

## Volunteer Opportunities

### TOWN OF PARADISE VALLEY COMMITTEE VOLUNTEER APPLICATION FORM

A vacancy has opened up on the Municipal Property Corporation (MPC). The MPC Board of Directors issues debt on behalf of the Town to finance major capital projects such as construction of sewer line infrastructure and public buildings. The Board is made up of seven members who serve three year terms. The Board meets once or twice per year. If you are interested in serving on this Board, please complete this application and submit. The deadline to submit an application is September 6, 2017

Please provide the following background information.

Name*	Harish Ramakrishna MD, FACC, FASE
Address*	
Email*	
Home Phone	
Employer	Mayo Clinic
Occupation	Professor and Vice-Chair
Business Phone	
Cell Phone	
Number of years as PV resident	7

Professional experience highlights

I have attached my CV- I am one of the few dual anesthesiologist-cardiologists in the country, I have worked at Mayo Clinic for the past 13 years, I helped start the heart transplant program here at Mayo Clinic in Arizona in 2005.  
I am currently Professor and Vice Chair for Research at Mayo Clinic in Arizona.

What experience do you think qualifies you to be a committee member?

I have close to 20 years of experience as a physician leader, innovator and director.  
I am confident I can contribute effectively to this community.

Community Activities

Attach resume and cover letter

[Dr Ramakrishna CV August 2018.pdf](#)

# Curriculum Vitae and Bibliography

## Harish Ramakrishna, MD, FASE, FACC

### Personal Information

Work Address: Mayo Clinic  
5777 East Mayo Boulevard  
Phoenix, AZ 85054

Email Address:

### Present Academic Rank and Position

**Consultant** - Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Phoenix, Arizona 11/2008 - Present

**Consultant** - Division of Cardiovascular and Thoracic Anesthesiology, Department of Anesthesiology, Mayo Clinic, Phoenix, Arizona 07/2012 - Present

**Vice Chair for Research** - Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Phoenix, Arizona 08/2014 - Present

**Professor of Anesthesiology** - Mayo Clinic College of Medicine and Science 06/2017 - Present

### Education

Bangalore University, Biology, Chemistry, Physics, French 1984 - 1986

Bangalore University - MD 1986 - 1993

Texas Tech University - Internship, Internal Medicine 1995 - 1996

University of Pittsburgh Medical Center - Resident, Anesthesiology; Cardiovascular/ICU track 01/1999-06/1999 07/1996 - 06/1999

### Additional Education

Cardiac and Thoracic Anesthesia/TEE/Cardiothoracic Intensive Care Track  
University of Pittsburgh Medical Center  
Pittsburgh, Pennsylvania 1998 - 1999

CardioWest TAH-t Start Up Training  
Received Implant Certification Sponsored by SynCardia Systems, Inc. Proctored  
Implant at Mayo Clinic-Phoenix, AZ 08/22/2007  
University Medical Center  
Tucson, Arizona 08/2007

### Certification

#### Board Certifications

##### American Board of Anesthesiology

Anesthesiology 2000 - Present

**American College of Cardiology**

Fellow 2015 - Present

**American College of Surgeons (ACS)**

Advanced Trauma Life Support (ATLS) 1998 - Present

**American Heart Association (AHA)**

Advanced Cardiovascular Life Support (ACLS) 2004 - Present

**American Society of Echocardiography**

Fellow (FASE) 2007 - Present

**Educational Commission for Foreign Medical Graduates (ECFMG)**

ECFMG 1994 - Present

**National Board of Echocardiography (NBE)**

Echocardiography 2003 - Present

Diplomate - Adult Transthoracic Plus Transesophageal Echocardiography 2004 - Present

Examination of Special Competence in Advanced Perioperative Transesophageal Echocardiography (Advanced PTEeXAM) 2013 - Present

**Mayo Clinic Quality Academy**

Mayo Clinic Quality Fellow: Bronze Level Certification 2012

**Licensure**

Florida ME 86789 (Medical) 01/2003 - 2019

California A83945 - Inactive (Medical) 07/2003 - 2017

Arizona 33238 (Medical) 08/2004 - 2018

**Honors and Awards****Distinctions in Physiology, Pathology, Pharmacology and Microbiology** 1989  
**Ranked first in 2nd year of Medical School** - Bangalore University**Graduated with MD Honors (First Class), in top 5%** - Bangalore University 1993**Mark H. Gilland Best Clinical Resident Award, Department of Anesthesiology and Critical Care Medicine** - University of Pennsylvania 1999**Second Prize Resident Research Competition** - Western Pennsylvania Society of Anesthesiologists 1999**Best Doctors in America** - Best Doctors 2009 - 2010**Best Doctors in America** - Best Doctors 2010 - 2011**Top Doctor in Phoenix, Arizona** - International Association of Anesthesiologists 10/2010**Best Doctors in America** - Best Doctors 2011 - 2012**Who's Who in America** - Marquis Who's Who in America 2012**Who's Who in America** - Marquis Who's Who in America 2014**Who's Who in America - 70th Platinum Anniversary Edition** - Marquis Who's Who in America 2015**Who's Who in Science and Engineering** - Marquis Who's Who in America 2016 - 2017

## Previous Professional Positions and Major Appointments

<b>Clinical Instructor</b> - Department of Anesthesiology-CCM, University of Pittsburgh, Pittsburgh, Pennsylvania	1999 - 2000
<b>ACLS Instructor</b> - VA Pittsburgh Healthcare System, Pittsburgh, Pennsylvania	1999 - 2002
<b>Charge Anesthesiologist and Schedule Maker, TEE Consultant, Liver Transplant Anesthesiologist</b> - VA Pittsburgh Healthcare System, Pittsburgh, Pennsylvania	1999 - 2002
<b>Staff Anesthesiologist part-time</b> - VA Pittsburgh Healthcare System, Pittsburgh, Pennsylvania	1999 - 2002
<b>Acute Pain Service Attending</b> - Presbyterian University Hospital, University of Pittsburgh Medical Center, Unknown	1999 - 2005
<b>Assistant Professor</b> - Department of Anesthesiology-CCM, University of Pittsburgh, Pittsburgh, Pennsylvania	2000 - 2002
<b>Clinical Assistant Professor</b> - Department of Anesthesiology-CCM, University of Pittsburgh, Pittsburgh, Pennsylvania	2002 - 2005
<b>Senior Associate Consultant</b> - Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Phoenix, Arizona	2004 - 11/2008
<b>Instructor in Anesthesiology</b> - Mayo Clinic College of Medicine and Science	07/2005 - 03/2008
<b>Director</b> - Division of Cardiovascular and Thoracic Anesthesiology, Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Phoenix, Arizona	04/2007 - 07/2012
<b>Assistant Professor in Anesthesiology</b> - Mayo Clinic College of Medicine and Science	04/2008 - 09/2014
<b>Chair</b> - Division of Cardiovascular and Thoracic Anesthesiology, Department of Anesthesiology, Mayo Clinic, Phoenix, Arizona	07/2012 - 06/2015
<b>Associate Professor in Anesthesiology</b> - Mayo Clinic College of Medicine and Science	10/2014 - 05/2017

## Professional and Community Memberships, Societies, and Services

### Professional Memberships and Services

American College of Cardiology Fellow	06/2015 - Present
Surgeon's Section Appointee	04/2016 - Present
Surgeons' Section Leadership Council Member	04/2017 - 04/2020
American Heart Association	

Council on Cardiovascular Surgery and Anesthesia Member	2016 - Present
Council on Quality of Care and Outcomes Research Member	2016 - Present
American Society of Anesthesiologists Member	1996 - Present
Committee on Cardiovascular and Thoracic Anesthesia Adjunct Member	10/2015 - 10/2017
Committee on Patient Safety and Education Adjunct Member	10/2015 - 10/2017
American Society of Echocardiography Member	2002 - Present
Finance & Development Committee Member	2015 - Present
Membership Committee Member	2013 - Present
Steering Committee Member	2010 - Present
Telemedicine and New Technology Task Force Member	2014 - Present
Anesthesia Patient Safety Foundation Grants Review Committee Member	2008 - Present
Scientific Evaluation Committee Member	2013 - Present
Arizona Society of Anesthesiologists Member	2005 - Present
Arizona Society of Echocardiography Member	2005 - Present
Association of University Anesthesiologists Member	2015 - Present
Pennsylvania Medical Society Member	1996 - 2004
Society of Cardiovascular Anesthesiologists Member	1996 - Present
Ethics Committee Member	
Newsletter Sub-Committee Member	07/2014 - 04/2016
Veterans Affairs Medical Center Transfusion Committee Member	1999 - 2002
Western Pennsylvania Society of Anesthesiologists	

Member	1996 - 2005
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## Journal Responsibilities

### Journal Editorial Responsibilities

Annals of Cardiac Anesthesia Editorial Board Member	2013 - Present
Heart Failure Section Editor	2015 - Present
Journal of Anaesthesiology Clinical Pharmacology Editorial Board Member	2015 - Present
Journal of Cardiothoracic and Vascular Anesthesia Editorial Board Member	2014 - Present
Expert Review Section Section Editor	2015 - Present

### Journal Other Responsibilities

Anesthesia & Analgesia Reviewer	2007 - Present
Annals of Cardiac Anesthesia Reviewer	2007 - Present
F1000 Prime Cardiovascular Medicine in Anesthesia: Basic Science Associate Faculty Member	2008 - Present
Journal of Applied Pharmacology Reviewer	2006 - Present
Journal of Neurosurgical Anesthesiology Reviewer	2006 - Present
Journal of Pharmacy Technology Reviewer	2006 - Present

## Educational Activities

**Curriculum and Course Development**

Course Co-Director, Moderator, and Workshop Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2007 Scottsdale, Arizona	02/2007
Faculty and Workshop Moderator American Society of Anesthesiologists - TEE Workshop	11/2007
Meeting Faculty 2008 Society of Cardiovascular Anesthesiologists Annual Meeting Vancouver, British Columbia	06/2008
Course Co-Director and Workshop Organizer Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2009 Phoenix, Arizona	02/2009
Course Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2010 Phoenix, Arizona	02/2010
Course Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2011 Phoenix, Arizona	03/2011
Course Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2012 Scottsdale, Arizona	02/2012
Course Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2013 Scottsdale, Arizona	02/2013
Course Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2014 Scottsdale, Arizona	02/2014
Course Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2015 Scottsdale, Arizona	2015
Course Director Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2016 Scottsdale, Arizona	02/2016

**Teaching Intramural**

<p>ACLS  Instructor for the Department of Anesthesiology and CRNA Program. Faculty Instructor (the only attending anesthesiologist in the Department of Anesthesiology at Presbyterian Hospital) on multiple ACLS courses sponsored by the Departments of Anesthesiology and Emergency Medicine.  University of Pittsburgh Medical Center  Pittsburgh, Pennsylvania</p>	1999 - 2005
<p>General Anesthesiology  Didactic CA-1, CA-2 and CA-3 Lectures - monthly lectures for rotating anesthesia residents (15-20 per class) and University of Pittsburgh Medical Students (2-4 per class)  University of Pittsburgh Medical Center  Pittsburgh, Pennsylvania</p>	06/1999 - 06/2005
<p>Cardiac Anesthesiology  Formal cardiac anesthesia lectures for Cardiothoracic Fellows and rotating Cardiac Residents  University of Pittsburgh Medical Center  Pittsburgh, Pennsylvania</p>	06/1999 - 06/2005
<p>TEE  Formal Echo Lectures for Intraoperative Series  University of Pittsburgh Medical Center  Pittsburgh, Pennsylvania</p>	06/1999 - 06/2005
<p>Basic Pharmacology of Muscle Relaxants  CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic  University of Pittsburgh Medical Center  Pittsburgh, Pennsylvania</p>	08/1999
<p>Anesthesia Machine Basics  CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic  University of Pittsburgh Medical Center  Pittsburgh, Pennsylvania</p>	09/1999
<p>Hyperkalemia: Approach to the Patient with Renal Disease  Problem-based Learning Discussion (30 min. lecture)  VA Pittsburgh Healthcare System  Pittsburgh, Pennsylvania</p>	09/1999
<p>COPD, Anesthetic Management  Problem-based Learning Discussion (30 min. lecture)  VA Pittsburgh Healthcare System  Pittsburgh, Pennsylvania</p>	12/1999
<p>Geriatric Anesthesia  CA-2 Lecture - 60 minute lecture - formal didactic  University of Pittsburgh Medical Center  Pittsburgh, Pennsylvania</p>	01/2000



Liver Disease: Approach to the Patient with Elevated LFTs Problem-based Learning Discussion (30-min lecture) VA Pittsburgh Healthcare System Pittsburgh, Pennsylvania	03/2000
Anesthesia for Liver Disease CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	06/2000
Basic Pharmacology of Muscle Relaxants CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2000
Anesthesia Machine Basics CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2000
Basic Review of Cardiac Pharmacology Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2000
Cardiopulmonary Bypass Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	02/2001
Geriatric Anesthesia CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	03/2001
Anesthesia for Liver Disease CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	06/2001
CNS Issues - Anesthesia for Intracranial Aneurysms Problem-based Learning Discussion (30 min. lecture) VA Pittsburgh Healthcare System Pittsburgh, Pennsylvania	06/2001
Basic Pharmacology of Muscle Relaxants CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2001

One Lung Ventilation CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2001
Basic Review of Cardiac Pharmacology Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2001
Anesthesia Machine Basics CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2001
Perioperative Management of the Management with Vascular Disease CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	11/2001
Bleeding in Cardiac Surgery - An Approach Problem-based Learning Discussion (30 min. lecture) VA Pittsburgh Healthcare System Pittsburgh, Pennsylvania	12/2001
Geriatric Anesthesia CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	01/2002
Geriatric Anesthesia Review Problem-based Learning Discussion (30-min. lecture) VA Pittsburgh Healthcare System Pittsburgh, Pennsylvania	03/2002
Thoracic Epidural Analgesia Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	05/2002
Basic Pharmacology of Muscle Relaxants CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2002
Anesthesia for Liver Disease CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2002

Basic Review of Cardiac Pharmacology Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2002
Cardiopulmonary Bypass Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2002
Anesthesia Machine Basics CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2002
One Lung Ventilation CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2002
Basic Physics of TEE Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	08/2002
Perioperative Management of the Management with Vascular Disease CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	09/2002
Geriatric Anesthesia CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	01/2003
Aortic Stenosis Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	05/2003
Basic Pharmacology of Muscle Relaxants CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2003
Anesthesia for Liver Disease CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2003

Cardiopulmonary Bypass Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2003
Thoracic Epidural Analgesia Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2003
Basic Physics of TEE Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	07/2003
One Lung Ventilation CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2003
Anesthesia Machine Basics CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	09/2003
Basic Review of Cardiac Pharmacology Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	09/2003
Perioperative Management of the Management with Vascular Disease CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	10/2003
LV Function Assessment Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	10/2003
Geriatric Anesthesia CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	01/2004

Intracardiac Masses Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	01/2004
Aortic Stenosis Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	06/2004
Basic Pharmacology of Muscle Relaxants CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2004
Anesthesia for Liver Disease CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2004
Thoracic Epidural Analgesia Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	07/2004
Aortic Dissection Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	07/2004
Anesthesia Machine Basics CA-1 Lecture - 60 minute lecture: Introductory lecture for new anesthesiology residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2004
Cardiopulmonary Bypass Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	08/2004
Basic Physics of TEE Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	08/2004

One Lung Ventilation CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	09/2004
Basic Review of Cardiac Pharmacology Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	09/2004
LV Function Assessment Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	09/2004
Perioperative Management of the Management with Vascular Disease CA-3 Lecture - 60 minute lecture for senior residents - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	11/2004
Preceptor to 4th year medical students and rotating surgical residents in Anesthesiology Mayo Clinic Arizona Scottsdale, Arizona	2005 - Present
Geriatric Anesthesia CA-2 Lecture - 60 minute lecture - formal didactic University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	01/2005
Basic Review of Cardiac Pharmacology Cardiac Anesthesia Lectures - monthly lectures for rotating Anesthesia Residents and Fellows (45 min. lecture) University of Pittsburgh Medical Center Pittsburgh, Pennsylvania	01/2005
LV Function Assessment Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	01/2005
Aortic Dissection Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	01/2005
Basic Physics of TEE Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	05/2005

Intracardiac Masses Monthly Echocardiography Lecture for Cardiac Anesthesia Residents, Fellows and Cardiology Echo Fellows (45 min. lecture) Presbyterian University Hospital, University of Pittsburgh Pittsburgh, Pennsylvania	05/2005
Geriatric Anesthesia Review Anesthesiology Grand Rounds Mayo Clinic Phoenix, Arizona	08/2005
Cardiac Monitoring Basics Resident Lecture Mayo Clinic Phoenix, Arizona	10/2005
Anesthetic Management of the Patient Following Heart Transplantation Anesthesiology Grand Rounds Mayo Clinic Phoenix, Arizona	06/2006
Heart Transplantation Issues Perioperative Service Lecture Mayo Clinic Phoenix, Arizona	06/2007
Anesthesiology Resident Introductory Lectures (3 lectures) Mayo Clinic Phoenix, Arizona	07/2007
Fluid and Blood Therapy Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2007
Cardiac Risk Factor Stratification and TEE Introduction Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2007
Invasive Cardiovascular Monitoring Resident Lecture Mayo Clinic Phoenix, Arizona	09/2007
Inaccuracies in CVP Monitoring Keyword Conference Mayo Clinic Phoenix, Arizona	05/2008
Ventilatory Assist Devices Keyword Conference Mayo Clinic Phoenix, Arizona	06/2008

Anesthesia Management for Valvular Heart Disease Resident Lecture Mayo Clinic Phoenix, Arizona	06/2008
Fluid and Blood Therapy Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2008
Cardiac Risk Factor Stratification and TEE Introduction Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2008
Introduction to E-Echo Application Resident Lecture Mayo Clinic Phoenix, Arizona	08/2008
Coagulation Management for Bypass Resident Lecture Mayo Clinic Phoenix, Arizona	11/2008
Coronary Stents: Are We Going Back to Bare-Metal? Anesthesiology Grand Rounds Mayo Clinic Phoenix, Arizona	06/2009
Pacemakers and Defibrillators Resident Lecture Mayo Clinic Phoenix, Arizona	10/2009
Cardiopulmonary Bypass Resident Lecture Mayo Clinic Phoenix, Arizona	01/2010
Introduction to Echocardiography Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2010
Congenital Heart Disease Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2010
Obesity: Pathophysiology and Management Resident Lecture Mayo Clinic Phoenix, Arizona	08/2010



Anesthesia for Urological Procedures Resident Lecture Mayo Clinic Phoenix, Arizona	01/2011
Journal Club Host and Moderator Mayo Clinic Phoenix, Arizona	03/2011
Anesthesia for Thoracic Surgery Resident Lecture Mayo Clinic Phoenix, Arizona	06/2011
Uncommon Cardiac Conditions Resident Lecture Mayo Clinic Phoenix, Arizona	11/2011
Intracranial Vascular Lesions & Anesthesia Resident Lecture Mayo Clinic Phoenix, Arizona	04/2012
Journal Club Host and Moderator Mayo Clinic Phoenix, Arizona	05/2012
Congenital Heart Disease Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2012
Invasive CV Monitoring Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2012
Journal Club Host and Moderator Mayo Clinic Phoenix, Arizona	12/2012
Liver Disease and Anesthesia Resident Lecture Mayo Clinic Phoenix, Arizona	01/2013
Cardiopulmonary Bypass Resident Lecture Mayo Clinic Phoenix, Arizona	06/2013

Congenital Heart Disease Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2013
Invasive CV Monitoring Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2013
Congenital Heart Disease Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2014
Invasive CV Monitoring Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2014
Coronary Stents Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	09/2014
Oral Boards Mayo Clinic Residents Mayo Clinic Phoenix, Arizona	03/2015
Anesthesia Oral Board Review Mayo Clinic Residents Mayo Clinic Phoenix, Arizona	06/2015
Congenital Heart Disease Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2015
Invasive CV Monitoring Anesthesiology Residency Core Lecture Mayo Clinic Phoenix, Arizona	07/2015
Anesthetic Considerations for Lung Transplantation Invited Lecture - Perioperative Nursing Mayo Clinic Phoenix, Arizona	09/2015
Cardiopulmonary Bypass Resident Lecture Mayo Clinic Phoenix, Arizona	12/2015

Cardiovascular Anesthesia Highlights 2015 - Progress in Mitral Valve Disease and Arrhythmia Management 02/2016  
 Grand Rounds Invited Speaker  
 Department of Anesthesiology, Mayo Clinic in Arizona  
 Phoenix, Arizona

Congenital Heart Disease 08/2016  
 Anesthesiology Residency Core Lecture  
 Mayo Clinic  
 Phoenix, Arizona

Invasive CV Monitoring 08/2016  
 Anesthesiology Residency Core Lecture  
 Mayo Clinic  
 Phoenix, Arizona

Aortic Valve Stenosis-A Reappraisal of Perioperative Risk 01/2017  
 Resident Lecture  
 Mayo Clinic  
 Phoenix, Arizona

Oral Board Reviews 04/2017  
 Mayo Clinic  
 Phoenix, Arizona

Congenital Heart Disease 07/2017  
 Anesthesiology Residency Core Lecture  
 Mayo Clinic  
 Phoenix, Arizona

Invasive CV Monitoring 07/2017  
 Anesthesiology Residency Core Lecture  
 Mayo Clinic  
 Phoenix, Arizona

### Mentorship

Chen, W (Anesthesia Resident) 01/2003  
**Description:**  
**Current Status:** Private Practice  
**Outcome:**

Murray, Andrew (Cardiovascular Anesthesia Fellow) 01/2003  
**Description:**  
**Current Status:** Anesthesiology Consultant, Mayo Clinic Arizona  
**Outcome:**

Balasubramanian, H (Anesthesia Resident) 01/2004  
**Description:**  
**Current Status:** Private Practice  
**Outcome:**

<p>Wilkins, Eric (Cardiovascular Anesthesia Fellow)  <b>Description:</b>  <b>Current Status:</b> Associate Professor, Lewis Katz School of Medicine  <b>Outcome:</b></p>	01/2004
<p>Humpherys, Clint (Anesthesia Resident)  <b>Description:</b> Formal advisor to Dr. Humpherys. Met with resident to review performance and provide professional career advice.  <b>Current Status:</b> Private Practice in Alaska  <b>Outcome:</b> Dr. Humpherys completed a Fellowship in Cardiology in 2013. Peer reviewed publication: Intermittent obstruction of left ventricular assist device due to prolapsing papillary muscle. Ann Card Anaesth 2012 Jul-Sep; 15 (3):250-1.</p>	01/2010 - 01/2012
<p>Craner, Ryan (Anesthesia Resident)  <b>Description:</b> Mentored in study, article preparation and submission  <b>Current Status:</b> Anesthesiology Consultant, Mayo Clinic Arizona  <b>Outcome:</b> One peer-reviewed article: Emergent cardiopulmonary bypass during pectus excavatum repair. Ann Card Anaesth. 2013 Jul-Sep; 16(3):205-8 and three abstracts</p>	01/2011 - 01/2013
<p>Carvajal, Tomas (Research Fellow)  <b>Description:</b> Transitional Year Resident 2014  <b>Current Status:</b> Anesthesiology CA-2 Resident  <b>Outcome:</b> Co-author on International Meeting Abstract. Paper: RV Failure Mimicking Malignant Hyperthermia Following CABG; submitted to Academic Excellence Day 2015 and for publication.</p>	01/2013 - Present
<p>Cubillo, Efrain (Anesthesia Resident)  <b>Description:</b> Mentored in study, article preparation and submission  <b>Current Status:</b> Private Practice, Pain Medicine, Tucson, Arizona  <b>Outcome:</b> Manuscript accepted to the Journal of Emergency Medicine and another manuscript in progress</p>	01/2013
<p>Knapp, Kathleen (Anesthesia Resident)  <b>Description:</b> Mentored on academic project for resident research requirements  <b>Current Status:</b> Cardiothoracic Anesthesiology Fellow, University of Colorado  <b>Outcome:</b> Peer Reviewed Article: Spontaneous Postpartum Coronary Artery Dissection and Cardiogenic Shock with Extracorporeal Membrane Oxygenation Assisted Recovery in a 30-Year-Old Patient. Published in Case Reports in Cardiology. 2016.</p>	01/2013
<p>Kraus, Molly (Anesthesia Resident)  <b>Description:</b> Mentored in study, article preparation and submission  <b>Current Status:</b> Anesthesiology Consultant, Mayo Clinic Arizona  <b>Outcome:</b> Abstract submitted and accepted to ASA meeting</p>	01/2013
<p>Shamoun, Fadi (MD)  <b>Description:</b> Advisor to Special Edition Publication for Dr. Shamoun  <b>Current Status:</b> On staff, Mayo Clinic Hospital  <b>Outcome:</b> Publications: 1) Novel Anticoagulants in Atrial Fibrillation: Monitoring, Reversal and Perioperative Management. Biomed Res Int 2015; 2015:424031; 2) Percutaneous and minimally invasive approaches to mitral valve repair for severe mitral regurgitation-new devices and emerging outcomes. Ann Card Anaesth 2015 Oct-Dec; 18 (4):528-36.</p>	01/2014

<p>Zach, Kelly (Anesthesia Resident)  <b>Description:</b> Mentored in study, article preparation and submission  <b>Current Status:</b> On Staff, Oregon Health &amp; Science University, Portland, Oregon  <b>Outcome:</b> Paper accepted for publication in Annals of Cardiac Anaesthesia - Perioperative Approach to Patients with Single Ventricle Physiology, April 2015.</p>	01/2014
<p>Tankosic, Nikola (Research Assistant)  <b>Description:</b> Research project for Survey of the National Drug Shortage Effect on Anesthesia and Patient Safety: a Patient Perspective. ID: 13-009642  <b>Current Status:</b> Internal Medicine Resident, Mt Sinai School of Medicine, New York  <b>Outcome:</b> Survey of the National Drug Shortage Effect on Anesthesia and Patient Safety: A Patient Perspective. Anesth Analg. 2015 Aug; 121(2):502-6.</p>	01/2014 - 01/2015
<p>Koushik, Sarang (Anesthesia Resident)  <b>Description:</b> Formal advisor to Dr. Koushik. Meet with resident quarterly to review performance and provide professional and career advice. LVAD Research.  <b>Current Status:</b> Anesthesiology CA-3 Resident  <b>Outcome:</b> Peer reviewed paper accepted for publication in Annals of Cardiac Anaesthesia: The Increasing Use of the Impella in Heart Failure Management</p>	07/2014 - 06/2017
<p>Hanley, Seth (Anesthesia Resident)  <b>Description:</b> Mentored in study, article preparation and submission  <b>Current Status:</b> Pediatric Fellow, University of North Carolina, Chapel Hill  <b>Outcome:</b> Research project and paper to be submitted to Journal of Anesthesiology Clinical Pharmacology</p>	10/2014
<p>O'Hare, Meabh (Cardiology Fellow)  <b>Description:</b> Sudden Cardiac Death JCVA Research Series  <b>Current Status:</b>  <b>Outcome:</b> Peer-reviewed publication: Sudden Cardiac Death and Disorders of the QT Interval: Anesthetic Implications and Focus on Perioperative Management. J Cardiothorac Vasc Anesth 2015 Dec; 29 (6):1723-33.</p>	11/2014 - 12/2014
<p>Askar, Wajih (Visiting Resident)  <b>Description:</b>  <b>Current Status:</b> Visiting Resident, Department of Anesthesiology, Mayo Clinic in Arizona  <b>Outcome:</b> Peer reviewed paper accepted for publication in JCVA: Direct Oral Anticoagulant Reversal Agents: A Looming Horizon, 2015</p>	01/2015
<p>Briceno, David (Cardiology Fellow)  <b>Description:</b>  <b>Current Status:</b> Cardiology Fellow, Albert Einstein College of Medicine, New York  <b>Outcome:</b> 1) Peer reviewed paper submitted for publication in Annals of Cardiac Anaesthesia: Mild Therapeutic Hypothermia in Patients Resuscitated from out of Hospital Cardiac Arrest: A Meta-Analysis of Randomized Controlled Trials. 2) Peer reviewed publication: A meta-analysis and meta-regression of long-term outcomes of transcatheter versus surgical aortic valve replacement for severe aortic stenosis. Int J Card 2016;225:234-43. 3) Abstract at AHA 2016 "Substrate-based Ablation Strategies Versus Standard Ablation of Ventricular Tachycardia in Patients with Structural Heart Disease: A Meta-analysis."</p>	01/2015

Callisen, Hannelisa (Physician Assistant)	01/2015
<b>Description:</b>	
<b>Current Status:</b> Critical Care NP/PA, Mayo Clinic, Phoenix, AZ	
<b>Outcome:</b> Contributing author for peer reviewed publication submitted to JCVA: Adult Venovenous Extracorporeal Membrane Oxygenation (VV-ECMO) for Severe Respiratory Failure: Current Status and Future Perspectives	
Einsenberg, Evann (Cardiology Fellow)	01/2015
<b>Description:</b>	
<b>Current Status:</b> Albert Einstein College of Medicine, New York	
<b>Outcome:</b> Peer reviewed paper submitted for publication in Annals of Cardiac Anaesthesia: Mild Therapeutic Hypothermia in Patients Resuscitated from out of Hospital Cardiac Arrest: A Meta-Analysis of Randomized Controlled Trials.	
Evans, Adam (MD)	01/2015
<b>Description:</b> Research - Outcomes research	
<b>Current Status:</b>	
<b>Outcome:</b> Peer-reviewed paper accepted for publication in JCVA: Mitral valve percutaneous repair - an update on recent trials	
Libricz, Stacy (Physician Assistant)	01/2015
<b>Description:</b>	
<b>Current Status:</b> Critical Care Physician Assistant, Mayo Clinic, Phoenix, AZ	
<b>Outcome:</b> Contributing author for peer reviewed publication submitted to JCVA: Adult Venovenous Extracorporeal Membrane Oxygenation (VV-ECMO) for Severe Respiratory Failure: Current Status and Future Perspectives	
Lowell, Amelia (Respiratory Therapist)	01/2015
<b>Description:</b>	
<b>Current Status:</b> Respiratory Care Therapist, Mayo Clinic, Phoenix, AZ	
<b>Outcome:</b> Contributing author for peer reviewed publication submitted to JCVA: Adult Venovenous Extracorporeal Membrane Oxygenation (VV-ECMO) for Severe Respiratory Failure: Current Status and Future Perspectives	
MacKnight, Brenda (MD)	01/2015
<b>Description:</b> Mentored for peer reviewed paper in JCVA	
<b>Current Status:</b> Department of Anesthesiology, Temple University School of Medicine	
<b>Outcome:</b> Moderate Aortic Stenosis at the Time of Coronary Artery Bypass Grafting: An Evidence Based Analysis and Recommended Management Approach for the Perioperative Echocardiographer-Accepted for publication in JCVA January 2015	
Makar, Gerges (Cardiology Fellow)	01/2015
<b>Description:</b>	
<b>Current Status:</b> Private Practice, Phoenix, Arizona	
<b>Outcome:</b> 1) Percutaneous and minimally invasive approaches to mitral valve repair for severe mitral regurgitation: new devices and emerging outcomes. Ann Card Anaesth. 2015 Oct-Dec;18(4):528-36. 2) Peer reviewed paper accepted for publication in JCVA: Direct Oral Anticoagulant Reversal Agents: A Looming Horizon, 2015.	

- Makkiya, Mohammed (Internal Medicine Resident) 01/2015  
**Description:**  
**Current Status:** Albert Einstein College of Medicine, New York  
**Outcome:** 1) Peer reviewed paper submitted for publication in Annals of Cardiac Anaesthesia: Mild Therapeutic Hypothermia in Patients Resuscitated from out of Hospital Cardiac Arrest: A Meta-Analysis of Randomized Controlled Trials. 2) Peer reviewed publication: A meta-analysis and meta-regression of long-term outcomes of transcatheter versus surgical aortic valve replacement for severe aortic stenosis. Int J Card 2016;225:234-43.
- Maldonado, Yasdet (MD) 01/2015  
**Description:** Mentored in peer reviewed paper for JCVA  
**Current Status:** Department of Anesthesiology, Temple University School of Medicine  
**Outcome:** Moderate Aortic Stenosis at the Time of Coronary Artery Bypass Grafting: An Evidence Based Analysis and Recommended Management Approach for the Perioperative Echocardiographer-Accepted for publication JCVA, January 2015
- Malhotra, Anita (MD) 01/2015  
**Description:** Project - Echo research  
**Current Status:**  
**Outcome:** Peer-reviewed paper accepted for publication in JCVA: "Incidental mitral regurgitation in the patient for AVR for severe aortic regurgitation- What is the evidence for optimal management?"
- Panagiota, Christia (Internal Medicine Resident) 01/2015  
**Description:**  
**Current Status:** Department of Medicine, Jacobi Medical Center, Albert Einstein College of Medicine  
**Outcome:** Peer reviewed paper submitted for publication in Annals of Cardiac Anaesthesia: Mild Therapeutic Hypothermia in Patients Resuscitated from out of Hospital Cardiac Arrest: A Meta-Analysis of Randomized Controlled Trials.
- Schleifer, William (Electrophysiology Fellow) 01/2015  
**Description:** Mentored in peer reviewed paper for Annals of Cardiac Anaesthesia  
**Current Status:** Electrophysiology Fellow, Mayo Clinic  
**Outcome:** Hybrid Atrial Fibrillation Ablations and the Increasing Importance of the Hybrid Cardiovascular Laboratory Operating Room, published in Annals of Cardiac Anaesthesia Jul-Sep 2015. Perioperative atrial fibrillation: a systematic review of evolving therapeutic options in pharmacologic and procedural management. Ann Card Anaesth. 2015 Oct-Dec;18(4):565-70.
- Seggern, Rita (Nurse Practitioner) 01/2015  
**Description:**  
**Current Status:**  
**Outcome:** Percutaneous and minimally invasive approaches to mitral valve repair for severe mitral regurgitation: new devices and emerging outcomes. Ann Card Anaesth. 2015 Oct-Dec;18(4):528-36.

<p>Singh, Saket (MD)  <b>Description:</b> Mentored in peer reviewed paper for JCVA  <b>Current Status:</b> Department of Anesthesiology, Temple University School of Medicine  <b>Outcome:</b> Moderate Aortic Stenosis at the Time of Coronary Artery Bypass Grafting: An Evidence Based Analysis and Recommended Management Approach for the Perioperative Echocardiographer-Accepted for publication in JCVA January 2015</p>	01/2015
<p>Tarwade, Pritee (Research Trainee)  <b>Description:</b>  <b>Current Status:</b> Research Trainee, Mayo Clinic, Phoenix, AZ  <b>Outcome:</b> Contributing author for peer reviewed publication submitted to JCVA: Adult Venovenous Extracorporeal Membrane Oxygenation (VV-ECMO) for Severe Respiratory Failure: Current Status and Future Perspectives</p>	01/2015
<p>Weiner, Menachem (MD)  <b>Description:</b> Research - Outcomes research  <b>Current Status:</b>  <b>Outcome:</b> Peer-reviewed paper accepted for publication in JCVA: Mitral valve percutaneous repair - an update on recent trials</p>	01/2015
<p>Villablanca Spinetto, Pedro (Cardiology Fellow)  <b>Description:</b> Anesthesia CA-1, Mayo Clinic in Arizona Project: Meta-analysis research, therapeutic hypothermia in MI  <b>Current Status:</b> Cardiology Resident, Albert Einstein College of Medicine, New York  <b>Outcome:</b> 1) Peer-reviewed paper sent for publication: Therapeutic Hypothermia for Myocardial Protection in ST Elevation Myocardial Infarction: A Systematic Review and Meta-Analysis of Randomized Control Trials. 2) Peer reviewed paper accepted for publication in JCVA: Current Status of TAVR: Results of Landmark Clinical Trials. 3) Peer reviewed paper submitted for publication in Annals of Cardiac Anaesthesia: Mild Therapeutic Hypothermia in Patients Resuscitated from out of Hospital Cardiac Arrest: A Meta-Analysis of Randomized Controlled Trials. 4) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 5) Peer reviewed publication: Extracorporeal Membrane Oxygenation (ECMO) in Severe Influenza Infection with Respiratory Failure: A Systematic Review and Meta-analysis. Annals of Cardiac Anaesthesia. 2017 Jan-Mar. 20(1):14-21. 6) Peer reviewed publication: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636. 7) Peer reviewed publication: A meta-analysis and meta-regression of long-term outcomes of transcatheter versus surgical aortic valve replacement for severe aortic stenosis. Int J Card 2016;225:234-43. 8) Abstract at AHA 2016: Comparison of General versus Local Anesthesia in Patients Undergoing Transcatheter Aortic Valve Replacement (TAVR):A Meta-analysis. 9) Abstract at TCT 2016: Impact of Staged versus One-Time Multivessel Percutaneous Intervention in ST-elevation Myocardial Infarction: An Updated Review of Literature. 10) Peer-reviewed publication: Trends in the Incidence and In-Hospital Outcomes of Cardiogenic Shock Complicating Thyroid Storm. Am J Med Sci. 2017 (Suppl 1).</p>	01/2015 - 01/2016



Carvajal, Tomas (Anesthesiology Resident)	01/2015 - 01/2018
<b>Description:</b> TAVR Research	
<b>Current Status:</b> Anesthesia CA-2, Mayo Clinic in Arizona	
<b>Outcome:</b> Peer reviewed paper accepted for publication in JCVA: Current Status of TAVR: Results of Landmark Clinical Trials	
Lohrmann, Graham (Visiting Resident)	07/2015 - 01/2016
<b>Description:</b>	
<b>Current Status:</b> Visiting Cardiology Resident	
<b>Outcome:</b> Peer reviewed paper accepted for publication in JCVA: Direct Oral Anticoagulant Reversal Agents: A Looming Horizon, 2015.	
Atwal, Danish (Visiting Resident)	09/2015 - 10/2015
<b>Description:</b>	
<b>Current Status:</b> Internal Medicine Resident, Maricopa Medical Center	
<b>Outcome:</b> Peer reviewed paper accepted for publication in JCVA: Direct Oral Anticoagulant Reversal Agents: A Looming Horizon, 2015.	
Abrich, Victor (Resident)	01/2016 - Present
<b>Description:</b>	
<b>Current Status:</b> Cardiology Resident, Mayo Clinic	
<b>Outcome:</b> The possible role of propofol in drug-induced torsades de pointes: A real-world single-center analysis. Int J Cardiol 2017 Apr 01; 232:243-246 Epub 2017	
Agrawal, Sahil (Cardiology Fellow)	01/2016
<b>Description:</b>	
<b>Current Status:</b> Department of Cardiovascular Medicine, St. Luke's University Health Network	
<b>Outcome:</b> 1) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 2) Peer reviewed article: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636. 3) Peer-reviewed publication: Trends in the Incidence and In-Hospital Outcomes of Cardiogenic Shock Complicating Thyroid Storm. Am J Med Sci. 2017 (Suppl 1).	
Al-Bawardy, Rasha (MD)	01/2016
<b>Description:</b> Cardiologist, Massachusetts General Hospital	
<b>Current Status:</b>	
<b>Outcome:</b> Two publications: 1) TCT-159 Impact of Staged versus One-Time Multi-vessel Percutaneous Intervention in ST-elevation Myocardial Infarction: A Meta-analysis. J Am Coll Cardiol 2016; 2) TCT-750 Bivalirudin versus Heparin Anticoagulation in Transcatheter Aortic Valve Interventions. A Systematic review and a Meta-analysis. J Am Coll Cardiol 2016.	

Baruah, Anushka (Internal Medicine Resident) 01/2016

**Description:**

**Current Status:** Department of Internal Medicine, John H. Stroger, Jr. Hospital of Cook County

**Outcome:** 1) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 2) Peer reviewed publication: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636. 3) Peer-reviewed publication: Trends in the Incidence and In-Hospital Outcomes of Cardiogenic Shock Complicating Thyroid Storm. Am J Med Sci. 2017 (Suppl 1).

Bhatia, Nirmanmoh (Internal Medicine Fellow) 01/2016

**Description:**

**Current Status:** Cardiovascular Medicine Fellow, Vanderbilt Heart and Vascular Institute

**Outcome:** 1) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 2) Peer reviewed publication: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636. 3) Peer-reviewed publication: Trends in the Incidence and In-Hospital Outcomes of Cardiogenic Shock Complicating Thyroid Storm. Am J Med Sci. 2017 (Suppl 1).

Ganesh, Malini (Internal Medicine Resident) 01/2016

**Description:** Mentored in study, article preparation and submission

**Current Status:** Resident in Internal Medicine, John H. Stroger, Jr. Hospital of Cook County

**Outcome:** Peer reviewed publication: Extracorporeal Membrane Oxygenation (ECMO) in Severe Influenza Infection with Respiratory Failure: A Systematic Review and Meta-analysis. Annals of Cardiac Anaesthesia. 2017 Jan-Mar. 20(1):14-21.

Hussain, Zeeshan (Internal Medicine Resident) 01/2016

**Description:**

**Current Status:** Department of Internal Medicine, University of Louisville

**Outcome:** 1) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 2) Peer reviewed publication: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636.

Kumar, Rohit (Internal Medicine Resident) 01/2016

**Description:**

**Current Status:** Department of Internal Medicine, John H. Stroger, Jr. Hospital of Cook County

**Outcome:** 1) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 2) Peer reviewed publication: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636.

<p>Mohananey, Divyanshu (Internal Medicine Resident)</p> <p><b>Description:</b></p> <p><b>Current Status:</b> Department of Internal Medicine, John H. Stroger, Jr. Hospital of Cook County</p> <p><b>Outcome:</b> 1) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 2) Peer-reviewed publication: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636. 3) Abstract at AHA 2016: Trends in Incidence, Management and Outcomes of Cardiogenic Shock Complicating Thyroid Storm in the United States. 4) Peer-reviewed publication: Trends in the Incidence and In-Hospital Outcomes of Cardiogenic Shock Complicating Thyroid Storm. Am J Med Sci. 2017 (Suppl 1).</p>	01/2016
<p>Nikolic, Katarina (MD)</p> <p><b>Description:</b> Cardiac Outcomes Project, TAVR meta-analysis</p> <p><b>Current Status:</b> Data Collection in Progress</p> <p><b>Outcome:</b> Abstract: Comparison of General versus Local Anesthesia in Patients Undergoing Transcatheter Aortic Valve Replacement (TAVR): A Meta-analysis</p>	01/2016
<p>Sajawal Ali, Muhammad (Internal Medicine Resident)</p> <p><b>Description:</b></p> <p><b>Current Status:</b> Department of Internal Medicine, John H. Stroger, Jr. Hospital of Cook County</p> <p><b>Outcome:</b> Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness</p>	01/2016
<p>Sethi, Jaskaran (Internal Medicine Resident)</p> <p><b>Description:</b> Mentored in study, article preparation and submission</p> <p><b>Current Status:</b> Internal Medicine Resident at John H. Stroger, Jr. Hospital of Cook County</p> <p><b>Outcome:</b> 1) Peer reviewed publication submitted for publication to JCVA: Outcomes Research in Critical Illness. 2) Peer reviewed publication: Extracorporeal Membrane Oxygenation (ECMO) in Severe Influenza Infection with Respiratory Failure: A Systematic Review and Meta-analysis. Annals of Cardiac Anaesthesia. 2017 Jan-Mar. 20(1):14-21. 3) Peer reviewed publication: Effect of antiplatelet therapy on mortality and acute lung injury in critically ill patients: A systematic review and meta-analysis. Annals of Cardiac Anaesthesia 2016 Oct-Dec; 19(4):626-636.</p>	01/2016
<p>Sukhal, Shashvat (Pulmonary Fellow)</p> <p><b>Description:</b> Mentored in study, article preparation and submission</p> <p><b>Current Status:</b> Pulmonary Fellow, John H. Stroger, Jr. Hospital of Cook County</p> <p><b>Outcome:</b> Peer Reviewed Article: Extracorporeal Membrane Oxygenation (ECMO) in Severe Influenza Infection with Respiratory Failure: A Systematic Review and Meta-analysis. Annals of Cardiac Anaesthesia. 2017 Jan-Mar. 20(1):14-21.</p>	01/2016

<p>Cyrille, Nicole (MD)  <b>Description:</b> Cardiology Fellow  <b>Current Status:</b> Cardiology Fellow, Montefiore Medical Center, Bronx, New York  <b>Outcome:</b> Three publications: 1) Predictors and Outcomes of Right Ventricular Failure in Patients With Left Ventricular Assist Devices. Journal of Cardiothoracic and Vascular Anesthesia.2017; 2) Periprocedural Anticoagulation for Catheter Ablation of Atrial Fibrillation: Practical Implications for Perioperative Management. Journal of Cardiothoracic and Vascular Anesthesia.2017; 3) Practical Implications for Perioperative Management. Journal of Cardiothoracic and Vascular Anesthesia.2017.</p>	01/2016 - 01/2017
<p>Ali, Muhammad (Resident)  <b>Description:</b>  <b>Current Status:</b>  <b>Outcome:</b> Peer-reviewed publication: Trends in the Incidence and In-Hospital Outcomes of Cardiogenic Shock Complicating Thyroid Storm. Am J Med Sci. 2017 (Suppl 1).</p>	07/2016 - Present
<p>Benito-Gonzalez, T.  <b>Description:</b>  <b>Current Status:</b> Cardiology, University Hospital of Leon, Spain  <b>Outcome:</b> Publication: Predictors and outcomes of right ventricular failure in patients with left ventricular assist devices. Science Direct. July 2017</p>	07/2016 - Present
<p>Gupta, T (Resident)  <b>Description:</b> Cardiology Resident, Albert Einstein College of Medicine  <b>Current Status:</b>  <b>Outcome:</b> Comparison of local versus general anesthesia in patients undergoing transcatheter aortic valve replacement: A metaanalysis. Catheter Cardiovasc Interv. 2017</p>	07/2016 - Present
<p>Shah, T (Resident)  <b>Description:</b>  <b>Current Status:</b> Resident, Albert Einstein College of Medicine  <b>Outcome:</b> Publication: Comparison of local versus general anesthesia in patients undergoing transcatheter aortic valve replacement a metaanalysis. Catheter Cardiovasc Interv . 2017</p>	07/2016 - Present
<p>Tran, A. (Resident)  <b>Description:</b> Medicine Resident, Jacobi Hospital, Bronx, New York  <b>Current Status:</b>  <b>Outcome:</b> Predictors and outcomes of right ventricular failure in patients with left ventricular assist devices. Science Direct. July 2017</p>	07/2016 - Present

**Academic Career Development**

Crucial Conversations Mayo Clinic in Arizona Scottsdale, Arizona	10/2009
Resident Evaluation Process Mayo Clinic in Arizona Phoenix, Arizona	10/2009
Making Your Next Presentation Go Better Than Your Last Presentation Skills for Physicians Mayo Clinic in Arizona Phoenix, Arizona	12/2010
Drug Diversion from Mayo from 2011-2012 Mayo Clinic Arizona Phoenix, Arizona	08/2012
Arizona Resiliency Program Mayo Clinic Phoenix, Arizona	03/2015

**Institutional/Departmental Administrative Responsibilities, Committee Memberships, and Other Activities****Mayo Clinic in Arizona**

## Department of Anesthesiology

## Cardiothoracic Anesthesiology

Chief

Member

2005 - Present

## Intraoperative Echocardiography

Joint Director

## Resident Board Review

Oral Board Review Examiner

11/02/2015 - Present

## Technology Assessment Committee

Member

2007 - Present

## Transcatheter Aortic Valve Replacement Team

Cardiovascular Anesthesiology

Director

07/2012 - Present

## Mayo Clinic Arizona Committees

Member

2008 - Present

## Clinical Research Subcommittee

Discipline Oriented Group (DOG)

Anesthesia-Critical Care-Emergency Medicine

Chair	2016 - Present
Executive Operations Team - Arizona	
Clinical Practice Committee - Arizona	
Member	2005 - Present
Patient Safety Subcommittee	
Member	2008 - Present
Pharmacy and Therapeutics Subcommittee	
Member	2008 - Present
Education Committee	
Member	2008 - Present
Personnel Committee	
Search Committee for Cardiovascular Anesthesiologist Recruitment	
Member	2007 - Present
Search Committee for Cardiovascular Surgery	
Member	2007 - Present
Quality & Process Improvement Committee	
Mortality Review Subcommittee	
Member	2015 - Present
Sedation Subcommittee	
Member	2014 - Present
Mayo Clinic Department of Anesthesiology	
Academic Appointments and Promotions Committee	
Member	03/2014 - Present
<b>Activities at Other Institutions</b>	
University of Pittsburgh	
Department of Anesthesiology-CCM	
Resident Education Committee	
Member	1999 - 2005
Resident Selection Committee	
Member	2000 - 2005
Medical Student Committee	
Member	2000 - 2005

## **Presentations Extramural**

### **National or International**

**Invited**

Use of Thoracic Epidural Analgesia in Treating Intractable Angina Unresponsive to Maximal Medical Therapy in a Patient Awaiting Heart Transplantation Annual Resident Research Competition; WPSA Meeting Abstract Pittsburgh, Pennsylvania	05/1999
Anesthetic Management of Heart Transplantation Mayo Clinic Heart Symposium Scottsdale, Arizona	07/2005
Echocardiography: from Pictures to Information 3rd Annual American Society of Echocardiography Phoenix, Arizona	10/2005
Airway Technology Conducted Workshop (3 hours) Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	02/2007
Airway Technology Conducted Workshop (3 hours) Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	02/2007
Cardiac Rhythm Management Devices 30 minute presentation Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	02/2007
Mitral Valve Repair American Society of Echocardiography - State of the Art Echocardiography Phoenix, Arizona	02/2007
Mitral Valve Repair Association of Cardiovascular Anesthesiologists Bangalore, India	08/2007
Basic Knobology Workshop Moderator American Society of Anesthesiologists Transesophageal Echocardiography Workshop Phoenix, Arizona	11/2007
Understanding the Basics of the Ultrasound Machine American Society of Anesthesiologists Transesophageal Echocardiography Workshop Phoenix, Arizona	11/2007

Airway, Regional Technology Faculty and Workshop Moderator Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2008 Phoenix, Arizona	02/2008
Noncardiac Surgery in the Patient with Severe Cardiac Disease Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2008 Phoenix, Arizona	02/2008
Mitral Valve Repair American Society of Echocardiography - Mayo Clinic State of the Art Echocardiography Meeting Phoenix, Arizona	03/2008
Coronary Stents: Are We Going Back to Bare Metal? Lecture at the Society of Cardiovascular Anesthesiologists Vancouver, British Columbia, Canada	06/2008
ACC/AHA Guidelines: A Review Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2009 Phoenix, Arizona	02/2009
Mitral Valve Repair American Society of Echocardiography-Mayo Clinic State of the Art Echocardiography Meeting Scottsdale, Arizona	02/2009
TEE-An Introduction to TEE Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2009 Phoenix, Arizona	02/2009
Airway Workshop Instructor Mayo Clinic College of Medicine Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2010 Phoenix, Arizona	02/2010
Preoperative Evaluation for Non-cardiac Surgery - What's New? Co-chair, Panel on Non-cardiac Surgery World Congress of Cardiology Shanghai, China	12/2010
Echocardiography for the Assessment of Perioperative Hypotension Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2011 Phoenix, Arizona	03/2011
Moderator Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2011 Phoenix, Arizona	03/2011



Workshop on Heart Failure: Coordinator Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2011 Phoenix, Arizona	03/2011
Chair Panel on Perioperative Care in Cardiothoracic Anesthesia Third International Congress of Cardiology Beijing, China	12/2011
Using Echocardiography in Hemodynamically Unstable Patients Third International Congress of Cardiology Beijing, China	12/2011
Heart Failure, Ventricular Assist Device and Total Artificial Heart Workshop Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	02/2012
Moderator Mayo Clinic College of Medicine, Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2013 Scottsdale, Arizona	02/2013
The Acutely Unstable Patient - How Can Echo Help? Mayo Clinic College of Medicine, Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2013 Scottsdale, Arizona	02/2013
Pre-operative Evaluation of the High Risk Cardiac Patient for Non Cardiac Surgery: Focus on the Revised ACC/AHA Guidelines BIT's Major Diseases Clinical Summit - 2013 Warsaw, Poland	11/2013
Moderator Mayo Clinic College of Medicine, Mayo Clinic Symposium on Anesthesia and Perioperative Medicine 2014 Scottsdale, Arizona	02/2014
Pre-operative Evaluation of the High Risk Cardiac Patient for Non Cardiac Surgery: A Comprehensive Approach Focused on the ACC/AHA Guidelines 2nd Asian Clinical Congress Kyoto, Japan	04/2014
Diastolic Dysfunction Panel Moderator 18th Meeting of the Indian Association of Cardiovascular and Thoracic Anesthesiologists (IACTA) Jaipur, India	02/2015
Extracorporeal Circulation: History, Best Practices and the Future Plenary Session Keynote Speaker	02/2015

18th Meeting of the Indian Association of Cardiovascular and Thoracic Anesthesiologists (IACTA) Jaipur, India	
TEE in Haemodynamically Unstable Patients 18th Meeting of the Indian Association of Cardiovascular and Thoracic Anesthesiologists (IACTA) Jaipur, India	02/2015
Challenging Cases Panel Member Annual Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	03/06/2015
Meeting Moderator Annual Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	03/06/2015
Meeting Moderator Annual Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	03/07/2015
Remifentanyl in Cardiac Anesthesia - An Analysis 37th Annual Meeting of the Society of Cardiovascular Anesthesiologists (SCA) Washington, District of Columbia	04/2015
Anesthetic Implications/Complications Mayo Clinic Lung Transplant Symposium Phoenix, Arizona	07/2015
Session Moderator The 34th Annual Symposium: Clinical Update in Anesthesiology, Surgery and Perioperative Medicine Icahn School of Medicine at Mt. Sinai New York, New York	01/2016
Moderator Mayo Clinic Symposium on Anesthesia and Perioperative Medicine Scottsdale, Arizona	02/2016
The High-Cardiovascular Risk Patient for the Non-Cardiac Surgery: Guidelines for the Perioperative Clinician Chair of Panel - Session 4-13: Cardiovascular Drug Discovery and Therapy 8th Annual International Conference of Cardiology Barcelona, Spain	05/2016
Aortic Stenosis- A Reappraisal of Perioperative Risk Anaesthesia and Critical Care Symposium 2016- Galway Clinic and Royal College of Surgeons Galway, Ireland	09/2016

**Poster**

Right Ventricular Protection Strategy to Decrease the Need for Bi-Ventricular Mechanical Circulatory Support Poster Presentation Mayo Clinic Quality Symposium Phoenix, Arizona	04/2014
Providing Anesthesia to a Patient on ECMO: A Case Report American Society of Anesthesiologists Annual Meeting New Orleans, Louisiana	10/2014

**Regional****Invited**

Anesthesia for the Heart Transplant Recipient Anesthesiology Grand Rounds Mayo Clinic Phoenix, Arizona	08/2005
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**Visiting Professorship****Visiting Professorships**

Bangalore Heart Foundation Yearly Lecture: CV Resident Program - Yearly Update in Mitral Valve Repair Wockhardt Hospital India (Harvard Medical International) Bangalore, India	08/2007
Extracorporeal Circulation: Past, Present and Future University of New Mexico Health Sciences Center Albuquerque, New Mexico	08/2012
Uncommon Cardiac Diseases University of New Mexico Health Sciences Center Albuquerque, New Mexico	08/2012
Extracorporeal Circulation- From Cardiopulmonary Bypass to ECMO and Mechanical Assist Device Therapy University of Kansas Kansas City, Kansas	03/2015
Cardiac Anesthesia for the Non-cardiac Anesthesiologist Lecture University of Basel Basel, Switzerland	01/2016
Hot Topics in Cardiac Anesthesia Lecture University of Basel Basel, Switzerland	01/2016

Extracorporeal Circulation: Emerging Trends and Outcomes Lecture University of Colorado Department of Anesthesiology Denver, Colorado	01/2016
Extracorporeal Circulation - Outcomes with ECMO and Mechanical Assist Devices Department of Anesthesiology, West Virginia University Morgantown, West Virginia	03/2016
Annual Highlights in Cardiac Anesthesia 2016 University of Alabama at Birmingham Birmingham, Alabama	12/2016
Extracorporeal Circulation - Past, Present, and Future University of Alabama at Birmingham Birmingham, Alabama	12/2016
Perioperative Outcomes in Aortic Valve Stenosis and TAVR Department of Anesthesiology and Perioperative Medicine, Penn State Milton S. Hershey Medical Center Hershey, Pennsylvania	02/2017
Perioperative Outcomes in Aortic Valve Stenosis and Transcatheter Aortic Valve Replacement Grand Rounds Lecture Department of Anesthesiology, University of Pennsylvania Perelman School of Medicine Philadelphia, Pennsylvania	05/17/2017 - 05/18/2017

## Clinical Practice, Interests, and Accomplishments

2005 - Present Mayo Clinic Arizona - Intraoperative Echocardiography: Instrumental in developing the intraoperative component of the perioperative echocardiography service. Co-director of the Intraoperative Echocardiography Service. 2005 - Present Mayo Clinic Arizona - Assisted in developing the anesthetic component of the heart transplant and heart failure program. 2005 - Present Educational Protocol - Assisted in developing the cardiac anesthesia rotation and lecture series for the Mayo anesthesiology residents. 2012 - Present Mayo Clinic Arizona Transcatheter Aortic Valve Replacement (TAVR) Program. Leader of the Anesthesiology TAVR Team, credentialed by Edwards Life Sciences, created and developed the TAVR protocol for the cardiac anesthesia division. The TAVR team from CV anesthesiology comprises 2 CV anesthesiologists and 4 CRNA's.

## Research Interests

IRB Approved Research Protocols: Co-Investigator: GSK NKT - Neurokinin-1 receptor antagonist for postoperative nausea and vomiting Progenics - Methylsallitrexone in the treatment of postoperative ileus Heartmate 2 LVAD - Destination therapy study Hospira - Precedex for prevention of postoperative delirium in hip fracture patients

## Research Grants Awarded

### Active Grants

#### Federal

Program Director / Principal Investigator	ISCHEMIA-CKD: International Study of Comparative Health Effectiveness with Medical and Invasive Approaches- Chronic Kidney Disease. Funded by National Institutes of Health. ( U01 HL117905)	09/2016 - 09/2020
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**Industry**

Co-Investigator 10-005239/ A Prospective, Randomized, Controlled, Un-blinded, Multi-Center Clinical Trial to Evaluate the HeartWare® Ventricular Assist System for Destination Therapy of Advanced Heart Failure . Funded by HeartWare Inc.. (HW-004) 10/2010 - 10/2016

**Completed Grants****Industry**

Co-Investigator Grigore/06-008774/DX-88 (Ecallantide) for the Reduction of Blood Loss Associated with Cardiopulmonary Bypass: A Phase 2 Randomized, Double-Blind, Placebo-Controlled, Multicenter Study in Patients Undergoing Primary Coronary Artery Bypass Grafting, Single: 06-008774/ DX-88 (Ecallantide) for the Reduction of Blood Loss Associated with Cardiopulmonary Bypass: A Phase 2 Randomized, Double-Blind, Placebo-Controlled, Multicenter Study in Patients Undergoing Primary Coronary Artery Bypass Grafting, Single Valve R. Funded by Dyax Corporation 01/2008 - 12/2009

Co-Investigator 08-005619/Quark QRK.004/ INTRAVENOUS I5NP: 08-005619/QRK.004/ A PHASE I, RANDOMIZED, DOUBLE-BLIND, DOSE ESCALATION TRIAL OF THE SAFETY AND PHARMACOKINETICS OF A SINGLE INTRAVENOUS INJECTION OF I5NP IN PATIENTS AT HIGH RISK OF ACUTE KIDNEY INJURY UNDERGOING MAJOR CARDIOVASCU. Funded by Quark Pharmaceuticals. (QRK.004) 02/2009 - 01/2011

**Mayo Clinic**

Program Director / Principal Investigator 14-005465 PProtective Ventilation with Higher versus Lower PEEP during General Anesthesia for Surgery in OBESE Patients – The PROBESE Randomized Controlled Trial: PProtective Ventilation with Higher versus Lower PEEP during General Anesthesia for Surgery in OBESE Patients – The PROBESE Randomized Controlled Trial. Funded by Anesthesiology 10/2014 - 12/2016

Program Director / Principal Investigator 14-007528 Expiron: Pilot Study of Postoperative Evaluation of Breathing Using Noninvasive Respiratory Monitor in Patients Randomized Intraoperatively into “Lung Recruitment vs. Standard Ventilation” Management Groups: 14-007528 ExSpiron: Pilot Study of Postoperative Evaluation of Breathing Using Noninvasive Respiratory Monitor in Patients Randomized Intraoperatively into “Lung Recruitment vs. Standard Ventilation” Management Groups. Funded by Anesthesiology Research 01/2015 - 12/2015

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4. **Ramakrishna H**, Jaroszewski DE, Arabia FA. Adult cardiac transplantation: a review of perioperative management Part-I. *Ann Card Anaesth*. 2009 Jan-Jun; 12(1):71-8. PMID:19136760
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\* Indicates that the primary author was a mentee of this author.