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Şenol Pişkin

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Research Interests

Translational Healthcare Technologies, Bio-medical Engineering, Vascular Diseases, Cardiovascular Simulation, Bio-mechanics, Surgical Planning, Biomimetics, Aneurysm Rupture Risk, Diagnosis, Prognosis and Treatment Planning, Microfluidic Devices, Bio-materials, Bio-medical Conduits and Devices, Hemodynamics, Rheology, Blood Flow, Blood Damage, Computational and Experimental Fluid Dynamics, Finite Element Analysis, Fluid-Structure Interaction, Computational Science, Parallel Computing, High Performance Computing, Cardiovascular Simulation, Bio-mechanics, Surgical Planning, Biomimetics, Aneurysm Rupture Risk, Diagnosis, Prognosis and Treatment Planning, Microfluidic Devices, Bio-materials, Bio-medical Conduits and Devices, Hemodynamics, Rheology, Clinical Image Processing, Imaging Modalities, Virtual/Augmented/Extended Reality Applications, Robotics, Haptics

Academic Experience

March 2021 – Present
Department Chair, *Istinye University*, Istanbul – Turkey.
Department of Mechanical Engineering

December 2019 – Present
Assistant Professor, *Istinye University*, Istanbul – Turkey.
Research and Education on biomedical engineering, cardiovascular modeling and simulation

February 2017 – November 2019
Research Associate, *University of Texas*, San Antonio – USA.
Pulmonary hypertension, Accurate modeling of lungs, growth, cardiac CT/MR image segmentation for simulation and rapid prototyping, predicting rupture risk of cerebral and aortic aneurysms, device design

August 2018 – January 2019
Instructor, *University of Texas*, San Antonio – USA.
Biomechanics II: Cardiovascular fluid dynamics

Aug 2013 – February 2017
Post Doctoral Fellow, *Koc University & Carnegie Mellon University*.
Cardiovascular simulation, sketch-based surgery planning, growth, cardiac CT/MR image segmentation for rapid prototyping, coordination of research group, grant application, invention disclosure, supervision of the PhD, master and bachelor biomedical, mechanical and computer engineering students

Feb – Jul 2013 **Researcher**, *Dogus University* , Istanbul – Turkey.
Cardiovascular fluid-structure interaction simulation, opening and closure of ventricle valve

Nov 2001 – Nov 2012 **Graduate Research Assistant**, *Istanbul Technical University*, Istanbul – Turkey.
Research and Teaching activities

Education

2014 **Ph.D. in Computational Science and Engineering**, *Istanbul Technical University*, Istanbul – Turkey.

2004 **M.Sc. in Computational Science and Engineering**, *Istanbul Technical University*, Istanbul – Turkey.

2001 **B.Sc. in Mechanical Engineering**, *Istanbul Technical University*, Istanbul – Turkey.

Ph.D. Thesis

Title *A Numerical Three Dimensional Blood - Artery Wall Interaction Model for Human Carotid Artery and Its Applications*

Supervisor Prof. M. Serdar Çelebi

Description The thesis includes several technical and clinical projects about modeling of large arteries

- Data acquisition and 3D reconstruction of patient-specific cardiovascular anatomies (Clinical meetings, literature search, image analysis, statistical analysis, evaluation of clinical relevance).
- Modeling blood flow in arteries using computational fluid dynamics (Software development, boundary condition implementation, mesh generation, post-processing, evaluation of clinical relevance)
- Analysing and modeling material behavior of carotid artery (Fitting material properties of the artery, finite element modeling, software development, post-processing, evaluation of clinical relevance)
- Fluid-structure interaction (Coupling fluid and structure codes, software development, optimization, post-processing, evaluation of clinical relevance)
- High-performance computing (Distributed computing of fluid and structure codes separately, parallel computing of fluid-structure interaction coupling code, performance analysis)
- Visualization and animation (Software development, GPU computing, parallel processing, large data management)

M.Sc. Thesis

Title *Model of Blood Flow in Carotid Artery Bifurcation using Computational Fluid Dynamics*

Supervisor Prof. M. Serdar Çelebi

Description Detailed analysis of a parametric artery model was performed. Effect of stenosis was investigated. A software was developed in order the generate many different models automatically. Simulations were performed in a parallel computing environment.

Graduation Project B.Sc.

Title *Calibration of Liquid Crystal Films*

Supervisor Prof. Mustafa Özdemir (promoter) and Prof. Murat Çakan (co-promoter)

Description Several experiments were performed to calibrate the liquid crystal films with respect to temperature and temperature changes within a specified range. Results were post-processed on computer.

Professional Experience

December, 2013 – Present **Co-founder and CTO**, *Hemodyn, LLC*, – .
A Healthcare IT StartUp

August, 2004 – June, 2013 **Engineering Applications Consultant and Administrator**, *National Supercomputing Center*, Istanbul – Turkey.
Supported system administrators during engineering software installation and case run. Helped users preparing their cases and solving their problems. Prepared scripts for best system performance. Field of applications includes computational fluid dynamics, computational structural mechanics and parallel visualization.

Jul 2000 – May 2001 **Project Assistant**, *Arçelik A.Ş.*, Istanbul – Turkey.
Carried out several engineering projects, including modeling (the scattering) of the amount of water used in washing machines.

Honors, awards, grants, and rankings

2021 **Marie Sklodowska-Curie Actions**, *Seal of Excellence Award for a project proposal (for a grade of 90.40/100)*, MSCA.
European Commission

2021 **The Scientific and Technological Research Council of Turkey**, *Above-Threshold Award - Eşik üstü Ödülü*, TUBITAK.
Turkey

2020, 2021 **Istinye University**, *Promotions for journal publications*, ISU.
Turkey

2019 **The Fields Institute for Research in Mathematical Sciences**, *Travel Award*, UofT.
Toronto, Ontario, Canada

2019 **Office of the Vice President for Research, Economic Development and Knowledge Enterprise**, *Travel Award*, UTSA.
San Antonio, Texas, USA

2018 **San Antonio Postdoctoral Research Forum (SAPRF)**, *2nd Best Poster Presentation Award*, UTHealth.
San Antonio, Texas, USA

2018 **on Image-based Biomedical Modeling (The University of Utah)**, *Scholarship for Summer Course - IBBM*, NIH.
Park City, Utah, USA

2018 **for International High Performance Computing Summer School**, *Scholarship for Mentorship - IHPCSS*, XSEDE - PRACE.
Ostrava, Czech Republic

2017 **for Integrated Computational Materials Education (University of Michigan)**, *Scholarship for Summer School - ICMEd*, NSF.
Ann Arbor, Michigan, USA

2016-2017 **The Scientific and Technological Research Council of Turkey**, *2219 Postdoctoral Fellowship for University of Texas*, TUBITAK.
San Antonio, Texas, USA

2017 **The Scientific and Technological Research Council of Turkey**, *Investigated Patent Promotion*, TUBITAK.
TURKEY

2016 **Hyperloop Pod Competition Design Weekend (Texas A&M University)**, *Finalist and scholarship for attendance, travel*, SPACEX.
Austin, Texas, USA

2016 **Koç University**, *Patent Days Plate Award*, KU, TTO.
İstanbul, TURKEY

2015 **in Computational Sciences - Partnership for Advanced Computing in Europe**, *Scholarship for International Summer School on HPC Challenges*, PRACE.
Toronto, CANADA

2014 **The Scientific and Technological Research Council of Turkey**, *1512 Entrepreneurship Funding (65K USD): (Proje fonu - 100bin TL)*, TUBITAK.
TURKEY

2014 **The Scientific and Technological Research Council of Turkey**, *1602 Patent Support Program*, TUBITAK.
TURKEY

2013 **New Ideas New Businesses - Middle East Technical University**, *Entrepreneurship Competition Grand (1.) Prize (60K USD):*, METU.
Yeni Fikirler Yeni İşler Proje Ödülü - 100bin TL, Ankara, TURKEY

2013 **The Scientific and Technological Research Council of Turkey**, *1602 Patent Support Program*, TUBITAK.
TURKEY

2013 **Partnership for Advanced Computing in Europe**, *Research and Computing Source Fund*, PRACE, EU-FP7.
FRANCE and GERMANY

2012 **ITN in Advanced Techniques in Computational Mechanics, Marie Curie Actions**, *Scholarship for summer school on Discontinuous Galerkin Methods*, ATCoMe and E-CAero.
and European Collaborative Dissemination of Aeronautical research and applications, Aeronautics and Air Transport Coordination and Support Action, Barcelona, SPAIN

2010 **The Scientific and Technological Research Council of Turkey**, *Summer school participation and travel support*, TUBITAK.
Jyväskylä, FINLAND

2010 **The Scientific and Technological Research Council of Turkey**, *Conference participation and travel support*, TUBITAK.
Chongqing, CHINA

2008 **European Union Marie Curie Conferences and Training Courses**, *Scholarship for European Mathematical Society Summer Schools*, EMS.
Cortona, ITALY

2008 **Centre d'Eté Mathématique de Recherche Avancée en Calcul Scientifique**, *Junior Grants for summer schools and workshops*, CEMRACS.
Marsielle, FRANCE

September 2007 **European Atelier for Engineering and Computational Sciences**, *Young researcher scholarship*, EUA4X.
Crete, GREECE

September 2007 **European Atelier for Engineering and Computational Sciences**, *Young researcher scholarship*, EUA4X.
Rome, ITALY

2007 **Centre d'Eté Mathématique de Recherche Avancée en Calcul Scientifique**, *Junior Grants for summer schools and workshops*, CEMRACS.
Marsielle, FRANCE

2007 **Translational Access Programme**, *EC-funded research visit support to Edinbourgh*, HPC-Europa.
Edinbourgh, SCOTLAND

November 2005 **European Atelier for Engineering and Computational Sciences**, *Young researcher scholarship*, EUA4X.
Brussels, BELGIUM

October 2005 **European Atelier for Engineering and Computational Sciences**, *Young researcher scholarship*, EUA4X.
Lecce, ITALY

June 2005 **European Atelier for Engineering and Computational Sciences**, *Young researcher scholarship*, EUA4X.
Ancona, ITALY

2004 , *1st among all attendants award*, BSUN summer school final exam, Sakarya, TURKEY.

2004 , *Summer school support*, Black Sea Universities Network (BSUN), Sakarya, TURKEY.

Between 2004 and 2021 **The Scientific and Technological Research Council of Turkey**, *Several promotions for journal publications*, TUBITAK.
TURKEY

Between 2004 and 2015 **Istanbul Technical University**, *Several promotions for journal publications*, ITU.
TURKEY

1997 , *In the first 1000 out of 1,4 million applicants*, University entrance exam, TURKEY.

Project Activities

- **COST Action** European Cooperation in Science and Technology
  Management Committee Member **2019-2023**
  CA18216 - Network for Research in Vascular Ageing: Cardiovascular disease (CVD) is the leading cause of morbidity and mortality worldwide, regardless of gender, ethnicity or income. The concept that vascular age, as opposed to chronological age, is better related to the prognosis of CVD is rapidly evolving. Arterial stiffness is an important component of vascular ageing and a potent CVD risk predictor, and as such is emerging as an appealing therapeutic target. Despite recent technological advances for the measurement of vascular ageing in clinical practice, unmet needs remain including: complexity of use and heterogeneity of approaches, insufficient validation in clinical settings, fragmentation of expertise, and lack of research driven studies regarding treatment and head-to-head comparisons between different techniques.

- **COST Action** European Cooperation in Science and Technology
  Working Group Member **2019-2023**
  CA18206 - Network for Research in Glioma MR Imaging 2.0: This COST Action aims to build a pan-European and multidisciplinary network of international experts in glioma research, patient organisations, data scientists, and MR imaging scientists by uniting the glioma imaging community within Europe and progressing the development and application of advanced MR imaging for improved decision making in diagnosis, patient monitoring, and assessment of treatment response in clinical trials and clinical practice.

- **COST Action** European Cooperation in Science and Technology
  Working Group Member **2019-2023**
  CA18233 - European Network for Innovative Diagnosis and Treatment of Chronic Neu-

tropenias (EuNet-INNOCHRON): Chronic neutropenias (CNP) represent a wide spectrum of disorders ranging from mild to life-threatening, acquired or congenital diseases. The pathophysiological mechanisms underlying CNPs are diverse and vary from haemopoietic stem cell and bone marrow microenvironment defects resulting in impaired neutrophil production, to immune disturbances leading to accelerated apoptosis of neutrophil progenitors and/or the circulating mature neutrophils. The prognosis of patients with CNP is related to the underlying pathogenesis, the degree of neutropenia and the propensity for leukaemic transformation. Accurate diagnosis is mandatory for risk stratification and treatment choice.
The principal challenge of the Action is to establish a wide network of researchers with special interest in CNPs and facilitate interactions and collaborations among top-level European experts and young investigators from different scientific areas i.e. Clinical and Laboratory Haematology, Immunology, Genetics, Molecular Biology and Regenerative Medicine. The main aims of the Action are: (a) to promote science, training and education on advanced biochemical, immunological, genetic and molecular biology techniques for the accurate diagnosis and treatment of patients with different types of CNP, early recognition of Myelodysplastic Syndromes/Acute Myeloid Lekaemia evolution and appropriate intervention, (b) to link and further expand existing neutropenia networks for a more multidisciplinary approach of CNP that will result in a better characterization of the underlying diseases and development of individualized and precision medicine therapeutic approaches for selected patients, (c) to organize and expand CNP patient Registries and Biobanks using homogenized protocols in line with the ethical standards of the European Legal Framework and the relevant national regulations.

- **Istinye University, Turkey** University Research Funding
  Principal Investigator **2020-2022**
  The project aims to establish the Modeling, Simulation and Visualization and Virtual Reality Laboratory, which is a part of the advanced project laboratories, College of Engineering, Istinye University. The laboratory will be used for both research and education by students and faculties. In the first phase, there will be 2 sets of equipment which include virtual reality headsets, haptic devices, and 3D mouses. With these sets, it will be possible to perform biomechanics, virtual medicine, fluid dynamics, structural mechanics and similar applications. With the sets, it will be possible to do studies on virtual geography, architecture and history as well. The focus of the laboratory will be collaboration and publishing with medical centers and doctors.

- **Istinye University, Turkey** University Research Funding
  Principal Investigator **2021-2022**
  Robotics and Extended Reality
  The aim of the project is to strengthen the infrastructure of existing laboratories. Equipping these laboratories, which focus on control, robotics and extended reality, with modern devices is extremely important in order to follow current developments and teach students these disciplines. In addition, it is necessary to develop such infrastructure in order to carry

out studies at the level of research laboratories in the world. After these updates, the education/training capacity will increase and there will be a stronger potential for research projects. The devices to be purchased will enable a wide variety of applications to be made. Students will be able to come up with their own ideas with robotic devices that have many flexibilities. In addition, the computer infrastructure will be strengthened so that they can do the coding themselves. With the renewals on the virtual reality side, many medical and engineering applications will be able to be studied, and even a platform can be created for some application developments.

- **Istinye University, Turkey** University Research Funding
  Principal Investigator **2020-2023**
  Digital Stethoscope

- **Bilgi University, Turkey** University Research Funding
  Researcher **2020-2021**
  The project aims to analyse and optimize a novel passive heart support device (integrated aortic-turbine venous-assist - iATVA) using computational computer simulation technique.

- **TUBITAK, Turkey** The Scientific and Technological Research Council of Turkey *Principal Investigator* **2020-2021**
  TUBITAK funding for MARIE SKLODOWSKA CURIE INDIVIDUAL FELLOWSHIP - Project Review

- **TUBITAK, Turkey** The Scientific and Technological Research Council of Turkey TEYDEB 1601
  Principal Investigator **2016-2017**
  In this project, we proposed methodologies for semi-automatic segmentation of scanned pediatric patient data. The patient-specific geometry will be reconstructed and be prepared for computational fluid dynamics or structural mechanics analyses.

- **University of Bath, England** International Research Funding
  Researcher **2015-2017**
  In this seed project, we aim to improve the fluid dynamics performance of cardiovascular components via active and passive flow control principles. Expanding on the research interests of the partner laboratories, we will focus both on cardiovascular devices (ventricle assist devices and cardiopulmonary by-pass cannulas) and in-vivo models (for example, controlling flow in the embryonic heart during development).

- **PRACE, European Union** Partnership for Advanced Computing in Europe
  Researcher **2015-2016**
  We studied GPU solver performance of matrices produced by fluid flow simulation using the incompressible, laminar OpenFOAM solvers implemented in SuperLU direct solver libraries.

- **ERC PoC** European Research Council - Proof of Concept Funding

Researcher **2014-2016**
This type of funding was granted first time in Turkey to our company Hemodyn, LLC. We worked on sketch-based, online surgical planning platform to repair the heart and vascular anomalies, particularly by patch implementation. The scope of the study aimed to cover the growth of the patient cardiovascular system so that the surgery performance will be higher for a longer life span.

- **TUBITAK, Turkey** The Scientific and Technological Research Council of Turkey ARDEB 1003
  Researcher **2015-2018**
  This project's main goal is to develop a medical image based computer-aided design/modeling tools for the patient-specific design of vascular conduits and grafts, and for the pre-operational surgical planning, aimed for the neonatal and pediatric congenital heart and vascular surgeries. The novelty of the proposed pre-surgical patient-specific design framework is its ability to employ bio-mechanical modeling of soft-tissue behavior under mechanical loading in order to predict post-operational outcomes.

- **PRACE, European Union** Partnership for Advanced Computing in Europe
  Researcher **2013-2014**
  We studied a fluid flow simulation using the incompressible, laminar OpenFOAM solver icoFoam and other direct solvers (kernel class) such as SuperLU DIST 3.3 and SuperLU MCDT (Many-Core Distributed) for the large almost Penta-diagonal and almost Hepta-diagonal matrices coming from the simulation of flow with a structured mesh domain.

- **TUBITAK, Turkey** The Scientific and Technological Research Council of Turkey TEYDEB 1512
  Principal Investigator **2013-2014**
  In this project, we developed a patient-specific pre-surgical planning platform for congenital heart defect operations. We implemented computational fluid dynamics tools to simulate blood flow of surgery scenarios to calculate post-surgery operation performance.

Journal Publications

- **Comparison of Non-Newtonian Viscosity Models for Blood Flow in a Stenosed Patient-Specific Carotid Artery Using Measured Pulsatile Inlet Data**, Şenol Pişkin*, Hasret Türkeri, M. Serdar Çelebi, **...**, To be Submitted, 2021, *Corresponding author

- **Integrated visualization of multi-scale hemodynamics in human pulmonary arteries**, Pavan Pillalamarri*, Şenol Pişkin*, Ender A. Finol, -, To be Submitted, 2021, *Both authors contributed equally to this paper

- **Patient-specific computational analysis of hemodynamics in adult pulmonary hypertension**, Pavan Pillalamarri, Şenol Pişkin, Sourav S. Patnaik, Srinivas Murali, Ender A.

Finol, -, Submitted, 2021

- **Computational Fluid Dynamics as a Non-Invasive Tool for Assessment of Pulmonary Hypertension**, Şenol Pişkin, Alifer Bordones, Vitaly Kheyfets, Sourav Patnaik, Kerem Pekkan, Srinivas Murali, Ender A. Finol, **Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine**, Submitted, Pending major revisions, 2021

- **Sensitivity of Computational Fluid Dynamics Simulations against Soft Errors**, E. Fatih Yetkin, Şenol Pişkin, **Computing**, Accepted, 2021, *Both authors contributed equally to this paper

- **Wall Motion Detection and MRI-based Hemodynamic Assessment in a Flow-Loop Model of a Patient-Specific Abdominal Aortic Aneurysm**, Mirunalini Thirugnanasambandam, Tejas Canchi, Şenol Pişkin, Christof Karmonik, Ethan Kung, Prahlad G. Menon, Stephane Avril, Ender A. Finol, **Journal of Biomechanical Engineering**, Volume 143, Issue 5, 2021

- **Ex Vivo Regional Mechanical Characterization of Porcine Pulmonary Arteries**, Narasimha Rao Pillalamarri, Sourav S. Patnaik, Şenol Pişkin, Pete Gueldner, Ender A Finol, **Experimental Mechanics**, Volume 61, Issue 1, 2021

- **Patient-specific hemodynamics of new coronary artery bypass configurations**, Mohammad Rezaeimoghaddam, Gokce Nur Oguz, Şenol Pişkin, Sanser Ates, Tijen Alkan Bozkaya, S. Samaneh Lashkarinia, Erhan Tenekecioğlu, Haldun Karagoz, Kerem Pekkan, **Cardiovascular Engineering and Technology**, Volume 11, 2020

- **A Canonical Correlation Analysis on the Relationship between Clinical Attributes and Patient-Specific Hemodynamic Indices in Adult Pulmonary Hypertension**, Şenol Pişkin, Sourav Patnaik, David Han, Alifer Bordones, Srinivas Murali, Ender A. Finol, **Medical Engineering & Physics**, Volume 77, 2020, **Selected as Editor's Choice by the journal, Selected as paper of the month by The Institute of Physics and Engineering in Medicine**

- **Hypoxia: The best stimulator that increases the shear-induced response of red blood cells**, Elif Ugurel*, Senol Piskin*, Ali Cenk Aksu, Ozlem Yalcin, **Frontiers in Physiology**, Volume 10, 2020, *Both authors contributed equally to this paper

- **Multiple Aneurysms AnaTomy Challenge 2018 (MATCH) - Phase II: Rupture Risk Assessment**, International Study, Şenol Pişkin with Multi-authors, **International Journal of Computer Assisted Radiology and Surgery**, Volume 14, Issue 10, 2019

- **Cover Story: Biomechanical Properties of Degraded Arterial Tissues are Re-**

stored by Pentagalloyl Glucose, Sourav Patnaik, Şenol Pişkin, Narasimha Rao Pillalamarri, Gabriella Romero Uribe, G. Patricia Escobar, Eugene Sprague, Ender A. Finol, **Bioengineering**, Volume 7, Issue 3, 2019

- **Biomechanical Restoration Potential of Pentagalloyl Glucose after Arterial Extracellular Matrix Degeneration**, Sourav Patnaik, Şenol Pişkin, Narasimha Rao Pillalamarri, Gabriella Romero Uribe, G. Patricia Escobar, Eugene Sprague, Ender A. Finol, **Bioengineering**, Volume 7, Issue 3, 2019

- **Multiple Aneurysms AnaTomy Challenge 2018 (MATCH) - Phase I: Segmentation**, International Study, Şenol Pişkin with Multi-authors, **Cardiovascular Engineering and Technology**, Volume 9, Issue 4, 2018

- **Real-World Variability in the Prediction of Intracranial Aneurysm Wall Shear Stress: The 2015 International Aneurysm CFD Challenge**, Kristian Valen-Sendstad, Aslak W. Bergersen, Yuji Shimogonya, Leonid Goubergrits, Jan Bruening, Jordi Pallares, Anton Vernet, Şenol Pişkin, et al., **Cardiovascular Engineering and Technology**, Volume 9, Issue 4, 2018

- **Parametric limits of computational pre-surgical pulmonary artery patch reconstruction framework**, S.Samaneh Lashkarinia, Senol Piskin, Tijen A.Bozkaya, Ece Salihoglu, Can Yerebakan, Kerem Pekkan, **Annals of Biomedical Engineering**, Volume 46, Issue 9, 2018

- **The effect of modified Blalock-Taussig shunt anastomosis angle and pulmonary artery diameter on pulmonary flow**, Ahmet Arnaz*, Senol Piskin*, Gokce Nur Oguz, Yusuf Yalcinbas, Kerem Pekkan, Tayyar Sarioglu, **The Anatolian Journal of Cardiology**, Volume 20, Issue 1, 2018, *Both authors contributed equally to this paper

- **Cover Art: Hemodynamical visualization of pulmonary hypertension disease**, Senol Piskin, Alifer D. Bordones, Kerem Pekkan, Ender A. Finol, **Pulmonary Circulation**, 2018, Accepted

- **Hemodynamic Recovery of a Twisted Testicular Artery Lumen**, Selda Goktas, Ozlem Yalcin, Erhan Ermek, Senol Piskin, Can Taylan Capraz, Yusuf Ozgur Cakmak, Kerem Pekkan, **Nature - Scientific Reports**, Volume 7, Number 15570, 2017

- **Tetralogy of Fallot surgical repair: Shunt configurations, ductus arteriosus and the Circle of Willis**, Şenol Pişkin, Gözde Ünal, Kerem Pekkan, **Cardiovascular Engineering and Technology**, Volume 8, Issue 2, 2017,
  Most Downloaded paper list in 2017

- **The total cavopulmonary connection buckling increase energy loss**, Ǧokẹ N. Oğuz*,

Şenol Pişkin*, Erhan Ermek, Naz Altekin, Samir Donmazov, Ahmet Arnaz, Kerem Pekkan, **Journal of Medical Devices**, Volume 11, Issue 2, 2017, *Both authors contributed equally to this paper

- **Hemodynamics of patient-specific aorta-pulmonary shunt configurations**, Şenol Pişkin, Fırat H. Altın, Okan Yıldız, İhsan Bakır, Kerem Pekkan, **Journal of Biomechanics**, Volume 50, 2016

- **The Computational Fluid Dynamics Rupture Challenge 2013 - Phase II: Variability of Hemodynamic Simulations in Two Intracranial Aneurysms**, International Study, Şenol Pişkin with Multi-authors, **Journal of Biomechanical Engineering**, Volume 137, Issue 12, 2015

- **Computational Modeling of Neonatal Cardiopulmonary Bypass Hemodynamics with Full Circle of Willis Anatomy**, Şenol Pişkin, Akif Ündar, Kerem Pekkan, **Artificial Organs**, Volume 39, Issue 10, 2015

- **Non-invasive in vivo Determination of Residual Strains and Stresses**, Samir Dönmazov, Şenol Pişkin, Kerem Pekkan, **Journal of Biomechanical Engineering**, Volume 137, Issue 6, 2015

- **Scalability of OpenFOAM for bio-medical flow simulations**, Ahmet Duran, M. Serdar Çelebi, Şenol Pişkin, Mehmet Tuncel, **The Journal of Supercomputing**, Volume 71, Issue 3, 2015

- **Analysis of the effects of different pulsatile inlet profiles on the hemodynamical properties of blood flow in patient specific carotid artery with stenosis**, Şenol Pişkin*, M. Serdar Çelebi, **Computers in Biology and Medicine**, Volume 43, Issue 6, Pages 717-728, 2013, *Corresponding author
was in the Most Downloaded Paper List in 2013, 2014 and 2015

- **Computational Science and Engineering at Istanbul Technical University**, Hasan Dağ, Gürkan Soykan, Şenol Pişkin, Osman Yaşar, **Computing in Science and Engineering**, Volume 7, Issue 1, 2005

Book Chapter

- **Computational Science and Engineering (CSE) Education: Faculty and Student Perspectives**, Hasan Dağ, Gürkan Soykan, Şenol Pişkin, Osman Yaşar, **Lecture Notes on Computer Science** 3045 Springer 2004, ISBN 3-540-22057-7

Letter to the Editor

- **Re: Role of Flow Preference in Decision Making for Blalock-Taussig Shunt**, Ahmet Arnaz, Şenol Pişkin **The Anatolian Journal of Cardiology**, Volume 20, Issue 6, 2018

Abstracts in Journals

- **Progress in Computational Modeling of Neonatal Cardiopulmonary Bypass Hemodynamics with Detailed Circle of Willis Anatomy**, Şenol Pişkin, Akif Ündar, Kerem Pekkan, Artificial Organs, Volume 38, Issue 5, 2014
- **Impact of Integrated Computational Fluid Dynamics and Lumped Parameter Modeling on Neonatal CPB and Congenital Heart Surgery** Kerem Pekkan, Berk Yiğit, Prahlad Menon, Şenol Pişkin, William Kowalski, Ahmet Sasmazel, abstract in Artificial Organs, Volume 37, Issue 4, 2013
- **A parametric (inlet) flow analysis of 3D human carotid artery using realistic geometry**, Şenol Pişkin, Erke Aribas, M. Serdar Çelebi, abstract in Journal of Biomechanics, 44, Supplement 1, May 2011
- **A comparison between non-Newtonian and Newtonian blood viscosity models**, Hasret Turkeri, Şenol Pişkin, M. Serdar Çelebi, abstract in Journal of Biomechanics, 44, Supplement 1, May 2011
- **3D flow simulation at the geometry of thirteen main arteries of a human**, Erke Aribas, Şenol Pişkin, M. Serdar Çelebi, abstract in Journal of Biomechanics, 44, Supplement 1, May 2011

Papers in preparation

- **Streamlined Microfluidic Chip Design Through Simulation for Viscosity Measurements**, Senol Piskin, Aysenur Eser, Ahmet Erten, Ozlem Yalcin, To be submitted
- **Mechanical Characterization and Torsional Buckling Effects of Pediatric Vascular Conduits**, Samir Donmazov, Şenol Pişkin, Erhan Ermek, Ahmet Arnaz, Tijen Bozkaya, Kerem Pekkan, To be submitted to Mechanical Behaviour of Biomedical Materials
- **Optimal Material Parameters to Attain a Uniform Stress Distribution in Growing and Remodeling Arteries**, Samir Donmazov, Senol Piskin, Kerem Pekkan, To be submitted to Biomechanics and Modeling in Mechanobiology
- **Microstructural Analysis of Early Embryonic Aortic Arch Morphogenesis**, S. Samaneh Lashkarinia, Senol Piskin, Selda Goktas, Kerem Pekkan, To be submitted to PlosONE
- **An Elastic Blood-Vessel Wall Interaction Model for a Real Carotid Artery**, Şenol Pişkin, M. Serdar Çelebi, Under Review in Journal of Mechanics in Medicine and Biology (Resubmission with revision requested, it is being prepared)

Conference Publications

- **Roughness Analysis of Coronary Artery Stents and Bypass Grafts for Diabetes Mellitus Patients** Şenol Pişkin, Association for Research into Arterial Structure and Physiology Hybrid Conference (ARTERY 21), Paris, France, October 21 - 23, 2021, Accepted

- **In Silico Simulation of Hemodynamics and Blood Cell Mechanics Inside Human Vasculature** Şenol Pişkin, Aya Ahmed Faeek Elgebaly, The 2nd Joint Meeting of The European Society for Clinical Hemorheology and Microcirculation (ESCHM), The International Society for Clinical Hemorheology (ISCH) and The International Society of Biorheology - ESCHM-ISCH-ISB 2021, Fukuoka, Japan, July 4 - 7, 2021, Invited
- **Pre-Surgical Planning Of Femoropopliteal Bypass Operation Based On Patient Specific In Silico Simulation** Banu Kose, Muhammed Bayram, Cagdas Topel, Şenol Pişkin, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2021, USA, June 14 - 18, 2021
- **Treatment analysis of coronary artery stenosis by stent or bypass grafy for diabetes mellitus patients: A computational hemodynamics perspective** Şenol Pişkin, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2020, Vail, CO, USA, June 17 - 20, 2020
- **Computational Fluid Dynamics and Histological Analysis of Intraluminal Thrombus** Pete H. Gueldner, Sourav S. Patnaik, Şenol Pişkin, Mirunalini Thirugnanasambandam, Satish C. Muluk, and Ender A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2020, Vail, CO, USA, June 17 - 20, 2020
- **On the Use of Computational Hemodynamics for Predicting Disease Severity in Adult Pulmonary Hypertension** Narasimha Rao Pillalamarri, Şenol Pişkin, Sourav Patnaik, Ender A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2020, Vail, CO, USA, June 17 - 20, 2020
- **Microfluidic chip design through simulation for viscosity measurements** Aysenur Eser, Şenol Pişkin, Ahmet Erten, Ozlem Yalcin, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2020, Vail, CO, USA, June 17 - 20, 2020
- **Region-based characterization of stress relaxation behavior in porcine pulmonary arteries** Narasimha Rao Pillalamarri, Sourav Patnaik, Şenol Pişkin, Ender A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2020, Vail, CO, USA, June 17 - 20, 2020
- **Current and emerging computational pre-surgical planning tools for Tetralogy of Fallot repair** S.Samaneh Lashkarinaia, Şenol Pişkin, Banu Kose, Ece Salihoglu, Kerem Pekkan, Tetralogy of Fallot & Modeling of Diseases - TOFMOD Workshop, Virtual Physiological Human - VPH 2020, Paris, France, August 25 - 28, 2020, Invited
- **Spatiotemporal characterization of pulmonary hypertension under pulsatile flow conditions** Narasimha Rao Pillalamarri, Şenol Pişkin, Ender A. Finol, 70th Annual Meeting of the American Physical Society Division of Fluid Dynamics - APS DFD 2019, Seattle, WA, USA, November 23 - 26, 2019
- **Microstructural Characterization of Intraluminal Thrombus in Abdominal Aortic Aneurysms** Pete Gueldner, Sourav Patnaik, Şenol Pişkin, Mirunalini Thirugnanasambandam, Satish Muluk, Ender A. Finol, Biomedical Engineering Society Annual Meeting - BMES 2019, Philadelphia, PA, USA, October 16 - 19, 2019
- **Medical applications of computational and experimental methodologies and possible nanofluidics applications: Surgical planning, non-invasive diagnosis and prognosis** Şenol Pişkin, Workshop on Ion Transport and Nanofluidics: Modeling, Analysis

and Numerics - The Fields Institute for Research in Mathematical Sciences, University of Toronto, Toronto, Ontario, Canada, August 19 - 23, 2019

- **Comparison of Healthy and Pulmonary Hypertension Hemodynamics** Şenol Pişkin, Ender A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2019, Seven Springs, PA, USA, June 25 - 28, 2019
- **Developing A Scalable Open-Source Solver To Simulate Hemodynamics In The Human Pulmonary Vasculature** Narasimha Rao Pillalamarri, Şenol Pişkin, A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2019, Seven Springs, PA, USA, June 25 - 28, 2019
- **In-Silico Characterization Of Patient-Specific Pulmonary Hypertension Hemodynamics** Narasimha Rao Pillalamarri, Şenol Pişkin, Sourav Patnaik, Alifer Bordones Ender, Vitaly Kheyfets, A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2019, Seven Springs, PA, USA, June 25 - 28, 2019
- **Biomechanical Restoration Potential of Pentagalloyl Glucose after Arterial Extracellular Matrix Damage** Sourav Patnaik, Narasimha Rao Pillalamarri, Şenol Pişkin, Mirunalini Thirugnanasambandam, Vangelina Osteguin, Gladys P. Escobar, Eugene Sprague, Ender A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2019, Seven Springs, PA, USA, June 25 - 28, 2019
- **Regional Anisotropic Mechanical Characterization Of Porcine Pulmonary Arteries** Narasimha Rao Pillalamarri, Sourav Patnaik, Şenol Pişkin, Ender A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2019, Seven Springs, PA, USA, June 25 - 28, 2019
- **Microstructural Characterization Of Intraluminal Thrombus In Abdominal Aortic Aneurysms** Pete Gueldner, Sourav Patnaik, Şenol Pişkin, Mirunalini Thirugnanasambandam, Satish Muluk, Ender A. Finol, Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C 2019, Seven Springs, PA, USA, June 25 - 28, 2019
- **Microstructural Characterization of Intraluminal Thrombus in Abdominal Aortic Aneurysms** Pete Gueldner, Sourav Patnaik, Şenol Pişkin, Mirunalini Thirugnanasambandam, Satish Muluk, Ender A. Finol, San Antonio Military Health System and Universities Research Forum - SURF 2019, San Antonio, TX, USA, June 13 - 14, 2019
- **Parallelization of a New CFD Boundary Condition for Evolving Arteriovenous Malformations** Gokçe N. Oğuz, Şenol Pişkin, Kerem Pekkan, 31st International Conference on Parallel Computational Fluid Dynamics - Par CFD2019, Indianapolis, Antalya, Turkey, May 14 - 17, 2019
- **Temporal Evolution of Abdominal Aortic Wall Stress using image-based Vascular Mechanical Characterization (iV-MeCh) technique** Mirunalini Thirugnanasambandam, Prahlad G. Menon, Stephane Avril, Şenol Pişkin, Tejas Canchi, Christof Karmonik, Ender A. Finol, ASME's International Mechanical Engineering Congress and Exposition - IMECE 2018, Pittsburgh, PA, USA, November 9 - 15, 2018
- **Computer Aided Diagnosis, Prognosis And Treatment Of Cardiovascular Diseases: Pulmonary Hypertension, Abdominal Aortic Aneurysm And Cerebral Aneurysm**, Senol Piskin, Sourav Patnaik, Ender A. Finol, 6thAnnual San Antonio Postdoctoral Research Forum (SAPRF), UT Health, San Antonio, Texas, USA, September 18, 2018.

- **A Canonical Correlation Analysis on the Relationship between Clinical Attributes and Patient-Specific Computational Fluid Dynamic indices in Pulmonary Hypertension Patients** Şenol Pişkin, Sourav Patnaik, Alifer D. Bordones, Srinivas Murali, Ender A. Finol, 8th World Congress of Biomechanics - WCB 2018, Dublin, Ireland, July 8 - 12, 2018
- **Biomechanical Changes in the Porcine Abdominal Aorta after Treatment with Pentagalloyl Glucose** Şenol Pişkin, Sourav S. Patnaik, Miguel Guerrero, Gladys Escobar, Eugene Sprague, Ender A. Finol, 8th World Congress of Biomechanics - WCB 2018, Dublin, Ireland, July 8 - 12, 2018
- **A New CFD Boundary Condition for Evolving Arterial to Venous Malformations in the Brain and Lung** Gokę N. Oğuz, Şenol Pişkin, Hakan Hanimoglu, Ender A. Finol, Kerem Pekkan, 8th World Congress of Biomechanics - WCB 2018, Dublin, Ireland, July 8 - 12, 2018
- **Hypoxia: The Best Stimulator that Increases Shear-Induced Response of Red Blood Cell** Elif Ugurel, Ali Cenk Aksu, Senol Piskin, Ozlem Yalcin, Joint Meeting of The European Society for Clinical Hemorheology and Microcirculation The International Society of Clinical Hemorheology The International Society of Biorheology - ESCHM-ISB-ISCH 2018, Krakow, Poland, July 2 - 6, 2018
- **Soft error sensitivity of large scale CFD applications** E Fatih Yetkin, Şenol Pişkin, 10th International Workshop on Parallel Matrix Algorithms and Applications - PMAA18, ETH Zurich, Zurich, Switzerland, June 27 - 29, 2018, Invited
- **Radiation-induced Non-targeted Changes in Arterial Tissue Mechanics** Sourav S. Patnaik, Catherine M. Davis, Mirunalini Thirugnanasambandam, Şenol Pişkin, Anthony G. Lau, and Ender A. Finol, Conference on Normal Tissue Radiation Effects and Countermeasures, a Winthrop Rockefeller Conference - CONTREC 2018, Winthrop Rockefeller Institute, Petit Jean Mountain, Moritton, AR, USA, May 14 - 17, 2018, Invited
- **Parallelization of a New CFD Boundary Condition for Evolving Arteriovenous Malformations** Gokę N. Oğuz, Şenol Pişkin, Kerem Pekkan, 30th International Conference on Parallel Computational Fluid Dynamics - Parallel CFD2018, Indianapolis, IN, USA, May 14 - 17, 2018, Invited
- **Disease severity index derived from hemolysis evaluation** Şenol Pişkin, Ender A. Finol, Kerem Pekkan, 70th Annual Meeting of the American Physical Society Division of Fluid Dynamics - APS DFD 2017, Denver, CO, USA, November 19 - 21, 2017
- **Computational Fluid Dynamics as a Non-Invasive Tool for Assessment of Pulmonary Hypertension** Şenol Pişkin, Alifer Bordones, Vitaly Kheyfets, Sourav Patnaik, Kerem Pekkan, Ender A. Finol, The 54th Annual Technical Meeting of the Society of Engineering Science - SES 2017, ASME-AMD Joint Conference, Boston, MA, USA, July 25 - 28, 2017
- **Ex-Vivo Mechanical Characterization of the Canine Abdominal Aorta** Sourav S. Patnaik, Mirunalini Thirugnanasambandam, Gladys P. Escobar, Eugene A. Sprague, Şenol Pişkin, Ender A. Finol, The 54th Annual Technical Meeting of the Society of Engineering Science - SES 2017, ASME-AMD Joint Conference, Boston, MA, USA, July 25 - 28, 2017
- **Cardiovascular Surgical Planning Demonstration** Şenol Pişkin, Bringing Advanced

Concepts to Life, Cool Ideas Expo, Engineering Science Education, The 54th Annual Technical Meeting of the Society of Engineering Science - SES 2017, ASME-AMD Joint Conference, Boston, MA, USA, July 25 - 28, 2017, Invited

- **The effect of modified Blalock-Taussig shunt anastomosis angle and pulmonary artery diameter on pulmonary flow** Ahmet Arnaz, Şenol Pişkin, Yusuf Yalçınbaş, Tayyar Sarıoğlu, Kerem Pekkan, 7th World Congress of Pediatric Cardiology & Cardiothoracic Surgery - WCPCCS 2017, Barcelona, Spain, July 16 - 21, 2017
- **Parametric analysis of new coronary artery bypass configurations** Gokę N. Oğuz, Şenol Pişkin, Tijen A.Bozkaya, Mehmet Sanser Ates, Haldun Karagoz, Kerem Pekkan, Summer Biomechanics, Bioengineering and Biotransport Conference - SB3C 2017, Tucson, AZ, USA, June 21 - 24, 2017
- **Patient Specific, Image Based Cardiovascular Disease Modeling Using Computational Fluid Dynamics (Hastaya Özgü Görüntü Tabanlı Hesaplamalı Akışkanlar Dinamiği ile kardiyovasküler Hastalık Modellemesi)** Gokę N. Oğuz, Şenol Pişkin, Kerem Pekkan, The 22nd International Biomedical Science and Technology Symposium - BIOMED 2017, Ankara, Turkey, May 12 - 14, 2017
- **Modifiye Blalock-Taussing Şant Anastomoz Açısının ve Pulmoner Arter Çaplarının Pulmoner Akım Üzerine Etkisi** Ahmet Arnaz, Şenol Pişkin, Yusuf Kenan Yalçınbaş, Kerem Pekkan, Tayyar Sarıoğlu, 16. Ulusal Pediyatrik Kardiyoloji ve Kalp Cerrahisi Kongresi, Antalya, Turkey, April 19 - 22, 2017
- **Parametric limits and sensitivity of pulmonary outflow patch reconstruction with respect to the native and artificial tissue properties** S.Samaneh Lashkarinia, Şenol Pişkin, Tijen A.Bozkaya, Samir Donmazov, Kerem Pekkan, The 14th International Symposium Computer Methods in Biomechanics and Biomedical Engineering, Tel Aviv, Israel, September 20 - 22, 2016
- **Microstructural analysis of early embryonic aortic arch morphogenesis** S.Samaneh Lashkarinia, Şenol Pişkin, Selda Göktaş, A. İdil Çakıroğlu, Fazıl E. Uslu, Kerem Pekkan, Summer Biomechanics, Bioengineering and Biotransport Conference - SB3C2016, National Harbor, MD, USA, June 29 - July 2, 2016
- **Buckling Configurations of Total Cavopulmonary Conduit** Gokę N. Oğuz, Şenol Pişkin, Erhan Ermek, Naz Altekin, Samir Donmazov, Ahmet Arnaz, Kerem Pekkan, Summer Biomechanics, Bioengineering and Biotransport Conference - SB3C2016, National Harbor, MD, USA, June 29 - July 2, 2016
- **Evaluating the maturity of OpenFOAM simulations on GPGPU for bio-fluid applications** Ahmet Duran, Şenol Pişkin, Mehmet Tucnel, Emerging Technology Conference - EMiT 2016, Barcelona Supercomputing Center, Barcelona, Spain, June 2-3, 2016
- **Patient Specific First Stage Neonatal Shunt Hemodynamics** Şenol Pişkin, Fırat H. Altın, Kerem Pekkan, The 8th International Bio-Fluid Symposium, Pasadena, California, USA, February 12-14, 2016
- **Patient-specific Computer-aided Planning of Pulmonary Outflow Patch Reconstruction in Pediatric Congenital Heart Patients - Proof of Concept** Tijen Alkan-Bozkaya, Şenol Pişkin, Banu Köse, Atıf Akçevin, Halil Türkoğlu, Tufan Paker, Kerem Pekkan, The Eleventh International Conference on Pediatric Mechanical Circulatory Support

Systems and Pediatric Cardiopulmonary Perfusion, Verona, Italy, June 10 - 13, 2015

- **Emerging Predictive Tools and Hemodynamic Parameters in Pediatric Cardiovascular Bioengineering** Şenol Pişkin, Yusuf Yalçınbaş, Tayyar Sarıoğlu, Kerem Pekkan, Pediatric Biomechanics Symposium, 7th World Congress of Biomechanics, Boston, MA, USA, July 6 - 11, 2014
- **Progress in Computational Modeling of Neonatal Cardiopulmonary Bypass Hemodynamics with Detailed Circle of Willis Anatomy** Şenol Pişkin, Akif Ündar, Kerem Pekkan, Tenth International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion, Hershey, PA, USA, May 28 - 31, 2014
- **Computational Modeling of First-Stage Shunt Hemodynamics: Novel Shunt Configurations, Diameter and Cerebral Great Vessels** Şenol Pişkin, Gözde Ünal, Yusuf Yalçınbaş, Tayyar Sarıoğlu, Kerem Pekkan, 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Paris, France, May 21 - 22, 2014
- **Konjenital Kalp Hastalıklarında Cerrahi Öncesi Hemodinamik Planlama ve In-vitro Biyomühendislik Test Platformu**, Şenol Pişkin, Sezin Nargül, Kerem Pekkan, 13. Ulusal Pediatrik Kardiyoloji ve Kalp Damar Cerrahi Kongresi - PEDKAR2014, Diyarbakır, Turkey, April, 16-19, 2014
- **CFD Challenge 2013 for Rupture Prediction in Intracranial Aneurysms**, 12th Congress of the World Federation of Interventional and Therapeutic Neuroradiology joint with International IntraCranial Stent Meeting - WFITN+ICS2013, Buenos Aires, Argentine, November 9-14, 2013
- **Impact of Integrated Computational Fluid Dynamics and Lumped Parameter Modeling on Neonatal CPB and Congenital Heart Surgery** Kerem Pekkan, Berk Yiğit, Prahlad Menon, Şenol Pişkin, William Kowalski, Ahmet Sasmazel, Ninth International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Bypass, Hershey, PA, USA, May 8 - 11, 2013
- **Blood Flow in Realistic Neonatal Aorta using Open Source Software OpenFOAM**, Şenol Pişkin, Onur Dur, Kerem Pekkan, 8th International OpenFOAM Workshop, Jeju, Korea, June 11-14, 2013
- **Bir Boyutlu Damar Hareketi ile Sayısal Kan Akışı Benzetimi**, Şenol Pişkin, M. Serdar Çelebi, Tıp Teknolojileri Ulusal Kongresi - TIPTEKNO 12, Antalya, Turkey, November 1-3, 2012
- **Numerical Blood Flow Simulation with Predefined Artery Movement**, Şenol Pişkin, M. Serdar Çelebi, 5th International Conference on BioMedical Engineering and Informatics, BMEI'12, Chongqing, China, October 16-18, 2012
- **Açık Kaynak Kodlu Yazılımlarla Biyolojik Akış Uygulamaları - Biofluid Flow Applications by Open-Source Software**, Şenol Pişkin, Abdurrahman Akkuş, 17. Biyomedikal Mühendisliği Ulusal Toplantısı - BIYOMUT 2012, Istanbul, Turkey, October 3-5, 2012
- **Ön Tanımlı Damar Hareketi ile Sayısal Kan Akışı Benzetimi**, Şenol Pişkin, M. Serdar Çelebi, Tıp Teknolojileri Ulusal Kongresi - TIPTEKNO 11. BİYOMUT 2011 - 16. Biyomedikal Mühendisliği Ulusal Toplantısı, Antalya, Turkey, October 13-16, 2011
- **Comparison of Two Blood Flow Simulations with and without a Compliant Vessel Wall Model**, Şenol Pişkin, M. Serdar Çelebi, 3rd International Conference on Computational

Methods in Engineering and Science, FEMTEC (Finite Element Methods in Engineering and Science) 2011, South Lake Tahoe, USA, May 9-13, 2011

- **Visualization of Blood Flow Simulation in Human Arteries**, Esra Baltaoglu, Şenol Pişkin, M. Serdar Çelebi, 3rd International Conference on Computational Methods in Engineering and Science, FEMTEC (Finite Element Methods in Engineering and Science) 2011, South Lake Tahoe, USA, May 9-13, 2011
- **Coupled Simulation of Viscoelastic Artery and Newtonian Blood Flow Models**, Şenol Pişkin, M. Serdar Çelebi, 1st International Conference on Multiphysics Simulation - Advanced Methods for Industrial Engineering, Bonn, Germany, June 22-23, 2010
- **A 3d Human Carotid Artery Simulation Using Realistic Geometry with Two-Level Bifurcation and Experimental Inlet Velocity Profile**, Şenol Pişkin, Erke Aribas, M. Serdar Çelebi, Fifth European Conference on Computational Fluid Dynamics, Lisbon, Portugal, June 14-17, 2010
- **Non-Newtonian Blood Flow simulation in a Realistic Artery Domain**, Hasret Türkeri, Şenol Pişkin, M. Serdar Çelebi, Fifth European Conference on Computational Fluid Dynamics, Lisbon, Portugal, June 14-17, 2010
- **Simulation of Blood Flow in Human Aorta Including Thirteen Main Arteries**, Erke Aribas, Şenol Pişkin, M. Serdar Çelebi, Fifth European Conference on Computational Fluid Dynamics, Lisbon, Portugal, June 14-17, 2010
- **Gerçek Geometri ve Çeşitli Deneysel Giriş Koşulları Kullanılarak Üç Boyutlu İnsan Şah Damarı Benzetimi** , Şenol Pişkin, Erke Aribas, M. Serdar Çelebi, Uluslararası Katılımlı V. Ulusal Biyomekanik Kongresi, Çeşme, İzmir, Turkey, September 23-25, 2010
- **Newtonyen olan ve olmayan Kan Viskozite Modellerinin Karşılaştırılması** , Hasret Turkeri, Şenol Pişkin, M. Serdar Çelebi, Uluslararası Katılımlı V. Ulusal Biyomekanik Kongresi, Çeşme, İzmir, Turkey, September 23-25, 2010
- **13 Ana Damarla birlikte 3B Kan Akış Benzetimleri** , Erke Aribas, Şenol Pişkin, M. Serdar Çelebi, Uluslararası Katılımlı V. Ulusal Biyomekanik Kongresi, Çeşme, İzmir, Turkey, September 23-25, 2010
- **3D Blood Flow Simulations in Human Arterial Tree Bifurcations**, Erke Aribas, Şenol Pişkin, M. Serdar Çelebi, BIYOMUT: 2009 14th National Biomedical Engineering Meeting, Izmir, Turkey, May 20-22, 2009
- **Coupled Simulation of a Carotid Artery Bifurcation**, Şenol Pişkin, Erke Aribas, M. Serdar Çelebi, 10th Mesh Based Parallel Code Coupling Interface User Forum, Bonn, Germany, February 17-18, 2009
- **Carotid Artery Modelling Using Real Geometry**, Şenol Pişkin, M. Serdar Çelebi, Meeting on Applied Scientific Computing and Tools Grid Generation, Approximation and Visualization MASCOT 07, Rome, Italy, September 2007
- **Investigating the Effects of Variable Inlet Velocity Profiles at Main Carotid Artery and Different Carotid Artery Bifurcation Angles**, Şenol Pişkin, M. Serdar Çelebi, International Conference on Computational Science and Education - ICCSE 2006, Rochester, USA, August 7-10, 2006
- **Three Dimensional Carotid Artery Modeling in a Parallel Environment**, Şenol Pişkin, M. Serdar Çelebi, Meeting on Applied Scientific Computing and Tools Grid Genera-

tion, Approximation and Visualization - MASCOT 05, Lecce, Italy, October 2005

- **Effect of Changing the Parameters of a Carotid Artery Bifurcation Model**, Şenol Pişkin, M. Serdar Çelebi, International Conference on CAE and Computational Computational Technologies for Industry - TCN CAE 2005, Lecce, Italy, October 5-8, 2005
- **Kriging Reconstruction of Gappy Data for Twin-Jet Flow**, Şenol Pişkin, Hasan Güneş, International Conference of Computational Science and Engineering - ICCSE'05, Istanbul, Turkey, June 27-30, 2005
- **Computational Science and Engineering (CSE) Education: Faculty and Student Perspectives**, Hasan Dağ, Gürkan Soykan, Şenol Pişkin, Osman Yaşar, International Conference of Computational Science and Applications - ICCSA 2004, Assisi, Italy, May 14-17, 2004
- **A Carotid Artery Bifurcation Modelling for Blood Flow**, Şenol Pişkin, M. Serdar Çelebi, 7th International Symposium on Fluid Control, Measurement and Visualization, FLUCOME '03, Sorrento, Italy, August 25-28 2003.

Posters

- **Geometric Characterization of Pulmonary Hypertension**, Senol Piskin, Ender A. Finol, 7th Annual San Antonio Postdoctoral Research Forum (SAPRF), UT Health, San Antonio, Texas, USA, September 19, 2019.
- **Computational and Experimental Studies On Diagnosis, Prognosis And Treatment Of Cardiovascular Diseases: Pulmonary Hypertension, Abdominal Aortic Aneurysm And Cerebral Aneurysm**, Senol Piskin, Sourav Patnaik, Ender A. Finol, 6th Annual San Antonio Postdoctoral Research Forum (SAPRF), UT Health, San Antonio, Texas, USA, September 18, 2018.
- **Attempting Prognosis of Pulmonary Hypertension (PH) via Computational Fluid Dynamics**, Narasimha Rao Pillalamarri, Senol Piskin, Vitaly Kheyfets, Alifer Bordones, and Ender A. Finol, Scientific Computing with Python conference - SciPy 2018 - John Hunter Excellence in Plotting Contest, Austin, Texas, USA, July 9-15 2018.
- **Automatic Geometric Characterization of Pulmonary Arteries**, Gary Hernandez, Şenol Pişkin, Ender A. Finol, 2018 Undergraduate Research & Creative Inquiry Showcase, the University of Texas at San Antonio, San Antonio, Texas, USA, April 19, 2018.
- **Novel Catheter Design for Delivery of PGG in Large Arteries**, Vangelina Osteguin, Sourav Patnaik, Şenol Pişkin, Ender A. Finol, 2018 Undergraduate Research & Creative Inquiry Showcase, the University of Texas at San Antonio, San Antonio, Texas, USA, April 19, 2018.
- **Computational Surgical Planning and Non-Invasive Diagnosis Methodologies with Experimental Validation** Şenol Pişkin, Kerem Pekkan, Ender A. Finol, 6th Summer School for Integrated Computational Materials Education - ICMEd 2017, the University of Michigan at Ann Arbor, MI, USA, June 5 - 16, 2017
- **In silico planning of complex cardiovascular surgeries for optimal physiological outcome** Kerem Pekkan, Şenol Pişkin, Volkan Tuncay, Üniversite-Sanayi İşbirliği Merkezleri Platformu - ÜSİMP PATENT FUARI 2015, Harbiye Askeri Müzesi, Istanbul, Turkey, November 11 - 12, 2015

Workshops

- **Glioma MRI Annual Meeting**, GliMR2.0, February, 3-5, 2021, Amsterdam, Netherlands
- **Network for Research in Vascular Ageing, Working Group and Management Committee Meetings**, COST Action European Cooperation in Science and Technology, February, 19-21, 2020, Paris, FRANCE
- **Multiple Aneurysms AnaTomy Challenge 2018 (MATCH)**, 15th Interdisciplinary Cerebrovascular Symposium - ICS2018, June, 6-8, 2018, Magdeburg, GERMANY
- **International Aneurysm CFD Challenge 2015: Segmentation, Human vs. Computer**, 13th International IntraCranial Stent Meeting Interdisciplinary Cerebrovascular Symposium - ICS2016, November, 26-27, 2016, Kobe, JAPAN
- **SpaceX Hyperloop Pod Competition Design Weekend**, Design of the Hyperloop Pod, January 29-30, 2016, Texas A&M University, Austin, Texas, USA,
- **International Aneurysm CFD Challenge 2015: Segmentation, Human vs. Computer**, 13th Congress of the World Federation of Interventional and Therapeutic Neuroradiology joint with International IntraCranial Stent Meeting - WFITN+ICS2015, Gold Coast, November 9-13, 2015, Queensland, AUSTRALIA
- **9. İstanbul Sempozyumu: Türkiye'de Pediyatrik Kalp Cerrahisi, CPB&ECLS Sistemlerinin Geliştirilmesi ve Komplikasyon Oranlarının Düşürülmesi İçin Öneriler**, 14 November 2015, Istanbul, TURKEY
- **International Aneurysm CFD Challenge 2015: Segmentation, Human vs. Computer**, Summer Biomechanics, Bioengineering & Biotransport Conference - SB3C2015, June, 17-20, 2015, Snowbird Resort, Utah, USA
- **8. İstanbul Sempozyumu: Türkiye'de Pediyatrik Kalp Cerrahisi, CPB&ECLS Sistemlerinin Geliştirilmesi ve Komplikasyon Oranlarının Düşürülmesi İçin Öneriler**, 10 January 2015, Istanbul, TURKEY
- **SPE - SIAM Mathematical Methods, Fluid Dynamics and Simulation of Giant Oil and Gas Reservoirs**, 3-5 September 2012, Swissotel, Istanbul, TURKEY
- **V. National Biomechanics Congress**, 23-25 September 2010, Cesme, Izmir, TURKEY
- **9th MPCCI User Forum**, 19-20 February 2008, Sankt Augustin, GERMANY
- **10th International Conference on Numerical Grid Generation in CFS, EUA4X #32**, 16-20 September 2007, Crete, GREECE
- **EUA4X Computational Field Simulation Days III, EUA4X#31 & MASCOT'07** , 13-14 September 2007, Rome, ITALY
- **Summer Mathematical Research Center on Scientific Computing and Its Applications**, July-August 2007, 5 Weeks, Marseille, FRANCE
- **Workshop on Combustion Science and Technology for Advanced Gas Turbines**, 28-30 March 2005, Istanbul, TURKEY
- **Chemical Kinetics and Diffusion Processes in Reactive Flows**, 7-9 June 2004, Istanbul, TURKEY

Book in preparation

- **Hemodynamic Cardiovascular Pre-Surgical Planning - a Practical Toolkit with Open Software**, Kerem Pekkan, Şenol Pişkin, in progress, signed a publishing agreement with **Springer International Publishing AG**.

Patents and Invention Disclosures - Granted or applied

- **System for pre-operative development of patient-specific vascular patch graft prototypes for pediatric and neonatal patients**, Granted by US Patent 10,729,529, 2020
- **Operation Scenario Flow and Mechanical Modeling and Analysis System of Cardiovascular Repair Operations for Newborn and Foetus**, Granted by US Patent 10,639,103, PCT/TR2014/000263, 2020
- **Pre-Operative Development of Patient-Specific Vascular Patch Graft Prototypes for Pediatric and Neonatal Patients**, Granted by European Patent Office, EP3304499, PCT/TR2015/000243, 2019
- **Yeni Doğan ve Fetüs Kalp Damar Tamir Ameliyatları İçin Ameliyat Senaryosu Akış ve Mekanik Modelleme ve Analiz Sisstemi**, National (TURKEY), Issued for 20 years, PCT/TR2013/12991, 2015

- **A novel PGG drug delivery system without blocking blood blow for abdominal aortic aneurysms**, International application, submitted, 2019
- **A 3-D suture robot system for stitching patient-specific 3D patches to the cardiovascular system (heart, aorta, pulmonary arteries)**, International application, submitted, 2017
- **Application of 3D Printed Scaffold to Design Patient Specific Patch**, International application, submitted, 2017
- **Node Ranking for Sharing of Computing within Cloud or Non-cloud Infrastructures, Environments, and/or Resources**, International application, submitted, 2018

Lecturer in courses:

- Biomechanics: General concepts, tissue and biofluid mechanics
- Biomechanics I: Statics and strenght of materials with biomechanical applications
- Biomechanics II: Dynamics and strenght of materials with biomechanical applications
- Cardiovascular fluid mechanics
- High-Performance Computing and Parallel Programming
- Geometric Modelling and Applications
- Symbolic Programming with MuPAD
- Fluid Mechanics I
- Fluid Mechanics II
- Strength of Materials
- Statics

Guest lecturer in courses:

- Engineering Design
- Machine Design
- Biomimetics
- Introduction to Biomechanics
- Engineering in Medicine

Teaching assistant in courses:

- Advanced Computational Methods for Fluids
- Analysis and Applications of Numerical Methods for ODE
- Numerical Solution of Partial Differential Equations
- Computational Grid Generation
- Parallel Numerical Algorithms and Tools
- Parallel and Distributed Computing
- Programming with C
- Programming with Fortran
- Programming and Numerical Methods with Matlab

Mentorship activity

- Mentored 10 MSc students and
- 11 Ph.D. students for thesis studies
- and many undergraduate students during my Ph.D. and postdoctoral studies

PhD Committee Membership

- 1 student at the Department of Mechanical Engineering, UTSA
- 1 student at the Faculty of Medicine, Koc University
- 1 student at the Informatics Institute, Istanbul Technical University

Editorship

- Medicine, Wolters Kluwer

Journal Referee Activities

- Annals of Biomedical Engineering (ABME), Springer
- Journal of Biomechanics (JBM), Elsevier
- Artificial Organs (AO), Wiley
- Cardiovascular Engineering and Technology (CVET), Springer
- European Heart Journal (EHJ), Oxford University Press
- Medical & Biological Engineering & Computing (MBEC), Springer
- Nature - BioMedical Engineering OnLine (BMEO), Springer
- Computer Physics Communications (CPC), Elsevier

- Mathematics and Computers in Simulation (MATCOM), Elsevier
- Informatics in Medicine Unlocked (IMU), Elsevier
- Frontiers in Biotechnology and Bioengineering
- Frontiers in Physiology (FIP)
- Clinical Hemorheology and Microcirculation (CHM), IOS Press
- Current Stem Cell Research & Therapy (CSCRT), Bentham
- Turkish Journal of Mathematics (TURKJMATH)
- Journal of Biomimetics, Biomaterials and Biomedical Engineering (JBBBE)
- European Journal of Mechanics - B/Fluids (EUROMECH-B/FLUIDS), Elsevier
- International Journal of Advanced Computer Science and Applications (IJACSA)
- Journal of the Faculty of Engineering and Architecture of Gazi University
- Iranian Journal of Science and Technology - Transactions of Mechanical Engineering (ISTM), Springer
- PLOS ONE
- Medicine, Wolters Kluwer
- Journal of Clinical Medicine, MDPI
- Fluids, MDPI
- Mathematics
- Applied Sciences, MDPI
- Micromachines, MDPI
- Polymers, MDPI
- Symmetry, MDPI
- Diagnostics, MDPI
- Cancers, MDPI
- Data, MDPI

To check recent review records, please visit: https://publons.com/researcher/1199103/senol-piskin/peer-review

Conference Referee Activities

- Co-organizer and reviewer at Glioma MRI Annual Meeting - GliMR2.0, Virtual, 2021
- Reviewer at Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C, USA, 2021
- Reviewer at Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C, Vail, CO, USA, 2020
- Reviewer at Summer Biomechanics, Bioengineering, and Biotransport Conference - SB3C, Pittsburgh, PA, USA, 2019
- Reviewer at Scienfic Computing with Python - SciPy, Austin, TX, USA, 2019
- Co-chair at Congress on Image and Signal Processing, BioMedical Engineering and Informatics - CISP BMEI, Chongqing, China, 2012
- Co-organizer at International Conference of Computational Science and Engineering - ICCSE, Istanbul, Turkey, 2005

Project Review Activities

- INNOWWIDE: European INNOvative business solutions in WorldWIDE markets
- EUREKA (Eurostarts): Innovation accross borders, International calls
- PRACE: Partnership for advanced computing in Europe, DECI
- TUSEB: Turkey Institute of Health
- TUBITAK international calls
- Innovation Fund Denmark (IFD)

Short Educations

- **IHPCSS 2021**, Toronto, Ontario, Canada, Online attendance
  The eleventh International High Performance Computing (HPC) Summer School on HPC Challenges in Computational Sciences, 2 weeks. July 2021
- **York CVR 2020**, Toronto, Ontario, Canada, Online attendance
  York University Centre for Vision Research (CVR) Summer Lecture series, 1 week. July 2020
- **EEML 2020**, Krakow, Poland, Online attendance
  Eastern European Machine Learning Summer School, Deep Learning and Reinforcement Learning, 2 weeks. July 2020
- **Digital GTC**, San Jose, California, USA, Online attendance
  Digital GPU Technology Conference, NVIDIA, 3 weeks. March-April 2020
- **HPC Training Series**, San Antonio, Texas, USA
  Summer Institute on High Performance Computing, Office of Information Technology, The University of Texas at San Antonio, 2 days. July 2019
- **IBBM 2018**, Salt Lake City, Utah, USA
  2018 Summer Course on Image-based Biomedical Modeling, SCI (The Scientific Computing and Imaging Institute, The University of Utah), 2 weeks. July 2018
- **Data and Information Analytics**, Austin, Texas, USA
  Summer School, The TACC Institute Series, Immersive Training in Advanced computation, TACC (Texas Advanced Computing Center, The University of Texas at Austin), 1 week. June 2017
- **ICMED 2017**, Ann Arbor, Michigan, USA
  Summer School for Integrated Computational Materials Education, University of Michigan), 2 weeks. June 2017
- **HPC Challenges**, Toronto, CANADA
  2015 International Summer School on HPC Challenges in Computational Sciences, PRACE (Partnership for Advanced Computing in Europe), 1 week. June 2015
- **Bi-axial Testing**, Istanbul, TURKEY
  Obtaining Material Properties Using Bia-axial Testing Equipment. 1 day. April 2015
- **OpenFoam on GPU**, Istanbul, TURKEY
  Accelerating Large Scale CFD Analysis Using OpenFOAM on GPUs. 1 day. January 2014
- **OpenFoam Training**, Jeju, KOREA
  8th International OpenFOAM Workshop, Training Day. 1 day. June 2013
- **High Performance Computing**, Istanbul, TURKEY
  7th High-Performance Computing and Parallel Programming Summer School. 2 weeks.

June 2012 (As a lecturer)

- **Advanced Techniques in Computational Mechanics**, Barcelona, SPAIN
  Summer School on Discontinuous Galerkin Methods. 5 days. June 2012
- **Symbolic Programming**, Istanbul, TURKEY
  MuPAD Programming Workshop. 10 days. September 2011 (As a lecturer)
- **GPGPU Programming**, Istanbul, TURKEY
  GPGPU (CUDA, OpenCL) Programming Workshop. 4 days. June 2011
- **High Performance Computing**, Istanbul, TURKEY
  6th High-Performance Computing and Parallel Programming Summer School. 2 weeks. June 2011 (As a lecturer)
- **GPU Programming**, Istanbul, TURKEY
  Parallel Programming and Algorithms with GPU, Winter Workshop. 2 days. December 2010
- **Mimics and 3-Matic Software**, Istanbul, TURKEY
  Mimics and 3-Matic Innovation Forum and Courses. 2 days. October 2010
- **Jyväskylä Summer School**, Jyväskylä, FINLAND
  The 20th Jyväskylä Summer School. Courses of Modeling and Numerical Simulation of Biological Systems, and Introduction to Medical Imaging. 2 weeks. August 2010
- **High Performance Computing**, Istanbul, TURKEY
  5th High-Performance Computing and Parallel Programming Summer School, including two days of CFD tutorial. 2 weeks. June-July 2010 (As a lecturer)
- **High Performance Computing**, Istanbul, TURKEY
  High-Performance Computing and Parallel Programming Summer School, including two days of CFD tutorial. 2 week. June 2009 (As a lecturer)
- **RedHAT 5.0 and Virtualization Training**, Istanbul, TURKEY
  Installation, Configuration and Application. 4 weeks. October November 2008
- **High Performance Computing**, Istanbul, TURKEY
  High-Performance Computing and Parallel Programming Summer School, including one day of CFD tutorial. 2 week. September 2008 (As a lecturer)
- **European Mathematical Society Summer School**, Cortona, ITALY
  Mathematical and Numerical Methods for the Cardiovascular System. 2 weeks. August 2008
- **MpCCI Training**, Sankt Augustin, GERMANY
  MpCCI Basic Training seminar. 2 days. February 2008
- **High Performance Computing**, Istanbul, TURKEY
  High-Performance Computing and Parallel Programming Winter Workshop, including one day of CFD tutorial. 2 week. January 2008 (As a lecturer)
- **CEMRACS'07 Scientific Computing and Its Applications**, Marseille, FRANCE
  Pre and Post Processing in Scientific Computing Summer School. 1 week. July 2007
- **High Performance Computing**, Istanbul, TURKEY
  High-Performance Computing and Parallel Programming Summer School. 1 week. July 2007 (As a lecturer)
- **Geometric Modelling And Applications**, Istanbul, TURKEY

Summer School on Geometric Modelling and Applications for Master and Ph.D. students. 2 weeks. June 2007 (As a lecturer)

- **LSF Batch System**, Istanbul, TURKEY
  Basic and Advanced Configuration and Administration. 5 days. April 2007
- **Mimics Software**, Istanbul, TURKEY
  Mimics Training (3D reconstruction of CT, MRI data of arteries and remeshing). 4 days. February-March 2007
- **Intel Software College**, Istanbul, TURKEY
  High-Performance Application Tuning; Cluster Building; Programming for Multi-core (Linux). 5 days. November 2006
- **NATO RTO MSG-043 LECTURE SERIES**, Ankara, TURKEY
  Integration of Modeling And Simulation. 2 days. October 2006
- **EUMEDGRID TUTORIAL**, Istanbul, TURKEY
  European Mediterranean Grid Tutorial. 5 days. July 2006
- **Linux Administration**, Istanbul, TURKEY
  Advanced Linux and Linux Administration. 20 days. June 2006
- **von Karman Institute Lecture Series, EUA4X#12**, Brussels, BELGIUM
  Higher Order Discretization Methods for Computational Physics. 5 days. November 2005
- **CNR-IAC MASCOT, EUA4X#9**, Lecce, ITALY
  Meeting on Applied Scientific Computing and Tools Grid Generation, Approximation, Simulation and Visualization. 2 days. October 2005
- **CNR-IAC EUA4X#8-Training Course**, Lecce, ITALY
  State of the Art in Numerical Grid Generation From Theory to Practice. 3 days. October 2005
- **A.I.VE.LA.**, Ancona, ITALY
  Short Courses on LDA and PIV. 2 days. June 2005
- **von Karman Institute Lecture Series**, Brussels, BELGIUM
  Introduction to Computational Fluid Dynamics. 5 days. January 2005
- **Fluent and Gambit Training**, Istanbul, TURKEY
  Basics of the use of Gambit preprocessor and Fluent solver. 4 days. September 2004
- **Black Sea Universities Network Summer School, Attendance**, Sakarya, TURKEY
  Attended the International Summer School on: Computational and Experimental Simulation of Combustion & Multi-Phase Flows in Advanced Energy Systems. 6 days. July 2004
- **Black Sea Universities Network Summer School, Credits**, Sakarya, TURKEY
  Passed the exam of the International Summer School on Computational and Experimental Simulation of Combustion & Multi-Phase Flows in Advanced Energy Systems. 5 Credits. July 2004
- **Matlab Training**, Istanbul, TURKEY
  Basics of Matlab and its Toolboxes (Simulink, Curve Fitting, Optimization). 3 days. 2003
- **SUN High-Performance Computing Education**, Istanbul, TURKEY
  Advanced Programming Techniques on Large Computer Systems. 3 days. 2003

Computer skills

Programming Languages	Fortran 77/90/95, C, C++, (Visual) Basic, parallel processing libraries (MPI, PVM, HPF, OpenMP, OpenCL, CUDA), SQL, bash, Perl, PHP, Python, R, etc.
Engineering Software	Gambit, Fluent, Abaqus, Ansys, OpenFOAM, ADINA, FEBio, I-Deas, Mathematica, Matlab, MuPAD, Mathcad, TecPlot, Paraview, Icem CFD, Mimics, 3-matic, ScanIP, Geomagic (Studio, Wrap, Freeform), VMTKLab, 3D Slicer, 3D Printing software: 3DPrint, 3DEdit Pro
Other Software	TEX/LATEX, common Windows database, spreadsheet, and presentation software
Hardware	3D Mouse (Connextion), 3D Haptic device (Touch X), 3D Printer (Projet CJP 260C: dust composite binding color printing, Zortrax: filament based, MakerBot: filament based), ViVitro pulse duplicator (in vitro cardiovascular hydrodynamic testing system), Bose biaxial tensile test system
Operating Systems	Unix/Linux, Windows, MacOS
Administration	Linux system administration, HPC application expert, Content management system

Selected Courses Taken

- Computational Fluid Dynamics
- Advanced Computational Fluid Dynamics
- Finite Element Methods
- Advanced Fluid Dynamics
- Analysis and Applications of Numerical Methods for ODE
- Partial Differential Equations (Analytical, Numerical)
- Computational Mechanics
- Numerical Grid Generation
- Viscoelastic Materials
- Parallel Numerical Algorithms and Tools
- Parallel and Distributed Computing
- Computational Geometry
- Boundary Element Methods
- Scientific Computing

Entrepreneurship Activities

Hemodyn, LLC, In silico surgery planning platform, Co-founder and Co-owner, 2013-present
We are providing surgeons an opportunity to implement the vessel configurations in their minds on the pre-surgical planning platform and compare the hemodynamic performance of each configuration so that the surgeon can choose the best one to implement during the real operation. This methodology can prevent re-operations that can save lives and reduce surgery costs.

Achievements;

- Selected for Ph.D. Thesis Awards, Technology Development Foundation of Turkey (TTGV), Academical Thesis Applied in Industry, 2016
- Selected for TeknoJump International Acceleration program, San Francisco, Boston, 2015-2016
- Selected for Koc University Incubation, acceleration program, 2015-2016
- Koc University Incubation, Office support, 12 months, 2015-2016
- The Scientific and Technological Research Council of Turkey (TUBITAK) TEYDEB 1512 Project Fund, 2014
- Teknopark İstanbul Office support, 12 months, 2014-2015
- Middle East Technical University YFYI Grand Prize, 1st award, 2013
- Middle East Technical University Technopark Office support, 36 months, 2013
- IBM Smart Camp Finalist, 2013
- İstanbul Technical University ARI Çekirdek Finalist, 2013

Languages

Turkish	Expert	*Native*
English	Expert	*Both written and spoken*
German	Beginner	

References

- **Ender A. Finol**: Professor, Department of Mechanical Engineering, University of Texas, San Antonio, TX, USA, e-mail: ender.finol@utsa.edu
- **Eric Brey**: Chair, Professor, Department of Biomedical Engineering, University of Texas, San Antonio, TX, USA, e-mail: eric.brey@utsa.edu
- **Kerem Pekkan**: Professor, Department of Biomedical Engineering, Carnegie Mellon University, PA, USA, & Department of Mechanical Engineering, College of Engineering, Koc University, Turkey, e-mail: kpekkan@ku.edu.tr

Media Coverege

Available upon request.

Volunteer work

June 2016 – Feb 2017 **Mentor**, *Outreach Activity*.
Help primary, middle and high school students to interact with research tools used in our labs

Sep 2011 – Sep 2011 **Lecturer**, *Education*.
MuPAD Programming Workshop - Symbolic Programming to university grad students and faculties