# CURRICULUM VITAE

**MICHAEL J. JOYNER, M.D.**

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| **E-mail Address:** | joyner.michael@mayo.edu | **Fax No.:** | (507) 255-7300 |
| **Birthplace:** | Lafayette, Louisiana | **Date:** | August 8, 1958 |
| **Citizenship:** | U.S. |  |  |

## POSITIONS HELD

Director for Consortia Development, Mayo Clinic Center for 5/1/12 – 2/1/14

Translational Science Activity

Frank R. and Shari Caywood Professor of Anesthesiology, Mayo Clinic 5/14/09 - present

Deputy Director and Associate Dean for Research, Mayo Clinic 1/1/2006 - 9/30/10

Vice-Chair, Department of Physiology, Mayo Clinic 1/15/2003 - 7/15/06

Associate Program Director, Mayo GCRC 12/01/2002 - 9/30/06

Associate Program Director, Mayo CTSA 11/01/2006 - 10

Professor of Anesthesiology, Mayo Medical School 7/1/1999 - present

Consultant, Department of Anesthesiology, Mayo Clinic 1/1/1996 - present

Associate Professor of Anesthesiology, Mayo Medical School 7/1/1996 - 7/1/99

Senior Associate Consultant, Department of Anesthesiology, Mayo Clinic 1/1/1993 - 12/31/95

Assistant Professor of Anesthesiology, Mayo Medical School 7/1/1991 - 7/1/96

Tucson City Lifeguard 1977, 1978

## EDUCATION

High School: Rincon High School, Tucson, Arizona 1976

College: University of Arizona – B.S. (Nutrition and Food Science) 1981

Medical School: University of Arizona – M.D. 1987

Internship: Mayo Clinic 1987-88

Residency: Mayo Graduate School of Medicine, Resident in Anesthesiology 1988-92

## BOARD CERTIFICATION MEDICAL LICENSURE

American Board of Anesthesiology, 1994 Minnesota (no. 31986)

Arizona (no. 24618)

## CAREER GOALS

My career goals are: (1) continued development of my human-based integrative physiology research program; (2) continued excellence in clinical anesthesia; (3) continued contributions to the administrative and educational activities of the department and institution; (4) participation in extramural activities related to issues 1-3 above.

## RESEARCH INTERESTS

Autonomic control of the cardiovascular and respiratory systems

Oxygen transport and gas exchange

Limits of human athletic performance

Blood substitutes and clinical transfusion practices

**MAJOR HONORS**

1981 PAC-10/7-UP Post Graduate Scholarship for Athletic and Academic Excellence

1987 University of Arizona College of Medicine, Class of 1987, Excellence in Research Award

1991 Balfour Award for Outstanding Research by Mayo Resident

1993 Lamport Award for Contributions to Cardiovascular Physiology as a Young Investigator, American Physiological Society

2004 Wolff Memorial Lecture, American College of Medicine

2007 Alumni Achievement Award, University of Arizona

2007 Streeten Lecture, American Autonomic Society

2007 Spinoza Lecture, Academic Medical Center (Amsterdam)

2007 DeBurgh Daly Lecture, Physiological Soc (UK)

2009 Citation Award, American College of Sports Medicine

2009 Shepherd Lecture MOVD

2010 Distinguished Mayo Investigator

2011 Edward F. Adolph Distinguished Lecture, American Physiological Society (awarded 2010)

2011 American Society of Anesthesiology Mentorship Award

2011 American Society of Anesthesiology FAER Honorary Lecture

2013 Cannon Lecture, American Physiological Society

2014 Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award

## PROFESSIONAL MEMBERSHIPS AND SOCIETIES

American College of Sports Medicine 1981-

American Physiological Society 1986-

American Society of Anesthesiologists 1988-

Research Committee

Experimental Circulation

American Heart Association

Council on Circulation 1993-

Council on High Blood Pressure Research 2002-

Association of University Anesthesiologists 1998-

Physiological Society (U.K.) 2001-

Academy of Research Mentors in Anesthesiology 2006-

American Autonomic Society

President 2011-2012

### EDITORIAL AND CONSULTANT DUTIES

Associate Editor, *Journal of Applied Physiology* 1999-2005

Associate Editor, *Exercise and Sports Sciences Reviews* 1999-2005

Reviewing Editor, *Journal of Physiology* 2001-2005

Consulting Editor, *Japanese Journal of Physiology* 2003-present

Senior Editor, *Journal of Physiology* 2005-2008

Consulting Editor, *Journal of Applied Physiology* 2005-present

Consultant, ExternalAdvisory Board for the University of Mississippi 2008-present

Medical Center COBRE program

Editor, *Clinical Perspectives (Journal of Physiology)* 2008-present

Editorial Board Member, *American Journal of Physiology: 2014-present*

*Heart and Circulatory Physiology*

#### Journals:

*American Journal of Physiology* (reviewer)

*Anesthesia and Analgesia* (reviewer)

*Anesthesiology* (reviewer)

*Annals of General Psychiatry* (reviewer)

*British Medical Journal* (reviewer)

*Circulation* (reviewer)

*Circulation Research* (reviewer)

*Clinical Autonomic Research* (reviewer)

*Hypertension* (reviewer, editorial board)

*International Journal of Sports Medicine* (reviewer; editorial board)

*Journal of Applied Physiology* (reviewer; editorial board)

*Journal of the Autonomic Nervous System* (reviewer)

*Journal of Clinical Investigation* (reviewer)

*Journal of Physiology (London)* (reviewer)

*Mayo Clinic Proceedings*

*Medicine and Science in Sports and Exercise* (reviewer)

*New England Journal of Medicine* (reviewer)

*News in Physiological Sciences* (reviewer)

Scientific Communications in Public Media

Dr. Joyner has done blog posts for the *New York Times, Outside Magazine,* and *Psychology Today*. He also blogs at “Human Limits” and is frequently interviewed by the national and international print and electronic media, including the *New York Times, BBC, NPR,* and major commercial networks.

<http://www.drmichaeljoyner.com>

##### Research Funding Agencies:

NASA Site Visitor, University of Texas 1993

Southwestern Medical School

NIH Site Visitor, Pennsylvania State University 1994

and Hershey Medical School

NIH Special Study Section on Blood Substitutes 1994

Site Visitor to NASA NSCORT, University of 1997

Texas Southwestern

VA Merit Award Reviewer 1998

NIH Respiratory and Applied Physiology Study Section, 1998-2001

Ad Hoc Reviewer

NSF Ad-Hoc Reviewer 1998

NIH/FDA/US Army Ad-Hoc Panel on Blood Substitutes 1999-2001

NIH Respiratory and Applied Physiology Study Section, 1999-2001

Member

American Society of Anesthesiology Research Committee 1999-2001

Chair, Section of Experimental Circulation

NIH Integrative, Functional and Cognitive Neuroscience 2000

Study Section, Ad-Hoc Reviewer

NIH Respiratory Physiology Study Section, member 2001-2004

NIH Data and Safety Monitoring Board for the ACTION trial 2003-2004

Site Visitor, NIH HCRA and Research Nursing Home, Harvard 2003

NIH, HLBI PPG Review Panel 2003

NIH Site Visitor to UCSF GCRC 2003

NIH Site Visitor to UCSD GCRC 2004

Helmholz Foundation Site Visitor 2005

Berlin CRC, Munich Pulmonary Center

Member, NIH Clinical and Integrative Cardiovascular Sciences 2006-2010

Study Section

Member, NIH CTSA Review Panel 2007

Chair, NIH, CICS Study Section 2009-2010

## NASA Advisory Panel on Cardiovascular Risks 2009-present

## EDUCATIONAL ACTIVITIES

Mayo Medical School:

MMSI Respiratory Physiology Labs

MMSII Cardiovascular Course (one lecture annually)

MMSII Clinical Pharmacology Course (one lecture annually)

Mayo Graduate School:

Advanced Physiology Course (approximately three lectures annually)

Topics in Integrative Physiology (30 classes every other year)

Methods in Clinical Physiology (10 classes every other year)

Mayo Graduate School of Medicine:

Masters of Nurse Anesthesia (approximately one lecture annually)

Multispecialty Case Conferences (approximately four lectures annually)

Resident's Lectures (approximately three lectures annually)

Mentor to Research Fellows (see below)

Mentor to summer students (approximately four students per summer)

Danish Cardiovascular Foundation, Ph.D. Course (2003, 2004, 2005, 2006, 2007)

INSTITUTIONAL/DEPARTMENTAL ADMINISTRATIVE RESPONSIBILITIES, COMMITTEE MEMBERSHIPS, AND OTHER ACTIVITIES

Mayo Clinic/Foundation:

Animal Care and Use Committee 1994-1996

Federal Public Affairs Committee 1994-2001

Cardiovascular Search Committee 1995

Clinical Research Task Force 1996

Clinical Research Subcommittee 1977-1999

Clinical Investigator Program 1998-2001

Indirect Cost Recovery Task Force, Chair 1999-present

Research Committee 1999-2010

Health Sciences Research Search Committee, Chair 2001

NIH General Clinical Research Center (Associate Program 2002-2006

Director)

Clinical and Translational Science Activities (CTSA) 2006-2014

Department of Anesthesiology:

Education Council 1993-

Research and Human Studies Committee 1993

Appointments and Promotions Committee 1997

Personnel and Recruitment Committee 1997

Recruitment Task Force 1999-

Department of Physiology and Biophysics:

Education Committee 1994-1998

Promotion and Tenure Committee 2003-

**MAJOR EXTRAMURAL PRESENTATIONS (by topic):**

Metabolism and Glucose Homeostasis

Department of Physiology, University of Oklahoma, 2013

Oklahoma City, OK

Physiology, Reductionism and the New Biology

Department of Integrative Physiology, University of Colorado, 2011

Boulder, CO

Adolph Lecture American Physiological Society 2011

Directors of Graduate Studies in Physiology & Pharmacology

Michigan State University, East Lansing, MI 2011

MD/Ph.D. Program, University of Kansas, Kansas City, KS 2011

Mt. Desert Island Biological Institute, Salisbury Cove, ME 2011

American Society of Anesthesiology National Meeting, 2011

Chicago, IL

University of Western Australia, Perth WA, Australia 2011

University of Sydney, Sydney, Australia 2011

Indiana Physiological Society Annual Meeting, 2012

Muncie, IN

Buskirk Lecture, Penn State University, University Park, PA 2012

Department of Anesthesiology, Vanderbilt University, 2012

Nashville, TN

ACSM Exercise is Medicine, University of Kansas Med Center, 2012

Kansas City, KS

Technion Institute, Haifa, Israel 2012

International Union of Physiological Sciences, Birmingham, UK 2013

Exercise and Sports Science Australia, Adelaide, Australia 2014

Experimental Biology, San Diego, CA 2014

Michigan Physiological Society, East Lansing, MI 2014

Exercise Physiology, Muscle Blood Flow and Human Performance

Department of Physiology, University of Arizona 1984

Department of Exercise Science, University of Arizona 1984

Department of Medicine, Section of Applied Physiology, 1985

Washington University, St. Louis

Department of Physiology, University of Arizona 1986

Department of Physiology, University of Oklahoma 1986

Section of Cardiology, Department of Medicine, University 1987

of Arizona

Department of Exercise Science, University of Arizona 1991

Department of Biology, Brown University 1991

Department of Exercise Science, Arizona State University 1994

Department of Kinesiology, University of Colorado 1994

Invited lecture, American College of Sports Medicine 1995

National Meeting, Minneapolis, MN

American College of Sports Medicine 44th Annual Meeting, 1997

Denver, CO

National Institute on Aging, Special Symposia, 1998

Washington, DC

Department of Physiology, University of Texas Health 1998

Science Center, San Antonio, TX

Department of Kinesiology, University of Texas, Austin, TX 1998

Department of Exercise Science, University of Texas, Arlington, TX 1998

Department of Physiology (Advanced Undergraduate Physiology), 1999

University of Arizona, Tucson, AZ

Copenhagen Muscle Research Symposia/*Acta Physiologica* 1999

*Scandinavica* Symposia on Oxygen Transport and

Muscle Blood Flow, Copenhagen, Denmark

Department of Kinesiology and Applied Physiology,

University of Colorado, Boulder, CO 2001

International Congress of Physiological Sciences, Christchurch, 2001

New Zealand

International Sports Science Network Forum, Nagano, Japan 2001

Department of Kinesiology, Texas A&M, College Station, TX 2002

Department of Anesthesiology, University of New Mexico,

Albuquerque, NM 2003

Featured Speaker, American College of Sports Medicine, 2003

San Francisco, CA

Department of Kinesiology, University of Maryland, 2003

College Park, MD

Department of Physiology, University of Arizona, Tucson, AZ 2004

Department of Physiology, Nitiroi State University, 2004

Nitiroi, Brazil

INCOR Research Institute, Sao Paolo, Brazil 2004

Brazilian Society of Sports Medicine (3 lectures), 2004

Rio de Janeiro, Brazil

Shinshu University Medical School symposia, Matsumoto, Japan 2004

American College of Sports Medicine, symposia presenter, 2005

Nashville, TN

Canadian Society for Exercise Physiology, plenary lecture, 2005

Ottawa

University of Mississippi Dept. of Physiology 2007

University of Copenhagen Winter Symposia 2007

University of Nijmegen Medical Center, The Netherlands 2008

Department of Human Physiology, University of Oregon 2009

Finish Society of Anesthesiologists, Helsinki, Finland 2009

Krogh-Lindhard Symposia, University of Copenhagen, Denmark 2009

University of Missouri, Dept. of Physiology 2010

American College of Sports Medicine 2010

University of Western Australian, Perth WA, Australia 2011

Australian Physiological Society, Sydney, Australia 2011

University of Arizona, Tuscon, AZ 2012

ACSM Exercise is Medicine, Kansas City, KS 2012

University of Illinois, Chicago, IL 2012

Intersociety Meeting, American Physiological Society, Westminster, 2012

CO

University of Minnesota School of Kinesiology, Minneapolis, MN 2012

University of Oklahoma, Oklahoma City, OK 2013

American College of Sports Medicine, Southeast Regional Chapter, 2013

Greenville, SC

Nike Fuel Summit, Portland, OR 2013

Hypoxia 2013, Lake Louise, Calgary, Canada 2013

University of Alabama Center for Exercise Medicine, Birmingham, AL 2013

Association of Specialty Professors Workshop, Washington, DC 2013

Experimental Biology Symposium, Boston, MA 2013

St. Catherine’s University, St. Paul, MN 2013

Pediatric Academic Societies Annual Meeting, Washington, DC 2013

American College of Sports Medicine, Indianapolis, IN 2013

International Union of Physiological Sciences, Birmingham, UK 2013

Twin Cities Marathon Expo, St. Paul, MN 2013

6th International Symposium in Strength Traning, Madrid, Spain 2013

Exercise and Sports Science Australia, Adelaide, Australia 2014

Experimental Biology, San Diego, CA 2014

American College of Sports Medicine, Orlando, FL 2014

Reflex Control of Circulation and Nitric Oxide

Department of Kinesiology, University of Texas, Austin 1991

Departments of Anesthesiology and Physiology, University 1991

of Washington

Biodynamics Laboratory, University of Wisconsin, Madison 1991

Department of Anesthesiology, University of Texas Southwestern 1992

Medical School, Dallas

Department of Physiology, University of Arizona 1994

Department of Physiology, University of Texas, 1994

San Antonio, Health Sciences Center

Department of Kinesiology, University of Texas, Austin 1994

International Society of Cardiovascular Anesthesiologists, 1995

Istanbul, Turkey

Indiana Physiological Society, Muncie, IN 2012

Sympathetic Nervous System Summit, Prague, Czech Republic 2012

Buskirk Seminar, Penn State University 2012

Association of Specialty Professors Workshop, Washington, DC 2013

Pediatric Academic Societies Annual Meeting, Washington, DC 2013

14th Annual Symposium, Clinical Update in Anesthesiology, 1996

Aruba, NA

Department of Anesthesiology, University of Pennsylvania, 1997

Philadelphia, PA

Department of Anesthesiology, Beth Israel Deaconess 1997

Medical Center, Boston, MA

Department of Exercise Science, University of Iowa, 1998

Iowa City, IA

Department of Anesthesiology, Medical College of Wisconsin, 1998

Milwaukee, WI

Department of Kinesiology, Texas A&M, College Station, TX 1998

Department of Physiology, Presbyterian Hospital, Dallas, TX 1998

Department of Physiology, University of Northern Texas 1998

Health Science Center, Fort Worth, TX

American Autonomic Society, Plenary Lecture, Kona, HI 1999

Department of Comparative Morphology, Brown University, 1999

Providence, RI

Department of Veterinary, Anatomy and Physiology, 1999

Kansas State University, Manhattan, KS

August Krogh Institute, Copenhagen, Denmark 2000

Clinical Research Center, Penn State University, 2000

Hershey Medical Center, Hershey, PA

Guest lecturer, Advanced Physiology Course, University of 2000

Arizona, Tucson, AZ

Department of Preventive Medicine, University of Wisconsin, 2000

Madison, WI

RAP Study Section, Bethesda, MD 2000

Ontario Exercise Physiology Winter Meeting, Ontario, Canada 2001

Department of Kinesiology, Queen’s University, Ontario, Canada 2001

Department of Physiology, Hiroshima Medical School, Japan 2001

Department of Clinical Neurophysiology, University of 2002

Goteborg (Gunnar Wallin Retirement Symposia),

Goteborg, Sweden

NASA Space Medicine and Life Sciences Research Center, 2002

Morehouse School of Medicine, Atlanta, GA

Department of Anesthesiology, University of New Mexico, 2003

Albuquerque, NM

Cardiovascular course (2 lectures), Copenhagen Muscle 2003

Research Centre

Department of Anesthesiology, Mayo Clinic Jacksonville 2003

Department of Anesthesiology, University of Split, 2003

Split, Croatia

Department of Anesthesiology, Duke University, 2003

Durham, NC

Experimental Biology symposia, Washington, DC 2004

Department of Anesthesiology, Washington University 2005

St. Louis, MO

Canadian Society for Exercise Physiology, plenary lecture, 2005

Ottawa

Experimental Biology Symposia , San Diego, CA 2005 Department of Integrative Biology, University of Colorado

Boulder, Co 2006

Experimental Biology Symposia, San Francisco, CO 2006

ACSM/APS Integrative Biology of Exercise,

Indianapolis, In 2006

David Greenfield Symposium, University of Nottingham

Medical School, United Kingdom 2006

John Mores University, Liverpool 2006

American Society of Anesthesiologists, San Francisco, CA 2007

Department of Cellular and Integrative Physiology, 2007

University of Nebraska

Center for Cardiovascular Disease, Morehouse School of Medicine, 2008

Atlanta, GA

Department of Physiology, Wayne State University, 2009

Detroit, MI

The John B. Pierce Laboratory, Yale University, 2009

New Haven, CT

International Union of Physiological Sciences, Kyoto, Japan 2009

International Society for Autonomic Neuroscience, Sydney, Australia 2009

Center for Systems Biology, University of Chicago, Chicago, IL 2010

University of Western Australia, Perth WA, Australia 2011

Department of Physiology, University of Minnesota, 2012

Minneapolis, MN

Department of Physiology, University of Arizona, Tucson, AZ 2012

Department of Anesthesiology, Vanderbilt University, 2012

Nashville, TN

Blood Substitutes and Transfusion Practices

3rd Annual “Current Topics in Anesthesiology,” 1994

Department of Anesthesiology, Mayo Clinic Scottsdale

Hemosol, Inc., Toronto, Canada 1994

Current Issues in Blood Substitute Research and Development, 1996

San Diego, CA

Minnesota Associate of Blood Banks 1996 Fall Meeting 1996

“Preparing for the 21st Century” Rochester, MN

Combined Anesthesia and Surgery Grand Rounds, 1996

Sloan Kettering Cancer Institute, New York, NY

Mayo Seventh Annual Current Topics in Anesthesiology, 1997

Phoenix, AZ

15th Annual Symposium, Clinical Update in Anesthesiology 1997

and Advances in Techniques of Cardiopulmonary Bypass,

Acapulco, Mexico

807th Medical Brigade Physician’s Conference, Department 1997

of the Army, San Antonio, TX

Department of Anesthesiology, University of Pennsylvania, 1997

Philadelphia, PA

16th Annual Symposium, Clinical Update in Anesthesiology 1998

and Advances in Techniques of Cardiopulmonary Bypass,

San Juan, PR

Department of Anesthesiology, University of Iowa, Iowa City, IA 1998

Department of Anesthesiology, Medical College of Wisconsin, 1998

Milwaukee, WI

Center for Bloodless Medicine, University of Miami, Miami, FL 2000

TransFUSE 2014 Meeting, Phoenix, AZ 2014

## CLINICAL PRACTICE, INTERESTS, AND ACCOMPLISHMENTS

Clinical anesthesia, transfusion practices, preoperative evaluation of surgical patients

VISITING SCIENTISTS, RESEARCH FELLOWS, RESEARCH TRAINEES, ETC.

##### Visiting Scientists

Wouter Wieling, M.D. 1991

Academic Medical Center, Amsterdam

Richard Hughson, Ph.D.

University of Waterloo, Canada 1996

Barbara Morgan, Ph.D.

University of Wisconsin, Madison, WI 2001

Gunnar Wallin, M.D. 2004 (~1 month)

University of Gothenburg, Sweden 2005 (~1 month)

Farah Ramirez-Marrero, Ph.D. 2007-2009

University of Puerto Rico, San Juan, PR

##### Post-Doctoral Fellows

Niki M. Dietz, M.D. 1992-93

David N. Proctor, Ph.D. 1994-1997

Keith A. Engelke, Ph.D. 1994-1996

John R. Halliwill, Ph.D. 1995-1996; 1997-2000

Christopher T. Minson, Ph.D. 1997-2000

Ann Reed 1999-2000

Michael E. Tschakovsky, Ph.D. 1998-2000

Nisha Charkoudian, Ph.D. 2000-2003

Frank A. Dinenno, Ph.D. 2000-2003

William G. Schrage, Ph.D. 2001-2006

John Eisenach 2002-2004

Kittaphong Sujirattanawmol 2000-2001

Paul Krediet 2004-2005

Jaya Rosenmeier, M.D. 2001-2002

Shizue Masuki, Ph.D. 2003-2005

Wayne T. Nicholson, M.D. 2004-2006

Liu Zhong, M.D. 2004-2006

Brad Wilkins, Ph.D. 2004-2007

Elizabeth Martin, Ph.D. 2005-2008

Christiane Hesse, M.D. 2005-2009

Darren Casey, Ph.D. 2007-2011

Emma Hart, Ph.D. 2007-2011

Erica Wehrwein, Ph.D. 2008-2011

John Schmidt, Ph.D. 2008-2011

Thomas Olson, Ph.D. 2008-2011

Jill Barnes, Ph.D. 2009-present

Blair Johnson, Ph.D 2011-2014

Sushant Ranadive, Ph.D. 2012-present

Jacqueline Limberg, Ph.D. 2012-present

Walter Holbein , Ph.D. 2014-present

Sarah Baker, Ph.D. 2014-present

Residents

Christine Kenyon 2007-2008

Andrea Dutoit, M.D. 2007-2010

Residents with ~6-month Rotations

Creston Martin, M.D. Spring/Summer 1996

Allison Albrecht, M.D. Fall 1996-Winter 1997

Klaus Torp, M.D. Spring 1999

Kitiphong Sujirattanawimol, M.D. Fall 1999-Winter 2000

Susanne Pfeffer, M.D. Winter/Spring 2000

John Eisenach, M.D. Fall 2000-Winter 2001

Timothy Curry, M.D. Winter/Spring 2005

##### Medical Students

Christopher Dyke 1993-94

(Sarnoff Fellow, UT Southwestern Medical School)

Shurea Wilson 1997-98

(University of Pittsburgh)

Ann S. Reed 1998

(Mayo Medical School)

Paul Odenbach (Luther College) 1997 (fall), 1999 (summer)

(University of Minnesota-Duluth Medical School, 1998)

Sarah Hager 1999, 2000 (summers)

(University of North Dakota)

Erin Clark 2000 (summer, fall)

(Mayo Medical School)

Beth Burrow 2001 (fall, winter)

(Mayo Medical School)

Kellie Hancock 2006

(Mayo Medical School)

Stephen Gleich 2007

(Mayo Medical School)

Jeff McKenzie 2007

(Mayo Medical School)

Lawrence Grietin 2007

(University of Arizona College of Medicine)

Judith Schmitt 2008

(Paracelsus Medical School, Salzburg)

Modupef’Oluwa Jegede 2008

(Mayo Medical School)

Claus Egidy 2008

(Paracelsus Medical School, Salzburg)

Sandy Fritzlar 2002 (spring, summer)

(Mayo Medical School)

David Wetter 2003 (winter)

(Mayo Medical School)

Hans Sviggum 2005 (fall)

(Mayo Medical School)

C.P.T Krediet 2006/07 (fall-winter)

(Academic Medical Center, Amsterdam)

Marcos Lopez 2009-2010

(Mayo Medical School; 1 year CTSA M.S. Program)

Ronee Harvey 2011- present

(Mayo Medical School; CTSA based M.D./Ph.D program)

Kathryn Farni 2013 (summer)

Loyola University Chicago, Stritch School of Medicine)

Noud van Helmond 2013

Radboud University Medical Center Nijmegen

Myrthe Kuijpers 2014

Radboud University Medical Center Nijmegen

Lisa Veldhoven

Radboud University Medical Center Njmegen 2014

John Roger Shepherd 2014-2015

Mayo Medical School

##### Graduate Students

Shubha Shastry 1996-2001

(Ph.D., Mayo Graduate School, May 2001)

Elizabeth Martin 2003-2006

(Ph.D., Mayo Graduate School, May 2004)

Maile Ceridon 2005-2007

(Ph.D. candidate, Mayo Graduate School)

Amin Issa 2006-2010

(Ph.D. candidate, Mayo Graduate School)

Miguel Bernal-Restrepo 2006-2011

(Ph.D. candidate, Mayo Graduate School)

Undergraduate Students (since 1992)

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| --- | --- | --- |
| Juanita Rivera  Robert Fix  Scott Eggener  Abel Beltran-Del-Rio  Peter Shen  Terri Samuel  Karin Batalden  Malaika Williams  Richard Ashley  Ethan Ebersold  Paul Odenbach  Cara Weisbrod  Sara Hager  Thomas Pittlekow  Latoya Berry  Tamica Young  Christopher Johnson  Antonio McGuire  Jordan Miller  Isaac Kieffer  Eric Cornidez | Tasha Pike  Hans Sviggum  Erik Sviggum  Rachel Schwingler  Ram Chettiar  Cheryl Wick  Jessica Abenstein  Brandon Madery  Brian Welch  Stephanie Pedersen  Heather Tonyan  John Roger Shepherd  Alexander Allen  Rachel Elvebak  David Gonzalex  Jennifer Arroyo  Andrew Bacon  Casey Hines  Alexander White  Essa Mohammad  David Gonzales | Bernd Bader  Judith Schmidt  Haley Sobeck  Brianna Vaa  Ram Chettiar  Amanda Palm  Diane Wick  Daniel Chantigian  Sarah Kruse  Luke Wass  Kathryn Thomas  Zachariah Scruggs  Marika Pitot  Timothy Kruse  Steve Amaefuna  Luke Matzek  Jennifer Taylor  Maja Johnson  Michael Mozer  Katherine Malterer |

## RESEARCH GRANTS AWARDED

##### As a Trainee

Stuart Pharmaceuticals (co-investigator)

1984-1986 “Interactions of cardioselective and non-selective beta-blockade on endurance exercise responses of trained and untrained human subjects” (PI, Jack Wilmore, Ph.D.)

Approximately $75,000/year

USPHS HL-07479

1982-1987 “Medical student research training grant” (PI, M.H. Witte, M.D.)

Zuckerman Fund

1985 “Exercise physiology graduate student salary support”

$5,000/year

NIH GM 08288

7/89 - 7/90, 7/91 - 7/92 “Research training program in anesthesiology”

Research fellowship (PI, Kai Rehder, M.D.)

Principal Investigator

American Heart Association (Minnesota Affiliate)

Research Grant-in-Aid

7/90 - 7/91 $20,850

7/91 - 7/92 $23,815

United States Army Research and Development Command (No. 91283001)

5/93 - 5/96 “Mechanisms of hypertension after cross-linked hemoglobin blood substitute transfusion” (PI M.J. Joyner, M.D.; co-investigators, J.C. Romero, M.D., Z.S. Katusic, M.D., Ph.D., G.M. Tyce, Ph.D., D.K. Rorie, M.D., Ph.D.)

$748,559 (direct costs)

NIH P01 NS32352-01A1 Program Project Grant

1/95 - 12/99 “Vascular resistance during orthostatic stress in humans”

(Project 3 of Autonomic Disorders Program Project, P. Low, PI)

M.J. Joyner, M.D., P.I. of Project 3

$707,212 (direct costs to M.J. Joyner)

9/00 - 10/05 “Vascular resistance during orthostatic stress in humans”

(Project 3 of Autonomic Disorders Program Project, P. Low, PI)

M.J. Joyner, M.D., P.I. of Project 3

$680,326 (direct costs to M.J. Joyner)

10/05 - 10/10 “Vascular resistance during orthostatic stress in humans”

(Project 3 of Autonomic Disorders Program Project, P. Low, PI)

M.J. Joyner, M.D., P.I. of Project 3

$800,000 (direct costs to M.J. Joyner)

NIH R29 HL 46493

12/91 - 12/96 “Perfusion of active muscles: Metabolites and nerves”

$350,000 (direct costs)

NIH R01 HL 46493

9/97 - 8/02 "Perfusion of active muscles: Metabolites and nerves"

(originally funded 1991)

$925,422 (direct costs)

9/02 - 8/06 “Perfusion of active muscles: Metabolites and nerves”

$1,125,000 (direct costs)

Renewal received 1.1% score in Fall 2006, to be funded in early 2007 for years 15-20

4/07 - 3/12 “Perfusion of active muscles: Metabolites and Nerves

$1,250,000 (direct costs)

NIH R01 HL 63328

7/00 - 6/05 “Nitric oxide and exercise vasodilation in human hyperlipidemia”

(PI M.J. Joyner, M.D.)

$1,125,000 (direct costs)

NIH R01 HL083947

7/07 - 6/12 “Neurovascular Control and Blood Pressure Regulation in Humans”

(PI M.J. Joyner, M.D.)

$1,250,000 (direct costs)

8/13 - 6/17 “Neurovascular Control and Blood Pressure Regulation in Humans”

(PI M.J. Joyner, M.D.)

$244,631/year (direct costs)

NIH HL 07766

9/02 - 8/04 “Institutional Short-Term Research Training for Minority Students”

NIH NCRR 00585

12/04 - 11/06 “General Clinical Research Center”

Dr. Joyner was Associate Program Director

(This grant was replaced in the fall of 2006 by Mayo’s CTSA award)

$5,700,000/year (direct costs)

NIH R01 DK090541

2/11 - 1/15 “Role of Carotid Bodies in Glucose Regulation and Counter Regulation in Humans”

(PI M.J. Joyner, M.D.)

$357,470/year (direct costs)

NIH UL1 TR000135

7/11 - 6/16 “Mayo Clinic Center for Translational Science Activities”

(PI R.A. Rizza, M.D.)

$10,689,073 (direct costs)

U.S. Army Institute of Surgical Research/Department of Defense

9/11 - 8/12 “Preclinical Evaluation of a Decision Support Medical Monitoring System for Early Detection of Potential Hemodynamic Decompensation During Blood Loss in Humans”

(PI M.J. Joyner, M.D.)

$~190,000/year (direct costs)

W81XWH-13-2-0038

9/13 – 8/16 “Effects of Simulated Pathophysiology on the Performance of a Decision Support Medical Monitoring System for Early Detection of Hemodynamic Decomposition in Humans”

(PI M.J. Joyner, M.D.)

$188,676/year (direct costs)

NIH R01HL119337

7/14-6/18“Exercise Hyperemia in Humans” (PI MJ Joyner, MD)

$493,024/year (direct costs)

NIH R44HL106851

9/14-8/16“Device for Measuring Capillary Blood Flow and the Onset of Shock” (PI J. Christian)

$88,660/year (direct costs)

Co-Investigator

NIH/NIDR DK50456-03S1

9/97 – 9/99 “The Effect of Insulin on Vascular Regulation in Viscerally Obese Men”

Minnesota Heart Association FNDT-1

7/96 - 6/98 “Effects of Gender and Oral Contraceptives in Vascular Tone in Humans”

NIH R01 DK 45343-5

9/96 - 9/01 "Regional Fatty Acid Metabolism in Humans" (PI M.D. Jensen, M.D.)

NIH R01 AG 09531

7/99 - 6/05 “Mechanism of Muscle Wasting in Aging Man” (PI K.S. Nair, M.D.)

NIDDKD R01 DK41973

7/02 - 6/05 “In Vivo Regulation of Protein Turnover by Hormones” (PI K.S. Nair, M.D.)

NHLBI R01 HL 71478

6/02 - 5/06 “Pulmonary Limitations in Chronic Heart Failure” (PI B.J. Johnson, Ph.D.)

American Heart Association

6/02 - 5/04 “Influence of Beta2-Adrenergic Receptor Polymorphism on the Cardiopulmonary Responses to Exercise” (PI B.J. Johnson, Ph.D.)

NHLBI R01 91867

7/1/09 - 6/30/10 “Mechanisms of Endothelial Repair After Vascular Surgery” (PI Z.S. Katusic, M.D., Ph.D.)

NIH P50 AG044170-01

9/12 - 8/17 “Sex-Specific Risk for Vascular Dysfunction and Cognitive Decline” (PI V.M. Miller, Ph.D.)

NIH UH2/UH3TR 000954-1

6/13 - 5/16 “Therapeutic Strategy to Slow Progression of Calcific Aortic Valve Stenosis” (PI J.D. Miller, Ph.D.)

Consultant

NHLBI R01 HL 70928

5/02 - 4/06 “Mechanisms of Cutaneous Vasodilation in Humans” (PI C.T Minson, Ph.D.)

NHLBI R01 HL 68030

7/02 - 6/06 “Endothelial Abnormalities in Obesity/Insulin Resistance” (PI C. DeSouza, Ph.D.)

$225,000 (direct costs)

(no salary for Dr. Joyner)

Faculty

NIH GM 08288

7/93 - 7/04 “Research Training Grant in Anesthesiology”

(PI K. A. Jones, M.D.)

NIH T32GM08685-02

7/03 - 6/08 "Training Grant in Clinical Pharmacology" (PI R.M. Weinshilboum, M.D.)

7/08 - 6/13 “Training Grant in Clinical Pharmacology” (PI R.M. Weinshilboum, M.D.)

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\*indicates primary author was a trainee or student under Dr. Joyner’s supervision

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| **Invited Review Articles** | | |
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