

CURRICULUM VITAE  
**STUART K. WILLIAMS II, Ph.D.**

**Current Position:** Director, Bioficial Organs Program  
Jewish Hospital Endowed Chair  
In Cardiovascular Innovation  
University of Louisville  
302 E Muhammad Ali Boulevard  
Louisville, Kentucky 40202

Professor  
Department of Physiology and Biophysics  
(primary with tenure)  
University of Louisville

**Office:** (502) 852-1379  
**Mobile:** (502) 693-5250  
**Fax:** (502) 852-1391  
**Email:** [stu.williams@louisville.edu](mailto:stu.williams@louisville.edu)  
[cvregen@gmail.com](mailto:cvregen@gmail.com)  
website: [cvregen.com](http://cvregen.com)

**Birth date:** April 3, 1952  
**Birthplace:** Wilmington, Delaware  
**Married:** Carol Lynn Mraz  
**Children:** Kyle Clifford; Ross Stuart

**EDUCATION:**

**Postdoctoral Fellow:** Yale University School of Medicine  
New Haven, Connecticut, 1981

Major Field: Pathology  
Research: Blood Vessel Pathology  
Atherosclerosis and Diabetic Angiopathy  
Advisor: Dr. Mark W. Bitensky

**Doctor of Philosophy:** University of Delaware  
Newark, Delaware, 1979  
Major: Cell Biology  
Minor: Physiology  
Dissertation: Micropinocytosis in Isolated Capillary Endothelium  
Dissertation Advisor: Dr. Roger C. Wagner

**Master of Science:** University of Delaware  
Newark, Delaware, 1976  
Major: Biological Sciences  
Minor: Plant Physiology  
Thesis: Urea Transport in the Unicellular Green  
Alga, Chlamydomonas reinhardi.  
Thesis Advisor: Dr. Robert C. Hodson

**Bachelor of Arts:** University of Delaware  
Newark, Delaware, 1974  
Major: Biological Sciences  
Senior Research Project: Biochemistry and Enzymology of a Green  
Alga, Chlamydomonas reinhardi.

## **PROFESSIONAL EXPERIENCE:**

<b>2013–Present</b>	Director	Bioficial Organs Program Louisville, Kentucky 40202
<b>2014–Present</b>	Professor	Department of Physiology and Biophysics University of Louisville Louisville, KY 40202
<b>2007–2014</b>	Professor	Department of Surgery University of Louisville Louisville, Kentucky 40202
<b>2010–2013</b>	Executive Director	Cardiovascular Innovation Institute University of Louisville and Jewish Hospital Louisville, Kentucky 40202
<b>2007–2013</b>	Scientific Director	Cardiovascular Innovation Institute

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		University of Louisville and Jewish Hospital Louisville, Kentucky 40202
<b>1997-2007</b>	Professor and Director	Division of Biomedical Engineering Arizona Research Laboratories University of Arizona Tucson, Arizona 85721
<b>1997-2007</b>	Chairman	Biomedical Engineering Graduate Program University of Arizona Tucson, Arizona 85721
<b>1996-2007</b>	Professor	Department of Materials Science & Engineering College of Mines and Engineering University of Arizona Tucson, Arizona 85721
<b>1994-2007</b>	Professor	Department of Physiology University of Arizona Health Sciences Center College of Medicine Tucson, Arizona 85724
<b>1991-2007</b>	Professor	Department of Surgery University of Arizona Health Sciences Center College of Medicine Tucson, Arizona 85724
<b>1991 - 2000</b>	Section Head	Section of Surgical Research Department of Surgery University of Arizona Health Sciences Center College of Medicine Tucson, Arizona 85724
<b>1995-1997</b>	Chairman	University of Arizona Committee for Medical and Biological Engineering
<b>1993-1996</b>	Chairman	Physiological Sciences Graduate Program

		University of Arizona Tucson, Arizona 85724
<b>1991-1994</b>	Associate Professor	Department of Physiology University of Arizona Health Sciences Center College of Medicine Tucson, Arizona 85724
<b>1986-1991</b>	Director of Research Associate Professor	Department of Surgery
	Associate Professor	Department of Pathology/Cell Biology
	Associate Professor	Department of Physiology Jefferson Medical College Philadelphia, Pennsylvania
<b>1981-1985</b>	Assistant Professor	Department of Physiology Jefferson Medical College Philadelphia, Pennsylvania
<b>1979-1981</b>	Postdoctoral Fellow	Department of Pathology Yale School of Medicine New Haven, Connecticut
<b>1976-1979</b>	Graduate Teaching Assistant	School of Life and Health Sciences University of Delaware Newark, Delaware

### **ENTREPRENEURIAL EXPERIENCE:**

<b>2013- Present</b>	Partner and Scientific Advisor	Advanced Solutions Life Sciences Louisville, Ky.
<b>2011 – Present</b>	Director of Cell Biology	IKOTECH New Albany, IN
<b>2011 – Present</b>	Scientific Advisor	TechShot, New Albany, IN

<b>2010 - Present</b>	Co-Founder	Riviera Medical Technologies, Inc. Louisville, KY
<b>2004-Present</b>	Co-Founder	Angiomics, Inc. Tucson, AZ
<b>2003-Present</b>	President and Founder	Paré Technologies Tucson, AZ
<b>2003 - 2012</b>	Co-Founder Member, Scientific Advisory Board	Theregen, Inc. San Francisco, CA
<b>2003-2007</b>	Scientific Advisor	MediPacs, Inc. Tucson, AZ
<b>2002-Present</b>	Chief Science Officer	Tissue Genesis, Inc. Honolulu, HI
<b>1998-Present</b>	Member, Scientific Advisory Board	BioHeart, Inc. Sunrise, FL
<b>1994-Present</b>	Scientific Advisor	SurModics, Inc. Eden Prairie, MN

## HONORS AND AWARDS:

Business First Partner in Healthcare, Louisville Kentucky 2014  
 Business First Partner in Healthcare, Louisville Kentucky 2013  
 President, International Federation of Adipose Therapeutics and Science (IFATS) Society, 2011  
 Business First Partner in Healthcare, Louisville Kentucky 2012  
 Jewish Hospital Distinguished Endowed Chair in Cardiovascular Innovation, 2008  
 Distinguished Alumnus, University of Delaware, Department of Biological Sciences, 2004  
 R&D Magazine: One of the 100 Most Technologically Significant New Products of the Year for the Development of 3D Printing BioAssembly Tool, Sciperio, Inc., Human Architectural Technologies, Inc. and University of Arizona, October 2003  
 Surfaces in Biomaterials, Excellence in Surface Science Award, 2001  
 Fellow, American Heart Association, 2001  
 Visiting Scholar, University of Utrecht, Netherlands, 1999  
 Fellow, American Institute Medical and Biological Engineering, 1999  
 Research Career Development Award, NIH, 1985  
 Searle Scholar, 1983

New Investigator Award, NIH, 1981  
 Lamport Award (Young Investigator) of the Microcirculatory Society, 1981  
 National Science Foundation Postdoctoral Fellow, Yale School of Medicine, 1980-1981  
 James Hudson Brown Fellow in Pathology, Yale School of Medicine, 1979-1980  
 UNIDEL Predoctoral Research Fellow, 1977-1979  
 UNIDEL Research Fellow, Summer 1974

## **MEMBERSHIPS AND AFFILIATIONS:**

Microcirculatory Society Inc., 1981-Present  
 Surfaces in Biomaterials Foundation, 1994-Present  
 Academy of Surgical Research, 1992-Present  
 Society for Biomaterials, 1994-Present  
 American Institute for Medical and Biological Engineering, 2005-  
 Present  
 The Transplantation Society, 2007-Present  
 BIO5 Institute, University of Arizona, 2004-2007  
 International Federation of Adipose Therapeutics and Science (IFATS) Society, 2009-Present  
 International Society of Endovascular Specialists, 2001-2007  
 Society for Biomaterials, University of Arizona Student Chapter, Faculty Advisor, 2000 - 2007  
 American Association of Anatomists, 2000 - 2007  
 University of Arizona Vascular Health Group, 1999 - 2007  
 Arizona Cancer Center, 1997 - 2007  
 AAMC Group on Graduate Research, Education, and Training, 1996 - 2007  
 Cell Transplantation, 1995- 2007  
 Vascular Access Society of Arizona, Organizing Committee, 1995- 2007  
 American Diabetes Association, 1994 to present  
 Southwest Association for Education in Biomedical Research, 1994 - 2007  
 Society for Leukocyte Biology, 1994- 2000  
 Arizona Society Electron Microscopy Microbeam Analysis, 1993- 2007  
 Association for the Advancement of Medical Instrumentation, 1993 - 2000  
 American Association for Laboratory Animal Science, Arizona Branch, 1992 - 2007  
 University Heart Center, UMC, Tucson, AZ, 1992 - 2007  
 American Society Artificial Internal Organs, 1992 - 2005  
 International Society for Applied Cardiovascular Biology, Founding Member, 1988 - present  
 Executive Council, 1996 - 2005  
 Tissue Culture Association of America/Society for In Vitro Biology, 1988 - 2000  
 American Heart Association, Thrombosis Council, 1987 - present  
 American Physiological Society, 1983 - present  
 Experimental Biology, 1983- present  
 American Society of Cell Biologists, 1982 - 2001  
 Ischemia-Shock Research Center of Thomas Jefferson University, 1981- 1990  
 Microscopy Society of America, 1979 - 1990  
 Sigma Xi, 1979  
 American Association for the Advancement of Science, 1977-Present  
 American Society of Plant Physiologists, 1977 - 1985

New York Academy of Sciences, 1977

## **RESEARCH INTERESTS AND EXPERIENCE:**

### **Regenerative Medicine**

- 3D Bioprinting
- Regenerative Medicine/Tissue Engineering
- Adult Stem Cell Transplantation
- Angiomics - Microarrays, Genomics and Proteomics
- Shear Effects on Cells
- Restenosis
- Angiogenesis
- Gene Therapy

### **Medical Devices**

- Biomedical Implant Design
- Stents and Stent Grafts
- Surface Modification and Characterization
- Soft Tissue Replacement
- Cell Migration
- Anti-Infective Coatings

### **Diabetes Mellitus**

- Non Enzymatic Glycation
- Capillary Permeability and Angiopathies
- Islet Cell Transplantation

### **Regulatory Experience**

- Good Laboratory Practices
- Good Tissue Practices
- Good Manufacturing Practices
- Good Clinical Practices
- Investigational Device Exemptions
- Investigational New Drugs
- 510K applications
- AAMI Testing
- ISO standards

- CE Mark

## TEACHING AND TRAINEES

### Teaching

- 2014 Lecturer, Leadership Louisville  
Lecturer, Health Enterprise Network Louisville Healthcare Fellows Program  
Business Education Course in Regenerative Medicine Lecture Series at Case Western Reserve, Cleveland  
Physiology 609 Cardiovascular Physiology
- 2013 Lecturer, Leadership Louisville  
Lecturer, Health Enterprise Network Louisville Healthcare Fellows Program  
John G. Maijub, M.D., Surgery Resident Research Program  
Business Education Course in Regenerative Medicine Lecture Series at Case Western Reserve, Cleveland  
Monthly Lecture, Cardiovascular Research at the Cardiovascular Innovation Institute
- 2012 Louisville Public Library, Regenerative Medicine  
Lecturer, Leadership Louisville  
Lecturer, Health Enterprise Network Louisville Healthcare Fellows Program  
John G. Maijub, M.D., Surgery Resident Research Program  
Business Education Course in Regenerative Medicine Lecture Series at Case Western Reserve, Cleveland  
Monthly Lecture, Cardiovascular Research at the Cardiovascular Innovation Institute
- 2011 Laxmi Krishnan, Ph.D., CII Postdoctoral Fellowship Program  
Amanda LeBlanc, Ph.D., CII Postdoctoral Fellowship Program  
Tristen LeMunyon, Undergraduate Internship in Cardiovascular Regenerative Medicine  
Business Education Course in Regenerative Medicine Lecture Series at Case Western Reserve, Cleveland  
Lecturer, Leadership Louisville  
Lecturer, Health Enterprise Network Louisville Healthcare Fellows Program  
Monthly Lecture, Cardiovascular Research at the Cardiovascular Innovation Institute
- 2010 Laxmi Krishnan, Ph.D., CII Postdoctoral Fellowship Program  
Amanda LeBlanc, Ph.D., CII Postdoctoral Fellowship Program  
Business Education Course in Regenerative Medicine Lecture Series at Case Western Reserve, Cleveland  
Lecturer, Leadership Louisville  
Lecturer, Leadership Louisville



- Lecturer, Health Enterprise Network Louisville Healthcare Fellows Program  
Monthly Lecture, Cardiovascular Research at the Cardiovascular Innovation Institute
- 2009 Laxmi Krishnan, Ph.D., CII Postdoctoral Fellowship Program  
Amanda LeBlanc, Ph.D., CII Postdoctoral Fellowship Program  
Business Education Course in Regenerative Medicine Lecture Series at Case Western Reserve, Cleveland  
Monthly Lecture, Cardiovascular Research at the Cardiovascular Innovation Institute
- 2008 Monthly Lecture, Cardiovascular Research at the Cardiovascular Innovation Institute  
Heidi Hoefler, Undergraduate Internship in Cardiovascular Research
- 2007 NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Course Organizer, BME 597G: Laboratory Rotations; 1-3 credits; 2 graduate students  
Lecturer, BME 511: Physiology for Biomedical Engineers; 3 credits; 13 graduate students  
Instructor, BME 599: Independent Study in Biomedical Engineering, 1 credit, 1 graduate student  
Lecturer, PSIO 603: Systems Physiology, Cardiovascular Physiology section; 6 credit; 15 graduate students  
Instructor, PSIO 610: Research Methods in Physiology, 1 credit, 2 graduate students
- 2006 Lecturer BME 597: Laboratory Rotations; 1-3 credits; 4 graduate students  
Lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 20 graduate students  
Lecturer, PSIO 503: Cell Physiology, Extracellular Matrix and Heart Failure lectures; 5 credit; 20 graduate students  
Lecturer, BME 576, Microvascular Biology; 3 credits, 8 graduate students.
- NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Lecturer BME 597: Laboratory Rotations; 1-3 credits; 1 graduate student  
Lecturer, BME 511: Physiology for Biomedical Engineers; 3 credits; 17 graduate students  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Cardiovascular Physiology section; 1 credit; 20 graduate students
- 2005 Lecturer BME 597: Laboratory Rotations; 1-3 credits; 1 graduate students  
Lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 14 graduate students; 13 undergraduates  
Lecturer, PSIO 503: Cell Physiology, lectures; 5 credits; 19 graduate students
- NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 1 graduate students

- Lecturer, BME 411/511: Physiology for Biomedical Engineers; 3 credits; 16 graduate students; 23 undergraduate students  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Extracellular Matrix and Heart Failure Cardiovascular Physiology section; 1 credit; 21 graduate students
- 2004 Lecturer BME 597: Laboratory Rotations; 1-3 credits; 1 graduate students  
Lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 15 graduate students; 13 undergraduates  
Lecturer, PSIO 503: Cell Physiology, Extracellular Matrix and Heart Failure lectures; 5 credits; 27 graduate students
- NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Lecturer BME 597: Laboratory Rotations; 1-3 credits; 1 graduate student  
Lecturer, BME 411/511: Physiology for Biomedical Engineers; 3 credits; 15 graduate students; 17 undergraduate students  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Cardiovascular Physiology section; 1 credit; 15 graduate students
- 2003 Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 1 graduate students  
Lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 13 graduate students; 10 undergraduates  
Lecturer, PSIO 503: Cell Physiology, Physiological Genomics lectures; 5 credit; 17 graduate students
- NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 1 graduate student  
Lecturer, BME 411/511: Physiology for Biomedical Engineers; 3 credits; 8 graduate students; 16 undergraduate students  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Cardiovascular Physiology section; 1 credit; 13 graduate students
- 2002 Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 4 graduate students  
Lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 13 graduate students; 14 undergraduates  
Lecturer, PSIO 503: Cell Physiology, Physiological Genomics lectures; 5 credit; 15 graduate students  
NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 6 graduate students  
Lecturer, BME 411/511: Physiology for Engineers; 3 credits; 8 graduate students; 11 undergraduate students  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Cardiovascular Physiology section; 1 credit; 12 graduate students

- 2001 Lecturer, MATH 596a: IGERT Forum; 2 credits; 15 graduate students  
Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 4 graduate students  
Lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 9 graduate students; 5 undergraduates  
Lecturer, SURG 596I: Molecular Cardiovascular Biology, 3 credits; 10 graduate students  
Lecturer, PSIO 503: Cell Physiology, Physiological Systems lectures; 5 credit; 20 graduate students
- NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 6 graduate students  
Lecturer, BME 411/511: Physiology for Engineers; 3 credits; 9 graduate students; 13 undergraduate students  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Cardiovascular Physiology section; 1 credit; 12 graduate students
- 2000 Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 8 graduate students  
Lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 14 graduate students; 10 undergraduate  
Lecturer, SURG 596I: Molecular Cardiovascular Biology, Genetic Models and Angiogenesis lectures; 3 credits; 8 graduate students  
Lecturer, PSIO 503: Cell Physiology, Physiological Genomics lectures; 5 credits; 18 graduate students  
BME 597x: Research methods; 2 credits; 2 graduate students  
BME 900: Research; 8 credits; 2 graduate students
- NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 10 graduate students  
Lecturer, BME 411/511: Physiology for Engineers; 3 credits; 10 graduate students; 11 undergraduates  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Cardiovascular Physiology section; 1 credit; 8 graduate students
- 1999 Course Organizer, BME 597: Laboratory Rotations; 1-3 credits; 12 graduate students  
Lecturer, BME 595a: Topics in Tissue Engineering; 1 credit; new permanent course  
Course Coordinator and lecturer, BME 410/510: Biology for Biomedical Engineers; 3 credits; 14 graduate students
- NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer, 3 credits; 35 undergraduates  
Lecturer, BME 411/511: Physiology for Engineers; 3 credits; 13 graduate students; 5 undergraduate students  
Session Facilitator, PSIO 602: Readings in Systems Physiology, Cardiovascular

Physiology section; 1 credit; 8 graduate students

Lecturer, BME 510: Biology for Biomedical Engineers; 3 credits; 12 graduate students

#### Teaching Experience 1978 to 1998

Lecturer in Histology University of Delaware

Lecturer in Endothelial cell pathology Yale School of Medicine

Lecturer in Human Physiology Jefferson Medical College

Lecturer in Human Physiology University of Arizona School of Medicine

Lecturer in Surgery, University of Arizona School of Medicine

#### Course Development

NATS 104 Biology in Medicine, Engineering and Applied Sciences. Co-coordinator and lecturer

BME 410/510, Biology for Biomedical Engineering; Assisted in the development of course syllabus and reading materials

BME 411/511, Physiology for Biomedical Engineering, Assisted in the development of course syllabus and reading materials

BME 595A, Co-developed course syllabus and reading lists

BME 597, Research Methods in Biomedical Engineering, Re-designed lab rotation format and reporting

Biomedical Engineering – University of Arizona. Established the BME program at the University of Arizona in 1996. Prepared curriculum and all documentation for this program. Submitted to and gained approval from the Arizona Board of Regents for the program.

#### Journal Clubs and Discussion Groups

2009-present Co-coordinator; CII Regenerative Medicine Journal Club

2004-2007 Faculty Advisor; Cardiovascular Engineering Journal Club

1998-2007 Co-coordinator; Vascular Research Group; Faculty, Fellows, Post-Docs, Graduate Students, Undergraduate Students

Graduate Students (Mentor):

#### **Present Position**

Maria Rupnick, M.D., Ph.D.

Instructor in Medicine, Brigham & Women's Hospital,  
Internal Medicine, Harvard School of Medicine

Dissertation: The Study of Microvessel Endothelial Cell Migration in Vitro, 1988

Lisa Speicher, Ph.D.

Senior Scientist, Schering Plough, Philadelphia, PA

Dissertation: Effects of Shear Stress on Leukocyte-Endothelial Cell Interactions

Kerri Pratt, Ph.D.

Assistant Professor, Thomas Jefferson University,  
Philadelphia, PA

Dissertation: The Effects of Hyperglycemia on Human Endothelial Cell Cytoskeletal Function, 1990

James B. Hoying, Ph.D.                      Professor, University of Louisville, Division  
Head, Cardiovascular Innovation Institute,  
Louisville, KY

Dissertation: Cell-Matrix Interactions of Microvessel Endothelial Cells in Response to Basic  
Fibroblast Growth Factor, 1994

Dennis Salzman, Ph.D.                      Director of Regulatory Affairs, Bard Peripheral Vascular,  
Inc. Tempe AZ. 85280

Dissertation: Macrophage Response to Polymeric Vascular Grafts, 1997

Lloyd Williams, M.D.                      Resident, Tufts University School of Medicine  
Boston, MA

Daniel Hagerty, M.S., M.D.                      Emergency Medicine Physician, Spokane, WA

Robert Kellar, Ph.D.                      President, Design Engineering Sciences, Flagstaff, AZ  
Dissertation: Tissue-Engineered Polymers Stimulate Angiogenesis in Infarcted Myocardium,  
2001

Donny Dal Ponte, Ph.D.                      Faculty, Pima Community College, Tucson, AZ  
Dissertation: Intimal responses associated with synthetic vascular implants, 2001

Kameha Kidd, Ph.D.                      Staff Scientist, National Institutes of Health, Bethesda, MD  
Dissertation: Angiogenesis and Neovascularization in Association with Extracellular Matrix  
Protein Modified Biomaterials, 2002

Ben Shepherd                      Senior Scientist, Organovo, San Diego, CA  
Dissertation: Implantation and Characterization of Tissue Engineered Microvascular Grafts,  
2004

Paul Rigby                      Staff Scientist Telios, San Diego, CA  
Dissertation: Characterization of Arteries and Tissue Engineered Vascular Grafts Using  
Experimental and Finite Element Models

Samantha Powis                      Product Specialist, W.L. Gore, Flagstaff, AZ  
Dissertation: Chlorine Dioxide for the Prevention of Biomaterial-Associated Infections, 2005

Cindy Smith                      Consultant, n-Script,  
Dissertation: A Direct-Write Three-Dimensional BioAssembly Tool for Regenerative Medicine,  
2005

Mark Schwartz                      Research Scientist, High Throughput Genomics, Tucson,  
AZ



## Arizona

- Kenneth A. Fox: 1995, 2nd place, 7th Annual Resident Research Symposium, Department of Surgery, University of Arizona
- Dennis Salzmann: 1996-1998, Predoctoral Fellowship Award, American Heart Association, Arizona Affiliate
- Donny Dal Ponte: 1998, Young Investigator's Award, International Society for Applied Cardiovascular Biology
- Rob Kellar: 1999-2000, Predoctoral Fellowship Award, American Heart Association, Arizona Affiliate  
2001, Jay N. Cohn Clinical/Integrative Physiology New Investigator Award, Heart Failure Society
- Kameha Kidd: 1999, Finalist 1999 SkiView Business Plans Competition, The University of Arizona Berger Entrepreneurship Program  
1999, Honorable Mention-Graduate Division, Entrepreneurship Intercollegiate Competition  
1999-2001, Predoctoral Fellowship Award, American Heart Association, Arizona Affiliate  
2001, David J. Lee Student Award for Excellence in Student Research, Surfaces in Biomaterials Foundation
- Ben Shepherd: 2000-2002, Predoctoral Fellowship Award, American Heart Association, Arizona Affiliate
- Samantha Powis: 2003-2004, Institute for Biomedical Science and Biotechnology Graduate Student Fellowship
- Kristen O'Halloran: 2004, National Science Foundation Graduate Research Fellowship  
2005, Society for Biomaterials Student Travel & Professional Development Award

## Residents:

John Radomski, M.D.	1985-1986	Karl Ahlswede, M.D.	1990-1991
F. Allan Hubbard, M.D.	1986-1987	Carlton Young, M.D.	1990-1991
John R. Hoch, M.D.	1987-1988	Mark Sarfati, M.D.	1992-1994
Thomas Carter, M.D.	1988-1989	Kenneth A. Fox, M.D.	1993-1995
Audrey Park, M.D.	1989-1990	Jonathan Maijub	2012 - present

## Preceptor Advisor:

Mark Sarfati, M.D.	1992-1994
John A. Daller, M.D.	1992-1994
Bryan J. Venerus, M.D.	1992-1994

## Post-Doctoral Fellows:

Mercedes Rivero-Hudec, Ph.D.	1989-1991
Shih-Chieh Chen, Ph.D.	1991-1993
Jolyon Schilling, M.D.	1992-1993
Scott Berman, M.D.	1992-1993
Luke Erdoes, M.D.	1993-1994
John Marek, M.D.	1994-1995
Stephani Boykin, Ph.D.	1996-1997
Alex Westerband, M.D.	1996-1997
Amanda LeBlanc, Ph.D.	2009 – 2011
Laxmi Krishnan, Ph.D.	2009 – 2011

## Undergraduate Student Research Projects:

Robert Castrillo	1992-1993
Richard Langford	1992-1993
Anthony Paul	1993 (Project Access)
Richard Ashley	1996
Jane Kim	1997 (Osler Summer Science Program for HS Students)
Jeff Kersten	1997
Jia Lia	1997
Tulshi Bhattacharyya	1998 (Osler Summer Science Program for HS Students)
Lisa Levy	1998 (Undergraduate Biology Research Program)
Despina Tavalarides	1998-00 (Undergraduate Biology Research Program)
MEDCAMP Job Shadow	1998 (2 high school students)
MEDCAMP	1999 (3 presentations, 15 High School Students/presentation)
Matt Aldridge	1999 (University High)
Nealda Muhammad Yusof	2000 (University of Singapore)
JoAnn Chang	2000-01 (Undergraduate Biology Research Program)
Alex St. John	2001-02 (University High)
Anne Williams	2001-02 (Senior Design Project)
Niral Patel	2002 (Biochemistry Honors Project)
Tristen LeMunyon	2012 Bioengineering Co-Op



Faculty Mentor:

Bala Appakalai, Ph.D.  
Marvin Morris, M.D.  
Alison Stopeck, M.D.  
W. Bradford Carter, M.D.  
Lorraine H. Manciet, Ph.D.  
Hunter Wessells, M.D.  
David Arzouman, M.D.  
Julie Zaetta, M.D.  
Rob Noecker, M.D.  
Linda Meade-Tollin, Ph.D.  
Dan Stamer, Ph.D.  
John Nichols, M.D.

**GRANTS AND CONTRACTS:**

**A: ACTIVE SUPPORT:**

Improving Coronary Microcirculation in Advanced Age through Cell-based Therapy, American Heart Association, Role: Collaborating Investigator. Principal Investigator, Amanda LeBlanc, 1/1/2012-12/31/2015, \$132,000

Microvascular Repair using Adipose-Derived Stromal Vascular Fraction Cells, American Heart Association, Scientist Development Grant, Role: Collaborating Investigator, PI, Nolan Boyd, \$308,000, July 1, 2011 – July 1, 2015

Autologous Cell-Based Implantable Apheresis Device for Real-Time LDL-c Clearance Pilot Study, Kosair Charities Pediatric Heart Research Pilot Grant, Role: Collaborating Investigator PI Nolan Boyd, \$47,154, June 1, 2011 – June 1, 2015

Basic Science Studies to Increase Safety of Hand Transplantation for Congenital Defects and Traumatic Limb Loss in Pediatric Recipients. Kosair Charities Role: Collaborating Investigator, PI James B Hoying 21/1/2012 to 11/30/2015 \$64,138.

Magnetic Flow Sorter for Pancreatic Islet Isolation. NIH/SBIR. Role: 10% Principal Investigator of University of Louisville subcontract. Primary Award – TechShot, Greenville, Indiana

Human Microvessel Culture System NIH STTR Role: PI of subcontract University of

Louisville. PI: James Hoying, Ph.D. Angiomics, Inc.

Positioning Vascularized Composite Allograft Transplantation with the Spectrum of Transplantation. Department of Defense. W81XWH-12-PRMRP-CTA Role: Co-investigator PI: Joseph Kutz 1/1/2013- 12/31/17 2.40 calendar Dept. of the Army – USAMRAA \$3,282,264

Immunomodulation and Tolerance Induction in Hand Transplant Recipients using Adipose SVF cells W81XWH-13-AFIRM-IIRP Role: Co-investigator PI: Joseph Kutz 7/1/2013 – 6/30/2018 1.2 calendar AFIRM II – Department of Defense \$1,569,668.

A Randomized, Controlled, Parallel Group, Blinded Feasibility Study of the TGI Adipose-derived Stromal Cell (ASC)-coated ePTFE Vascular Graft for Femoral-tibial Bypass Grafting, Tissue Genesis Inc., Role: Co-Investigator; Principal Investigator, Michael Marvin, M.D.

## **B. IN PREPARATION/PROPOSED/SUBMITTED**

Autologous Cell Based Implantable Apheresis Device for Continuous LDLc Clearance. NIH. Role: Co-investigator. Principal Investigator Nolan Boyd.

Regenerative Cell Therapy for Coronary Microvascular Dysfunction in Aged Females, NIH, Role; Co-Investigator, Principal Investigator, Amanda LeBlanc, Ph.D.

Humanized Microvascular Preclinical Assay NIH. Role: Principal Investigator of subcontract to University of Louisville. PI; James Hoying.

Blood Vessel Mimics for Discovery of Predictive Markers Presymptomatic Diagnosis of Hemorrhagic Fever Virus Infections, NIH, 10%, Co-Principal Investigator

Adipose Regenerative Cells for Treatment of Ischemia, NIH, Principal Investigator

Bioassembly Tool for Spatial Organization of Human 3D Implants, NIH, 20%, Principal Investigator

Development of Inflammation Imaging Ultrasound Contrast Agents, KyPha, 2%, Principal Investigator

Three-Dimensional Heart Patch for Ischemic Myocardium, NIH, 20%, Principal Investigator

## **C. COMPLETED**

Gheens Foundation Research in Regenerative Medicine

This is an award from the Gheens Foundation to support research in Regenerative Medicine.

Role: Principal Investigator. \$250,000.

Manufacturing Development of Allogeneic Stem Cells in Clinical Settings. Department of Defense contract number W81XWH-11-C-0017. Role: Principal Investigator of Subcontract with University of Louisville. 12/1/2012 to 12/31/2014. \$63,970

Acute Evaluation of the M4 Delivery System in an Ovine Model, Bolton Medical, 2%, Role: Principal Investigator, 7/1/12-12/28/13, \$76,767

Upgrade and Expansion of Cardiovascular Facilities – Cardiovascular Innovation Institute HRSA, 1 C76HF09473-01-00. Role: Grant Proposal Author, Project and Financial Management and Oversight. 9/1/2008 – 9/30/2013. \$5,988,824.

Nanocomposite Imaging System for Choroidal Neovascularization, Kentucky Pharmaceuticals/NIH, 2%, Role: Principal Investigator of subcontract, 7/1/2012-6/30/2013 \$61,757

A Prevascularized Islet Immuno-Isolation Device, NIH, 20%, Role: Principal Investigator, 4/08-3/31/13, 7/11/2011-6/30/2013, \$314,500

Validation of a Straight AV Graft, Atrium Medical, Inc, 3%, Principal Investigator Preclinical services for the Development of Biopharmaceutical Products of Infectious Diseases, DTRA, 10%, Co-principal Investigator

Blood Vessel Mimics as an in Vitro Aneurysm Models for Evaluation of Endovascular Devices, ARDF, 1%, Principal Investigator 6/1/11-5/31/2012, \$37,500

Medical Device Testing in Human Blood Vessel Mimics, Alternatives Research & Development Foundation, 1%, Principal Investigator, 6/1/10-5/31/2011, \$37,500

Protocol Development for Cell Characterization Study, TGI, Principal Investigator

Bioprinting with Cells from Adipose Stromal Vascular Fraction, Organovo, Inc., 2%, Principal Investigator, 9/1/2010-2/28/2011, \$31,114

Medical Device Testing in Human Blood Vessel Mimics, Alternatives Research & Development Foundation, 10%, 6/1/2010-5/31/2011, \$39,653

Fabricated Microvascular Networks, NIH, 15%, Co-Principal Investigator, 7/12/07 – 4/30/2011 \$930,000

Bioprinting with Cells from Adipose Stromal Vascular Fraction, Organovo, Inc., 2%, Principal Investigator, 9/01/10 - 2/28/2011, \$31,114

An ExVivo Shunt Model to Evaluate Thrombogenicity of Abbott Stents in a Porcine Model, Abbott Vascular, 2%, Principal Investigator

Percutaneous Delivery of Adipose Derived Therapeutic Cells, Tissue Genesis, 3%, Principal Investigator, 10/10/07 - 12/31/10, \$409,337,

Endothelialized Vascular Graft Research Program, Tissue Genesis, 10%, Principal Investigator, 8/1/2007 - 12/31/2010 \$182,222,

Automated Cell Isolation and Sodding System for Peripheral Vascular Grafts, Tissue Genesis, 10% , Principal Investigator, 11/12/07 - 12/31/10, \$390,000,

Acute Evaluation of a Bifurcated Stent Graft in a Porcine Model, Bolton Medical, Inc., 5%, 10/20/09 - 11/20/09 \$16,440

GLP Chronic Evaluation of a Stent Graft in an Ovine Model, Industry 3%, 7/1/09 – 3/30/10, \$256,219

Evaluation of Manufactured Collagen Coated Stents, Surmodics, Principal Investigator, 5%, 4/15/09-8/15/09 \$78,751

Ex Vivo Shunt to Evaluate the Relative Thrombogenicity of Coated Materials in the Pig Femoral Model, Surmodics, Principal Investigator, 5%, 4/1/08 - 6/30/08 \$47,728

Percutaneous Delivery of Adipose Derived Therapeutic Cells, US Army Medical Research & Materiel, Principal Investigator of Consortium, 5%, 5/1/08 - 11/30/09, \$265,000 (DC), 10/10/07 - 12/31/09

Endothelialized Vascular Graft Research Program, US Army Medical Research & Materiel, Principal Investigator of Consortium, 5%, Principal Investigator-Paul Kosnik, Tissue Genesis, 7/1/05- 12/31/09

Automated Cell Isolation and Sodding System for Peripheral Vascular Grafts, US Army Medical Research & Materiel, Principal Investigator of Consortium, 5%, 5/1/06 - 6/30/09

In Vivo Chronic Evaluation of the Histopathologic Response in Rabbit Iliac Model after stenting using finale extracellular matrix coating and a bare metal system that have been sterilized by either e-beam or ETO, Surmodics, 5%, Principal Investigator, \$60,084

Cardiovascular Biomedical Engineering Training Grant, NIH/NRSA, Program Director, 5%, 7/1/01 - 6/30/11, 1,400,000 (DC)

Sheep model to assess pannus overgrowth associated with valve material, ValveXchange (sub-federal), Study Director, Research Consortium, 1%, 12/19/08 - 12/31/09, \$38,000 (DC),

Acute Evaluation of a Stent graft in an Ovine Model, Bolton Medical Inc, Principal Investigator, 2%, 7/1/09 - 8/31/09, \$26,111

Tissue Engineered Grafts Implanted in the Canine Carotid Model, Tissue Genesis, Study

Director, 5%, 9/1/05 - 12/31/08, \$154,000 (DC)

Evaluation of the Short Term Outcomes of Sodded Grafts in a Canine Model, Surpass, 25%, Principal Investigator, 8/14/08 - 10/31/08 \$118,540

Bioactive Polymer for Cardiac, ABIOMED Bioactive, Principal Investigator, 10/1/2004 - 8/31/2008

Graduate Training in Physiology, NIH, 5 T32 HL07249-17, Mentor, 1%, Principal Investigator-Janice Burt, Ph.D, 6/03 - 5/08, \$1,364,269

Porcine Ex-Vivo Shunt Study, Surmodics, Principal Investigator, 1%, 6/15/07 - 8/15/07, \$29,610

Graduate Training in Systems and Integrative Physiology, NIH 5 T32 GMO8400, Mentor, 1%, Principal Investigator-William H, Dantzler, M.D., Ph.D., 7/01 - 6/06, \$274,473 (DC)

Sensate Scaffold for Orthopedic Tissue Repair, NIH, Consultant, 3%, Principal Investigator-John Szivek, Ph.D., 9/30/02 – 9/29/06, \$225,000 (DC),

Transportable Chlorine Dioxide Sterilization System, NIH/STTR, 15%, Principal Investigator, 09/04 - 9/07, \$93,450 (DC),

Prevascularized Immuno-Isolation Device, Juvenile Diabetes Research Foundation, 5%, Principal Investigator, 10/1/05 - 9/30/07, \$100,000 (DC),

In Vivo Chronic Eval of the Histopathologic Response Using Coated Materials in the Rabbit Iliac Model, Surmodics, 1%, Principal Investigator, 6/15/07 - 9/30/07, \$56,070

Biodegradable Sealant for Biopsy Tract in Soft Tissue, NIH STTR, 5%, Co-Investigator, Principal Investigator-Lucjan Hronowski (Biopsy Sciences), 6/1/05 - 5/30/07, \$75,000 (DC),

Animal Study Evaluating Guidant Stents, Guidant Corporation, 1%, Study Director, 8/1/05 - 7/31/07, \$109,000 (DC),

Short-term wound healing response of Atrium C-Qur barrier mesh, Atrium, 2%, Study Director, 11/1/05 - 1/31/06, \$30,000 (DC),

A study evaluating the in-vivo performance of Atrium hernia repair material in the rat model, Atrium, 1%, Study Director, 9/15/05 - 3/15/06, \$24,000 (DC),

An Ex-vivo shunt model to evaluate thrombogenicity in a porcine model, Advanced Cardiovascular Systems/Guidant, 1%, Study Director, 2/1/06 - 3/31/06, \$18,000 (DC),

Short-term wound healing response of Atrium alpha coated mesh, Atrium, 1%, Study Director, 11/1/05 - 2/15/06, \$13,000 (DC),

Evaluation of Tissue Response to Control and Coated Stents in a Blood Vessel Mimic, Guidant Corporation, 1%, Study Director, 8/1/05 - 3/31/06, \$19,000 (DC),

Evaluation of histology from hernia patch rabbit study, Atrium, 1%, Study Director, 4/25/05 - 12/15/05, \$11,000 (DC),

Gene Therapy of Diabetic Penile Endothelial Dysfunction, NIH, Consultant, 1%, Principal Investigator-Hunter Wessells, M.D., 9/1/00 - 8/31/05, \$750,000 (DC),

Role of Laminin-5 in Implant Associated Angiogenesis, NIH, 30%, Principal Investigator, 8/1/00 - 7/31/04 (NCX to 7/31/05), \$800,000 (DC),

Pre-clinical Study Evaluating the Bolton Stent Graft in an Ovine Model, Bolton Medical, 1%, Principal Investigator, 4/1/04 - 3/31/05, \$100,000 (DC),

Treatment of Type 1 Diabetes through Beta-Cell Replacement Therapy, University of Arizona Department of Pediatrics, 1%, Co-investigator, 7/1/04 - 6/30/05, \$100,000 (DC),

Biocompatibility of Atrium Hernia Patch in the Rat Model, Atrium Medical, 1% Study Director, 8/1/04 - 4/30/05, \$32,500 (DC),

A Study Evaluating the Inflammation and Healing Response of PEA-BENZYL and PEA-TEMPO in a Subcutaneous Rat Model, Advanced Cardiovascular Systems, 1%, Principal Investigator, 5/1/04 - 8/31/04, \$7,300 (DC),

A Study Evaluating Healing Characteristics Associated with Guidant PEA-BENZYL and PEA-TEMPO Polymers on the Epicardial Surface, Advanced Cardiovascular Systems, 1%, Principal Investigator, 5/1/04 - 10/31/04, \$23,250,

A Study Evaluating the In-vivo Performance of Atrium anti-adhesive Technologies on Hernia Repair Material in the Rat Model, Atrium Medical, 1%, Principal Investigator, 11/10/03 - 4/15/04, \$20,000 (DC),

A Study Evaluating the Healing response Associated with Atrium Materials, Atrium Medical, 1%, Principal Investigator, 11/10/03 - 4/15/04, \$16,000 (DC),

Characterization of Arterial Ring Model for Drug Screening Purposes, Advanced Cardiovascular Systems, Guidant Corp, 1%, Principal Investigator, 11/10/03 - 1/31/04, \$23,000 (DC)

Pericardial Tissue Implanted Subcutaneous in the Rat Model, Southwest Research Institute, 1%, Principal Investigator, 11/10/03 - 2/10/04,

Poroelastic Transport of Neutral and Charged Species in Arterial Tissue, National Science Foundation, Co-Investigator, 10%, Principal Investigator-Bruce Simon, Ph.D., 8/98 - 7/03, \$250,096 (DC),

Vascular Characterization with Optical Low-Coherence Techniques, National Science Foundation, Collaborator, Principal Investigator-Jennifer Barton, 8/1/99 - 7/31/03, \$185,900,

Clinical Oncology Research Training Program, NIH, CA-01-32, Program Faculty Member, .01%, Principal Investigator-Evan M, Hersh, M.D., 7/98 - 6/03, \$1,707,805,

Antimicrobial Coating for Implantable Devices, NIH STTR, 15%, Principal Investigator, 9/1/00 - 8/31/03, \$98,000 (DC),

Evaluation of Local Therapy to Limit Vascular Graft Hyperplasia, NIH, Principal Investigator of Consortium, 5%, Principal Investigator- Steven Massia, Ph.D., Arizona State University, 12/1/98 - 6/03, \$173,265 (DC),

A Study Evaluating the Atrium® T-graft in a Canine AVG Model, Atrium Medical, 1%, Principal Investigator, 1/3/03 - 4/30/03, \$26,416 (DC),

Pre-Clinical Study Evaluating the Medtronic Stent Graft in an Ovine Model, Medtronic AVE, Inc., 1%, Principal Investigator, 1/15/02 - 1/14/03, \$88,560 (DC),

Feasibility Study Evaluating the Use of Anginera as an Epicardial Implant to Attenuate a Loss of Left Ventricular Function in a Porcine Model of LAD Occlusion, Advanced Tissue Sciences, 2%, Principal Investigator, 2/1/02 - 07/01/02, \$84,000 (DC),

Tissue Engineering of an Ischemic Repair Device for Cardiovascular and Other Therapies, NIST, Principal Investigator, Univ of AZ subcontract, 10%, Principal Investigator-Tony Ratcliffe (Advanced Tissues Sciences), 1/1/02 - 10/31/03, \$40,000 (DC),

Tissue Engineered Constructs for Repair of Ischemic Tissue, DARPA, Sciperio (prime), UA (sub), 1%, Principal Investigator of AZ subcontract, 8/1/01 - 1/31/03, \$127,000 (DC),

Effect of Anti-angiogenic Treatment on Ligament Healing, Aircast Foundation, University of Utah (prime), Jeffrey Weiss-Principal Investigator, UA (sub), 2%, Co-Investigator of AZ subcontract, 12/00 - 12/02, \$17,900,

Development and Use of a Telemetrized CPC Coated Strain Gauge System for Advancing Fundamental Knowledge of Bone Strain in Animals and Humans, National Science Foundation, Consultant, Principal Investigator-John Szivek, Ph.D., 6/1/98 - 5/30/02, \$213,000,

The Role of Alpha 6 Beta 4 Integrin in Angiogenesis, AHA, Desert/Mountain Affiliate Predoctoral Fellowship, Consultant, 1%, Principal Investigator-Kameha Kidd, 7/1/00 - 6/30/02, \$36,000,

Ocular Shunt for Glaucoma Treatment, Atrium Medical Corp, Principal Investigator, 3/00 - 5/02, 63,975 (DC),

Prostate Carcinoma--Invasion and Metastasis Factors: Core Component B, Microscopy and

Morphometrics, NIH Program Project, Core Leader, 10%, Principal Investigator-Raymond Nagle, M.D., Ph.D., 4/1/98 - 3/31/02, \$396,564 (DC),

Effect of Fluid Flow and Pressure on Endothelial Cells of the Aqueous Outflow Pathway, University of Arizona Dean's Research Council Grant, Mentor, Principal Investigator-Dan Stamer, 7/1/00 - 6/30/01, \$15,000,

Safety of Hypothermosol for Intra-cardiac Injection, Bioheart, 1%, Principal Investigator, 7/01 - 10/01, \$6,400 (DC),

A Study Evaluating the Advanced Tissue Sciences, Inc, Tissue Engineered Graft in a Canine Model, Advanced Tissue Sciences, Inc., Principal Investigator, 5%, 1/15/01 - 6/30/01, \$55,860 (DC),

An Ex Vivo Shunt Model to Evaluate the Advanced Tissue Sciences, Inc, Tissue Engineered ePTFE Scaffold in a Canine Model, Advanced Tissue Sciences, Inc., 5% Principal Investigator, 1/01 - 6/30/01, \$15,380 (DC),

Cell Retention/Distribution in Normal and Infarcted Pig Myocardium, Bioheart, 5%, Principal Investigator, 2/22/01 - 6/30/01, \$19,000 (DC),

A Study Evaluating the Functional Response Associated with Advanced Tissue Sciences, Inc, Tissue-Engineered Constructs Using a SCID Mouse Model of Ischemic Injury, Advanced Tissue Sciences, 1%, Principal Investigator, 2/01 - 7/01, \$28,600 (DC),

Improved Extracellular Matrix for Treatment of Tobacco Related Occlusive Vascular Disease, Arizona Disease Control Research Commission, 10%, Co-Principal Investigator, 7/1/98 - 6/30/01, \$315,300 (DC),

Biomedical Engineering Program in Imaging, Modeling and Evaluation of Medical Implants: Cooperative Academic-Industrial Program, The Whitaker Foundation Special Opportunity Awards in Biomedical Engineering, Program Director, 6/97 - 5/01, \$2,064,000 (DC),

Feasibility Study Evaluating Dermagraft as a Cardiac Patch in a Porcine Model, Advanced Tissue Sciences, Inc, 5%, Principal Investigator, 10/00 - 2/01, \$57,000 (DC),

Pre-clinical Study Evaluating the Medtronic Generation II AnueRx Stent Graft in an Ovine Model, Medtronics AVE, Principal Investigator, 5/1/00 - 2/1/01, \$43,230 (DC),

Tissue Engineered Heart Valves, University of Arizona Dean's Physician-Scientist Career Development Award, Mentor, Principal Investigator-David Arzouman, 7/1/98 - 6/30/00, \$103,750,

A 30 Day Study Evaluating the Advanced Tissue, Inc, Matrix Vascular Graft, Advanced Tissue Sciences, Study Director, 4/3/00 - 8/31/00, \$54,580 (DC),



Cadherin Regulation and Function in Vascular Smooth Muscle, American Heart Association, National, Consultant, 5%, Principal Investigator-Ronald L. Heimark, Ph.D., 1/1/98 - 12/31/00, \$150,000 (DC),

Pre-Clinical Study Evaluating the Medtronic Next Generation Stent Graft in a Canine Model, Medtronic AVE, Principal Investigator, 3/15/00 - 8/15/00, \$45,300 (DC),

A Study Evaluating Atrium Soft-Tissue Replacement Materials as Subcutaneous Implants in a Porcine Model, Atrium Medical Corp., Principal Investigator, 6/99 - 8/00, \$52,500 (DC),

The Coordinate Expression of VEGF and BFGF Modulate the Angiogenic Response in Tissues Around Epicardial Implants, AHA, Desert/Mountain Affiliate Predoctoral Fellowship, Sponsor, 1%, Principal Investigator-Robbie Kellar, 7/1/1999 - 6/30/2000, \$18,000,

A Study Evaluating the Atrium ePTFE Patch for Repair of Abdominal Wall Defects in the Rat, Atrium Medical Corp, Principal Investigator, 10/99 - 1/00, \$11,560 (DC),

Stent Versus Endovascular Graft Healing in Atherosclerotic Yucatan Microswine Iliac Arteries, W.L. Gore and Associates, Co-Investigator, 5%, Principal Investigator - Julie Zaetta, M.D., 7/1/98 - 12/31/99, \$15,550 (DC),

A Study Evaluating the Healing Response Associated with Advanced Tissue Sciences, Inc, Dermagraft Material for Use as an Epicardial Patch in a Porcine Model, Advanced Tissue Sciences, Inc., Principal Investigator, 10/99 - 2/00, \$20,440 (DC),

Stent Versus Endovascular Graft Healing in Atherosclerotic Yucatan Microswine Iliac Arteries, Cardiovascular and Interventional Radiology Research and Education Foundation, Co-Investigator, 5%, Principal Investigator - Julie Zaetta, M.D., 7/1/98 - 12/31/99, \$25,000 (DC),

Stent Versus Endovascular Graft Healing in Atherosclerotic Yucatan Microswine Iliac Arteries, University of Arizona Dean's Research Council Award, Co-Investigator, 5%, Principal Investigator - Julie Zaetta, M.D., 7/1/98 - 6/30/99, \$15,000 (DC),

A Mouse Model for Evaluation of the Healing Response Associated with Advanced Tissue Sciences, Inc, Dermagraft® Materials for Use as an Epicardial Patch, Advanced Tissue Sciences, Principal Investigator, 7/1/99 - 12/31/99, \$25,936 (DC),

A Study Evaluating the Healing Response Associated with the Advanced Tissue Sciences, Inc, Dermagraft® Materials for use as a Peripheral Ischemia Angiogenesis Patch, Advanced Tissue Sciences, Principal Investigator, 8/30/99 - 2/29/00, \$22,370 (DC),

A Safety and Efficacy Study Evaluating the World Medical Endoluminal Stent Graft in the Thoracic Aorta of Swine, World Medical Manufacturing, 1%, Principal Investigator, 2/1/99 - 6/15/99, \$44,324,

A Study Evaluating and Comparing the Healing Response of Various World Medical Graft

Materials, World Medical Manufacturing, 10%, Principal Investigator, 1/5/99 - 3/31/99, \$8,420,

Endothelial Cell Based Gene Therapy to Correct Erectile Dysfunction, University of Arizona Dean's Physician-Scientist Career Development Award, Mentor, Principal Investigator-Hunter Wessells, 7/1/97 - 6/30/99, \$103,750,

Evaluation of the Sarns 3-M Bioactive Surface Heparin Bonded CPB Circuit in a Porcine Model, 3-M, Collaborating Investigator, Principal Investigator-Doug Larson, Ph.D., \$60,000,

Atrium® Hybrid PTFE™ Clinical Study, Atrium Medical Corporation, Co-Principal Investigator with Joseph Mills, 1/1/96 - 12/31/98, \$7,500,

Endothelial Cell Transplantation and AV Graft Healing, NIH, 1R01 DK45670, 15 %, Principal Investigator, 1/95 - 12/98, \$334,094 (DC),

A Study Evaluating the Advanced Tissue Sciences, Inc, Tissue Engineered Vascular Graft in a Canine Model, Advanced Tissue Sciences, Principal Investigator, 12/1/97 - 6/1/98, \$10,000 (DC)

An Ex Vivo Shunt Model to Evaluate the Advanced Tissue Sciences, Inc, Matrix Vascular Graft in a Canine Model, Advanced Tissue Sciences, Principal Investigator, 12/1/97 - 6/1/98, \$9,200 (DC),

Pre-Clinical Study Evaluating the World Medical Endoluminal Stent Graft in a Canine Model, World Medical Corporation, Principal Investigator, 7/1/97 - 6/30/98, \$83,351 (DC),

A Study Evaluating the Healing Response of Various Impra ePTFE Graft Materials, Impra, Inc, Principal Investigator, 7/1/98 - 10/31/98, \$11,828 (DC),

Smoking and Pericytes: Their Role in Angiogenesis, AZ Disease Control, Contract #9609, Consultant, 5%, Principal Investigator-Ronald L, Heimark, Ph.D., 8/1/95 - 6/30/98, \$91,443 (DC),

Tissue Engineered Coronary Artery Bypass Grafts, American Heart Association, AZ Affiliate, Principal Investigator, 10%, 7/1/96 - 6/98, \$60,000 (DC),

A Study Evaluating the VCS Clip Applier System with ePTFE Graft Material in a Canine AVG Model, United States Surgical Corp, Principal Investigator, 9/97 - 2/98, \$15,900 (DC),

A Study Evaluating the Healing Response in Rats to Monsanto Graft Material, Monsanto, Principal Investigator, 7/1/97 - 10/31/97, \$17,880 (DC),

A Study Evaluating the Atrium® Hybrid ePTFE Graft in a Canine AVG Model, Atrium Medical Corporation, Principal Investigator, 5/97 - 8/30/97, \$8,880 (DC),

A Study Evaluating the Effect of Fragmin™ Low Molecular Weight Heparin on the

Inflammatory Response Observed in Association with Polymeric Medical Implants, Upjohn & Pharmacia, Principal Investigator, 9/96 - 12/96, \$7,234 (DC),

Nonenzymatic Glycation in Diabetic Kidney Diseases, NIH, DK 5 R01 43620, Principal Investigator, 10% effort, 4/1/91 - 3/31/97, \$422,500 (DC),

Endothelial Cell Sodding of Endovascular Grafts, American Heart Association, 95-STIP-3, Sponsor, 5% effort, Principal Investigator-Dennis Salzman, 7/1/95 - 12/31/96, \$5,000 (DC),

The Coronary Microcirculation in Myocardial Protection, NIH, 1 RO1 HL49230-01A1, Co-Investigator, 5% effort, Principal Investigator-Paul F, McDonagh, Ph,D, 9/93 - 8/96, \$325,785 (DC),

Endothelial Cell Sodding of Coronary Artery Bypass Grafts, American Heart Association, AZ Affiliate, AZ-94-GS-14/AZGS-26-95, Principal Investigator, 10% effort, 7/01/94 - 6/30/96, \$48,874 (DC),

Vascular Anomalies in Diabetic Rats after Heart Surgery, NIH, 5 K14 HL03151, Primary Sponsor, 5% effort, Principal Investigator-Lorraine H, Manciet, Ph,D,, 7/01/94 - 6/30/96, \$409,943 (DC),

Vascular Graft Coating for Transmural Endothelialization, NIH SBIR, Subcontractor, Principal Investigator-David L, Clapper, Ph,D,, 3/95 - 11/95, \$68,472 (DC),

Microvascular Endothelial Cell Sodding of ePTFE Hemodialysis Vascular Access Graft: A Prospective, Randomized Comparison, Dialysis Clinics Inc, JCVRDF-1092-6, Co-Principal Investigator, 10% effort, Principal Investigator-Bruce E, Jarrell, M,D,, 12/01/92 - 11/30/95, \$76,725 (DC),

Genetic Engineering Using Microvascular Endothelial Cells, Arizona Elk's Research Grant, 5% effort, Principal Investigator, 7/01/94 - 6/30/95, \$19,942 (DC),

Quantitative Assessment of Attachment and Growth of Endothelial Cells on Biodegradable Polymeric Substrates, American Heart Association, Consultant, 1% effort, Principal Investigator-Scott S, Berman, M,D,, 7/01/93 - 6/30/95, \$50,000 (DC),

Lesions of the Microvascular as a Result of Diabetes Mellitus, National Science Foundation Postdoctoral Fellowship, #SPI 7914915, Principal Investigator, 1980 - 1981, \$14,560,

Carbohydrate Dependent Micropinocytosis in Endothelium, NIH Research Grant, New Investigator Award, 1 R23 HL28310, Principal Investigator, 1981 - 1984, \$107,500,

Regulation and Specificity of Endocytosis in Endothelium, NIH Research Grant, 1 R01 HL30227, Principal Investigator, 1983-1988, \$733,973,

Ischemia and the Coronary Microcirculation, American Heart Association, Delaware Affiliate

Research Grant, Principal Investigator, 1983 - 1984, \$12,692,

Capillary Endothelial Cell Function and Structure in Pathological States, Searle Scholars Program, 83-I101, Principal Investigator, 1983 - 1986, \$150,000,

Endocytosis in Capillary Endothelium, Research Career Development Award, NIH, HL01514, Principal Investigator, 1985 - 1990, \$182,250,

Studies of Human Endothelial Cells of Diverse Origin, NIH, P01-AG 04961, Co-Investigator with Elliott Levine, Ph.D, 1986 - 1991, \$3,091,950,

Endothelialization of Vascular Grafts, NIH, 1R01 HL33906, Co-PI with Bruce E, Jarrell, M.D., 1986 - 1991, \$499,126,

The Use of Capillary Endothelial Cells Isolated from Fat Tissue to Endothelialize Prosthetic Vascular Graft Surfaces, W,W, Smith Charitable Trust, Principal Investigator, 1986 - 1989, \$163,900,

Proliferation and Function in Human Endothelial Cells, NIH, R01-HL34153, Co-Principal Investigator with Elliott Levine, Ph.D., 1986 - 1991, \$997,393,

Analysis of Microvessel Endothelial Cell Migration, NIH, 1R01 GM 41476, Principal Investigator-Douglas A, Lauffenburger, Ph.D., 1988 - 1991, \$445,077,

Human Endothelial Cell Interaction with Native Surfaces, NIH, 5R01 HL 38103, Principal Investigator, 1988 - 1991, \$450,000,

### **COMMITTEE SERVICE:**

2011-2012	President, International Federation of Adipose Therapeutics and Science (IFATS) Society
2011-pres	Member, Executive Committee, International Federation of Adipose Therapeutics and Science (IFATS) Society
2002-2007	Member and Chair, External Advisory Board, South Carolina Biomedical Research Infrastructure Network
1996-2007	Executive Council, International Society for Applied Cardiovascular Biology
2004-2007	Member, Advisory Committee, Flinn/Battelle/AZ Disease Control Research Commission Project, Developing a Translational Research Vision for Arizona
2004-2007	Member, University of Arizona Flinn Biosciences Roadmap Advisory Committee
2003-2007	Co-Chairman, Bioengineering Platform Committee, Flinn Foundation/Battelle Institute's Arizona Bioscience Roadmap Platform for Progress
2001-2007	Member, Institute for Biomedical Science and Biotechnology Faculty Advisory Committee
1997-2007	Chairman, Biomedical Engineering Interdisciplinary Graduate Program
1996-2007	Committee Member, University of Arizona M.D./Ph.D. Program

1996-2007	Technical Advisory Committee, Bioindustry Targeted Industry
1993-2007	Committee Member, Steele Children's Research Center Scientific Advisory Committee
1993-2007	Committee Member, VA Research and Development Committee
1997-2001	Member, Department of Surgery Research Committee
1998-2000	University of Arizona College of Medicine Dean's Research Council, Bioindustry Subcommittee
1998-2000	International Society for Applied Cardiovascular Biology, VIIth Biennial Meeting Organizing Committee
1998-1999	Symposium Organizer, Materials Research Society
1998	Committee Member, Optical Sciences Academic Program Review
1996-2006	University of Arizona College of Medicine Dean's Research Council, Space Subcommittee
1995-2003	University of Arizona College of Medicine Dean's Research Council
1997-1999	Chairman, Department of Surgery, Promotion and Tenure Committee
1995-1998	University of Arizona College of Medicine Admissions Committee
1995-1997	Chairman, University of Arizona Committee for Medical and Biological Engineering
1995-1996	Chairman, Microcirculatory Society, Awards Committee
1993-1996	Microcirculatory Society, Awards Committee
1993-1995	Faculty Interviewer, College of Medicine Admissions
1993-1996	Chairman, Physiological Sciences Graduate Program, Executive Committee
1992-2001	Surgery Resident Research Committee
1992-1999	Department of Surgery, Promotion and Tenure Committee
1992-1993	Admission Committee, Physiological Sciences Physiological Sciences Graduate Program, Chair, Recruiting and Admissions

## RESEARCH GRANT REVIEWER:

- National Science Foundation,
- Veterans Administration,
- Food and Drug Administration,
- Canadian Research Council,
- National Institutes of Health
- Previous Reviewer – Ad Hoc Service
  - Surgery, Anesthesia, Trauma
  - Cellular Biology and Physiology
  - Surgery and Bioengineering
- Program Project Study Section Reviewer
  - NIDDK, Chairman
  - NIHLB, Member-multiple project reviews
- Ad Hoc Service
  - Research Training Review Special Emphasis Panel Study Sections K series

## STTR/SBIR

## P41 Resource Centers

- American Heart Association, Council on Thrombosis
- American Heart Association, Scientific Review Panel, Southwestern Region
- Austrian Science Fund (FWF)
- Nan Yang University, Singapore

**MANUSCRIPT REVIEWER:**

- American Journal of Physiology
- Cells and Materials
- Cell Transplantation, (**Section Editor, 1995 to 2005**), Blood Vessels, Skin and Other Tissues
- In Vitro
- Journal of Cancer Research and Clinical Oncology
- Journal of Neurochemistry
- Journal of Clinical Investigation
- Journal of Cell Biology
- Journal of Biomedical Materials Research
- Journal of Vascular Surgery
- Laboratory Investigation
- Metabolism
- Microcirculation
- Microvascular Research
- Scanning Microscopy International
- Science
- Surgery

**INVITED PRESENTATIONS:**

- International Federation for Adipose Therapeutics and Science. Three Dimensional Bioprinting of Islet and Adipose Stromal Vascular Fraction Containing Spheroids. Amsterdam, Netherlands, November 2014
- Livingston Securities Life Sciences Summit 3D Printing the Total Bioficial Heart. Philadelphia Pennsylvania October 2014
- Industry Day Louisiana Tech University The Development of the Total Bioficial Heart: The Value of Industry-Academic Relationships. Reston Louisiana September 2014
- Medical Manufacturing Asia Conference 3D Bioprinting of Medical Devices Suntek, Singapore. September 2014.
- International Bioprinting Conference 3D Bioprinting: Bioassembly Robots and Biinks. Biopolis, Singapore. July 2014
- Centre for Commercialization of Regenerative Medicine (CCRM) The Business of Regenerative Medicine. Toronto, Canada, July 2014
- Indiana Health Industry Forum The Future of Cell Therapy Indianapolis, IN May 2014
- University of Minnesota Medical Device Conference Organ Printing using 3D Bioprinting

Technology. Minneapolis, MN April 2014

Frost and Sullivan Mind Exchange 3D Printing San Diego California March 2014

Launch. Bioprinting San Francisco, California. February 2014

World Stem Cell Summit. Regulatory Aspects of Stem Cell Therapies, San Diego, California. December 2013

BioPrinting – 3D Printing of Live Cells Bio-Printing the Total Bioficial Heart. Atlanta Georgia, November 2013

New York Stem Cell Meeting. Adipose Derived Stem Cells and Regenerative Medicine New York City, New York. February, 2013

Harvard Medical School. Seminars in Vascular Biology. Adipose –Derived Cells for Regeneration of the Macro and Micro-Circulation January 10, 2013, Boston, MA.

Louisville Free Public Library. Biomedical Engineering: From George Washington’s false teeth to artificial hearts November 15, 2012

OVALS Conference. Building a Regenerative Medicine Enterprise in an Academic Environment. Louisville, KY, October 2012.

Houston Stem Cell Summit. Automated Systems for Adipose Stem Cell Isolation. Houston, Texas, October 2012

International Federation for Adipose Therapeutics and Science Regulatory Strategies for Adipose Stem and Regenerative Cell Therapies, Quebec City, Quebec, October 2012

Stem Cell Society of Singapore Symposium. Adipose Stromal Vascular Fraction Cells for Regenerative Medicine, Biopolis, September 2012

Caplan Business Development Course, Adipose Regenerative Cells for Microvascular and Macrovascular Applications, Cleveland, Ohio. July 2012

Metro United Way. Cardiovascular Regenerative Medicine. Louisville, Kentucky December 6, 2011

Corporate College. Innovation & Entrepreneurism. Louisville, Kentucky March 2011.

International Federation for Adipose Therapeutics and Science. Pre-Clinical Studies of Tissue Engineered Vascular Grafts, Dallas, Texas. October 2010

New York Stem Cell Meeting. Adipose Derived Stromal Vascular Fraction Cells for Tissue Ischemia. New York City, New York. February, 2010

International Federation for Adipose Therapeutics and Science. Automated Systems for Tissue Engineered Vascular Graft Production, Daegu, Korea. October 2009

International Society of Applied Cardiovascular Biology, Training Students in Cardiovascular Innovation, Chang Mai, Thailand. October 2009

New York Stem Cell Meeting. Adipose Derived Stem Cells and Their Therapeutic Capabilities. New York City, New York. February, 2009

International Federation for Adipose Therapeutics and Science. Automated Systems for Tissue Engineered Vascular Graft Production, Toulouse, France. October 2008

American Veterinary Medical Association, Regenerative Stem Cell Medicine: What the Future has in Store, New Orleans, Louisiana. July 2008

New York Stem Cell Meeting. Automated Adipose Cell Isolation System. New York City, New York. February, 2008

School of Chemical and Biomedical Engineering Bimolecular Engineering Conference, Plenary speaker, Singapore. December 2007.

World Congress of Microcirculation, Bioengineering Approaches to Stimulating Therapeutic Neovascularization. August 2007.

University of Massachusetts-Amherst Polymers in Medicine and Pharmaceutical Research Symposium, “Biopolymer-Directed Tissue Responses: Material Design and Modification. October 2006.

Golden Gate Polymer Forum Polymers in Medicine Short Course, “Tissue Engineering-Cell polymer interaction and choice of animal models to evaluate device-tissue interactions”, May 2006. (4 lectures)

University of Arizona Applied Math Program “Building Blood Vessels”. May 2006

Scanning 2006, “Morphologic Assessment of the Endothelialization of Biomedical Implants”. April 2006.

University of Arizona Stem Cell Conference, “Stem Cell Therapies for the Treatment of Cardiovascular Disease”. April 2006.

International Society of Applied Cardiovascular Biology, “Extracellular Matrix Modifications of Materials to Control Tissue Responses”. March 2006

Training Grant Workshop University of Arizona. December 2005

Conor Medical, Surface Modifications to Support Endothelialization, November 2005

Golden Gate Polymer Forum, “Biomaterials-Directed Tissue Responses: Material Design & Modification”, San Francisco, California. October 2005

Surfaces in Biomaterials, Biointerface 2005, “Invention Symposium”, Minneapolis, Minnesota. October 2005.

Surmodics, Inc., “Opportunities in Regenerative Medicine”, Minneapolis, MN, September 2005.

University of Washington Summer Symposium, “Bugs and Biomaterials: Bacteria and the Biointerface”, Seattle, Washington. August 2005.

Controlled Release Society: Drug Eluting Stents Workshop, “Biology and Drug Eluting Stents”, Miami Beach, Florida. June 2005

Georgia Tech, ET-2005: Engineering Tissues Workshop, “Animal Models in Tissue Engineering”. March 2005.

Shaping the Future of IT, The University of Arizona Eller College Of Management, Management Information Systems Department 30<sup>th</sup> Anniversary Program, Panelists: Pharma-Drug & Device Informatics and Moderator: Medical Informatics.

Biomedical Research Day, Southwest Association for Education in Biomedical Research, University of Arizona. October 2004

League of AZ Cities and Towns Conference, “Arizona Biosciences Roadmap”. September 2004.

University of Washington Summer Symposium, Bioengineered Blood Vessels and Valves 2004: Grafts, Stents, Valves and Tissue Engineering, Invited Lecturer. August 2004.

7<sup>th</sup> World Biomaterials Congress, Symposium Keynote Lecturer, “Engineered Biomaterials for Angiogenesis”. May 2004

Faculty, Bioindustry Organization of Southern Arizona, “Hot Topics in Bioengineering”. April 2004.

Southwest Association for Education in Biomedical Research, Biomedical Research and Career Paths, presentation to high school students and teachers. February 2004

Bioindustry Organization of Southern Arizona, “Man in a Box: Biomaterials and Biomedical Implants”. January 2004

Flinn Foundation Arizona Biosciences Roadmap Bioengineering. May 2003

University of Alabama at Birmingham Biomedical Engineering Department. “Biomaterials for Regenerative Medicine: Regulation of Angiogenesis”. April 2003

Arizona Imaging and Microanalysis Society (AIMS) annual conference. March 2003



AZ Health Sciences Center Library Frankenstein Exhibit lectures series. Presentation title, "Tissue Engineering and Regenerative Medicine". March 2003

Bioethics Conference, Arizona Health Sciences Center. October 2002

Surfaces in Biomaterials, Scottsdale, Arizona. August 2002

MEDCAMP, University of Arizona, "Biomedical Engineering". July 2002

Undergraduate Research Biology Program, University of Arizona. July 2002

Camp ACCESS, The University of Arizona, "The Bionic Man". June 2002,

Achievement Rewards for College Scientists Foundation (ARCS). April 2002

Arizona Lab Animal Association, Tucson, Arizona, "How Biomedical Engineers Heal Broken Hearts, and Hips and Lips". February 2002

Jewish Community Center Young at Heart, Tucson, Arizona, "Stem cell research". January 2002

Tucson Women in Health Care, Tucson, Arizona, "Science of stem cell research". January, 2002

Surfaces in Biomaterials, Scottsdale, Arizona. August 2001

American Society of Mechanical Engineers, 2001 Summer Bioengineering Conference, Utah, June 2001

Eclipse Surgical Technologies National Sales Training Meeting. May 2001

Oregon Medical Laser Center Board of Trustees, Portland, Oregon. May 2001

Society for Biomaterials, St. Paul, Minnesota. April 2001

Intermountain University Research Administrators Annual Meeting, Tucson, Arizona. January 2001

University of Arizona Department of Surgery Grand Rounds, Tucson, Arizona. August 2000

Oregon Medical Laser Center Photomedicine Lecture Series, Portland, Oregon. July 2000

Camp ACCESS, The University of Arizona. June 2000

University of Arizona Chemical Engineering Seminar, Tucson, Arizona. April 2000

Experimental Biology, San Diego, California. April 2000

Achievement Rewards for College Scientists, Tucson, Arizona. March 2000

International Society for Applied Cardiovascular Biology, Tucson, Arizona. March 2000

University of Arizona Faculty Community Lecture Series, Tucson, Arizona. October 1999

Catalina High School, Tucson, Arizona. October 1999

Academy of Surgical Research, Keynote Speaker, Scottsdale, Arizona. September 1999

Surfaces in Biomaterials, Scottsdale, Arizona. September 1999

University of Washington Engineered Materials Summer Symposium. August 1999

Eastern Virginia Medical School. June 1999

American Society for Artificial Internal Organs, San Diego, California. June 1999

Society for Biomaterials, Providence, Rhode Island. April 1999

US Surgical, VCS Clip Applier Advanced Training Course, Tucson, Arizona. April 1999

US Surgical, VCS Clip Applier Advanced Training Course, Tucson, Arizona. March 1999

Estes Elementary School Gifted Program, Marana, Arizona. February 1999

Carbomedics, Austin, Texas. February 1999

National American Heart Association 71st Scientific Session, Dallas, Texas. November 1998

Department of Pharmacology, University of Pittsburgh, Pittsburgh, Pennsylvania. October 1998

Yale Alumni Club, Tucson, Arizona. October 1998

Surfaces in Biomaterials, Tucson, Arizona. September 1998

Discovery Seminar Series, Monsanto Corp. May 1998

Society for Biomaterials, Session Chair, Cell-Biomaterials Interaction, San Diego, California.

April 1998  
United States Surgical Corp, CME Cardiovascular Course, University of Arizona. February 1998  
Becton-Dickinson, Live Cell Handling in Surgical Research. February 1998  
Green Valley Recreation Fitness Club, Green Valley, Arizona. December 1997  
University Heart Center Scientific Conference, Tucson, Arizona. November 1997  
Medical University of South Carolina. October 1997  
NIH Angiogenesis Working Group, NCI, June 1997  
NIH Research Initiatives Conference, "How to Build a Blood Vessel", Bethesda, Maryland. February 1997  
University Heart Center Scientific Conference, Tucson, Arizona. November 1996  
Biomedical Engineering Society, Philadelphia, Pennsylvania. October 1996  
Surfaces in Biomaterials, Phoenix, Arizona. September 1996  
American Association for Laboratory Animal Science, Tucson, Arizona. May 1996  
American Society for Artificial Internal Organs, Washington, DC. May 1996  
Flinn Foundation Biomedical Initiative Symposium, Scottsdale, Arizona. May 1996  
International Society for Applied Cardiovascular Biology, Manchester, England. March 1996  
Arizona Cancer Center Gene Therapy Retreat, Tucson, Arizona. September 1995  
Arizona Imaging & Microanalysis Society, Tucson, Arizona. 1995  
American Society of Artificial Internal Organs, Chicago, Illinois. 1995  
Cell Transplantation Symposium, Miami, Florida. 1995  
University of Minnesota, St. Paul, Minnesota. 1995  
Geron Corporation, New York, New York. 1994  
Cardiovascular and Respiratory Mechanics and Transport Workshop. September 1994  
Association of American Medical College, Ft. Lauderdale, Florida. 1994  
Cell Transplant Society, Minneapolis, Minnesota. 1994  
Barrow Neurological Institute, Phoenix, Arizona. 1994  
University of Arizona, MEDCAMP, Tucson, Arizona. July 1994  
University of Arizona, Medical Student Summer Research Seminar, Tucson, Arizona. July 1994  
University of Arizona, Minority High School Student Seminar, Tucson, Arizona. July 1994  
University of Arizona, Workshop on Biomaterials, Tucson, Arizona. March, 1994  
Arizona American Assoc Laboratory Animal Science, Tucson, Arizona. September, 1993  
Baxter Healthcare Corporation, Irvine, California. 1993  
Cardiovascular Sciences and Technology Conference, Washington, DC. 1993  
NIH Biomolecular Engineering, Bethesda, Maryland. 1992  
European Surgeon's Scientific Program, Irvine, California. 1992  
Biomedical Implants, University of Michigan, Ann Arbor, Michigan. 1991  
Microcirculation Society Meeting, Louisville, Kentucky. 1991  
NIH Devices and Technology Branch, Contractors Meeting, Louisville, Kentucky. 1989  
Scanning Electron Microscopy Society. 1989  
Gordon Research Conference on Biomaterials. 1989  
Endothelial Cell Seeding of Vascular Grafts, Indianapolis, Indiana. 1988  
NIH Devices and Technology Branch, Contractors Meeting, Bethesda, Maryland. 1988  
NIH Devices and Technology Branch, Contractors Meeting, Bethesda, Maryland. 1987  
Vascular Endothelium in Health and Disease, Taiwan. 1987  
International Conference on Nephrology, London. 1987

Gordon Research Conference on Biomaterials. 1987  
 European Workshop on Advanced Technologies in Vascular Surgery. 1986  
 New York Academy of Sciences Symposia on Biomaterials. 1986  
 FASEB Mini-symposia on Endothelial Cell Biology. 1985  
 Gordon Research Conference on Biomaterials. 1987  
 Gordon Research Conference on Blood-surface Interfaces. 1985  
 Gordon Research Conference on the Microcirculation (Session Chairman). 1985  
 Microcirculatory Society Symposia on Isolated Endothelial Cell Methods. 1985  
 Tissue Culture Association of America. 1985  
 Endothelial Vesicle Workshop, Oxford, UK. 1984  
 Peripheral Neuropathy Association of America, Annual Meeting. 1984  
 American Diabetes Association, New York Affiliate, Annual Meeting. 1983  
 New York Academy of Sciences Symposium on Biorheology. 1982

### **PRESENTATIONS:**

International Federation for Adipose Therapeutics and Science. In vitro Assessment of Adipose Stromal Vascular Fraction Cell Delivery Utilizing a Perfusion Balloon Catheter. Amsterdam, Netherlands November 2014.

International Society for Applied Cardiovascular Biology. 3D Bioprinting the Total Bioficial Heart. Cleveland, OH. April 2014

International Federation for Adipose Therapeutics and Science. Human Adipose SVF Spheroids, NYC. November 2013

International Federation for Adipose Therapeutics and Science, Regulatory Pathway Panel, Miami, November 2011

The Business of Regenerative Medicine : From Stem Cells to Marketplace, Adipose Regenerative Cells for Microvascular and Macrovascular Applications, Cleveland, July 2011

International Federation for Adipose Therapeutics and Science. Pre-Clinical Studies of Tissue Engineered Vascular Grafts, Dallas, Texas. October 2010

New York Stem Cell Meeting. Adipose Derived Stromal Vascular Fraction Cells for Tissue Ischemia. New York City. New York. February, 2010

International Federation for Adipose Therapeutics and Science. Automated Systems for Tissue Engineered Vascular Graft Production, Daegu, Korea. October 2009

International Society of Applied Cardiovascular Biology, Training Students in Cardiovascular Innovation, Chang Mai, Thailand. October 2009

Biomedical Engineering Society Annual Meeting, Medical Device and Therapeutics Developed in the Academic Environment, Pittsburgh, October 2009

New York Stem Cell Meeting. Adipose Derived Stem Cells and Their Therapeutic Capabilities. New York City, New York. February, 2009

International Federation for Adipose Therapeutics and Science. Automated Systems for Tissue Engineered Vascular Graft Production, Toulouse, France. October 2008

American Veterinary Medical Association, Regenerative Stem Cell Medicine: What the Future has in Store, New Orleans, LA. July 2008

New York Stem Cell Meeting. Automated Adipose Cell Isolation System. New York City, New York. February, 2008

School of Chemical and Biomedical Engineering Bimolecular Engineering Conference, Plenary speaker, Singapore. December 2007.

World Congress of Microcirculation, Bioengineering Approaches to Stimulating Therapeutic Neovascularization. August 2007.

University of Massachusetts-Amherst Polymers in Medicine and Pharmaceutical Research Symposium, "Biopolymer-Directed Tissue Responses: Material Design and Modification. October 2006.

Golden Gate Polymer Forum Polymers in Medicine Short Course, "Tissue Engineering-Cell polymer interaction and choice of animal models to evaluate device-tissue interactions". May 2006. (4 lectures)

University of Arizona Applied Math Program "Building Blood Vessels"/May 2006

Scanning 2006, "Morphologic Assessment of the Endothelialization of Biomedical Implants". April 2006.

University of Arizona Stem Cell Conference, "Stem Cell Therapies for the Treatment of Cardiovascular Disease". April 2006.

International Society for Applied Cardiovascular Biology Symposium, Practical Aspects of Cardiovascular Tissue Engineering, Cape Town South Africa. February 2005

Surfaces in Biomaterials. October 2003

Biomedical Engineering Society. October 2003

DARPA Tissue CAD Technologies Workshop. December 2001

European Hernia Society. June 2001

Experimental Biology. April 2001

Sixth World Biomaterials Congress. May 2000

Society for Biomaterials. April 1998

International Society for Applied Cardiovascular Biology. March 1998

Surfaces in Biomaterials. September 1997

Rincon Rotary. June 1997

Cell Transplant Society. September 1996

Microcirculatory Society. April 1996

FASEB, Washington, DC. April 1996

Gordon Research Conference, Kingston, Rhode Island. July 1995

Microcirculatory Society, Atlanta, Georgia. April 1995

FASEB, Atlanta, GA. April 1995

Society for Biomaterials, San Francisco, California. March 1995

Frontiers in Biomedical Engineering, Tempe, Arizona. October 1994

Society for Leukocyte Biology, Tucson, Arizona. September 1994

Surfaces in Biomaterials 94, Scottsdale, Arizona. September 1994

Academy of Surgical Research, Breckenridge, Colorado. August, 1993

Alexion Corporation, New Haven, Connecticut. July 1993

American Society for Artificial Internal Organs, New Orleans, Louisiana. April, 1993

American Heart Association, Arizona Affiliate, Tucson, Arizona. April 1993

FASEB, New Orleans, Louisiana. March 1993

Baxter Healthcare Corporation, Irvine, California. February 1993

University of Arizona, Physiology Department, Tucson Arizona. February 1993

University of Arizona, University Animal Care, Tucson, Arizona. January 1993  
University of Arizona, Hematology Conference, Tucson, Arizona. October 1992  
University of Arizona, Arizona Cancer Center, Tucson, Arizona. October 1992  
University of Arizona, Technology Transfer, Tucson, Arizona. April 1992  
University of Arizona, Technology Transfer, Tucson, Arizona. March 1992  
University of Arizona, Program Project, Tucson, Arizona. January 1992  
University of Arizona, Cardiothoracic Surgery, Tucson, Arizona. November 1992  
University of Arizona, Physiology Department, Tucson, Arizona. February 1992  
University of Arizona, Physiology Department, Tucson, Arizona. February 1992  
Baxter Healthcare, Irvine, California. January 1992  
Baxter Healthcare, Round Lakes, Illinois. November 1989  
Medical College of Pennsylvania, Philadelphia, Pennsylvania. November 1989  
Delaware Valley Vascular Society, Philadelphia, Pennsylvania. September 1989  
C.R. Bard, Inc., Rutherford, New Jersey. September 1989  
Baxter Laboratories, Irvine, California. July 1989  
Gordon Research Conference, Plymouth, New Hampshire. July 1989  
Berlex Laboratories, Cedar Knolls, New Jersey. May 1989  
Endothelial Cell Seeding Symposia, Indianapolis, Indiana. October 1988  
World Congress Cell Biology, Montreal, Canada. August 1988  
Becton Dickinson Company, Franklin Lakes, New Jersey. July 1988  
Merck Company, Fort Washington, Pennsylvania. May 1988  
New Jersey College of Medicine and Dentistry, Newark, New Jersey. May 1988  
FASEB, Las Vegas, Nevada. April 1988  
Becton Dickinson Company, Franklin Lakes, New Jersey. April 1988  
NIH Devices Branch, Bethesda, Maryland. December 1987  
American Society of Cell Biology, St. Louis, Missouri. November 1987  
University of Pennsylvania, Philadelphia, Pennsylvania. October 1987  
Thomas Jefferson University, Philadelphia, Pennsylvania. September 1987  
Vascular Endothelium Conference, Taiwan. July 1987  
Nephrology Conference, London, UK. July 1987  
Gordon Research Conference, Plymouth, New Hampshire. July 1987  
Becton Dickinson Company, Franklin Lakes, New Jersey. June 1987  
FASEB, St. Louis, Missouri. April 1987  
Becton Dickinson Company, Raleigh, North Carolina. February 1987  
Thomas Jefferson University, Philadelphia, Pennsylvania. January 1987  
American Society Cell Biology, Baltimore, Maryland. December 1986  
Philadelphia Urban Club, Philadelphia, Pennsylvania. December 1986  
New York Academy of Sciences, New York, New York. November 1986  
European Endothelial Cell Seeding Symposia, Vienna, Austria. November 1986  
Becton Dickinson Company, Raleigh, North Carolina. October 1986  
New York Academy of Medicine, New York, New York. October 1986  
Endothelial Seeding Symposia, Indianapolis, Indiana. September 1986  
Becton Dickinson Company, Raleigh, North Carolina. August 1986  
Searle Scholars Program, Chicago, Illinois. March 1986  
University of Pennsylvania, Philadelphia, Pennsylvania. March 1986  
New York Academy of Sciences, New York, New York. March 1986

Thomas Jefferson University, Philadelphia, Pennsylvania. March 1986  
Thomas Jefferson University, Philadelphia, Pennsylvania. February 1986  
Merck Company, Fort Washington, Pennsylvania. February 1986  
Thomas Jefferson University, Philadelphia, Pennsylvania. January 1986  
DuPont Company, Wilmington, Delaware. October 1985  
University of Missouri, Columbia, Missouri. June 1985  
Gordon Research Conference, Plymouth, New Hampshire. June 1985  
DuPont Company, Wilmington, Delaware. June 1985  
Tissue Culture Association, New Orleans, Louisiana. May 1985  
Searle Scholars Meeting, Chicago, Illinois. May 1985  
FASEB, New Orleans, Louisiana. April 1985  
Microcirculatory Society, New Orleans, Louisiana. April 1985  
Thomas Jefferson University, Philadelphia, Pennsylvania. March 1985  
New York Medical College, Valhalla, New York. March 1985  
American Society Vascular Surgery, San Antonio, Texas. November 1984  
American Society Cell Biology, Denver, Colorado. November 1984  
World Congress Microcirculation, Oxford, UK. September 1984  
Allentown Hospital, Allentown, Pennsylvania. July 1984  
Peripheral Neuropathy Symposia, Keystone, Colorado. June 1984  
Searle Scholars Program, Chicago, Illinois. May 1984  
Yale School of Medicine, New Haven, Connecticut. April 1984  
FASEB, Atlanta, Georgia. March 1984  
Thomas Jefferson University, Philadelphia, Pennsylvania. March 1984  
College of Physicians and Surgeons, Philadelphia, Pennsylvania. March 1984  
Texas Tech University, Lubbock, Texas. February 1984  
Los Alamos National Laboratory, Los Alamos, New Mexico. February 1984  
Yale School of Medicine, New Haven, Connecticut. February 1984  
Wistar Institute, Philadelphia, Pennsylvania. February 1984  
University of Maryland, Baltimore, Maryland. March 1983  
St. Joseph's University, Philadelphia, Pennsylvania. March 1983  
Rockefeller University, New York, New York. April 1983  
Thomas Jefferson University, Philadelphia, Pennsylvania. May 1983  
Pfizer, Groton, Connecticut. May 1983  
Thomas Jefferson University, Philadelphia, Pennsylvania. October 1983  
University of Pennsylvania, Philadelphia, Pennsylvania. November 1983  
American Physiological Society, Honolulu, Hawaii. August 1983  
Microcirculatory Society, New Orleans, Louisiana. March 1983  
Microcirculatory Society, Atlanta, Georgia. March 1982  
Microcirculatory Society, St. Louis, Missouri. March 1981  
Microcirculatory Society, San Diego, California. March 1980  
University of Delaware, Newark, Delaware. March 1979  
Yale School of Medicine, New Haven, Connecticut. April 1979  
World Congress of Microcirculation, San Diego, California. July 1979  
Microcirculatory Society, San Antonio, Texas. March 1979  
American Society Cell Biology, San Diego, California. November 1977  
American Society Microbiology, Atlantic City, New Jersey. April 1976

Plant Physiology Society, Ithaca, New York. June 1975

Plant Physiology Society, Ithaca, New York. June 1974

## **UNITED STATES PATENTS ISSUED:**

1. U.S. PATENT #: 4,820,626 - A Method of Treating a Synthetic or Naturally Occurring Surface with Microvascular Endothelial Cells and the Treated Surface Itself
2. U.S. PATENT #: 4,883,755 - Method of Reendothelializing Vascular Linings
3. U.S. PATENT #: 5,035,708 - Endothelial Cell Procurement and Deposition Kit
4. U.S. PATENT #: 5,131,907 - Method of Treating a Synthetic Naturally Occurring Surface with a Collagen Laminate to Support Microvascular Endothelial Cell Growth, and the Surface Itself
5. U.S. PATENT #: 5,194,373 - Method of Determining Endothelial Cell Coverage of a Prosthetic Surface
6. U.S. PATENT #5,230,693 - Implantable Prosthetic Device for Implantation into a Human Patient Having a Surface Treated with Microvascular Endothelial Cells
7. U.S. PATENT #5,312,380 - Endothelial Cell Procurement and Deposition Kit
8. U.S. PATENT #5,372,945 - Device and Method for Collecting and Processing Fat Tissue and Procuring Microvessel Endothelial Cells to Produce Endothelial Cell Product
9. U.S. PATENT #5,441,539 - Endothelial Cell Deposition Device
10. U.S. PATENT #5,628,781 - Implant Materials, Methods of Treating the Surface of Implants with Microvascular Endothelial Cells, and the Treated Implants Themselves
11. U.S. PATENT #5,744,515 - Method and Implantable Article for Promoting Endothelialization
12. U.S. PATENT #5,957,972 - Implants Possessing a Surface of Endothelial Cells Genetically-modified to Inhibit Intimal Thickening
13. U.S. PATENT #6,699,210 - Glaucoma Shunt and a Method of Making and Surgically Implanting the Same
14. U.S. PATENT #7,029,838 - Prevascularized Constructs for Implantation to Provide Blood Perfusion
15. U.S. PATENT #7,052,829 - Prevascularized Constructs for Implantation to Provide Blood Perfusion
16. U.S. PATENT #7,220,276 - Endovascular Graft Coatings
17. U.S. PATENT #8,202,725 - Cell Sodding Method and Apparatus
18. U.S. PATENT # 8,727,965 – Methods and Compositions to Support Tissue Integration and Inosculation of Transplanted Tissue and Transplanted Engineered Penile Tissue with Adipose Stromal Cells

## **UNITED STATES PATENTS PENDING:**

### **Published Non Provisional Patent Applications**

20140370069 Methods for Treating an Established Myocardial Infarction

- 20140271574 Methods and compositions for treating congestive heart failure
- 20140242143 Adipose Stromal Vascular Fraction Cell Constructs
- 20140207103 Hand-held Adipose Processor and Cell Concentrator
- 20140114064 Hand-Held Micro-Liposuction Adipose Harvester, Processor and Cell Concentrator
- 20130064798 Methods And Compositions For Treating Congestive Heart Failure
- 20120276062 Methods for Treating Ischemic Tissue
- 20120201890 Methods and Compositions to Support Transplanted Tissue Integration and Inosculation with Adipose Stromal Cells
- 20110244014 Implantable Medical Articles Having Laminin Coatings and Methods Of Use
- 20110218396 Methods And Compositions To Support Tissue Integration And Inosculation Of Transplanted Tissue and Transplanted Engineered Penile Tissue With Adipose Stromal Cells
- 20110212068 Methods And Compositions For Treating Congestive Heart Failure
- 20110059059 Methods for Treating Ischemic Tissue
- 20100196433 Prevascularized Devices and Related Methods
- 20100075293 Bioreactors, Systems and Methods for Vascularizing Tissue Constructs
- 20090317482 Methods and Compositions for Treating Congestive Heart Failure
- 20090220569 Prevascularized Constructs for Implantation to Provide Blood Perfusion
- 20090192454 Catheter for Cell Delivery
- 20090186001 Methods for Treating Ischemic Tissue
- 20090008238 Portable Gas Sterilization System Using Disposable Gas Generation Components
- 20080243243 Implantable Medical Articles Having Pro-healing Coatings
- 20080226604 Methods for Treating Ischemic Tissue
- 20080160085 Cell Delivery Matrices



20080058763 Catheter for Cell Delivery

20080014181 Cell Separation Apparatus and Methods of Use

20070243574 Vascular Mimic for Drug and Device Evaluation

20070173922 Endovascular Graft Coatings

20070179589 Endovascular Graft Coatings

20070191936 Endovascular Graft Coatings

20060292125 Methods for Treating Ischemic Tissue

20060210603 Implantable Medical Articles Having Laminin Coatings and Methods of Use

20060188488 Prevascularized Constructs for Implantation to Provide Blood Perfusion

20060140916 Methods and Compositions for Treating Congestive Heart Failure

### **United States Provisional Patent Applications and Disclosures**

Total Bioficial Heart

Bioprinted 3D Spheroids

Biohybrid Systems and Methods of Making The Same

Adipose Stromal Vascular Fraction Cell Construct Sustains Coronary Microvascular Function  
After Acute Myocardial Infarction

Prevascularized Materials and Methods of Using the Same

Cell Delivery Device Constructed from Electrospun Components

Adipose Tissues Washing, Digestion and Cell Isolation System

Bioabsorbable Closure for Endoscopic Repair of Gastric Perforation

Pressure Sensor for Balloon Catheter System

Adipose-derived Stromal Vascular Fraction (and sub-fraction) Cells as Diagnostic Agents for  
Vascular Status and Inflammation

Biochamber and Methods for Development and Investigation of Tissues and Tissue Engineered

## Constructs

Biohybrid Coronary Artery Bypass Graft

Prevascularized Materials to Improve Function

Materials and Processes for Direct-Write 3D Printing of Non-vascularized and Pre-vascularized Cell/Biological Encapsulation and Delivery Systems

Device and Method for Collecting and Processing Fat Tissue and Procuring Adipose Stromal Vascular Fraction Cell Product

Micro-Scale Blood Vessel Mimic

Glaucoma Shunt Constructed from Electrospun Components

Adipose Derived Regenerative Cell Isolation

Cell Delivery Device Constructed from Electrospun Components

Methods and Compositions to Support Transplanted Tissue Integration and Inoculation with Adipose Stromal Cells

## **MEDIA:**

### **January 2015**

Moonshots for the 21<sup>st</sup> Century Fareed Zakaria Global Public Square CNN

Hand transplant docs use fat to prevent rejection USA Today

### **November 2014**

New hand transplant method tested in Louisville Courier Journal Louisville, Kentucky

### **September 2014**

From a Medical Past Comes a Bioprinting Future: At the University of Louisville, great strides are being made in the development of a bioficial heart.

Medical Design

University of Louisville working on 'bioficial heart' using 3-D printing

Fierce Medical Devices

## May 2014

Bioprinting – The Next Stage of 3D Printing

<http://www.inside3dp.com/bioprinting-next-stage-3d-printing/>  
Inside 3DP

Researchers closing in on printing 3-D hearts

<http://www.usatoday.com/story/tech/2013/05/29/health-3d-printing-organ-transplant/2370079/>  
USA Today

## April 2014

3D 'bioprinting': 10 things you should know about how it works

<http://www.techrepublic.com/article/3d-bioprinting-10-things-you-should-know-about-how-it-works/> Tech Republic

Scientists try 3-D printer to build human heart Washington Post - Apr 9, 2014

3-D Printer Designs and News: Scientists Try to Create Human Heart with 3-D ...  
Latin Post

3D Printing Full 'Bioficial' Hearts Still In Its Early Stages, But Scientists Getting ...  
Medical Daily

3D printer bid to build heart out of fat cells Yorkshire Post

The 3D printed HEART: Scientists could soon build replacement organs using a ...  
Daily Mail

Scientists hope to build first 3D-printed heart

[Siliconrepublic.com](http://Siliconrepublic.com)

[www.huffingtonpost.com/.../3d-printer-human-heart...](http://www.huffingtonpost.com/.../3d-printer-human-heart...)

The Huffington Post

Photos of the Day: 3D Printing a Heart

[www.mdtmag.com/news/2014/04/photos-day-3d-printing-heart](http://www.mdtmag.com/news/2014/04/photos-day-3d-printing-heart)

[Scientists try 3-D printer to build human heart - WATE.com](http://Scientists try 3-D printer to build human heart - WATE.com)

[www.wate.com/.../scientists-try-3-d-printer-to-build-human-...](http://www.wate.com/.../scientists-try-3-d-printer-to-build-human-...)

WATE-TV

Breakthrough: How scientists are 3D printing a human heart that will work better ...

TechRepublic

Louisville Scientists Seek to 3D Print a Heart for Implant [Video]  
Latinos

3D printer bid to build human heart  
Times of Malta

3D printers to print a live human heart  
Pune Mirror

Researchers aim to build human hearts using 3-D printer  
Business Standard

Heart may be built by 3D printer  
Irish Independent

3D printer bid to build heart out of fat cells  
Yorkshire Post

Scientists to Create World's First 3D Printed Heart  
International Business Times UK

*Heart may be built by 3D printer*  
Irish Independent

Scientists to Create World's First 3D Printed Heart  
International Business Times UK

## **2013**

### **June 2013**

Louisville Researchers Closing in on Printing 3-D Hearts Courier Journal, Louisville Kentucky

Louisville Researchers Closing in on Printing 3-D Hearts USA Today

### **February 2013**

Louisville doctors developing bioificial heart. CNN News, Atlanta, GA

Louisville doctors developing bioificial heart. WDRB News, Louisville Kentucky

## **2012**

### **January 2012**

“A Beacon in Higher Education.” The Lane Report’s Research Kentucky 2012

## **2011**

### **June 2011**

“Using Fat in New Way.” Courier-Journal, Louisville, Kentucky

## **2010**

### **November 2010**

“Stem Cells in Fat May Help Repair Damaged Hearts.” Washington Post, Washington, DC

### **June 2010**

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162. Kellar RS, Kern A, Landeen L, Naughton G, Ratcliffe A, WILLIAMS SK: March 2000. Dermagraft Epicardial Patch Stimulates Angiogenesis in Ischemic Heart Tissue. 7<sup>th</sup> Biennial meeting of the International Society for Applied Cardiovascular Biology.

161. Patula VB, Kellar RS, Kleinert LB, Salzman DL, Berman SS, WILLIAMS SK: March 2000. Inflammatory Activity of Polyethyleneterephthalate Materials Used for Endovascular Grafts. 7<sup>th</sup> Biennial meeting of the International Society for Applied Cardiovascular Biology.

160. WILLIAMS SK, Kleinert LB, Martakos P, Lane J, Karwoski T: May 2000. Dual Porosity ePTFE for Skin Augmentation. Sixth World Biomaterials Congress hosted by the Society for Biomaterials.

159. WILLIAMS SK, Kleinert LB, Patula VB, Clapper DL: May 2000. Accelerated Endothelialization of Vascular Grafts. Sixth World Biomaterials Congress hosted by the Society for Biomaterials.

158. Kleinert LB, Patula VP, Gray PN, Mueller EP, Barenberg SA, WILLIAMS SK: May 2000. Evaluation of an Antimicrobial Coating for Implantable Devices. Sixth World Biomaterials Congress hosted by the Society for Biomaterials.

157. Kidd KR, Dal Ponte DB, Tavlarides DM, Nagle RB, Cress AE and WILLIAMS SK: May 2000. Augmented Endothelial Cell Adherence to Surface-modified Porous Materials. Sixth World Biomaterials Congress hosted by the Society for Biomaterials.

156. Kidd KR, Patula VB, WILLIAMS SK: May 2000. Accelerated Endothelialization of 1mm Vascular Grafts: 1999. Sixth World Biomaterials Congress hosted by the Society for Biomaterials.
155. WILLIAMS SK, Kleinert LB, Patula VB and Clapper DL: 1999. Accelerated Neovascularization and Endothelialization of ePTFE Vascular Grafts. Surfaces in Biomaterials annual meeting.
154. Kellar RS, Dal Ponte DB, Kidd KR, Kleinert LB, Patula VB and WILLIAMS SK: 1999. Characterization of the Vascular Response Associated with Different Polymer Surfaces. Surfaces in Biomaterials annual meeting.
153. Kleinert LB, Dal Ponte DB, Patula VP, Berman SS and WILLIAMS SK: 1999. Comparison of Healing of Vascular Anastomoses Created with Sutures and Titanium Clips. 15<sup>th</sup> annual Academy of Surgical Research Conference.
152. Patula VP, Larson DF, Kleinert LB and WILLIAMS SK: 1999. Comparison of Heparin Bonded Bypass Circuits. 15<sup>th</sup> annual Academy of Surgical Research Conference.
151. Larson DF, Arzouman D, Kleinert LB, Patula V and WILLIAMS SK: 1999. Comparison of Sarns 3M Heparin Bonded to Control Bypass Circuits in the Porcine Model: Macro- and Microanalysis of Thrombus Formation. American Academy of Cardiovascular Perfusion.
150. Kellar RS and WILLIAMS SK: 1998. Microvasculature around Polymer Implants. Microcirculatory Society/Experimental Biology '99 meeting.
149. Simon BR, Liu J, Nichol J, Kaufmann MV and WILLIAMS SK: 1998. Mixed Porohyperelastic Theory and Finite Element Models for Soft Hydrated Biological Tissues. 1999 ASME/AICHE/ASCE/BMES summer bioengineering conference.
148. WILLIAMS SK: 1998. Stimulated Endothelialization of Porous Polymers. 25<sup>th</sup> Annual Meeting of the Society for Biomaterials.
147. Kidd KR, Nagle RB and WILLIAMS SK: 1998. Stimulated Neovascularization of Non-degradable Porous Polymers. 25<sup>th</sup> Annual Meeting of the Society For Biomaterials.
146. Boswell CA, Noecker RJ, Mack M, Snyder RW and WILLIAMS SK: 1998. An Aqueous Drainage Device Manufactured with ePTFE. 25<sup>th</sup> Annual Meeting of the Society for Biomaterials.
145. Berman SS, Dal Ponte D and WILLIAMS SK: 1998. The Healing Characteristics of Low Profile Talent® Endoluminal Grafts. International Congress XII on Endovascular Interventions.
144. Gentile AT, Mills JL, Gooden MA, Hagerty RD, Berman SS, Hughes JD, Kleinert LB and WILLIAMS SK: 1998. Reduction in Neointimal Thickening Associated with Prosthetic Graft Implantation: An Immunohistologic Analysis of Conventional and Vein-patched Anastomoses. The South Western Surgical Congress annual meeting.
143. Dal Ponte D, Berman SS, WILLIAMS SK, Kleinert LB and Patula VB: 1998. Comparison of Healing of Vascular Anastomoses Created with Sutures and Titanium Clips. Western Vascular Society.
142. Phillips MR, Yamuguchi H, WILLIAMS SK, Miller VM and Schaff HV: 1998. Endothelial Sodding of a Novel Prosthetic Coronary Artery Bypass Graft. Society of Thoracic Surgery annual meeting.
141. Hagerty RD, Salzman DL, Kleinert LB and WILLIAMS SK: 1998. Macrophage Populations and Proliferation within Chronic Inflammation around Implanted Vascular Graft Materials. International Society for Applied Cardiovascular Biology sixth biennial meeting. Cardiovasc Path 7:291, 1998.
140. WILLIAMS SK, Kleinert LB, and Patula VB: 1998. Accelerated Endothelialization of

- ePTFE Vascular Grafts Promoted by Extracellular Matrix Proteins. International Society for Applied Cardiovascular Biology sixth biennial meeting. *Cardiovasc Path* 7(6):327, 1998.
139. Clapper D, Hagan KM, WILLIAMS SK and Kleinert LB: 1998. Vascular Grafts Coated with ECM Proteins Promote In vivo Endothelialization. International Society for Applied Cardiovascular Biology sixth biennial meeting. *Cardiovasc Path* 7(5):283, 1998.
138. Dal Ponte D, Berman SS, Kleinert LB, Patula VB and WILLIAMS SK: 1998. Healing Associated with the Talent® Endovascular Graft. International Society for Applied Cardiovascular Biology sixth biennial meeting. *Cardiovasc Path* 7(5):292, 1998. Winner: Young Investigator's Award.
137. Dal Ponte D, Salzman DL and WILLIAMS SK: 1998. Cytokine Expression by Cells Associated with Synthetic Vascular Graft Material. International Society for Applied Cardiovascular Biology sixth biennial meeting. *Cardiovasc Path* 7(5):290, 1998.
136. Kellar RS, Smith RG, Arzouman DA, Copeland JG and WILLIAMS SK: 1998. Healing Associated with Polymers of the Artificial Heart. International Society for Applied Cardiovascular Biology sixth biennial meeting. *Cardiovasc Path* 7(5):293, 1998.
135. Kleinert LB, WILLIAMS SK, Clapper DL and Hagen KM: 1998. Extracellular Matrix Proteins Stimulate Neovascularization of Polymer. International Society for Applied Cardiovascular Biology sixth biennial meeting. *Cardiovasc Path* 7(6):334, 1998.
134. Wessells H and WILLIAMS SK: 1998. Endothelial Cell Transplantation into the Corpus Cavemosum: Basis for Efficient Gene Therapy for Erectile Dysfunction. American Urological Association annual meeting.
133. Kidd KR, Kellar RS, Salzman DL, Nagle RB, and WILLIAMS SK: 1998. Effect of Cell Mediated Modification of Porous Implants on Neovascularization. Society for Biomaterials annual meeting.
132. Kellar RS, Kleinert LB and WILLIAMS SK: 1997. Healing Associated with Biomedical Implants on the Epicardial Surface. Society for Biomaterials annual meeting.
131. Yee DC, Salzman DL, WILLIAMS SK and Berman SS: 1997. Evaluation of the Effects of Structural Characteristics of ePTFE and Tissue Environment on the Inflammatory Response to ePTFE Implants. Society of Cardiovascular & Interventional Radiology 23<sup>rd</sup> annual meeting.
130. Boswell CA and WILLIAMS SK: 1997. Biocompatibility of ePTFE Increases after Denucleation. *Surfaces in Biomaterials*.
129. WILLIAMS SK, Clapper DL, Kleinert LB and Hagen KM: 1997. Extracellular Matrix Proteins Stimulate Neovascularization of Polymers. *Surfaces in Biomaterials*.
128. Kellar RS, Kleinert LB, Arzouman DA and WILLIAMS SK: 1997. Healing Associated with Biomedical Implants on the Epicardium. American Heart Association 70<sup>th</sup> Scientific Sessions.
127. Arzouman DA, Kleinert LB, Patula VB, Phillips M, WILLIAMS SK and Copeland JG: 1997. Endothelial Cell Seeding of ePTFE Coronary Artery Bypass Grafts. American Heart Association 70<sup>th</sup> Scientific Session.
126. Boykin SLB and WILLIAMS SK: 1997. Differential Healing to ePTFE Implants in Young vs. Old Male Sprague-dawley Rats. American Heart Association 70<sup>th</sup> Scientific Sessions.
125. Gentile AT, Mills JL, Gooden MA, Hagerty RD, Berman SS, Kleinert LB, Hughes JD and WILLIAMS SK: 1997. Reduction in Neointimal Thickening Associated with Prosthetic Graft Implantation: An Immunohistologic Analysis of Conventional and Vein-patched Anastomoses. Western Vascular Society annual meeting.
124. Arzouman DA, Kleinert LB, Patula VB, Phillips M, WILLIAMS SK and Copeland JG:

1997. Endothelial Cell Sodding of Alternative Coronary Artery Bypass Graft. Eighth Annual Arizona Cardiovascular & Stroke Update.
123. Salzman DL, Patula VB, Yee DC, Roach DJ, Berman SS and WILLIAMS SK: 1997. Model for the Analysis of Endovascular Stents and Endovascular Grafts. 13th annual meeting of the Academy of Surgical Research.
122. Gentile AT, Mills JL, Gooden MA, Westerband A, Berman SS, Boswell CA, Hunter GC and WILLIAMS SK: 1997. Characterization of Cellular Density and Determination of Neointimal Extracellular Matrix Constituents in Human Lower Extremity Vein Graft Stenoses. The Society for Vascular Surgery, North American Chapter and International Society for Cardiovascular Surgery.
121. Stopeck AT, Hersh EM, Funk C and WILLIAMS SK: 1997. Endothelial Cells Genetically Modified to Produce Gamma Interferon Inhibit Tumor Growth in SCID Mice. Sixth International Conference on Gene Therapy.
120. Stopeck AT, Hersh EM, Funk C and WILLIAMS SK: 1997. A Novel SCID Mouse Model for Human Tumor Neoangiogenesis. International Society on Thrombosis and Haemostasis meeting.
119. Boswell CA, Gasdaska JR, Powis G and WILLIAMS SK: 1997. Thioredoxin Inhibits Angiogenesis and Microvascular Endothelial Cell Growth. Vascular Biology. Microcirculation 4:146.
118. Bellamy WT, Parris P, Raymond MA, WILLIAMS SK and Boswell CA: 1997. Anti-angiogenic Activity of Paclitaxel (Taxol) as Assessed Using a Novel 3-dimensional in Vitro Assay of Angiogenesis. Experimental Biology meeting.
117. Hagerty RD, Salzman DL, Kleinert LB and WILLIAMS SK: 1997. Differential Microvascular Responses in the Abluminal and Anastomotic Sites of ePTFE Grafts. Vascular Biology. Microcirculation 4:141.
116. Salzman DL, Yee DC, Roach DJ, Berman SB and WILLIAMS SK: 1997. Microvessel Formation around Endovascular Stent-grafts Placed in the Iliac Artery. Vascular Biology. Microcirculation 4:141.
115. Stopeck AT, Hersh EM, Funk C and WILLIAMS SK: 1997. A Novel SCID Mouse Model for Human Tumor Neoangiogenesis. AACR meeting.
114. Salzman DL, Kleinert LB, Berman SS and WILLIAMS SK: 1997. Neovascularization and Inflammation Associated with Clinically Used Vascular Prostheses. Society for Biomaterials annual meeting.
113. WILLIAMS SK, Kleinert LB and Berman SS: 1996. Blood Flow Regulated Neointima Formation in Tissue Engineered Vascular Grafts. Invited Abstract for the Biomedical Engineering Society annual meeting.
112. Wetterlind E, Kleinert LB and WILLIAMS SK: 1996. Optimization of Photography for Specimens Related to Animal Studies. AALAS, AZ conference.
111. Patula V, Kleinert LB and WILLIAMS SK: 1996. Scanning Electron Microscope Evaluation of Sodded and Non-sodded Vascular Grafts. AALAS, AZ conference.
110. Kleinert LB, Patula VP, Fox KA, Jarrell BE and WILLIAMS SK: 1996. Canine Model to Evaluate the Thrombogenicity of Endothelialized Arterial-venous Shunts. AALAS, AZ conference.
109. WILLIAMS SK, Jarrell BE, Kleinert LB and Berman SS: 1996. Accelerated Endothelialization of ePTFE Arterial-venous Shunts. Cell Transplant Society.
108. Westerband A, Mills J, Marek J, Heimark R, Hunter G and WILLIAMS SK: 1996.

Immunocytochemical Determination of Cell Type and Proliferation Rate in Human Vein Graft Stenosis. International Society of Cardiovascular Surgery/Society of Vascular Society Conference.

107. Westerband A, WILLIAMS SK, Kleinert LB, Berman SS, Boswell C and Mills J: 1996. Patterns of Proliferation after Endothelial Cell Transplantation onto Polymeric Arteriovenous Grafts in a Canine Model. International Society of Cardiovascular Surgery/Society of Vascular Society.

106. Salzman DL, Yee N, Berman SS and WILLIAMS SK: 1996. Effects of Balloon Dilation on Graft Structure and Healing of Standard ePTFE. The American Society for Artificial Internal Organs Conference.

105. Dominic YEE, WILLIAMS SK, Berman SS, Pond G, Salzman DL and Roach DJ: 1996. Stent vs. Endovascular Graft Healing Characteristics the Porcine Iliac Artery. Radiological Society of North America.

104. Stopeck AT, Funk C, Raymond M, Hersh EM, Yang NS, Burkholder J and WILLIAMS SK: 1996. Particle Bombardment Mediated Gene Transfer into Microvessel Endothelial Cells (MVECS). Microcirculatory Society Conference.

103. Carter WB, Crowell S, CA Boswell and WILLIAMS SK: 1996. Stimulation of Angiogenesis by Canine Parathyroid Tissue. American Association of Endocrine Surgeons Conference.

102. WILLIAMS SK, Raymond MA and Kleinert LB: 1996. Human Clinical Trials of Microvascular Endothelial Cell Seeding of Vascular Grafts. International Society for Applied Cardiovascular Biology Conference.

101. Salzman DL, Kleinert LB, Berman SS and WILLIAMS SK: 1996. Effects of Porosity on Endothelialization of ePTFE Implanted in Subcutaneous and Adipose Tissue. International Society for Applied Cardiovascular Biology Conference.

100. Boswell CA and WILLIAMS SK: 1996. Angiogenesis in Vitro is Blocked by the Anti-tumor Drug, Suramin, and by the Matrix Protein, Thrombospondin. Microcirculatory Society Conference.

99. WILLIAMS SK, Salzman D and Kleinert LB: 1996. Angiogenic Response to Biomaterials is Implant Site Dependent. Microcirculatory Society Conference.

98. Carter WB, Boswell CA, Crowell SL and WILLIAMS SK: 1996. Her-2/neu Expression Enhances Endothelial Cell Retraction, a Mechanistic Step in Breast Cancer Cell Transmigration. Experimental Biology Conference.

97. Boswell CA and WILLIAMS SK: 1996. Angiostatin does not Block Angiogenesis in a Novel in Vitro 3-D Angiogenesis Model. Experimental Biology Conference.

96. Manciet LH, Copeland JG, Chavez RA, Aboutalebi A, Reimer PR and WILLIAMS SK: 1996. Development of Neointimal Hyperplasia in Balloon-injured Carotid Arteries of Normal and Streptozotocin (STZ)-induced Diabetic Rats. Experimental Biology Conference.

95. Berman SB, Bernhard V, WILLIAMS SK, Carabasi RA, Park PK and Jarrell BE: 1996. Infrageniculate Bypass for Limb Salvage using Polytetrafluoroethylene Seeded with Microvascular Endothelial Cells. Western Vascular Society.

94. Salzman D, Kleinert LB, Berman S and WILLIAMS SK: 1995. Endothelialization of Biomaterials. Physiological Sciences Spring Poster Session, Tucson, AZ.

93. Kleinert LB, Berman SS and WILLIAMS SK: 1995. Comparison of Autologous Minced fat and Isolated Microvessel Endothelial Cells for Seeding ePTFE Vascular Grafts. Academy of Surgical Research.

92. Patula V, Butler KC, Kleinert LB, Raymond MA and WILLIAMS SK: 1995. Morphological Evaluation of Aspirin and Dipyridamole of Platelet Deposition in 1mm ePTFE Grafts. Academy of Surgical Research.
91. Ritter LR, Wilson DS, Davis-Gorman G, WILLIAMS SK, Copeland JG and McDonagh PF: 1995. During Reperfusion after Myocardial Ischemia, Reduced Blood Flow Enhances Leukostasis in the Coronary Microcirculation. American Heart Association, National Scientific Session.
90. Fox KA, Sarfati MR, Copeland JC, WILLIAMS SK and McDonagh PF: 1995. Hypothermic Preservation Protects Isolated Coronary Microvascular Endothelium from Intercellular Adhesion Molecule-1 Expression. 7th Annual Resident Research Symposium, Department of Surgery, University of Arizona.
89. Fox KA, Sarfati MR, Copeland JG, WILLIAMS SK and McDonagh PF: 1995. Hypothermic Preservation Protects Isolated Coronary Microvascular Endothelium from Intercellular Adhesion Molecule-1 Expression. American Heart Association, National Scientific Session.
88. Fox KA, Sarfati MR, Copeland JG, WILLIAMS SK and McDonagh PF: 1995. Hypothermic Preservation Protects Isolated Coronary Microvascular Endothelium from Intercellular Adhesion Molecule-1 Expression. American Heart Association, AZ Session.
87. Nelson TL, Hoying JB and WILLIAMS SK: 1995. Quantification of Microvessel Fragments in 3-D Culture using Fractal Analysis. Physiological Sciences Spring Poster Sessions.
86. Stopeck A, Vahedian M, Jolly D and WILLIAMS SK: 1995. Genetically-modified Endothelial Cells in Vascular Biology. Arizona Health Sciences Center Cancer Center Science Fair.
85. Ritter L, Wilson D, WILLIAMS SK, Copeland J and McDonagh PF: 1995. Early in Reperfusion Following Myocardial Ischemia, Leukocyte Activation is Necessary for Venular Adhesion but not Capillary Retention. Microcirculatory Society.
84. Boswell CA and WILLIAMS SK: 1995. Endothelial Cell Junction Protein Distribution in an in Vitro Model of the Blood-brain Barrier. Microcirculatory Society.
83. Boswell CA and WILLIAMS SK: 1995. Characterization of Endothelial Cytoskeletal Elements in Microvessel Fragments Growing in Three-dimensional Collagen Gels. Experimental Biology.
82. Hoying JB and WILLIAMS SK: 1995. Measurement of Endothelial Cell Migration using a Linear Migration Assay. Microcirculatory Society.
81. Ritter L, Wilson D, Copeland J, WILLIAMS SK and McDonagh P: 1995. Pentoxifylline Reduces Coronary Capillary Leukostasis following Myocardial Ischemia. Experimental Biology.
80. Carter WB, Hoying JB, Powis G and WILLIAMS SK: 1995. Her-2/neu Expression Enhances the Metastatic Potential in MCF-7 Breast Cancer Cells. American Society for Cell Biology.
79. McDonagh PF, Wilson D, Iwamura H, Manciet L, WILLIAMS SK, Smith CW and Copeland JG: 1995. Following Myocardial Ischemia, the Protective Effect of CL26 Treatment against CD-18 is not Due Solely to Maintaining Coronary Blood Flow. Experimental Biology.
78. Raymond MA and WILLIAMS SK: 1994. Exposure of Endothelial Cells to ePTFE or PET Induces Increased ICAM-1 Expression. Frontiers in Biomedical Engineering.
77. Raymond MA, McDonagh PF and WILLIAMS SK: 1994. Endothelial cells maintained on ePTFE, PET or TCP display increased leukocyte adhesion molecule expression. Society for Leukocyte Biology.
76. Berman SS, Jarrell BE, Raymond MA, Kleinert LB and WILLIAMS SK: 1994. A

Prospective Study of Polytetrafluoroethylene Dialysis Grafts Sodded with Microvascular Endothelial Cells. Ohio State University Dialysis Access Symposium.

75. WILLIAMS SK: 1994. Leukocyte Interaction with Vascular Endothelium In vitro. Frontiers of Biomedical Engineering.

74. Ritter L, Wilson DS, Copeland JG and WILLIAMS SK: 1994. During Reperfusion, Coronary Capillary Leukostasis is Significantly Reduced by Pentoxifyline. 67th Scientific Session, American Heart Association.

73. Sarfati MR, McDonagh P and WILLIAMS SK: 1994. Enhanced ICAM-1 Expression in Coronary Versus Fat-derived Microvascular Endothelium. 67th Scientific Sessions, American Heart Association.

72. Fox KA, Sarfati MR, WILLIAMS SK and McDonagh PF: 1994. Effect of Isolation and Fluorescent Labeling on Human Neutrophil Adhesion. Experimental Biology.

71. Sarfati MR, PF McDonagh and WILLIAMS SK: 1994. A comparison of ICAM-1 expression in fat and coronary microvessel endothelium. Experimental Biology.

70. Hoying JB and WILLIAMS SK: 1994. Reduced adhesion of human microvascular endothelial cells to collagen I in response to basic fibroblast growth factor is mediated by  $\beta 1$  integrin. Experimental Biology.

69. Kleinert LB and WILLIAMS SK: 1994. Quantitative differentiation of hyperplasia and hypertrophy during neointima formation in sodded vascular graft. Experimental Biology.

68. Raymond MA, R Castrillo and WILLIAMS SK: 1994. Immunocytochemical and scanning electron microscopic characterization of human, canine and rat adipose tissue and microvascular endothelial cell isolates. Experimental Biology.

67. WILLIAMS SK, MR Sarfati and PF McDonagh: 1994. Direct observation of leukocyte migration across endothelial monolayers using total internal reflectance fluorescence microscopy. Experimental Biology and NAVBO.

66. Hoying JB and WILLIAMS SK: 1994. Differential effects of growth factors on *in vitro* angiogenesis in 3-dimensional culture. Microcirculatory Society.

65. Ritter L, D Wilson, WILLIAMS SK, J Copeland, P McDonagh: 1994. Early in reperfusion following myocardial ischemia leukocytes are retained in both coronary capillaries and postcapillary venules - direct observations. Microcirculatory Society.

64. Hoying JB, BR Rueda, PB Hoyer and WILLIAMS SK: 1994. Conditioned medium from disrupted ovine corpora lutea inhibits endothelial cell proliferation. Microcirculatory Society.

63. Sarfati MR and WILLIAMS SK: 1994. A comparison of ICAM-1 expression in fat and coronary microvessel endothelium. 6th Annual Arizona Health Sciences Center Department of Surgery Resident Research Symposium.

62. McDonagh PF, D Wilson, H Iwamura, L Manciet, WILLIAMS SK, W Smith J Copeland: 1993. Treatment of unstimulated blood early in reperfusion with a monoclonal antibody to CD18 improves the recovery of ventricular function. 66th Scientific Sessions American Heart Association.

61. Kleinert LB, SK WILLIAMS, JD Schilling and BE Jarrell: 1993. Canine model to evaluate the thrombogenicity of endothelialized arterial-venous shunts. American Heart Association, Arizona Affiliate.

60. Langford R and WILLIAMS SK: 1993. Adherence and detachment forces regulating the interaction of Staphylococcus aureus and Pseudomonas aeruginosa with polymeric surfaces. American Heart Association, Arizona Affiliate.

59. Berman SS and WILLIAMS SK: 1993. Organ culture of canine arterial segments provides

an in vitro model for studying intimal hyperplasia. American Heart Association, Arizona Affiliate.

58. Hoying JB and WILLIAMS SK: 1993. Inhibition of microvessel endothelial cell migration by hydrocortisone. American Heart Association, Arizona Affiliate.

57. Wang TF and WILLIAMS SK: 1993. Immunocytochemical characterization of human liposuction fat used for cell transplantation. American Heart Association, Arizona Affiliate.

56. Sarfati MR and WILLIAMS SK: 1993. Shear force dependent polymorphonuclear leukocyte adherence to endothelial cells: An in vitro model. American Heart Association, Arizona Affiliate.

55. Castrillo and WILLIAMS SK: 1993. Scanning electron microscopic evaluation of human liposuction derived adipose tissue. Southwestern and Rocky Mountain Division.

54. Phillips CA, DS Wilson, DJ Geisler, WILLIAMS SK and PF McDonagh: 1993. Hyperglycemia increases granulocyte adhesion in-vitro. Experimental Biology. FASEB 7:A162.

53. Chen SC and WILLIAMS SK: 1993. Selectively restricted diffusion of proteins in reconstituted extracellular matrix. Microcirculatory Society.

52. WILLIAMS SK and KM Ahlswede: 1993. Autologous endothelial cell seeding of microvascular (1mm) prosthetic grafts. Experimental Biology.

51. Hoying JB and WILLIAMS SK: 1993. Growth of freshly isolated microvessel fragments cultured within collagen 1 gels. Experimental Biology.

50. Chen SC and WILLIAMS SK: 1993. Differential diffusion rates of albumin and glycated-albumin in matrix gels. Experimental Biology.

49. Chen SC, J Hoying and WILLIAMS SK: 1992. Diffusion rates of solutes in extracellular matrix measured by fluorescence recovery after photobleaching. The American Society for Cell Biology.

48. WILLIAMS SK: 1991. Endothelialization of vascular implants using microvessel endothelial cell transplantation. The Fifth World Congress for Microcirculation.

47. Hoying JB and WILLIAMS SK: 1990. Examination of endothelial cell monolayer permeability by total internal reflection fluorescence microscopy. Experimental Biology. Federation Proceedings.

46. Pratt KJ and WILLIAMS SK: 1990. Hyperglycemic modifications of endothelial cell (EC) - matrix interactions. Experimental Biology. Federation Proceedings.

45. Hoying JB and WILLIAMS SK: 1989. Shear stress induced changes in endothelial cell ultrastructure. Federation Proceedings.

44. WILLIAMS SK, BE Jarrell, PK Park, DG Rose, T Carter, J Fayer, B Kapelan and T Schneider: 1989. Vascular graft seeding with autologous microvessel endothelium. The First Meeting International Society for Applied Cardiovascular Biology, Gothenberg, Sweden.

43. Hoying JB and WILLIAMS SK: 1989. Evaluation of gold labeled glycosylated albumin transport across endothelial cell monolayers using rapid freeze fixation. Journal of Cell Biology.

42. Rose DG, T Cutshall, BE Jarrell, C Talbot, F Augello, PK Park, T Carter, J DiPisa, A Prais, P Alchas, J Gabel and WILLIAMS SK: 1989. Human microvessel endothelial cell isolation system for clinical trials. The First Meeting International Society for Applied Cardiovascular Biology, Gothenberg, Sweden.

41. Park PK, BE Jarrell, WILLIAMS SK, T Carter, D Rose, A Hernandez-Martinez and RA Carabasi: 1989. Achievement of an endothelial cell lined vascular surface in a human using microvessel endothelial cells. The First Meeting International Society for Applied Cardiovascular Biology, Gothenberg, Sweden.



40. Jarrell BE, K Pratt, M Rupnick and WILLIAMS SK: 1989. Enhancement of human endothelial cell attachment to polyethylene terephthalate by plasma discharge surface modification. The First Meeting International Society for Applied Cardiovascular Biology, Gothenberg, Sweden.
39. Carter T, P Park, BE Jarrell, DG Rose, B Kapelan, T Schneider and WILLIAMS SK: 1989. Neoartery formation in endothelial cell seeded polyurethane vascular grafts. The First Meeting International Society for Applied Cardiovascular Biology, Gothenberg, Sweden.
38. Speicher LA and WILLIAMS SK: 1988. Shear force dependent polymorphonuclear leukocyte (PMN) adherence to extracellular matrix protein. Cell Biology, 4th International Conference, Montreal - August 14-19.
37. McKenney SL, DG Rose and WILLIAMS SK: 1988. Transport of albumin and glycosylated albumin across bovine aortic endothelial cell monolayers. Cell Biology, 4th International Conference, Montreal - August 14-19.
36. Stokes CL, PB Weisz, WILLIAMS SK and DA Lauffenburger: 1989. Inhibition of microvascular endothelial cell migration by a synthetic saccharide with hydrocortisone. Journal of Cell Biology 107(6):15A.
35. Stokes CL, MA Rupnick, WILLIAMS SK and DA Lauffenburger: 1988. Measurement of migration parameters for endothelial cells with a linear under-agarose assay. Federation Proceedings 46:533.
34. Tan EML, GA Unger, E Glasber, B Gonen, ML Chu and WILLIAMS SK: 1988. Expression of basement membrane genes in human microvessel endothelial cells and modulation with glucose. Clinical Research 36(3):A492.
33. Speicher LA and WILLIAMS SK: 1988. Effect of shear force on polymorphonuclear leukocyte adhesion to human endothelial cells. FASEB Journal 2(5):A1076.
32. WILLIAMS SK, D Carter, SL McKenney and DG Rose: 1988. Solubility dependent endocytosis of proteins by vascular endothelium. FASEB Journal 2(4):A945.
31. Pratt KJ, BE Jarrell and WILLIAMS SK: 1987. Endothelial cell response to shear stress as a function of in-vitro age. Journal of Cell Biology 105:134a.
30. Rose DG and WILLIAMS SK: 1987. Differential transport of LDL and modified LDL across endothelial cell monolayers. Journal of Cell Biology 105:328a.
29. Rupnick MA, CL Stokes, DA Lauffenburger and WILLIAMS SK: 1987. Human endothelial cell migration in response to heparin. Federation Proceedings 46:533.
28. Rose DG, JA Ferry, B Gonan, BE Jarrell and WILLIAMS SK: 1986. Native and modified LDL interaction with human endothelial cell monolayers. Journal of Cell Biology 103:58a.
27. McKenney SL, DG Rose and WILLIAMS SK: 1986. Coordinate effects of temperature on fluid phase endocytosis and plasma membrane microviscosity in microvessel endothelial cells. Journal of Cell Biology 103:58a.
26. WILLIAMS SK, NJ Solenski, DA Greener, MA Rupnick, SN Mueller, E. Levine and BE Jarrell: 1985. Isolation and culture of phenotypically diverse human perinephric fat capillary endothelium. Microvascular Research.
25. WILLIAMS SK, E Levine, BE Jarrell and NJ Solenski: 1985. Differential insulin binding in human adult endothelial cells derived from arteries and veins. FASEB Journal.
24. WILLIAMS SK and DA Greener: 1985. Differential vesicular ingestion of native anionic and carbohydrate-modified hemoglobin by isolated capillary endothelium. Microvascular Research.
23. Rupnick MA and WILLIAMS SK: 1985. Isolation and culture of phenotypically diverse

- endothelial cells from the cerebral microvasculature. FASEB Journal.
22. Radomski JS, BE Jarrell, WILLIAMS SK, RA Carabasi, EA Koolpe and DA Greener: 1985. Human adult endothelial cell adherence and growth characteristics on polystyrene and Dacron. The International Society of Cardiovascular Surgery.
  21. Jarrell BE, WILLIAMS SK, JS Radomski, EA Koolpe, RA Carabasi and Greener: 1985. Human endothelial cell monolayers cultured on Dacron. the International Society of Cardiovascular Surgery.
  20. Flynn JT, D Wojcik, KP Chepenik, E Levine and WILLIAMS SK: 1985. Prostanoid production by cultured human iliac vein endothelial cells in response to zymosan-activated plasma. the Eighth Annual Conference on Shock.
  19. WILLIAMS SK and DA Greener: 1984. Absorptive endocytosis of glycosylated serum albumin by capillary endothelium. Journal of Cell Biology 99:1366a.
  18. Solenski NJ and WILLIAMS SK: 1984. Insulin binding and endocytosis on cultured and freshly isolated endothelium. Journal of Cell Biology 99:209a.
  17. WILLIAMS SK and RK Siegel: 1984. Increased permeability of the glomerular basement membrane to nonenzymatically glycosylated ferritin. Microvascular Research 27:261.
  16. WILLIAMS SK and GG Pinter: 1983. Selective permeability of kidney capillaries to glycosylated albumin. Physiologist 26(4):A67.
  15. WILLIAMS SK, JJ Devenny, GG Pinter and MW Bitensky: 1983. Preferential transendothelial transport of glycosylated albumin in the kidney. Microvascular Research 25:261.
  14. Bower DB and WILLIAMS SK: 1983. Exclusion of fibrinogen from vascular ingestion by capillary endothelium. Federation Proceedings 42:580.
  13. WILLIAMS SK and NJ Solenski: 1982. Vesicular ingestion of myoglobin and ovalbumin by capillary endothelium. Journal of Cell Biology 95:426a.
  12. WILLIAMS SK and BR Pitt: 1982. Disposition of  $5^{14}\text{C}$  -hydroxytryptamine (5-HT) in isolated capillary endothelium. Microvascular Research 23:277.
  11. Madri J and WILLIAMS SK: 1982. Capillary endothelial cell matrix interactions: The influence of substratum on differentiation. Federal Proceedings 41:378.
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