

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME <b>Khurram Shahzad MD</b>		POSITION TITLE <b>Postdoctoral Research Fellow</b>	
eRA COMMONS USER NAME <b>SHAHZADK</b>			
EDUCATION/TRAINING ( <i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i> )			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Govt. College Sargodha, Pakistan	FSc.	1997	Premedical Studies
King Edward Medical College, Pakistan	MBBS	2004	Medicine
Columbia University, Mailman School of Public Health, NY	MS-candidate	2011(exp)	Clinical Research Methods
Columbia University, College of Physicians & Surgeons, NY	Post-doc		Cardiac Transplantation Research

**A. Personal Statement**

In this proposal we plan to identify leukocyte gene expression profiles (GEP) of multiorgan dysfunction (MOD) in heart failure patients after cardiac surgery. From this, we plan to develop and validate a leukocyte GEP test, integrate it into current clinical MOD-scoring systems and demonstrate improved patient outcome prediction. I have a background in cardiology and leukocyte transcriptome research, with specific training and expertise in key research areas for this application. As a postdoctoral fellow in Heart Failure and Heart Transplant Program at Columbia University, I have been extensively involved in the development of genomic biomarkers for the detection/prediction of clinical diseases. I was a co-author on the feasibility study on the topic showing sequential changes in the leukocyte whole transcriptome in response to the mechanical circulatory support device therapy. I am also involved in the improvement of prediction tools for better selection of patients for surgical interventions after advanced heart failure.

**B. Positions and Honors**Positions

2008-pres Postdoctoral Research Fellow, Cardiac Transplantation Research, Columbia University

Honors

1993- Best student of the year and National Talent Scholarship  
 1995- Best student of the year and National Talent Scholarship  
 1997- Bazm-e-Kaleem Gold Medal  
 1997- Best student of the year in Premedical Studies (Gold Medal)  
 2004- Scholarship of Merit throughout MBBS curriculum  
 2008- Poster of Distinction Award at the annual American Transplant Congress (ATC) 2008  
 2009-pres Member International Society of Heart and Lung Transplantation (ISHLT)  
 2009-pres Member American Heart Association (AHA)  
 2009-pres Member King Edward Medical College Alumni Association of North America (KEMCAANA)  
 2010-pres Member Association of Physicians of Pakistani Descent of North America (APPNA)  
 2010-pres Member American Society of Transplantation (AST)  
 2010- ISHLT Research Fellowship Award

2010- Poster of Distinction Award at the annual American Transplant Congress (ATC) 2010

### **C. Selected peer-reviewed publications (in chronological order)**

#### Peer reviewed publications

1. Cadeiras M, Bayern MP, Burke E, Dedrick R, Gangadin AR, Latif F, **Shahzad K**, Sinha A, Marboe CC, Califano A, Deng MC. Gene Expression Profiles in Patients with Antibody Mediated Rejection after Cardiac Transplantation. *J Heart Lung Transplant* 2008; 27:932-4.
2. Latif F, Cadeiras M, Bayern MP, **Shahzad K**, Sinha A, Deng MC. Challenges of Long-term Mechanical Circulatory Support Therapy. *Expert Rev. Med. Devices* 2008; 5:413-414.
3. \***Shahzad K**, \*Cadeiras M, \*John MM, Gruber D, Bayern M, Auerbach S, Sinha A, Latif F, Unniachan S, Memon S, Mital S, Restaino S, Marboe CC, Addonizio LJ, Deng MC. Relationship between a Validated Molecular Cardiac Transplant Rejection Classifier and Routine Organ Function Parameters. *Clin Transplant*. 2010 May;24(3):321-7.
4. \***Shahzad K**, \*Sinha A, \*Latif F, Cadeiras M, von Bayern M, Oz S, Naka Y, Deng MC. Leukocyte Expression Signatures Early After Mechanical Circulatory Support Device Implantation. *Hum Immunol* 2010 Feb; 71(2):164-9.
5. **Shahzad K**, He J, Li Q, Aziz QA, and Deng MC. Relationship between Prolonged QTc-interval, Cardiac Allograft Dysfunction and Elevated Molecular Gene Expression Profiling Test Score after Heart Transplantation. *J Heart Lung Transplant*. 2010 Jun; 29(6):711-3.
6. Cadeiras M, von Bayern M, Sinha A, **Shahzad K**, Lim WK, Grenett H, Tabak EG, Klingler T, Deng MC. Drawing Networks of Rejection - A Systems Biological Approach to the Identification of Candidate Genes in Heart Transplantation. *J Cell Mol Med*. 2010 May 24. [Epub ahead of print]
7. **Shahzad K**, Cadeiras M, Arai K, Abramov D, Burke E, and Deng MC. Unexplained Graft Dysfunction after Heart Transplantation – Role of Novel Molecular Expression Test Score and QTc-Interval: a Case Report. *Cardiol Res Pract*. 2010; 2010:230810.
8. Deng MC, Alexander G, Wolters H, **Shahzad K**, Cadeiras M, Hicks A, Rowe T, Klingler T, Eisen H J. Low Variability of Intraindividual Longitudinal Leukocyte Gene Expression Profiling Cardiac Allograft Rejection Scores. *Transplantation*. 2010 Aug 27;90(4):459-61.
9. **Shahzad K**, Latif F, Sinha A, Cadeiras M, Baron H, and Deng MC. Development of Genomic Scores to Predict Clinical Outcomes in Critical Care Medicine. *Mol Med*. Invited Review (In press)
10. **Shahzad K**, Aziz QA, Leva JP, Cadeiras M, Ho EK, Vlad G, Vasilescu ER, Latif F, Sinha A, Burke E, Addonizio LJ, Restaino SW, Marboe CC, Suci-Foca N, Naka Y, Mancini D, Deng MC. New Onset Graft Dysfunction after Heart Transplantation – Incidence and Mechanism-Related Outcomes. *J Heart Lung Transplant*. (In press)
11. \***Shahzad K**, \*Cadeiras M, Memon S, Zeeberg B, Klingler T, Sinha A, Tabak EG, Unniachan S, Weinstein JN, Deng MC. Peripheral Blood Mononuclear Cell Gene Expression Profiles Early Post Transplant in Patients Developing Cardiac Allograft Vasculopathy. *J Transplant*. (In press)

### **D. Research Support**

***Biology of Human Long-Term Mechanical Circulatory Support***

Sponsor: NHLBI (US\$17 Mill) Specialized Center for Clinically Oriented Research (SCCOR)

Role: Post-doc Fellow (6 cal months)

Period: January 2008-December 2010

**Summary:** Infection is the most common cause of death in long-term Mechanical Circulatory Support-Device-supported heart failure patients, while both infection and bleeding complications are the major drivers of cost. Cell transplantation offers the promise of actively promoting regeneration of myocardial function, allowing potential temporary device use as a “bridge to recovery” rather than permanent implantation as a destination. These questions are addressed in this translational SCCOR which consists of clinical and basic research components.

***Immune Mechanisms of Graft Dysfunction after Heart Transplantation - Identification of Potential Biomarkers***

Sponsor: International Society of Heart and Lung Transplantation (US\$40,000)

Role: Principle Investigator (3 cal months)

Period: July 2010-June 2011

**Summary:** In the current era of immunosuppression, there is increased incidence of unexplained graft dysfunction in heart transplant recipients. These patients are associated with higher mortality. The evidence of improvement in some patients after augmented immunosuppression suggests the role of immune mediated mechanisms. Utilizing the unique data available as a result of Invasive Monitoring Attenuation Through Gene Expression (IMAGE) study these questions are addressed to identify potential biomarkers for appropriate diagnosis of these patients.