

# **CURRICULUM VITAE**

## **ANDREAS S. ANAYIOTOS Ph.D.**

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### **Department of Mechanical and Materials Science and Engineering**

Cyprus University of Technology  
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<http://www.cut.ac.cy/biolisys/>

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## EDUCATION

- Ph.D. Georgia Institute of Technology, Atlanta, Georgia 1990  
Aerospace Engineering with a minor in Mathematics  
Dissertation Title: "Fluid Dynamics at a Compliant Model of a Bifurcation"
- M.S. Georgia Institute of Technology, Atlanta, Georgia 1984  
Aerospace Engineering
- B.S. Boston University, Boston, Massachusetts 1983  
Mechanical and Aerospace Engineering

## LANGUAGES

English  
Greek  
Spanish

## RESEARCH INTERESTS

General Topics in Mechanical and Biomedical Engineering. Experimental and computational methods in cardiovascular modeling. Image-based arterial modeling and computational hemodynamics, Ultrasound & Magnetic Resonance Novel Imaging techniques for biological applications, Implants, devices and biomaterials, Novel in-vivo cellular Imaging methods, Nanotechnology, Drug delivery.

## ADMINISTRATIVE PROFESSIONAL EXPERIENCE

Rector  
Cyprus University of Technology

**December 2015 –  
December 2020**

University Chief Executive Officer

Vice-Rector for Financial Planning and Development,  
Cyprus University of Technology

**January 2012 – December 2015**

Leader in the university financial planning and maximization of outside economic support, responsible for the management of housing and building facilities, administrative infrastructure, quality assurance, Internationalization and implementation of the University development goals.

Vice-President for Financial Planning and Development, Governing Board  
Open University of Cyprus, Nicosia, Cyprus

**March 2011 – March 2012**

Have worked with the president and the director of Administration and Finance to implement the financial and administrative plan decided by the governing board for the expansion, internationalization and better organization of the University. The plan included increase of the budget, expansion of the building

installations, increase in the admission of foreign students, reorganization and optimization of the operation of all the administrative departments within the university and the attainment of University autonomy within 3 years.

Department Head, Department of Mechanical and Materials Science and Engineering,  
Cyprus University of Technology, Limassol, Cyprus

**September 2010-November 2011**

Have developed a governing structure for the department and have led the efforts in the expansion of the facilities of the department in terms of space and laboratory equipment. Have taken the initiative and lead the efforts for the development of the Mechanical Engineering teaching laboratories and the development of the Biomechanics and Living Systems Laboratory (BiOLISYS) research lab (<http://www.cut.ac.cy/biolisys/>). Have united the efforts in the department for the establishment of the vision, the mission and the strategic plan for the future whose priorities are: 1) the recruitment of high caliber faculty, 2) the establishment of innovative MS programs, 3) the expansion of the departmental teaching and research laboratory capabilities, 4) the expansion of funded research programs in the EU and at the International level, 5) The interconnection and research collaboration with Cypriot and EU member states industries and SMEs, 6) The expansion of student support programs 7) The provision of public service to the community of Cyprus.

Department Head, Department of Tourism and Hotel Management

**November 2008–November 2009**

Have been instrumental in maintaining the functionality of the department in a transitional period. Have managed to bridge differences among faculty and led the efforts in the implementation of the academic program and day to day operations. Have convened the departmental advisory board and with the contribution of the departmental faculty introduced improvements to the departmental undergraduate academic program.

## **ACADEMIC PROFESSIONAL HISTORY**

### **Professor, 2008 - to date**

Department of Mechanical and Materials Science and Engineering  
Cyprus University of Technology, Limassol, Cyprus

### **Associate Professor, 2007-2008**

Department of Mechanical and Materials Science and Engineering  
Cyprus University of Technology, Limassol, Cyprus

### **Associate Professor, 1999- 2008**

Department of Biomedical Engineering,  
The University of Alabama at Birmingham, Birmingham, Alabama USA

Director, Biofluids and Echocardiography Laboratory, 1991- 2009  
Division of Cardiology, The University of Alabama at Birmingham and the University of Alabama Hospital,  
Birmingham, Alabama USA

### **Associate Professor, 1997- 1999**

Department of Mechanical Engineering,  
The University of Alabama at Birmingham, Birmingham, Alabama USA

## **Assistant Professor, 1991-1997**

Department of Mechanical Engineering  
The University of Alabama at Birmingham, Birmingham, Alabama USA

### **RESEARCH LABORATORY DEVELOPMENT**

#### **CUT- Biomechanics and Living Systems Analysis Laboratory (BiOLISYS) since 2009**

A research lab that combines interdisciplinary skills from engineering, medicine and biology to provide solutions to clinical problems associated with cardiovascular cancer and other diseases. The lab features novel in-vivo imaging modalities and techniques at the cellular level, a small animal facility, cell culture facilities, experimental facilities for material characterization, Mechanical testing of stents and related devices and computational facilities for numerical simulations, <http://www.cut.ac.cy/biolisys/>.

#### **UAB-Biofluids Laboratory Department of Biomedical Engineering (1991-2009)**

A Biomedical Research laboratory was developed and expanded with funded research with grants from the NIH, the Alabama Health Services Foundation, the Whitaker Foundation and the cardiovascular device industry. The lab collaborated with medical and engineering faculty from the University of Alabama at Birmingham, Allegheny Medical Center and the University of New Orleans.

#### **UAB-Echocardiography Laboratory (1991-2009)**

A Hospital Ultrasound laboratory. Sonographic methods were developed for the quantitative evaluation of blood flow in the heart. The laboratory was responsible for verification procedures, proper operation, of ultrasound color Doppler instruments.

### **RESEARCH PROJECTS:**

#### ***Ph.D Thesis Research***

#### **Shear Stress at a Compliant Model of a Bifurcation (1984-1990)**

A compliant model of the human carotid bifurcation was designed and fabricated. A flow system was designed to simulate physiological conditions and a fluid dynamic evaluation was performed using Laser Doppler Velocimetry. The work was a part of a general study sponsored by the National Institute of Health to assess the role of hemodynamic factors in the genesis of atherosclerosis.

#### **Color Doppler Flow Mapping Evaluation (1985-1986)**

Initial Experiments with Multi-Mode Color Doppler Ultrasound imagers with "Johnson & Johnson Co", Arlington, Texas USA were developed to assess their qualitative capability to provide flow information prior to marketing in the US. The experiments required the design and fabrication of a carotid artery model with stenosis and a healthy coronary artery model.

**Research as a Faculty member at the Univ. of Alabama, Birmingham**

**Design of Methods of Evaluation of Heart Valve Disease (1991- 1999)**

In-vitro study of defective cardiac valve dynamics using Laser Doppler Velocimetry, Doppler Ultrasound Instrumentation, and Numerical Simulation Techniques. The project aims in designing and implementing methods to provide accurate information to the clinician such as orifice morphology, regurgitant flow rate, regurgitant flow volume to allow better diagnosis.

**Simulation of Ultrasound Blood Flowmetry (1996-1998)**

A joint study with Computational Fluid Dynamics Research Corporation (Huntsville, AL) on numerical simulation of ultrasound blood flowmetry, and aortic valve echocardiography. The project aims in developing bioengineering products for the biomedical industry.

**Development of New MRI Methods in the Evaluation of Cardiovascular Flow (1994- 2008)**

Development of rapid, robust and accurate methods to provide hemodynamic information to the clinician for accurate assessment of the cardiovascular system using BRISK (Block Regional Interpolation for k-Space) a novel MRI Imaging method that allows measurements at breatholds.

**Vascular Stiffness and Cardiovascular Function (1996-1997)**

Development of techniques using Applanation tonometry, Doppler ultrasound and Magnetic resonance to assess the importance of vascular stiffness as a risk factor in cardiovascular morbidity in-vitro and in vivo.

**Pulmonary Flow Dynamics (1997- 1999)**

Development of an improved jet ventilator and catheter design for emergency pulmonary oxygenation. (A joint project with the Department of Anesthesiology, University of Alabama at Birmingham).

**Fatigue Testing on intravascular Nickel-Titanium Alloy Stents (1998-1999)**

A model for evaluating the accelerated fatigue behavior characteristics of a new intravascular stent design.

**MRI Evaluation of in-Stent Restenosis in Nickel-Titanium Alloy Stents (1999- 2007)**

Development of a MRI Phase Contrast Angiography technique to evaluate flow and blood velocities through Ni-Ti intravascular stents and show the accuracy of the method in comparison to x-ray angiography and Duplex ultrasound methods.

**Design and Evaluation of a Novel Embolic Protection Catheter (1999-2001)**

Design and evaluation of a novel type of cardiovascular catheter with embolic protection capabilities.

**Design of a Flow Stabilizing NiTi Vascular Graft Connector (1999-2001)**

Evaluation assessment and design of a vascular anastomosis implant connector to improve the flowfield conditions at the anastomotic connection and patency of the graft.

**Design of a Novel Hemodialysis Graft (2002-to date)**

Evaluation, assessment and design of a novel dialysis graft that reduces turbulence at the venous anastomosis.

**Design of Novel Hemodialysis Needles** (2002-to date)  
Design of needles that improve the turbulent flow jet characteristics by reducing downstream turbulence.

**Comprehensive Modeling of Coronary Artery Bypass Grafting** (2002-2007)  
Development of methods that combine MRI segmentation in patient studies and computational simulations to provide a computational model of the dynamic geometry of the bypass graft throughout the cardiac cycle with blood flow.

**Faculty Member at the Cyprus University of Technology**

**Corrosion and Biomechanical testing of stents** (2007-today)  
Evaluation of cadaver retrieved stents in terms of surface alterations and structural damage and comparison with in-vitro mechanical studies to assess the degree of damage such as fracture, fretting and pitting due to vessel curvature, degree of stent overlapping, and vessel calcification.

**Carotid Artery Bifurcation Geometry and hemodynamic changes with Head posture** (2007-today)  
Patient Specific modeling of carotid artery bifurcation geometry and hemodynamics at different head postures to elucidate the changes in hemodynamic indices of disease development as well as the importance of geometry change on the instability of the plaque and stent fracture.

**Development of an in-vivo flow cytometer** (2009-today)  
Development of an instrument that provides real-time detection and quantitative information on fluorescently labeled cells while in circulation in a live animal model. This can be used to measure the circulation lifetime of different tumor cells and leukocyte populations in the peripheral circulation in response to immunological stress or therapeutic manipulation.

**ACADEMIC PROGRAM AND CURRICULUM DEVELOPMENT**

Have developed the course content and teaching methods for numerous undergraduate and graduate courses.

Have organized and initiated the Ph. D. program in Mechanical Engineering at the University of Alabama at Birmingham. Supervised and graduated the program's first doctoral graduate in 1996. Also supervised the work of the next 2 candidates.

Have designed and reorganized the undergraduate fluid mechanics laboratory curriculum in the Mechanical Engineering Department with new laboratories: 1) Laser Doppler Velocimetry with a Data Acquisition 2) Cone and plate viscometry, 3) Doppler ultrasound velocimetry 4) Dynamic pressure measurements with Diaphragm Pressure transducers, 5) Flow measurements in a Wind-tunnel interfaced with a data acquisition system. Have ensured consistency with ABET 2000 guidelines. Have been a member of the ABET 2000 accreditation committee for the Mechanical Engineering Program.

Have developed new undergraduate and graduate courses in Introduction to Biomechanics, Fluid Flow Measurements, Biomechanical Measurements, Inviscid Fluid Flow, Advanced Fluid Flow I, Advanced Fluid Flow II. Have contributed in the curriculum development of the new Biomedical Engineering undergraduate program in the Biomechanics area and ensured consistency with ABET2000 criteria.

Have led the efforts of the Mechanical Engineering faculty team for planning and developing the undergraduate Mechanical engineering laboratories.

### **COURSE DEVELOPMENT AND TEACHING**

#### ***Undergraduate***

Introduction to Engineering (UAB, CUT), Thermodynamics I (UAB, CUT), Thermodynamics II (UAB)

Introduction to Fluid Mechanics (UAB, CUT), Applied Fluid Flow (UAB), Heat Transfer I (UAB), Introduction to Biomechanics (UAB), Biofluid Instrumentation (UAB), Fluid Flow Measurements (UAB), Mechanical Measurements I (CUT), Mechanical Measurements II (CUT), Senior Design Project (UAB, CUT)

#### ***Graduate***

Inviscid Fluid Flow (UAB), Advanced Fluid Flow I (UAB), Advanced Fluid Flow II (UAB), Cardiovascular Flow Dynamics (UAB), Biomechanical Measurements (UAB), Living Systems Analysis (UAB)

### **ENGINEERING PROGRAM EVALUATION COMMITTEES**

Evaluation Committee for Private Universities (Official Body of the Republic of Cyprus)

Member, Evaluation Committee for the undergraduate Engineering program **Frederick University 2009**

Member, Evaluation Committee for the undergraduate Engineering program **University of Nicosia 2009**

Member, Evaluation Committee for the PhD Engineering program **Frederick University 2009**

### **ACADEMIC FACULTY APPOINTMENT AND SEARCH COMMITTEES**

#### **Chair of Electoral bodies**

Position of Associate Professor or Professor in the area of "Combustion and Thermodynamics", at the Department of Mechanical and Materials Science and Engineering (CUT) **2013**

Position of Associate Professor or Professor in the area of "Automation and Mechanical Systems", at the Department of Mechanical and Materials Science and Engineering (CUT) **2013**

Position of Lecturer or Assistant Professor in the area of "Polymers", at the Department of Mechanical and Materials Science and Engineering (CUT) **2012**

Position of Lecturer or Assistant Professor in the area of "Bioengineering and Biomedical Systems", at the Department of Mechanical and Materials Science and Engineering (CUT) **2012**

Position of Lecturer or Assistant Professor in the area of "Robotics, Mechatronics, MEMS or Biosystems at the Department of Mechanical and Materials Science and Engineering (CUT) **2010**

Position of Professor or Associate Professor or Assistant Professor or Lecturer in the area of "Design and Manufacturing" or Mechatronics /Robotics/MEMS" at the Department of Mechanical and Materials Science and Engineering, (CUT) **2009**

### **Search Committee Member**

Hiring of two Assistant professors in the area of Tissue Engineering and Regenerative medicine, Department of Biomedical Engineering, University of Alabama at Birmingham **2004**

Hiring of Chairman of the Department of Biomedical Engineering and Director of the Biomatrix Engineering and Regenerative Medicine Center, University of Alabama at Birmingham **2003-2005**

Hiring of two Assistant professors in the area of Thermofluid Sciences, Department of Mechanical Engineering, University of Alabama at Birmingham **1999**

Hiring of the Chairman, Department of Mechanical Engineering, University of Alabama at Birmingham **1999**

Hiring of an Assistant professor in the area of Thermodynamics and Power generation, Department of Mechanical Engineering, University of Alabama at Birmingham **1996**

Hiring of the Dean of Engineering, University of Alabama at Birmingham **1997**

### **ACADEMIC FACULTY TENURE AND PROMOTION EVALUATION COMMITTEES**

#### **Committee Chair**

Evaluation for promotion of Elisabeth Papathanassoglou from Associate Professor to Professor, Department of Nursing Cyprus University of Technology (September 2014)

Evaluation for promotion of Diofantos Hadjimitsis from Associate Professor to Professor, Department of Civil Engineering and Geomatics, Cyprus University of Technology (November 2013)

Evaluation for promotion of Stelios Choulis from Associate Professor to Professor, Department of Mechanical and Materials Science and Engineering, Cyprus University of Technology (November 2013)

Evaluation for Promotion of Tasos Georgiades from Assistant Professor to Associate Professor, Department of Mechanical and Materials Science and Engineering, Cyprus University of Technology (July 2011)

Evaluation for promotion of George Constantinides from Lecturer to Assistant Professor, Department of Mechanical and Materials Science and Engineering, Cyprus University of Technology (March 2011)

#### **External evaluator**

Frederick University Nicosia, Cyprus, (2012)

Pennsylvania State University, University Park, Pennsylvania, USA, (2010)

Al Balqa Applied University, Jordan, (2009)  
University of Toronto, Ontario, Canada, (2000)  
University of Alabama, Tuscaloosa, Alabama, USA, (1999)  
Rice University, Houston, Texas USA, (1997)  
University of South Alabama, Mobile, Alabama, USA, (1997)

### **AWARDS AND HONORS**

Appointed to the Cyprus Scientific Council by the Cyprus Government led by Dr. Fotis Kafatos (honorary president ERC) for the planning of the government research policy (2011-2015)

Appointed to the 9 member International panel of the EUROSTARS Program by the EUROSTARS secretariat representing Cyprus (2010- 2011)

Dina Halwani (PhD student) 2nd Prize PhD student Competition Summer Bioengineering Conference Lake Tahoe, (among 51 students from 11 countries) (2009)

Dina Halwani 1st Prize UAB Graduate student Conference (among 30 students from UAB) (2008)

Thanh Huynh (MS student) 1st.Prize MS student Competition Summer Bioengineering Conference (among 95 students from 15 countries) (2006)

Thanh Huynh (MS student) 1st Prize UAB Graduate student Conference (among 35 students from UAB) (2006)

Who's Who in Science and Engineering (1995-2005)

American Society of Mechanical Engineers Region XI "John Shortfall" award for Outstanding ASME Faculty Advisor (1997)

Elected, Sigma Xi Scientific Honor Society (1996)

Sigma Xi (ΣΧ) Scientific Research Society was founded in 1886 at Cornell University. Members are elected based on their research achievements and potential. ([www.sigmaxi.org](http://www.sigmaxi.org))

Faculty Advisor Recognition Award American Society of Mechanical Engineers (1995)

Member, Pi Tau Sigma (1992)

Pi Tau Sigma (ΠΤΣ) is an international Mechanical Engineering Honor Society that honors Mechanical engineering students and faculty who have exemplified the principles of scholarship, character and service in the Mechanical engineering profession. ([www.pitausigma.net](http://www.pitausigma.net))

Elected, Pi Mu Epsilon Mathematics Honor Fraternity (1985)

Pi Mu Epsilon (ΠΜΕ) is the US Honorary National Mathematics Society that is dedicated to the promotion of Mathematics and recognition of students who excel in Mathematics. ([www.pme-math.org](http://www.pme-math.org))

Georgia Institute of Technology Graduate Student Scholarship	(1983-1990)
Boston University B.S. degree with Summa Cum Laude	(1983)
Boston University Aerospace Engineering Alumni Award	(1983)
Member, Tau Beta Pi, Engineering Honor Fraternity	(1981)

Tau Beta Pi Association (TBP) is the oldest engineering honor society in the United States and the second oldest collegiate honor society in America. It honors engineering students who have shown a history of academic achievement as well as a commitment to personal and professional integrity. ([www.tbp.org](http://www.tbp.org))

### **PROFESSIONAL AND ACADEMIC SOCIETIES**

Member of the Cyprus Society of Mechanical Engineers	1999-to date
Member, American Society of Mechanical Engineers	1991-to date
Member, Biomedical Engineering Society	1997-to date
European Society of Biomechanics	1998-to date
American Association for the Advancement of Science	1997-to date
American Society of Engineering Education	1997-to date
Faculty advisor, Student Chapter American Society of Mechanical Engineers, The University of Alabama at Birmingham	1991-1999
Faculty Advisor, Hellenic Student Organization, University of Alabama at Birmingham	1994-2007
Scientist, Injury Prevention Research Center University of Alabama at Birmingham	1991-2007

### **AMERICAN SOCIETY OF MECHANICAL ENGINEERS ACTIVITIES**

Member, Bioengineering Division ASME Fluids Committee	1992-to date
Liaison, Biofluids-Education committee	2002
Liaison, Fluids -Biomaterials committee	1999-2000
Chairman, Long term planning committee	
Bioengineering Division ASME Fluids Committee	1999-to date
Member and Faculty Representative Birmingham Chapter	1991-1999
Faculty Advisor chairman Southeast Region XI	1998-1999

### **CONFERENCE ORGANIZATION/SESSION CHAIRMANSHIPS**

Local Organizing Committee Chair, ICoN 2015 International Conference on Nanotheranostics, Limassol, Cyprus, (Nov 2015)

Session Chairman, Summer Biomechanics, Bioengineering and Biotransport Conference, Pediatric/Embryonic Hemodynamics. Snowbird Utah (June 17-20, 2015)

Steering Committee, International Advisory Committee. BRAMAT 9<sup>th</sup> International Conference on Materials Science and Engineering, Brasov, Romania, (March 5-7 2015)

Session Chairman, World Congress of Biomechanics, Mechanical factors affecting arterial pathophysiology: Geometric features of vascular structures, Posture and their relation to arterial Mechanics and Hemodynamics Boston, MA (July 2014)

Session Chairman, International Union for Theoretical and Applied Mechanics: Symposium on non-linear wave phenomena from the micro to the macro scale, Limassol, Cyprus (April 2013)

Session Chairman ASME Summer Bioengineering Conference, Novel Flow Imaging Methods, Fajardo, Puerto Rico (June 2012)

Session Chairman ASME Summer Bioengineering Conference, Flow Imaging In Vivo and In Vitro. Farmington, PA (June 2011)

Session Chairman ASME Summer Bioengineering Conference, Flow Imaging In Vivo and In Vitro. Naples, FL (June 2010)

Session Organizer, 2nd Conference of Recent Advances in Health and Medical Science, Cardiovascular Disease, Paphos, Cyprus, (July 2010)

Organizing Committee Nanotheranostics Conference Ayia Napa Cyprus (April 2010)

Session Chairman 9th International Conference on Information Technology and Applications in Biomedicine IEEE. Biomedical Imaging Larnaca, Cyprus (November 2009)

Session Chairman BMES Conference, Medical Devices. Pittsburgh, PA (October 2009)

Session Chairman ASME Summer Bioengineering Conference, Flow Imaging In Vivo and In Vitro. Lake Tahoe, CA (June 2009)

Conference Organizing Committee, ASME Summer Bioengineering, Marco Island FL (June 2008)

Session Chairman ASME Summer Bioengineering Conference, Modeling of Human Circulation in Health and Disease, Marco Island FL (June 2008)

Conference Organizing Committee and Session Chairman, 1st Conference of Recent Advances in Health and Medical Science, Cardiovascular Disease (March 2008)

Session Chairman ASME Summer Bioengineering Conference, Imaging and Cardiovascular Simulations, Keystone, CO (June 2007)

Session Chairman ASME Summer Bioengineering Conference, Cardiovascular Implants and Devices, Amelia Island, FL (June 2006)

Session Chairman ASME Summer Bioengineering Conference, Cardiovascular Implants and Devices, Vale CO (June 2005)

Session Chairman, ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Cardiovascular Implants and Devices I, Anaheim CA (November 2004)

Session Chairman, ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Cardiovascular System Modeling I, Anaheim CA (November 2004)

Panelist, ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Image Based Computational Fluid Dynamics Anaheim CA (November 2004)

Organizing Committee, International Conference on Medical and Care Compunetics. The Hague, Netherlands (June 2004)

Session Chairman ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Cardiovascular Implants and Devices I, Washington DC (November 2003)

Session Chairman ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Cardiovascular System Modeling I, Washington DC ( November 2003)

Session Chairman ASME Summer Bioengineering Conference, Cardiovascular Implants and Devices I, Key Biscayne, FL (June 2003)

Session Chairman ASME Summer Bioengineering Conference, Cardiovascular Implants and Devices II, Key Biscayne, FL (June 2003)

Session Chairman ASME Summer Bioengineering Conference, Measurement and Modeling of Flow Phenomena, Key Biscayne, FL (June 2003)

Session Chairman ASME Summer Bioengineering Conference, Cardiovascular System Modeling I, Key Biscayne, FL (June 2003)

Session Chairman ASME Summer Bioengineering Conference, Cardiovascular Fluid Dynamics in Healthy and Pathologic States III, Key Biscayne, FL (June 2003)

Session Chairman ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Cardiovascular Implants and Devices I, New Orleans, LS (November 2002)

Session Chairman ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Cardiovascular Implants and Devices II, New Orleans, LS (November 2002)

Session Chairman ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Session on Cardiovascular Implants and Vascular Flow Modeling, New York, NY (November 2001)

Session Chairman ASME Summer Bioengineering Conference, Fluid Mechanics of Interventional Devices, Snowbird UT (June 2001)

Session Chairman ASME Summer Bioengineering Conference, Session on Stented Artery Mechanics, Snowbird, UT (June 2001)

Session Chairman, 20th Southern Biomedical Engineering Conference, Session: Cardiovascular Flow Applications, Birmingham, AL (May 2001)

Session Chairman ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Session on Vascular Flow Modeling, Orlando, FL (November 2000)

Session Chairman/panel discussion moderator ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Industry Session on Cardiac Valves, Nashville TN (November 1999)

Session Chairman, ASME/BMES Summer Bioengineering Conference. Session on Cardiac Valves-Imaging and Flow Measurement, Big Sky, MT (June 1999)

Session Chairman, ASME/BMES Summer Bioengineering Conference. Session on Cardiac Valves-Numerical Modeling and Fluid Structure Interaction, Big Sky MT (June 1999)

Technical Editor, ASME Graduate Student Technical Conference Birmingham, AL, USA (April 1999)

Session Chairman, ASME Bioengineering Division, International Mechanical Engineering Congress and Exposition, Cardiac Valves and Heart Modeling, Anaheim California (November 1998)

Session Chairman, 13th Southern Biomedical Engineering Conference, Laser Applications, Washington DC (April 1994)

Chairman ASME, Bioengineering Division, International Mechanical Engineering Congress and Exposition, Poster Session Atlanta GA (November 1993)

Co-Chairman, Masters Student Competition ASME Winter Annual Meeting Los Angeles, CA (November 1992)

Technical Editor, ASME Graduate Student Technical Conference Birmingham, Alabama USA (October 1992)

## **PEER REVIEWED PUBLICATIONS**

1. Ghiuță I, Cristea D, Croitoru C, Kost, J, Wenkert, R, Vyrides I, Anayiotos A, Munteanu D. Characterization and antimicrobial activity of silver nanoparticles, biosynthesized using Bacillus species Applied Surface Science e-pub (ahead of publication) 2017
2. Chatziiona VK, Constantinou BK, Savva PG, Olympiou GG, Kapnisis K, Anayiotos A, Costa CN. Regulating the catalytic properties of Pt/Al<sub>2</sub>O<sub>3</sub> through nanoscale inkjet printing. Catalysis Communications, 103, 69-73, 2018

3. Theologides, C.P., Theofilou, S.P., Anayiotos, A., Costa, C.N. Preventing maritime transport of pathogens: The remarkable antimicrobial properties of silver-supported catalysts for ship ballast water disinfection. *Water Science and Technology*. 76(3), 712-718, 2017
4. Theologides CP, Olympiou GG, Savva PG, Kapnisis K, Anayiotos A, Costa CN. Mechanistic aspects (SSITKA-DRIFTS) of the catalytic denitrification of water with hydrogen on Pd-Cu supported catalysts. *Applied Catalysis B: Environmental* 205, 443-454, 2017
5. Valant AZ, Zibera L, Papaharilaou Y, Anayiotos A, Georgiou GC. The influence of oxygen concentration on the rheological properties and flow of whole human blood. *Rheologica Acta*, 55(11-12): 921-933, 2016
6. Kapnisis K, Pitsillides C, Prokopi M, Lapathitis G, Karaikos C, Eleftheriou P, Brott B, Anderson P, Lemons J Anayiotos A. In vivo Monitoring of the Inflammatory Response in Stented Mice Aortas. *J Biomed Mater Res A. J Biomed Mater Res Part A*: 104A: 225–236, 2016.
7. Prokopi M, Filipovic A, Pitsillides C, Kapnisis K, Anayiotos A, Kousparou C, Epenetos A. miRNA-loaded exosome-like microparticles as targeted cancer therapy. *Journal of Clinical Oncology*. 34 (15): suppl e14069, 2016
8. Epenetos A, Prokopi M, Pitsillides C, Kousparou C, Filipovic A, Anayiotos A, Kapnisis K, Deonarain M. In vivo monitoring of the TR4 anti-Notch fusion protein: an imaging approach. *Journal of Clinical Oncology*. 34 (15): suppl e23186, 2016.
9. Aristokleous N, Seimenis I, Georgiou, G, Nicolaidis A, Anayiotos A. The Effect of Head Rotation on the Geometry and Hemodynamics of the Healthy Vertebral Arteries. *Annals of Biomedical Engineering Ann Biomed Eng*. 43 (6):1287-97, 2015
10. Berg P, Roloff C, Beuing O, Sugiyama SI, Aristokleous N, Anayiotos A et al. The Computational Fluid Dynamics Rupture Challenge 2013 – Phase II: Variability of Hemodynamic Simulations in Two Intracranial Aneurysms. *Journal of Biomechanical Engineering* 134(12) 235-245, 2015.
11. Gallo D, Anayiotos A, Morbiducci U. The evolution of computational hemodynamics as a clinical tool in decision making, patient specific treatment and clinical management. Part II. *Ann Biomed Eng*. 2015 Jun;43(6):1273-4.
12. Gallo D, Anayiotos A, Morbiducci U. The evolution of computational hemodynamics as a clinical tool in decision making, patient specific treatment and clinical management. Part I *Ann Biomed Eng*. 43(1) 1-2, 2015.
13. Kapnisis K, Constantinides G, Georgiou H, Cristea D, Gabor C, Munteanu D, Brott BC, Anderson PG, Lemons J, Anayiotos AS. Multi-scale Mechanical Investigation of Stainless Steel and Cobalt-Chromium Stents. *Journal of the Mechanical Behavior of Biomedical Materials*. 09(40) 240–251, 2014.

14. Aristokleous N., Seimenis I., Georgiou GC, Papaharilaou Y., Brott BC, Anayiotos AS. "Impact of Head Rotation on the Individualized Common Carotid Flow and Carotid Bifurcation Hemodynamics," *IEEE Trans. Inf. Technol. Biomed.* 18(3) 783-789, 2014.
15. Kapnisis K., Halwani DO, Brott BC, Anderson PG, Lemons JE, Anayiotos AS. "Stent Overlapping and Geometric Curvature Influence the Structural Integrity and Surface Characteristics of Coronary Nitinol Stents". *Journal of Mechanical Behavior of Biomedical Materials*; 20 227–236, 2013.
16. Papaharilaou Y., Aristokleous N., Seimenis I., Khozeymeh I., Georgiou GC, Brott BC, Eracleous E., Anayiotos AS, "Effect of head posture on the healthy human carotid bifurcation hemodynamics," *Med. Biol. Eng. Comput* 51 207-218, 2013.
17. Steinman DA, Hoi Y, Fahy P, Morris L, Walsh MT, Aristokleous N, Anayiotos AS, (...), F. Loth, "Variability of Computational Fluid Dynamics Solutions for Pressure and Flow in a Giant Aneurysm: The ASME 2012 Summer Bioengineering Conference CFD Challenge," *J. Biomech. Eng* 135, 210-216, 2013.
18. Halwani DO, Anderson PG, Brott BC, Anayiotos AS, Lemons JE. The Role of Vascular Calcification in Inducing Fatigue and Fracture of Coronary Stents. *Journal of Biomedical Materials Research Part B* 100B (1) 292–304, 2012.
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#### **PEER REVIEWED CONFERENCE ABSTRACTS AND PRESENTATIONS**

1. Prokopi M, Pitsillides C, Deonarain M, Kapnisis K, Stylianos S, Kousparos G, Kousparou C, Anayiotos A, Epenetos A. Monitoring Tumor Response to Therapeutic TR4 Fusion Protein via In Vivo Imaging. SB3C 2016, Summer Biomechanics, Bioengineering and Biotransport Conference, June 29 –July 2, 2016, National Harbor, MD, USA.
2. Prokopi M, Filipovic A, Pitsillides C, Kapnisis K, Anayiotos A, Kousparou C, Epenetos A. miRNA-loaded exosome-like microparticles as targeted cancer therapy. ASCO Annual Meeting. June 3-7, 2016, Chicago, IL, USA.
3. Epenetos A, Prokopi M, Pitsillides C, Kousparou C, Filipovic A, Anayiotos A, Kapnisis K, Deonarain M. In vivo monitoring of the TR4 anti-Notch fusion protein: an imaging approach. ASCO Annual Meeting. June 3-7, 2016, Chicago, IL, USA.
4. Kapnisis K, Pitsillides C, Prokopi M, Constantinides G, Cristea D, Munteanu D, Brott B, Anderson P, Lemons J, Anayiotos A. Metallic Stents: Biomechanical Analysis and In Vivo Investigation of the Vessel Inflammatory Response. XIV Mediterranean Conference on Medical and Biological Engineering and Computing, Paphos, Cyprus, 31/3-2/4/2016. Volume 57 of the series IFMBE Proceedings 1075-1078.
5. Pitsillides C, Kapnisis K, Anayiotos A. Facilitating the development of novel therapeutic strategies via in vivo optical imaging techniques. 2nd International Conference on Nanotheranostics (ICoN 2015). 29 Oct.-01 Nov. 2015, Limassol, Cyprus
6. Aristokleous N, Seimenis I, Georgiou GC,, Anayiotos AS, "The Effect of Head Rotation to the Geometry and Hemodynamics of Healthy Vertebral Arteries". SB3C 2015, Summer Biomechanics, Bioengineering and Biotransport Conference. Utah, USA, June 17-20, 2015.
7. Kapnisis K, Constantinides G, Georgiou H, Cristea D, Gabor C, Munteanu D, Anayiotos AS. Coronary stents crack and corrode in vivo: a structural integrity and tissue inflammation analysis 9<sup>th</sup> International Conference on Materials Science and Engineering Conference (BRAMAT), Brasov, Romania, March 5-7, 2015.
8. Kapnisis K, Pitsillides CM, Prokopi MS, Kokkinidou D, Brott BC, Anderson PG, Lemons JE, Anayiotos AS. Monitoring the Inflammatory Response in Stented Mice Aortas Using Novel Fluorescence-Based in vivo Imaging Techniques. 7th World Congress of Biomechanics, Boston, MA, July 6-11, 2014.
9. Aristokleous N, Seimenis I, Georgiou GC, Anayiotos AS. "Impact of Head Rotation on the Geometry and Flow of Healthy Vertebral Arteries". 7th World Congress of Biomechanics. Boston, MA, July 6-11, 2014.
10. Prokopi M, Pitsillides C, Kapnisis K, Anayiotos AS, Epenetos AA, Kousparou CA. Cancer Stem Cells, MicroRNAs & Therapeutic strategies including Stem Cell Microparticles. The 31ST

International Conference on the Advances in the Applications of Monoclonal Antibodies in Clinical Oncology and Symposium on Cancer Stem Cells, Mykonos, Greece, June 23-25, 2014.

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23. Papaharilaou Y, Semenidis Y, and Anayiotos A. A Novel Approach in Assessing the Effects on Hemodynamics of Topology Preserving Shape Changes of Image Based Arterial Structures. Summer Bioengineering Conference, Famington, Pennsylvania, June, 2011.
24. Aristokleous N, Seimenidis I, Papaharilaou I, Georgiou G, Brott BC, Eracleous E, Anayiotos AS Effect of head rotation on the geometric features of the healthy carotid bifurcation Summer Bioengineering Conference, Naples, Florida, 2010.
25. Halwani DO, Brott BC, Anderson PG, Anayiotos AS, Lemons JE. Corrosion of Metallic Endovascular Stents and Analyses of Wear Debris in Tissues. Biomedical Engineering Society Conference Pitt. PA, 2009.
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27. Kapnisis K., Halwani D., Brott B., Anderson P., Lemons J. and Anayiotos A. Biocorrosion and Biomechanical Analysis of Explant Devices. Nanotheranostics Conference, Ayia Napa, Cyprus, April, 2010.
28. Kim YH, Kim, JE, Anayiotos AS. Effect of the Compliance of a Femoral Artery Bifurcation on Hemodynamic Characteristics. Summer Bioengineering Conference, Lake Tahoe, CA, 2009.
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37. Longchuan Li, Mark Doyle, Geetha Rayarao, Eduardo Kortright, Andreas S. Anayiotos. Numerical and Experimental Study of a Novel Phase Contrast Technique - Self Reference Phase-Contrast Magnetic Resonance Imaging Summer Bioengineering Conference. Keystone, CO, June, 2007.
38. Shin M, Brott BC, Lloyd SG, Evanochko WT, Kiss P, Baker R, Anayiotos AS. MRI Evaluation of a stented abdominal aorta of a rabbit. Imaging Summer Bioengineering Conference. Keystone, CO, June, 2007.
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- morphology and nitric oxide formation Summer Bioengineering Conference, Amelia Island, FL, 2006 (Won 1st Prize MS student Competition).
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  45. Li L., Doyle M, Rayarao G, Ito Y., Kortright E, Anayiotos AS, Computer Simulations of Three Fast Imaging Techniques Used In Phase Contrast Magnetic Resonance Imaging. Huntsville Simulation Conference Huntsville, AL, October, 2006.
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  48. Ito Y., Shih AM, Shum PC, Soni BK, Nakahashi K., Anayiotos AS. "Image-based Biomedical Geometry Extraction and Mesh Generation for Computer-Aided Engineering Applications," 1st Annual SCAR (Society for Computer Applications in Radiology) TRIP (Transforming the Radiological Interpretation Process) Conference and Workshop, Bethesda, MD, January-February, 2005.
  49. Holton AD, Brott BC, Walsh EG, Venugopalan R., Shih AM, Koomullil R., Ito Y., Anayiotos AS. "Comparative Computational Fluid Dynamics and Experimental Phase-Contrast MRI: Evaluations of In-Stent Restenosis" International Mechanical Engineering Congress and Exposition, Bioengineering Division Anaheim CA, 2004.
  50. Hershey BL, More RA, Doyle M., Kortright E., Anayiotos AS. "Fast MRI Flow Imaging by Sparse Sampling and Segmentation "International Mechanical Engineering Congress and Exposition, Bioengineering Division, Anaheim CA, 2004.
  51. Anayiotos AS, "Image Based CFD" International Mechanical Engineering Congress and Exposition, Biomedical Track, Anaheim CA, 2004.
  52. Gleysteen JP, More R., Brott, BC, Shih, AM, Ito Y., and Anayiotos AS. "Evaluation of the Hemodynamics in a Realistic Image Based Femoral Artery Model", Huntsville Simulation Conference, October, 2004.
  53. Unnikrishnan S., Huynh T., Brott BC, Cheng CH, Ito Y., and Anayiotos AS. "Evaluation of Needle Flow Turbulence in Arteriovenous Grafts During Hemodialysis", Huntsville Simulation Conference, October, 2004.
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56. Anayiotos AS, Cheng CS, Ito Y., Gray J, Agarwal R., Image Based CFD Workshop. International Conference on Medical Care and Compunetics Bioengineering Division, The Hague Netherlands, June, 2004.
57. Hershey, B., Doyle, M., Kortright E., Anayiotos, AS "Simulation of BRISK-PCA by Computational Fluid Dynamics" International Mechanical Engineering Congress and Exposition, Bioengineering Division, Washington DC, November, 2003.
58. Holton, AD, Walsh, EG, Venugopalan, R., Anayiotos, AS "Phase Velocity Mapping Through a NiTi Stent with Different Levels of Stenosis" International Mechanical Engineering Congress and Exposition, Bioengineering Division Washington DC, November, 2003.
59. Unnikrishnan, S., Zarate, A., Jones, SA, Anayiotos, AS "Hemodynamic Evaluation of a Novel Hemodialysis Graft" BMES-EMBS Conference, Nashville Tennessee, USA.
60. Holton, AD, Walsh, EG, Venugopalan, R., Anayiotos, AS. "Flow Assessment Through a Metallic Stent by PC\_MRA" Summer Bioengineering Conference, Key Biscayne, Florida, June, 2003.
61. Holton, AD, Walsh, EG, Anayiotos, AS, Venugopalan, R. "Magnetic Resonance Imaging (MRI) of Stents: Quantifying Signal-loss to Aid in Device Design". International Conference of Shape Memory and Superelastic Technologies, Fremont California, May, 2003.
62. Pedroso P.D., Anayiotos, A.S, Hershey, B., Eleftheriou, E.C., Holman W" Preliminary Shear Stress Evaluation of a Saphenous Vein Anastomosis Model of a Coronary Artery with a NiTi Implant " International Mechanical Engineering Congress and Exposition, New Orleans, Louisiana, November, 2002.
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65. Anayiotos, A.S., Advincula, T. Venugopalan, K. Eleftheriou, E.C. "Flow Visualization in a Compliant Coronary Artery Anastomosis Model" Summer Bioengineering Conference Snowbird, Utah, June, 2001.
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67. Karavolos A, Powell M., Anayiotos A. 'In-Vivo Identification Sampling Procedure of Air Bubbles Using a Miniature Chamber and Selected Specimens' Proceedings of the Society of Under Water Science Gothenborg, Sweden, June, 2000.
68. Doyle, M., Anayiotos, A., Kortright E., Fuisz, A., Walsh, E, Pohost G. "Rapid Phase Velocity Mapping in a Curved Tube" Second Annual Meeting of The Society of Cardiovascular Magnetic Resonance, Atlanta, GA, Jan 30-Feb1, 2000.
69. Gong, X. Woo, Y.R. Yoganathan, A.P. Anayiotos A.S. "Research Contribution of Prosthetic Valve Manufacturers. Interfacing Academic Industry Research Efforts "International Engineering Congress and Exposition, Bioengineering Division, Vol 2 Nashville, Tennessee p 156, Nov, 1999.
70. Selzer J, Doblal DD, Anayiotos AS, Little LS, Sellers A. "Transtracheal Jet Ventilation A Life Threatening Or Life-Saving Device "BMES-EMBS Conference, Atlanta, Georgia 3:2.1, p 941, 1999.
71. Selzer J, Doblal DD, Anayiotos AS, Little LS, Sellers A "Transtracheal Jet Ventilation A Life Threatening Or Life-Saving Device" ASME Graduate student paper night, Birmingham, Alabama, April,1999.
72. Anayiotos A "Elasticity of the Arterial Tree, the Mechanical Aspect" Echocardiography Clinics University of Alabama at Birmingham, October, 1999.
73. Anayiotos, A.S. "Hemodynamic Evaluation of Cardiovascular Implants" Cardiology Faculty Retreat, University of Alabama at Birmingham, May, 1999.
74. Elmahdi, A., Anayiotos, A.S. "Evaluation of BRISK: A New Rapid Velocimetry Technique" ASME Graduate Student Technical Conference Region XI Birmingham, Alabama, March, 1999.
75. Anayiotos, A.S. Elmahdi, A. M. Doyle,M. Kortright, E Walsh, E G Perry, G J. Pohost, G M. "Evaluation of Valvular Regurgitation by Rapid Quantitative Flow Imaging by BRISK." Summer Bioengineering Conference, June, 1999.
76. Smith B.K. Anayiotos, A.S "Geometric Measurements of an orifice by 3-D Echocardiographic Reconstruction", Sigma Xi Graduate Student Technical Conference, Birmingham, AL, April, 1998.
77. Doyle, M., Anayiotos, A, Kortright E., Fuisz, A., Walsh, E, Pohost G. "Rapid Phase Velocity Mapping" First Annual Meeting of The Society of Cardiovascular Magnetic Resonance, Atlanta, GA, Jan 30-Feb1, 1998.
78. Anayiotos, A.S. Perry, G.J. "A New Method of Evaluation of Regurgitant Flow" The 1997 Whitaker Foundation Summer Conference, July, 1997.
79. Anayiotos, A.S. Smith B.K. Agrawal, D Nanda, N. C. "Morphologic Evaluation of an orifice by 3-D Echocardiography", Summer Bioengineering Conference Sunriver, Oregon, June, 1997.

80. Anayiotos, A.S. Perry, G.J. "A New Method of Evaluation of Regurgitant Flow" The 1996 Whitaker Foundation Summer Conference, August, 1996.
81. Elmahdi, A. M., Myers J.G., Fox, J.F., Anayiotos, A.S. "3-D Numerical Simulations of Orifice Flowfields", ASME Graduate Student Technical Conference Region XI May, 1996.
82. Anayiotos, A.S. Perry, G.J. "Recent Advances in Heart Valve Disease Diagnosis" Cardiology Faculty Retreat, University of Alabama at Birmingham, May, 1996.
83. Myers J.G., Fox, J.F., Newman, B., Elmahdi, A. M., Anayiotos, A.S. "Time Dependent Characteristics of Valvular Regurgitation: A Numerical Investigation", ASME Graduate Student Technical Conference Region XI May, 1996.
84. Fox, J.F., Anayiotos, A.S., Doyle, M. "Optimizing Velocity Encoded MR Parameters Using a Numerical Model", ASME Graduate Student Technical Conference Region XI May, 1996.
85. Perry, G.J. Anayiotos, A.S. Myers, J.G. Green, D.W. Fan, P.H. Nanda, N.C. "Underestimation of Velocities by Color Doppler in Valvular Regurgitation", ASME/AICE/ASCE/BES Summer Bioengineering Conference Beaver Creek, Colorado, June, 1995.
86. Anayiotos, A.S. "Initializing Mechanisms of Atherosclerosis" Cardiology Faculty Retreat, University of Alabama at Birmingham, May, 1995.
87. Perry, G J. Anayiotos, A.S. Myers, J.G. Green, D.W. Fan, P.H., Nanda, N. C. "Implications of Spatial Beam Expansion on Color Doppler Velocity Measurements" Biomedical Engineering Society Conference, Tempe, Arizona October, 1994.
88. Perry, G. J. Myers, J.G. Green, D.W. Anayiotos, A.S. , Fan, P. Nanda, N.C." Implications of Beam Expansion on Color Doppler Ultrasound Velocity. Measurements in Valvular Regurgitation" 13th Southern Biomedical Engineering Conference, Washington DC 128-131, April, 1994.
89. Myers, J.G. Green, D.W. Anayiotos, A.S. Perry, G.J. Fan, P.H., "Calculation of Regurgitant Volumes from the Proximal Orifice Flowfield Using a New Non-Dimensionalized Technique" Journal of the American College of Cardiology, 43rd Annual Scientific Session, Atlanta, Georgia, 463A, March, 1994.
90. Green, D.W. Anayiotos, A.S. "Evaluation of Regurgitant Volumes in A Circular Orifice of Different Sizes" ASME Graduate Student Technical Conference, Atlanta, Georgia, March, 1993.
91. Green, D.W. Anayiotos, A.S. "Orifice Visualization and Geometry Evaluation by Ultrasonography" ASME Graduate Student Technical Conference, Atlanta, Georgia, April, 1993.
92. Langston, T.M., Anayiotos, A.S. "A Finite Element Analysis of Pulsatile Flow in Different Conduits", ASME Graduate Student Technical Conference Region XI, Birmingham, Alabama, 1992.
93. Anayiotos, A.S., Giddens, D.P., Jones, S.A., Glagov, S., and Zarins, C.K. "Fluid Dynamics at the Carotid Bifurcation", Engineering Mechanics Conference, ASCE, 1992.

94. Fan, P., Nanda, N.C., Czuwala, P.J., Anayiotos, A.S., Yoganathan, A.P., "Transesophageal Echocardiographic Evaluation of Valvular Lesions by Color Doppler using the New 'Quasar' Technology", Journal of the American College of Cardiology, 40th Annual Scientific Session May, 1991.
95. Anayiotos, A.S., Giddens, D.P., Glagov, S., and Zarins, C.K. "Shear Stress in a Compliant Model of a Bifurcation", 1st World Congress of Biomechanics, August, 1990.

### **BOOK CHAPTERS**

A. Anayiotos, Y Papaharilaou, Healthy and Stenotic Carotid Artery Flow Ultrasound and Carotid Atherosclerosis edited by Andrew N Nicolaides, Kirk W Beach, Efthymoulos Kyriakou and Constantinos S Pattichis Springer, 2012

Anayiotos A, Cheng G, Ito Y, Gray J, Agarwal R. "The Challenges of Image Based Computational Fluid Dynamics" Medical and Care Compunetics L. Bos et al. (editors) IOS Press 225-231, 2004.

### **STUDY SECTION FOR GRANT REVIEW**

European Funding Agencies

European Commission H2020  
 Maria Sklodowska Curie ITN program  
 April 2016

European Commission H2020  
 Maria Sklodowska Curie Individual Fellowship Program  
 October 2016

European Commission I  
 FP7-SME-2010, 2011, 2012, 2013  
 Brussels, Belgium February 2010, 2011, 2012, 2013

Onsite Evaluation FRACFIX project  
 European Commission I  
 FP7-SME-2011  
 Oslo, Norway October 2010

Eurostars Program  
 Independent Evaluation panel  
 2nd stage evaluation  
 (Representation from 9 countries)  
 Brussels, Belgium January, June 2011

European Commission I  
 Unit G

Nanotechnologies and Nanosciences  
FP7-NMP-SME5  
Brussels, Belgium

April 2008  
December 2011  
December 2012

European Commission I  
Unit  
Cardiovascular Imaging Modalities  
FP7-NMP  
Brussels, Belgium

November 2007

European Commission  
DG: Research  
European Research Council  
Management of the "Ideas" Program  
FP7 MADO05/063

June, 2007

European Commission DGXII  
Unit G  
Nanotechnologies and Nanosciences  
FP6-NMP-SME4  
Brussels, Belgium

April 2005

European Commission Directorate: Education  
Mundus Erasmus Program  
Brussels, Belgium

June 2004

European Commission DGXII  
Marie Curie Research Training Networks"  
"Improving Human Research Potential"  
Brussels, Belgium

June-July 2003

European Commission DGXIII

Technical Evaluation Committee for the Esprit COPHIT project to fund the development of a comprehensive simulator for drug delivery in lungs.

Vienna, Austria  
Manchester, England  
Brussels, Belgium

May, 2002  
December, 2002  
July 2003

European Commission DGXIII

Technical Evaluation Committee for the Esprit MISSIMU project to fund the development of a simulator for minimally invasive surgery.

Cergy, France,

June, 1999  
February, 2000

	September, 2000 March, July2001
Tutlingen, Germany	April, 2002
European Union Commission DGXII "The High-Level Scientific Conferences" "Improving Human Research Potential" Brussels, Belgium	March 2000, 2001 September 2001 April 2002
US Funding Agencies	
National Heart, Lung and Blood Institute, National Institutes of Health DHHS Bethesda, MD	August, 2006
National Science Foundation Mechanical Engineering Panel Graduate Student Fellowship Program Washington DC.	February, 2008, 2009
National Science Foundation Chairman, Bioengineering Panel Graduate Student Fellowship Program Washington DC.	February, 2005, 2006
National Science Foundation Small Business Innovation Research Grants Biomedical Engineering Devices and Instruments Review Panelist Washington DC.	April 2004, March 2007, October 2007, April 2008
National Science Foundation Review Panelist Bioengineering Panel Graduate Student Fellowship Program Washington DC.	February, 2001-2004
National Science Foundation Bioengineering and Research for persons with Disabilities Washington DC.	December, 2001, January 2003

**INVITED LECTURES**

Transilvania University of Brasov  
Multi-scale Mechanical Testing of Stainless Steel and Cobalt-Chromium Stents.  
Invited by Vice Rector Daniel Munteanu

March 2015

National University of Ireland Galway  
BiOLISYS LAB Cyprus University of Technology  
Invited by Prof. Abhay Pandit

July, 2010

Universidad Autonoma de Barcelona Department of Cardiology  
Recent Advances of Biomechanical Applications in the Diagnosis and Treatment of Cardiovascular Disease  
Invited by: Prof Antonio Bayes de Luna

November, 2004

Parc Cientific de Barcelona, Barcelona, Spain  
"The Biofluids Laboratory at UAB"  
Invited by Prof. Josep Samitier

September, 2002

Panelist, Special Session in Mechanical Engineering Education SME International Mechanical Engineering  
Congress and Exposition, Bioengineering and Mechanical Engineering Education, New Orleans, LS,  
Invited by Dr. Mohamed Noory (North Carolina State University) of the Mechanical Engineering Chairmen  
Committee.

November, 2002

University Politechnica of Bucharest  
"Cardiovascular Implants-Nanotechnology and Tissue Engineering"  
Invited by Professor Aurelia Meghea.

May, 2001

### **JOURNAL ARTICLE REVIEWING**

- Journal of Biomechanics
- Journal of Biomechanical Engineering
- BioMED Central
- Journal of Biorheology
- Journal of Fluids Engineering
- ASME International Mechanical Engineering Congress and Exposition
- Ultrasound in Medicine and Biology
- Annals of Biomedical Engineering
- Medical & Biological Engineering and Computing
- Journal of Medical Devices
- Echocardiography
- Journal of the Society of Echocardiography
- Technology and Healthcare
- Journal of Inverse Problems in Science and Engineering
- Institute of Electrical and Electronic Engineers (IEEE)-Medical Devices
- PLoS ONE Public Library of Science
- International Angiology

## JOURNAL EDITORIAL BOARDS

### Associate Editor

Annals of Biomedical Engineering (IF 3.1)

2013 – today

Official Journal of the Biomedical Engineering Society

Kyriacos Athanasiou, 451 E. Health Sciences Drive, GBSF, Room 2303, University of California Davis  
California 95616, USA

### Editorial Advisory Board

Ultrasound in Medicine and Biology (IF 2.2)

2010 – today

Official Journal of the World Federation for Ultrasound in Medicine and Biology

Christy Holland Editor-in-Chief, University of Cincinnati Cardiovascular Center, Room 3988, 231 Albert  
Sabin Way, Cincinnati, Ohio 45267-0586, USA

### Editorial Board

Technology and Healthcare

2003 – 2006

Official Journal of the European Society for Engineering and Medicine

P.F. Niederer Editor-in-Chief, Institute of Biomedical Engineering, University and ETH Zürich, Gloriastrasse  
35 CH-8044 Zürich Switzerland

Former Editor (A. Engin)

## PROFESSIONAL AND ACADEMIC SOCIETIES

Member, Cyprus Society of Mechanical Engineers

Member, American Society of Mechanical Engineers

Member, Biomedical Engineering Society

Member, European Society of Biomechanics

Member, American Association for the Advancement of Science

Member, American Society of Engineering Education

Faculty advisor, Student Chapter American Society of Mechanical Engineers

The University of Alabama at Birmingham (1991 – 1999)

Faculty Advisor, Hellenic Student Organization, University of Alabama at Birmingham (1994 – 2007)

Scientist, Injury Prevention Research Center

University of Alabama at Birmingham (1991 – 2007)

## GRANTS AWARDED:

As Principal Investigator

Project Title /Funding Agency/Company	Dates	Amount
---------------------------------------	-------	--------

Pre-clinical drug development of TR4 for the treatment of human carcinomas(TROJANDRUG) EUREKA-EUROSTARS	2014-2016	\$80,000
Medical Diagnosis Support Tool for Detailed Morphology and Hemodynamic Assessment of the Carotid Bifurcation at Different Head Postures in Healthy and Diseased States Cyprus Research Promotion Foundation	2011-2013	\$250,000
Implanted coronary artery stents crack and corrode: A structural integrity and tissue inflammation analysis Cyprus Research Promotion Foundation Role: Coordinator	2010-2012	\$150,000
Development of an in-vivo flow cytometer FP7- Marie Curie reintegration grant MIVFC (Proposal No 256591) {REF REA REG/REA.P3(2010)D/1937 (C. Pitsillides)	2010-2012	\$75,000
"Biomechanical and Biocorrosion Analysis of Explant Devices" Cyprus Research Promotion Foundation	2008 – 2010	\$120,000
Image Based Computational Fluid Dynamics of Patient Specific Geometries: Hosting of an expatriate Investigator Host: George Georgiou (UCy) Cyprus Research Promotion Foundation	May, 2006- August 2007	\$ 69,000
In Stent Restenosis Evaluation in Novel MR compatible stents (Co PI with Dr. Brigitta Brott) Boston Scientific Corporation, Minneapolis MN	June 2006-June 2008	\$200,000
MRI evaluation of in-stent restenosis in NiTi and L-605 stents in an animal model Cordis (a J&J company)	June 2005-June 2006	\$25,000
Numerical Simulation of Aortic Valve flow in the presence of a Ventricular Assist Device Department of Thoracic Surgery, UAB	June, 2004- June 2005 1	\$15,000
"Surface Evaluation of the Novel Drug Elusion aSpire covered Stent" Vascular Architects, San Jose CA	March 2003- March 2004	\$9,886.00

<p>"Hemodynamic Evaluation of a Novel Dialysis Graft Design" Biomedical Enterprises, Washington DC. NIH-SBIR phase I</p>	<p>October 2002- October 2003</p>	<p>\$ 25,760</p>
<p>"Rapid Flow Evaluation with BRISK" (CoPI with Mark Doyle 40% salary release) NIH-NHLBI HL072317</p>	<p>March2002- March2007</p>	<p>\$1,500,000</p>
<p>"Minimally Invasive Design Development Laboratory" Alabama Health Services Foundation Co PI with Krishna Venugopalan</p>	<p>January 2001- December 2003</p>	<p>\$200,000</p>
<p>"Evaluation of a Novel Embolic Protection Catheter" Embolic Protection Technologies Inc. San Francisco CA</p>	<p>Nov1998- Nov1999</p>	<p>\$9,000</p>
<p>"Ni-Ti Vascular Fitting Laser Doppler Studies" Converge Medical Technologies Pleasanton, CA</p>	<p>Dec2000- Dec2001</p>	<p>\$18,000</p>
<p>"Ni-Ti Vascular Fitting Study Flow Visualization Studies" Advanced By-Pass Technologies, Pleasanton, CA</p>	<p>March1999- March2000</p>	<p>\$25,500</p>
<p>Experimental pressure measurements and pneumothorax in a human pulmonary model of jet ventilation Department of Anesthesiology (UAB)</p>	<p>March 1997- February 1999</p>	<p>\$10,000</p>
<p>" Evaluation of Regurgitant Flow Using a fast Imaging Technique" The Whitaker Foundation</p>	<p>May1997- May1998</p>	<p>\$54,670</p>
<p>"A New Method of Evaluation of Regurgitant Flow" The Whitaker Foundation Biomedical Engineering Research Grant</p>	<p>May1994- May1997</p>	<p>\$175,664</p>
<p>Faculty Research Grant University of Alabama at Birmingham</p>	<p>1993-1994</p>	<p>\$2,000</p>

Faculty Research Grant University of Alabama at Birmingham	1992-1993	\$2,000
"Development of a Cardiovascular Flow Laboratory" Biomedical Research Support Grant UAB-NIH	Jan1991- Jan1992	\$50,000.00

### As an Investigator

Project Title /Funding Agency/Company	Dates	Amount
Development of a Computer Cluster for Biomedical Applications Cyprus Research Promotion Foundation Role: Participating Investigator	2010-2012	\$20,000
Molecular Electronics and Photonics Center PI(S. Choulis) Development of Biosensor technology Role: Participating Investigator	2009-2014	\$3,000,000
"Comparative MRI Compatibility of 316 Stainless Steel Alloy and Ni-Ti Alloy Stents" Cordis Corporation	Jan2000-Jan2001	\$9,000
"Biomedical Force Core Facility" Alabama Health Services Foundation	Feb1998 - Feb2000	\$88,612
"John J. Sparkman Center for international Public Health Education" Alabama Health Services Foundation	April1998- April2000	\$55,000
Implementation of BRISK fast MRImaging on GE software General Electric (GE) Imaging Systems	Oct1999-Oct2000	\$50,000
Development of Left Ventricular Assist Device PI: Christodoulos Christodoulou Cyprus Research Promotion Foundation	September 1998- August 2000	\$ 130,000
Simulation of Ultrasound Blood Flowmetry Computational Fluid Dynamic Research Corporation NIH-SBIR (subcontracted)	Dec1996-Dec1998	\$20,000

## **TECHNICAL EXPERT CONSULTING**

- Cardiac Dimensions, Kirkland, WA
- Biomedical Enterprises Washington DC
- Advanced Catheter Engineering, Livermore, CA
- Converge Medical Technologies, Pleasanton, CA
- Embolic Protection Technologies (Boston Scientific Co St. Paul, MN)
- Advanced Stent Technologies, Pleasanton, CA
- Guidant Corporation, St. Paul, MN
- Codman & Shurtleff (J&J) Boston, MA
- Gambro Healthcare Co. Lakewood, CO
- Huie, Fernambucq & Stewart Law Firm LLP, Birmingham, AL

## **Technical Expert Advising Services**

Advising services to the ministry of Commerce Industry and Tourism of the Government of Cyprus for the establishment of technology business incubators (1998)

## **GRADUATE STUDENT ADVISING (Primary Advisor)**

### Medical Students and Medical Doctors

- 1) John Robinson MD/PhD student  
Project Title: "Numerical Simulation of Womersely Flow in a straight Rigid Tube" (1993)
- 2) Gopal Aggarwal MD  
Project Title: "3-D Echocardiographic Evaluation of a Circular Orifice by Planar Image Reconstruction" (1995)
- 3) Dipak Aggarwal MD  
Project Title: "3-D Echocardiographic Evaluation of Aortic Regurgitation in-Vitro" (1996)
- 4) G J. Costa, de Carvalho MD  
Project Title: "3-D Echocardiographic Evaluation of a Rigid Orifice of Increasing Aspect Ratio in-Vitro" (1997)
- 5) Michael Kolda MD  
Project Title: "Ultrasound Evaluation of a Damaged Porcine Bioprosthetic Valve" (1998)
- 6) Barugur Ravi MD  
Project Title: "Assessment of Doppler Properties of Blood Substitute Products" (2003)
- 7) Anoop Vora (Medical Student)  
Project Title: "Intravenous contrast-enhanced computed tomographic angiography (CTA) and Comparison with MRI in the Femoral Artery (2005)

### **Post Doctoral Fellows**

George Papageorgiou PhD (City University. Of London)	2007-2008
Costas Pitsillides PhD (Boston Univ/MIT) (Marie-Curie Fellow)	2010- today

### **Engineering Graduate Students**

PhD Mechanical and Materials Engineering Cyprus University of Technology

Konstantinos Kapnisis	January 2015
Coronary Stents Crack and Corrode in vivo:A Structural Integrity and Tissue Inflammation Analysis	
Nikolas Aristokleous	July 2013
Computational Simulation of the Carotid Bifurcation at Different Postures	

### **PhD Biomedical Engineering**

- 1) Dina Halwani  
Thesis Title: Local Release of Metallic Ions from Stents into Vascular Tissue and Associated Alterations of Stent Surfaces Summer 2010
- 2) Longchuan Li "Evaluation of MR Imaging compatibility of NiTi and Co-Cr Stents in an Animal model" Spring 2007
- 3) Andrea Holton  
Thesis Title: "MR Imaging Compatibility of a Carotid NiTi Stent" Spring 2004

### **PhD Mechanical Engineering**

- 1) Abdelaziz M. Elmahdi  
Thesis Title: "Development and Experimental Verification of Rapid Quantitative Imaging by BRISK" Fall 1996
- 2) Jerry G. Myers, Fall 1996  
Dissertation Title: Quantifying Valvular Insufficiency Utilizing Upstream Flowfield Characteristics

### **MS Mechanical Engineering**

- 1) Atef Jabr  
Thesis Title: " Hemodynamic Evaluation of a Light Design Polymeric Carbon Heart Valve" Spring 1999
- 2) Vladlen Tchouenko Spring 1999  
Thesis Title: " Evaluation of Carotid Artery Flow in A Stenosed Model of the Human Carotid Bifurcation"
- 3) Barry Smith Spring 1998  
Thesis Title: "Flow Evaluation Proximal to a Defective Prosthetic Porcine Valve by Color Doppler Flow Mapping"
- 4) Abdelaziz M. Elmahdi Winter 1997  
Thesis Title: "3-D Flow Characteristics in Orifices of Different Aspect Ratios"
- 5) Eric Green Winter 1998  
"Preliminary Assessment of Flow by BRISK a New Faster Method of Flow Imaging by Magnetic Resonance"
- 6) Jay Roberts Spring 1995  
"Circular Orifice Flowfield Simulations by FIDAP 6.0"
- 7) Derek W.Green Spring 1994  
Thesis Title:"Evaluation of Regurgitant Flow Proximal to a Circular Orifice by Color Doppler Flow Mapping"

- 8) Tom N. Langston Winter 1993  
Thesis Title: "A Finite Element Analysis of Pulsatile Flow in Different Conduits"

### MS Biomedical Engineering

- 1) Dina Halwani Summer 2007  
Characterization of biocorrosion and tissue contamination effects in explant stents
- 2) Minchul Shin Summer 2007  
"MRI evaluation of in-stent restenosis in MR compatible stents"
- 3) Thanh Huynh Summer 2006  
"Needle Turbulence and Failure of Arteriovenous Access"
- 4) Rohan More Fall 2005  
"Computational Simulation of FRISK, a rapid ME based Imaging technique"
- 5) Sunil Unnikrishnan August 2004  
"Hemodynamic Evaluation of a Novel Design of a Dialysis Graft"
- 6) Bradley Hershey Summer 2003  
Thesis Title: "Optimization of an accelerated Phase contrast angiography method in the evaluation of Blood Flow"  
(Biomedical Engineering Graduate student of the year 2003)
- 7) Ameya Mundekar (Academic Advisor) Fall 2003  
Thesis Title: The Role of Cell Borders in Early steps of Leukocyte Recruitment
- 8) Na Ni (Academic Advisor) Fall 2002  
Thesis Title: Role of Cytoskeleton in Cell Rolling and Adhesion under Flow
- 9) Andrea Holton Spring 2002  
Thesis Title: Comparative MRI Compatibility of 316 Stainless Steel Alloy and Nickel Titanium Stents
- 10) Tina Advincula Winter 2002  
Thesis Title: "Flow Visualization and Life Span Prediction of a NiTi Coronary Artery By-Pass Graft Fitting"
- 11) Pedro Pedroso Spring 2002  
Thesis Title: Axial and Radial Profiles of an In Vitro Coronary Artery Bypass Graft Model Measured by Laser Doppler Velocimetry
- 12) Jake Fox Spring 1994  
Thesis Title: "Optimization of Velocity Encoded Magnetic Resonance Imaging Proximal to an Orifice"

### **Special Topic Biomedical Engineering**

Zhang Xing Summer 2007

Evaluation of the endothelial layer of a swine carotid under laminar and turbulent flow conditions

### **GRADUATE STUDENT ADVISING (Committee Member)**

#### **Ph.D Biomedical Engineering**

Jim Zuo 2006  
Development of a Novel Fast MRI Imaging Scheme

#### **PhD Mechanical Engineering**

Wei Li 2001  
"Flow and thermal analysis of Resin Transfer Molding (RTM)"

Olufemi Agboola 1997  
"The Influence of Turbulent and Blade Geometry on the Acoustics of Turbomachinery"

#### **MS Mechanical Engineering**

John Nielsen 1996  
William Gates 1995  
Steve Conerly 1995  
Carl Dixon 1995  
Manoocher Sazmand 1995  
George Shunnarah 1994  
Olufemi Agboola 1994  
Richard Wang 1994  
Jerry G. Myers 1992

### **UNDERGRADUATE STUDENT ADVISING (Capstone Project advisor)**

#### **Biomedical Engineering**

Eric Dubois 2006  
Dina Halwani 2005  
Thanh Huynh 2003  
(Biomedical Engineering Undergraduate student of the year 2002)

#### **Mechanical Engineering**

44 students

1992-1999

School of Engineering Summer Student Program

Have mentored and trained more than 50 high school students from local High schools as summer interns of the Biofluids Laboratory

**BIOFLUIDS LABORATORY GRADUATES CURRENT POSITIONS ( partial list)**

Dina Halwani	Research Engineer, Cell and Tissue Systems Inc. Charleston SC, USA
Jerry G Myers	Lead Engineer, NASA Glenn Research Center Biomedical engineering applications in microgravity, Bioastronautics
Andrea Holton	Biomedical Engineer US-Food and Drug Administration-CDRH Post clinical evaluation of bio-functionality of drug eluting stents and other devices
Longchuan Li	Assistant Professor , Biomedical Imaging Technology Center, Emory University fMRI applications of blood flow in intracranial vessels
Abdelaziz M. Elmahdi	Nuclear Engineer, Westinghouse Corporation Nuclear power Station, Columbia South Carolina Development of novel cooling systems for nuclear power stations (has a patent)
Tina Advincula	Post doctoral fellow University of Rochester
Brad Hershey	Lead Engineer, Boston Scientific Corporation Development and design of spinal implants
Pedro Pedroso	R&D lead engineer Cordis Corporation (J&J Company) Design of intracranial stents
Barry Smith	Patent attorney and engineer, Neurorecovery Inc. Design and patenting of biotechnology products
Rohan More	Clinical Systems Engineer St Jude Medical Devices Implantable pacemakers and defibrillators
Thanh Huynh	PhD student University of Minnesota. With Dr. Bob Tranquillo's Group working on tissue engineered heart valves
Sunil Unnikrishnan	PhD student University of Virginia with Prof. Klaus Ley's group working on Intravital microscopy and micro-PIV (Particle image velocimetry) to elucidate the physical role of the endothelial layer in large arteries.
Na Ni	PhD student University of Alabama Department of vascular Pathology working with Dr. Dennis Kucik's group on Hemodynamic studies on endothelial cells

Jay Roberts                      Owner, IKOKA, Computer Software industry  
<http://www.linkedin.com/pub/jay-roberts/5/6b6/356>

## **UNIVERSITY COMMITTEES**

### **Cyprus University of Technology**

Library Committee (Coordinator)	2007-2012
Undergraduate Studies Committee (Member)	2007-2012
Health and Safety Committee (Member)	2007-2012
Buildings Committee (Coordinator)	2012-2015

### **University of Alabama at Birmingham**

Post Doctoral Education Committee	2003-2007
Affirmative Action Officer School of Engineering	2001-2007
Scholar, John J. Sparkman Center for international Public Health Education	1995-1999
UAB Study Abroad committee	1991-2009
UAB Faculty Senator	1994-1995
Science Olympiad for High school Students	1991-1995
DuPuis Engineering Scholarships Committee	1991-1995
"Excellence in Teaching" (Ingalls Awards) Committee	1995, 1996
Sigma Xi Graduate Student Day Committee	1996-1998
Engineering Faculty Mentor for Incoming Freshmen	1998
Undergraduate Student Scholarship Committee	1998-1999

## **FACULTY/STUDENT ACTIVITIES**

Have been the original organizer and promoter of the "ASME Eggdrop Contest" in the Department of Mechanical Engineering of the University of Alabama. A popular and high profile event that promotes mechanical engineering thinking through the ASME student chapter on "Engineers Week" every year. The event still receives considerable financial support from the local industry as well as student scholarship money. The event was named after my deceased senior design student Brent Newman for his multiyear involvement in the event

1992 -1999

<https://www.uab.edu/engineering/home/departments-research/me/student-organizations/asme/2016eggdrop>

Have taught Fundamentals of Engineering and Professional preparation courses to students offered by the School of Engineering.

1991- 2000

## **UNIVERSITY EXCHANGE / INTERNATIONALIZATION**

Instrumental in development of the faculty and student ERASMUS+ exchange program at the Cyprus University of Technology

Chairman of the International Association for the Exchange of Students for Technical Experience, Cyprus

Initiated the establishment of a bilateral agreement for an academic exchange program between the Cyprus University of Technology and the University of Alabama at Birmingham 2011

### **PUBLIC AND COMMUNITY SERVICE**

Evaluator for the Conference of Southern Graduate schools Awards	
Mentor for the UAB-Coca-Cola Minority Summer Internship program	1991-1995
Evaluated Scientific Designs for Girl and Boy Scout events	1991-1995
Taught special studies courses for community service	1994