurian 2014 (University School, Nova SE University)
15. Daniel Valles 2013 (Cypress Bay HS)
16. Neha Narang, 2013, 2014, 2015 (University School, Nova SE University)
17. Kaela Fennell-Chin, 2013 (University School, Nova SE University Shadowing)
18. Natalie Contreras, 2012 (TERRA Biomedical Research Institute)
19. Diana Gonzalez, 2011 (TERRA Biomedical Research Institute)
20. Jorge Perdomo, 2010 and 2011 (TERRA Biomedical Research Institute)
21. Brenda Abreu, 2010 (TERRA Biomedical Research Institute)

22. Rebecca Lebwohl, 2009
23. Aaron Enten, 2009
24. Brandon Wood, 2008 and 2010
25. Alisa Tao, 2004
26. Deniz Yavas, 2002-2003

#### **h. Undergraduate Students Mentored at the University of Cincinnati**

1. Ashfaque Karim, American Heart Association Summer Research Fellow, 1998
2. Nicole Faust, ASPET Summer Research Training Program, 1998
3. Ursula Ekpenyong, NIH Summer Research Fellow, 1996
4. Geneeco Hudson, NIH Summer Research Fellow, 1995, 1996
5. Katie Peeden, American Heart Association Summer Research Fellow, 1995
6. Darnell Hackworth, NIH Summer Research Fellow, 1994
7. Stephanie Buening, American Heart Association Summer Research Fellow, 1993

#### **COURSE, CURRICULUM DEVELOPMENT ACTIVITIES**

- ❖ Online Inter-professional Health Sciences and Ethics Course Development 2013-2014
- ❖ Restructure and redesign of BME 4050L and BME 4051L Undergraduate Laboratory Courses. Designed and implemented four new laboratory protocols. Fall 2013 and spring 2014.
- ❖ Coordinated major changes to the BME Undergraduate curriculum in 2012 and 2013.
- ❖ Increased the entrance requirements for the BME Undergraduate curriculum in 2013.
- ❖ American Society of Engineering Education Conference and Exposition, Atlanta GA. June 23-26, 2013.
- ❖ BME Council of Chairs Educational Workshop at the BMES Conference in Austin TX. October 6, 2010.
- ❖ Participating in the Q'BIC (Quantitative Biology in the Classroom) program funded by the NIH
- ❖ Attended the BMES Biomedical Engineering Educational Summit. St Charles, IL, 2008.
- ❖ Helped the TERRA Environmental Research Institute Magnet High School in Miami to develop a laboratory curriculum for their sophomore and junior biomedical students.
- ❖ Attended and presented a paper to the International Conference on Engineering Education in San Juan, Puerto Rico, July, 2006
- ❖ Served on the committee to develop the BS Biomedical Engineering curriculum at FIU.
- ❖ Serve as the Undergraduate Program Director for Biomedical Engineering and had a major role in the successful ABET accreditation 2005, 2008, and 2015.
- ❖ Designed and implemented two undergraduate student laboratory courses in which students learn to execute and analyze research level experiments. Worked closely with the laboratory instructor and other faculty in the Department to design 5 laboratory exercises for each course. The exercises incorporate current faculty research and utilize state-of-the-art research equipment.
- ❖ Developed a Minor in Biomedical Engineering for Non-Engineering Majors.
- ❖ Developed the Honor's Curriculum for Biomedical Engineering.
- ❖ Attended the 2005 Whitaker Foundation Biomedical Engineering Educational Summit. Washington, DC
- ❖ Attended the ABET Workshop at the Biomedical Engineering Society meeting. Philadelphia, PA, 2004
- ❖ Attended the 2000 Whitaker Foundation Biomedical Engineering Educational Summit. Washington, DC to present our Clinical Rotations for Biomedical Engineers course.
- ❖ To expose the students to "real world" bioengineering, I invited speakers from our Biomedical Engineering Industry Partners to speak to the students in the EGM 4580 class and the entire college to these lectures. I also coordinated visits by the EGM 4580 (Principles of Bioengineering) students to biotechnology companies.

#### **New Courses Developed and Taught (course numbers may have since changed):**

- ❖ BME 2740: BME Modeling and Simulation
- ❖ BME 3032: BME Transport
- ❖ BSC 4934 Modeling and Simulation Summer Workshop for the Q'BIC program
- ❖ BME 4005: Principles of Bioengineering
- ❖ BME 4011: Clinical Rotations for Biomedical Engineers
- ❖ BME 5005: Applied Biomedical Engineering Principles
- ❖ BME 6532: Molecular Imaging

- ❖ BME 6750: Artificial Organs
- ❖ BME 6933: PhD Workshops

**New Courses Developed but coordinated by a full time laboratory instructor**

- ❖ BME 4050L: Biomedical Engineering Lab I
- ❖ BME 4051L: Biomedical Engineering Lab II

**New courses developed and initially team-taught** (course numbers may have since changed):

- ❖ BME 3700: Engineering Analysis of Biological Systems I
- ❖ BME 3701: Engineering Analysis of Biological Systems II

**Major Course Modifications**

- ❖ Redesign of BME 4050L and BME 4051L Undergraduate Laboratory courses in 2013, 2014 and 2015
- ❖ Modified the Senior Design Course Sequence (BME 4800 - Design of Biomedical Systems and Devices and BME 4908 - Senior Design Project) to satisfy FIU Global Learning requirements in 2012.
- ❖ Organized a one-hour per week lecture for BME 4908 (Senior Design Project) which brings invited guests from industry to provide lectures on engineering practice in 2008.
- ❖ Added a one hour per week tutorial to BME 2740 (Modeling and Simulation) and BME 3710 (Data Evaluation Principles) in 2007.
- ❖ Offering all courses web-assisted through Moodle in 2011 and then Blackboard in 2012.
- ❖ “Flipped” BME 3721 in fall 2014 and BME 2740 in spring 2015 with pre-recorded lectures so that in-class could be spent working problems and concentrating on more difficult concepts.