

## MSTP STUDENT DESCRIPTION

NAME: David Zisa

e-Mail address: dczisa@buffalo.edu

Undergraduate College/University attended: Cornell University

Major: Chemical Engineering

Minor: Biomedical Engineering

Years in MSTP (1-8): 5<sup>th</sup>

DEPARTMENT: Biochemistry

THESIS ADVISOR: Dr. Te-Chung Lee & Dr. John Canty Jr.

### RESEARCH DESCRIPTION:

**Vascular Endothelial Growth Factor (VEGF) has shown promise for the treatment of cardiovascular and peripheral vascular ischemia via angiogenesis. Yet, recent evidence has emerged that VEGF may also have direct regenerative effects on injured muscle. The importance of growth factor trophic actions is increasingly being recognized in cardiovascular medicine. Given the reported findings that VEGF may promote muscle regeneration directly, we are investigating whether VEGF therapy could activate dystrophic skeletal muscle and promote heart repair in the cardiomyopathic delta-sarcoglycan null hamster.**

PhD Thesis title: **Intramuscular VEGF Therapy in the Delta-Sarcoglycan Null Hamster**

Date of Completion (or expected) of PhD: **June 2010**

### PUBLICATIONS:

**Zisa D, Shabbir A, Suzuki G, Lee T. Skeletal Muscle Activation by VEGF Mediates Heart Repair. (Manuscript in Preparation)**

**Shabbir A, Zisa D, Suzuki G, Lee T. 2009. Heart Failure Therapy Mediated by the Trophic Activities of Bone Marrow Mesenchymal Stem Cells: A Non-invasive Therapeutic Regimen. *American Journal of Physiology – Heart and Circulatory Physiology*, (In Press)**

**Shabbir A & Zisa D, Leiker M, Johnston C, Lin H, Lee T. 2009. Muscular Dystrophy Therapy by Non-Autologous Mesenchymal Stem Cells: Muscle Regeneration without Immunosuppression and Inflammation. *Transplantation*, (In Press)**

**Missihoun C, Zisa D, Shabbir A, Lin H, Lee T. 2009. Myocardial oxidative stress, osteogenic phenotype, and energy metabolism are differentially involved in the initiation and early progression of delta-sarcoglycan-null cardiomyopathy. *Molecular and Cellular Biochemistry*, 321(1-2):45-52.**

### ABSTRACTS:

**Zisa D, Shabbir A, Suzuki G, Johnston C, Aleksic I, Leiker M, Lee T. “VEGF Induced Skeletal Muscle and Heart Regeneration in the Delta-Sarcoglycan Null Hamster.” Seventh Annual Biochemistry Research Day, University at Buffalo. Buffalo, NY. May 4, 2009.**

**Suzuki G, Iyer V, Shabbir A, Zisa D, Palka B, Cimato T, Lee TC, Canty J. “Pravastatin Followed by Intracoronary Fibroblast Growth Factor (FGF-5) Synergistically Amplifies Endogenous Cardiac Repair in Swine with Hibernating Myocardium.” American College of Cardiology Annual Meeting. March 29-31 2009.**

**Zisa D, Shabbir A, Leiker M, Missihoun C, Lee TC. “Phenotypic and Functional Analyses of Delta-Sarcoglycan Null Mesenchymal Stem Cells.” Sixth Annual Biochemistry Research Day, University at Buffalo. Buffalo, NY. May 2, 2008.**

**Shabbir A, Suzuki G, Zisa D, Missihoun C, Leiker M, Canty J, Lee TC. Non-Invasive Mesenchymal Stem Cell Therapeutics in a Rodent Model of Heart Failure. Sixth Annual Biochemistry Research Day, University at Buffalo. Buffalo, NY. May 2, 2008.**

Zisa D, Otero JM, VanDusen WJ. “PER.C6™ Cell Growth and MRKAd5gag Virus Production at 2L Scale with Braun BIOSTAT® B-DCU and BIOSTAT® MD Units.” Merck Fermentation and Cell Culture Poster Session. November 3<sup>rd</sup> 2003.

Zisa D, Otero JM, VanDusen WJ . “Startup of a 2L Bioreactor Laboratory for PER.C6™ Process Development.” Merck Research Seminar. December 18<sup>th</sup> 2003.

Zisa D, Pearre C. “Investigation of Cryopreservation of PER.C6™ for a Large Scale Cell Bank.” Merck Research Seminar. August 9<sup>th</sup> 2004.

PROFESSIONAL/EDUCATIONAL MEETINGS ATTENDED (name of meeting, dates of attendance, location):

American Institute of Chemical Engineers Annual Meeting, November 7<sup>th</sup>-12<sup>th</sup> 2004, Austin, Texas

AWARDS / HONORS:

Commendation from the Dean 2006

**Gilbert D. Moore Fellowship 2005-2007**

**The Elizabeth Olmsted Ross Award for Outstanding Graduate Poster 2008**

MEDICAL SCHOOL ACTIVITIES:

American Medical Association-Medical Student Section

Emergency Medicine Student Association

Internal Medicine Interest Group

Lighthouse Medical Clinic

Surgical Interest Group

Wine Interest Group

EXTRACURRICULAR INTERESTS:

**Tutoring Biochemistry and Pharmacology**

Playing the Drums

Football

Softball