

# Antonis I. Sakellarios, PhD

## Biomedical Engineer

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Date of birth: 17 April 1983

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### PROFILE

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**Biomedical engineering** and simulation of patient-specific phenomena and diseases. Mathematical and computational approaches to understand mechanisms responsible for diseases.

**Modelling atherosclerosis** and the mechanisms for atherosclerotic plaque formation and growth.

Modelling of **blood flow** and arterial wall deformation.

Medical imaging processing and **3D arterial reconstruction**.

Virtual **stent deployment** and stent design

**Decision support systems** for diagnosis, prediction and stratification of cardiovascular disease.

Modelling of mechanical processes and structural dynamics.

Modelling of fluid dynamics in engineering problems.

Modelling of **hearing function** in the middle and inner ear.

3D reconstruction using image segmentation for engineering and biomedical field.

Simulation of objects and systems using finite elements.

Estimation of parametric analysis based on reverse engineering.

CAD, CAM, CAE.

- PhD in Biomedical Engineering and Materials science
- Fluid dynamics and mass transport dynamics expert
- Study of endothelial function and permeability
- Fluid structure interaction
- Patient specific modelling
- Computational utilization of genomics, lipidomics and metabolomics of coronary artery disease
- Machine learning and big data analytics
- 3D design and creation of objects
- Very strong design and programming skills, with great attention to detail and design
- Ability to learn and master any technology, language or development environment
- Languages: English, German
- Good communication and interpersonal skills with colleagues and students
- Experience in teaching biomedical engineering courses
- Experience in writing and management of research proposals (FP7, HORIZON 2020)

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### EDUCATION

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University of Ioannina, 2008 – 2016  
Department of Material Sciences and Engineering, GR

**PhD in Biomedical Engineering**

**Thesis:** Numerical modelling of atherosclerotic plaque development

**Advisor:** Prof. Dimitrios Fotiadis, Prof. of Biomedical Engineering,  
Department of Material Sciences and Engineering, University of Ioannina, GR

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University of Ioannina, 2001 – 2006  
Department of Biological Applications and Technologies, Ioannina, GR

**B.Sc., Biological Applications and Technologies**

(Five-year degree, M.Sc. equivalent)

**Thesis:** Implementation and evaluation of bioinformatics codes for automate prediction of gene expression

**Advisor:** Prof. Konstantinos Papaloukas

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**PROFESSIONAL EXPERIENCE**

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University of Ioannina, Ioannina, GR	April 2020 – Today
<b>Technical manager for University of Ioannina in To_Aition project “A high-dimensional approach for unwinding immune-metabolic causes of cardiovascular disease-depression multimorbidities”.</b>	
FORTH Biomedical and Research Institute, Ioannina, GR	Jan 2018 – Today
<b>Technical manager for FORTH in InSILC project “InSilc: In-silico trials for drug-eluting BVS development and evaluation”</b>	
<b>Senior research instructor in InSILC project “InSilc: In-silico trials for drug-eluting BVS development and evaluation”.</b>	
FORTH Biomedical and Research Institute, Ioannina, GR	Dec 2019 – Today
<b>Technical manager for FORTH in MyPal project “Fostering Palliative Care of Adults and Children with Cancer through Advanced Patient Reported Outcome Systems”.</b>	
Computer Technology Institute and Press "Diophantus", Patra, GR	Jan 2018 – Dec 2018
<b>“Development, adaptation and updating of Open Academic Resources and in particular: development of 3D models for Open Learning Objects and participation in technical inspection, selection, correction and improvement of existing Objects”.</b>	
FORTH Biomedical and Research Institute, Ioannina, GR	Jan 2016 – Jun 2019
<b>Technical Manager for FORTH in SMARTOOL project “Simulation Modeling of coronary ARtery disease: a tool for clinical decision support”.</b>	
<b>Senior research instructor in SMARTOOL project “Simulation Modeling of coronary ARtery disease: a tool for clinical decision support”.</b>	
FORTH Biomedical and Research Institute, Ioannina, GR	Apr 2016 – Jun 2019
<b>Associate Researcher (Post-doc) in SMARTOOL project “Simulation Modeling of coronary ARtery disease: a tool for clinical decision support”.</b>	
Institute of Communication and Computer Systems, Athens, GR	Jan 2015 – Jan 2016
<b>Technical manager for ICCS in SIFEM project “Semantic Infostructure interlinking an open source Finite Element tool and libraries with a model repository for the multi-scale Modelling and 3d visualization of the inner-ear”.</b>	
Hellenic Society of Cardiology	Jan 2014 – Dec 2014
<b>Development of a mathematical model of plaque growth based on endothelial dysfunction.</b>	
University of Ioannina, Greece	Jan 2013 – Dec 2013
<b>TELECARDIOLOGY: A training application for medical doctors and cardiologists.</b>	
Technical University of Chania, Crete, GR	Jan 2011 – Dec 2012
<b>Commissioned work for the project "RT3S" Modeling and development of educational application for the stent placement in peripheral arteries.</b>	
FORTH Biomedical and Research Institute, Ioannina, GR	Sep 2008 – Dec 2010
<b>Researcher in the project "Design and Development of Computer Models for Biological functions" under the financed program of the European Union «Multi-level Patient Specific Artery and Atherogenesis Model for Outcome Prediction, Decision Support Treatment, and Virtual Hand-on Training» (ARTreat).</b>	

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Research Committee of the University of Ioannina, Ioannina, GR <b>Work within the project "Promotion of Routes, Development and Promotion of Roman and early Christian monuments in the prefectures of Preveza and Thesprotia and Greek monuments in the Departments of Bari and Lecce".</b>	Jul 2008 – Nov 2008
Research Committee of the University of Ioannina, Ioannina, GR <b>Work within the project "Pilot Navigation System and Tour of the Municipality of Arta - Subproject 2Q, Design and Application Development Navigation and guide".</b>	May 2008 – Aug 2008
Research Committee of the University of Ioannina, Ioannina, GR <b>Work within the project "System of Prehospital Emergency Medicine and Nursing for the Region of Epirus, Subproject 2 - Design and Application Development for the Ambulance Fleet Management and Transmission - Medical Data Processing".</b>	Jun 2007 – Dec 2007
National Hospital of Kozani, GR <b>Practical training in Cytological and Pathoanatomical Department Training in various techniques and methods in real life assessment, diagnosis and prediction of diseases.</b>	Jul 2005 – Sep 2005
National Hospital of Kozani, GR <b>Practical training in Microbiological Department. Training in various techniques and methods in real life assessment, diagnosis and prediction of diseases.</b>	Jul 2004 – Aug 2004

#### EDUCATIONAL EXPERIENCE

<b>Adjunct Lecturer in the Department of Material Sciences and Engineering of the University of Ioannina:</b>	Jan 2018 – Today
<ul style="list-style-type: none"> <li>• Computational Modelling in Biomedical Engineering at the Department of Material Sciences and Engineering of the University of Ioannina, Greece</li> <li>• Complex analysis at the Department of Material Sciences and Engineering of the University of Ioannina, Greece</li> <li>• Fluid mechanics at the Department of Material Sciences and Engineering of the University of Ioannina, Greece</li> </ul>	
Computer Technology Institute and Press "Diophantus", Patra, GR Development, adaptation and updating of Open Academic Resources and in particular: participation in scientific supervision and quality control of the content of the Academic Objects, participation in the description of metadata of the objects.	Jan. 2018- Dec 2018
<b>Supervision of students' theses</b> in Bachelor, Master and PhD level in the Department of Material Sciences and Engineering of the University of Ioannina (At least four theses per academic semester). Excellent communication with students.	Sep 2013 – Today
<b>Teaching assistant</b> of Prof. Dimitrios I. Fotiadis, Professor of Biomedical Engineering at the Department of Material Sciences and Engineering of the University of Ioannina, Greece.	Sep 2011 – 2016
Teaching of the laboratory course :	Sep 2011 – 2016
<ul style="list-style-type: none"> <li>• Computational Modelling in Biomedical Engineering at the Department of Material Sciences and Engineering of the University of Ioannina, Greece</li> </ul>	
Teaching of the laboratory course:	Sep 2011 – 2016
<ul style="list-style-type: none"> <li>• Biomedical Spectroscopy and Medical Technology</li> </ul>	
Development of online academic material of the lessons of biochemistry and agricultural chemistry of the Department of Agricultural Technology of the	Jan 2015 – Dec 2015

Technological Educational Institute of Epirus, Greece.

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Teaching of the course: Sep 2012 – Feb 2014

- Biomedical Spectroscopy and Medical Technology at the Department of Material Sciences and Engineering of the University of Ioannina, Greece

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Development of training material for cardiologists and surgeons during the TELECARDIOLOGY research program. Jan 2013 – Dec 2013

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Development of training material and real medical scenarios for academic purposes for cardiologists and vascular surgeons during the RT3S research program. Jan 2011 – Dec 2012

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### CERTIFICATES

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Big Data, Genes, and Medicine by The State University of New York on Coursera. Certificate earned at Saturday, December 23, 2017 6:20 PM GMT, Grade Achieved: 91.6%

### SPEAKING LANGUAGES

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Greek: Native speaker

English: Excellent

German: Good

### COMPUTER SKILLS

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#### Software & Technologies

- Modeling tools: ANSYS software, ANSYS workbench, ANSYS-CFX, ICEM-CFD, COMSOL
- Platforms: Microsoft Windows, Microsoft Windows Server, Linux
- Software: Solidworks, Geomagic, Slicer3D, GMSH, LAMS, Photoshop, Dreamweaver, Flash

#### Languages

- Proficient in: Matlab

Knowledge of: HTML, CSS, JavaScript, jQuery

### FELLOWSHIPS AND AWARDS

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- **2012: Hellenic Society of Cardiology:** Implementation of a mathematical model of plaque growth in carotid arteries considering the endothelial dysfunction. Writing of the research proposal and co-ordination of the successful completion.
- **2016: Young Investigator Award from European Atherosclerosis Society:** Study for the reproducibility of CT imaging in calculation of blood flow and LDL transport modeling.
- **2017: Young Investigator Award from European Atherosclerosis Society.**
- **2017:** The paper "Prediction of atherosclerotic plaque development in a realistic coronary arterial segment based on a multi-level modeling approach," was presented in the **cover page** of the August volume of the IEEE Transactions of Biomedical Engineering.
- **2018: NVIDIA GPU Grant Program.** Donation of one (1) GeForce Titan Xp GPU for my research efforts.

### AFFILIATIONS & INTERESTS

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- Biomedical engineering
- Cardiovascular disease
- Modelling and simulation
- Decision support systems
- Big data analytics and machine learning
- Finite elements
- Software development (Windows/Web Forms)
- Biology
- Genetics and relation to mechanical responses
- Medical Informatics and Electronic Health Records

## ACTIVITIES

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- Outdoor activities (hiking, cycling, running, swimming)
- Football, basketball, tennis
- Reading (technological issues, encyclopedic knowledge)

### **Published papers in journals:**

- [1] A. I. Sakellarios, P. Siogkas, T. Exarchos, K. Stefanou, C. V. Bourantas, L. Athanasiou, et al., "Modelling LDL accumulation in the case of endothelial dysfunction," *Journal of the Serbian Society for Computational Mechanics*, vol. 5, pp. 90-100, 2011.
- [2] P. Siogkas, A. Sakellarios, T. Exarchos, D.I. Fotiadis, K. Naka, L. Michalis, N. Filipovic, O. Parodi, "Blood Flow in Arterial Segments: Rigid vs. Deformable Walls Simulations" *Journal of Internet Research, Special Issue on Computational Bioengineering*. Vol. 5, (1), pp. 69-77, 2011.
- [3] P. Siogkas, A. Sakellarios, T. P. Exarchos, L. Athanasiou, E. Karvounis, K. Stefanou, et al., "Multiscale - Patient-Specific Artery and Atherogenesis Models," *IEEE Transactions on Biomedical Engineering*, vol. 58, pp. 3464-3468, Dec 2011.
- [4] T. P. Exarchos, K. Stefanou, P. Siogkas, A. Sakellarios, D. I. Fotiadis, K. Naka, et al., "ARTool: A Platform for the development of multi-level patient-specific artery and atherogenesis models," *Transactions on Internet Research, Special Issue on Computational Bioengineering*, vol. 7(2), 2011.
- [5] O. Parodi, T. P. Exarchos, P. Marraccini, F. Vozzi, Z. Milosevic, D. Nikolic, et al., "Patient-Specific Prediction of Coronary Plaque Growth From CTA Angiography: A Multiscale Model for Plaque Formation and Progression," *IEEE Transactions on Information Technology in Biomedicine*, vol. 16, pp. 952-965, Sep 2012.
- [6] A. I. Sakellarios, K. Stefanou, P. Siogkas, V. D. Tsakanikas, C. V. Bourantas, L. Athanasiou, et al., "Novel methodology for 3D reconstruction of carotid arteries and plaque characterization based upon magnetic resonance imaging carotid angiography data," *Magn Reson Imaging*, vol. 30, pp. 1068-82, Oct 2012.
- [7] L. S. Athanasiou, P. S. Karvelis, A. I. Sakellarios, T. P. Exarchos, P. K. Siogkas, V. D. Tsakanikas, et al., "A hybrid plaque characterization method using intravascular ultrasound images," *Technology and Health Care*, vol. 21, pp. 199-216, 2013.
- [8] C. V. Bourantas, H. M. Garcia-Garcia, K. K. Naka, A. Sakellarios, L. Athanasiou, D. I. Fotiadis, et al., "Hybrid intravascular imaging: current applications and prospective potential in the study of coronary atherosclerosis," *J Am Coll Cardiol*, vol. 61, pp. 1369-78, Apr 2 2013.
- [9] N. Filipovic, M. Radovic, V. Isailovic, Z. Milosevic, D. Nikolic, I. Saveljic, et al., "Plaque formation and stent deployment with heating thermal effects in arteries," *Journal of the Serbian Society for Computational Mechanics* vol. 6, pp. 11-28, 2013.
- [10] E. C. Karvounis, T. P. Exarchos, E. Fotiou, A. I. Sakellarios, D. Iliopoulou, D. Koutsouris, et al., "ART-ML: A new markup language for modelling and representation of biological processes in cardiovascular diseases," *Technology and Health Care*, vol. 21, pp. 241-259, 2013.
- [11] D. Nikas, C. Bourantas, A. I. Sakellarios, A. Ramos, K. K. Naka, L. K. Michalis, et al., "New Developments in Hybrid Optical Coherence Tomographic Imaging: Current Status and Potential Implications in Clinical Practice and Research," *Current Cardiovascular Imaging Reports*, vol. 6, pp. 411-420, 2013.
- [12] A. I. Sakellarios, M. I. Papafaklis, P. Siogkas, L. S. Athanasiou, T. P. Exarchos, K. Stefanou, et al., "Patient-specific computational modeling of subendothelial LDL accumulation in a stenosed right coronary artery: effect of hemodynamic and biological factors," *American Journal of Physiology-Heart and Circulatory Physiology*, vol. 304, pp. H1455-H1470, Jun 2013.
- [13] L. Athanasiou, A. I. Sakellarios, C. V. Bourantas, G. Tsirka, P. Siogkas, T. P. Exarchos, et al., "Currently available methodologies for the processing of intravascular ultrasound and optical coherence tomography images," *Expert Rev Cardiovasc Ther*, vol. 12, pp. 885-900, Jul 2014.
- [14] L. S. Athanasiou, C. V. Bourantas, G. Rigas, A. I. Sakellarios, T. P. Exarchos, P. K. Siogkas, et al., "Methodology for fully automated segmentation and plaque characterization in intracoronary optical coherence tomography images," *Journal of Biomedical Optics*, vol. 19, Feb 2014.
- [15] C. V. Bourantas, M. I. Papafaklis, L. Lakkas, A. Sakellarios, Y. Onuma, Y. J. Zhang, et al., "Fusion

of optical coherence tomographic and angiographic data for more accurate evaluation of the endothelial shear stress patterns and neointimal distribution after bioresorbable scaffold implantation: comparison with intravascular ultrasound-derived reconstructions," *Int J Cardiovasc Imaging*, vol. 30, pp. 485-94, Mar 2014.

[16] L. S. Athanasiou, G. Rigas, A. Sakellarios, C. V. Bourantas, K. Stefanou, E. Fotiou, et al., "Error propagation in the characterization of atheromatic plaque types based on imaging," *Comput Methods Programs Biomed*, vol. 121, pp. 161-74, Oct 2015.

[17] L. S. Athanasiou, G. A. Rigas, A. I. Sakellarios, T. P. Exarchos, P. K. Siogkas, K. K. Naka, et al., "Computerized methodology for micro-CT and histological data inflation using an IVUS based translation map," *Comput Biol Med*, Mar 6 2015.

[18] C. Bourantas, S. Papadopoulou, P. Serruys, A. Sakellarios, P. Kitslaar, P. Bizopoulos, et al., "Non-Invasive Prediction of Atherosclerotic Progression: Analysis from the PROSPECT-MSCT study. *JACC Imaging*," *Jacc-Cardiovascular Imaging*, vol. 9(8), pp. 1009-11, Aug 2016.

[19] C. V. Bourantas, L. Raber, S. Zaugg, A. Sakellarios, M. Taniwaki, D. Heg, et al., "Impact of local endothelial shear stress on neointima and plaque following stent implantation in patients with ST-elevation myocardial infarction: A subgroup-analysis of the COMFORTABLE AMI-IBIS 4 trial," *Int J Cardiol*, vol. 186, pp. 178-85, May 1 2015.

[20] K. P. Exarchos, C. Carpegianni, G. Rigas, T. P. Exarchos, F. Vozzi, A. Sakellarios, et al., "A Multiscale Approach for Modeling Atherosclerosis Progression," *IEEE Journal of Biomedical and Health Informatics*, vol. 19, pp. 709-719, Mar 2015.

[21] P. K. Siogkas, M. I. Papafaklis, A. I. Sakellarios, K. A. Stefanou, C. V. Bourantas, L. S. Athanasiou, et al., "Patient-Specific Simulation of Coronary Artery Pressure Measurements: An In Vivo Three-Dimensional Validation Study in Humans," *Biomed Research International*, Article ID 628416, 11 pages, 2015.

[22] A. Sakellarios, C.V. Bourantas, S. Papadopoulou, Z. Tzirka, T. de Vries, P.H. Kitslaar, C. Gyrisis, K.K. Naka, D.I. Fotiadis, S. Veldhof, G. Stone, J.H.C. Reiber, L.K. Michalis, P.W. Serruys, P.J. de Feyter, H. Garcia Garcia, "Prediction of Atherosclerotic Disease Progression Using LDL Transport Modeling: a Serial Computed Tomographic Coronary Angiographic Study," *European Heart Journal - Cardiovascular Imaging*, vol. 18 (1), pp. 11-18, 2017.

[23] A.I. Sakellarios, P. Bizopoulos, M. Papafaklis, L. Athanasiou, T. Exarchos, C.V. Bourantas, K.K. Naka, A.J. Patterson, V.EL. Young, J.H. Gillard, O. Parodi, L.K. Michalis and D.I. Fotiadis, "Natural history of carotid atherosclerosis in relation to hemodynamics: a serial study of low density lipoprotein transport modeling in humans," *Angiology*, Vol. 68 (2), pp. 109-118, 2016.

[24] A.I. Sakellarios, L. Raber, C.V Bourantas, TP. Exarchos, L.S. Athanasiou, G. Pelosi, K.C. Koskinas, O. Parodi, K.K. Naka, L.K. Michalis, P.W. Serruys, H.M. Garcia-Garcia, S. Windecker, D.I. Fotiadis, "Prediction of atherosclerotic plaque development in a realistic coronary arterial segment based on a multi-level modeling approach," *IEEE Trans Biomed Eng*. 2017 Aug;64(8):1721-1730.

[25] A. Sakellarios, C.V. Bourantas, S.L. Papadopoulou, T. de Vries, P.H. Kitslaar, C. Girasis, K.K. Naka, S. Veldhof, G.W. Stone, J.H.C. Reiber, L.K. Michalis, P.W. Serruys, P.J. de Feyter, H.M. Garcia Garcia, D.I. Fotiadis, "Reproducibility of endothelial shear stress and low density lipoprotein transport modeling in computed tomography angiographic imaging data", *Atherosclerosis*,. Vol. 252, e214-e215, 2016.

[26] A.I. Sakellarios, G. Karanasiou, P. Siogkas, V. Kigka, T. Exarchos, G. Rigas, L.K. Michalis, D.I. Fotiadis, Available computational techniques to model atherosclerotic plaque progression implementing a multi-level approach, *CBM: Computational Biomechanics of Medicine XI Workshop in MICCAI*, Special issue published by SPRINGER, 2016.

[27] A.I. Sakellarios, N.S. Tachos, G. Rigas, T. Bibas, G. Ni, F. Böhnke and D.I. Fotiadis, A validated methodology for the 3D reconstruction of cochlea geometries using human microCT images, *Measurement Science and Technology*, Accepted for publication, vol. 28(5), 054001, 2017.

[28] M. Mehdi, Y. Khan, J. Jares, A. Freitas, A. K. Jha, A. Sakellarios and Ratnesh Sahay, A Linked Data Visualiser for Finite Element Biosimulations. *International Journal of Semantic Computing*, Vol. 10(2), 219-245, 2016.

[29] A.I. Sakellarios, C.V. Bourantas, S. Papadopoulou, T. de Vries, P.H. Kitslaar, C. Gyrisis, K.K. Naka, S. Veldhof, G. Stone, J.H.C. Reiber, L.K. Michalis, P.W. Serruys, P.J. de Feyter, H. Garcia Garcia,

D.I. Fotiadis, "The effect of coronary bifurcation and boundary conditions in prediction of atherosclerotic plaque development: a Serial Computed Tomographic Coronary Angiographic study," *EuroIntervention*. Oct 13;13(9):e1084-e1091, 2017.

[30] V. Kigka, G. Rigas, A. Sakellarios, P. P Siogkas, T. Exarchos, D. Loggitsi, C. Anagnostopoulos, L. Michalis, D. Neglia, G. Pelosi, O. Parodi, D. Fotiadis, "3D Reconstruction of Coronary Arteries and Atherosclerotic Plaques based on Computed Tomography Angiography images" *Biomedical Signal Processing & Control*, 40, 286-294, 2018.

[31] C. V. Bourantas, A. Ramasamy, A. Karagiannis, A. Sakellarios, T. Zanchin, K. Yamaji, Y. Ueki, X. Shen, D. Fotiadis, L. Michalis, A. Mathur, P. Serruys, H. Garcia-Garcia, K. Koskinas, R. Torii, S. Windecker, L. Raber, Angiographic derived endothelial shear stress: a new predictor of atherosclerotic disease progression, *European Heart Journal – Cardiovascular Imaging*. 20 (3), 314-322, 2019.

[32] P. K. Siogkas, C. D. Anagnostopoulos, R. Liga, T. P. Exarchos, A.I. Sakellarios, G. Rigas, A. J.H.A. Scholte, M.I. Papafaklis, D. Loggitsi, G. Pelosi, O. Parodi, T. Maaniitty, L. K. Michalis, J. Knuuti, D. Neglia, D. I. Fotiadis, "Noninvasive CT-based hemodynamic assessment of coronary lesions derived from fast computational analysis: a comparison against fractional flow reserve" *European Journal of Radiology*, 29 (4), 2117-2126, 2019.

[33] V. I Kigka, A. Sakellarios, S. Kyriakidis, G. Rigas, L. Athanasiou, P. Siogkas, P. Tsompou, D. Loggitsi, D. C Benz, R. Buechel, P. A Lemos, G. Pelosi, L. K Michalis, D. I Fotiadis, "A three-dimensional quantification of calcified and non-calcified plaques in coronary arteries based on computed tomography coronary angiography images: Comparison with expert" *Computers in biology and medicine*, Volume 113, Pages 103409, 2019.

[34] C. V. Bourantas, T. Zanchin, A. Sakellarios, A. Karagiannis, A. Ramasamy, K. Yamaji, M. Taniwaki, D. Heg, A. Moschovitis, D. I. Fotiadis, L. K. Michalis, A. Baumbach, R. Torii, P. W. Serruys, H. M. Garcia Garcia, S. Windecker, L. Räber, "Implications of the local hemodynamic forces on the phenotype of coronary plaques: a serial multimodality intravascular ultrasound – optical coherence tomography study" *Heart* 105 (14), 1078-1086, 2019.

[35] C.D. Anagnostopoulos, P.K. Siogkas, R. Liga, G. Benetos, T. Maaniitty, A.I. Sakellarios, I. Koutagiari, I. Karakitsios, M.I. Papafaklis, A.J.H.A. Scholte, L.K. Michalis, O. Gaemperli, P.A. Kaufmann, G. Pelosi, O. Parodi, J. Knuuti, D.I. Fotiadis and D. Neglia, "Characterization of functionally significant coronary artery disease by a coronary computed tomography angiography (CCTA) based index: a comparison with Positron Emission Tomography (PET)" *Eur Heart J Cardiovasc Imaging*, 20 (8), 897-905, 2019.

[36] A. Sakellarios, J. Correia, S. Kyriakidis, E. Georga, N. Tachos, P. Siogkas, F. Sans, P. Stofella, V. Massimiliano, A. Clemente, S. Rocchiccioli, G. Pelosi, N. Filipovic, D. I Fotiadis, "A cloud-based platform for the non-invasive management of coronary artery disease" *Enterprise Information Systems*, 1-22, 2020.

[37] C. V Bourantas, L. Räber, A. Sakellarios, Y. Ueki, T. Zanchin, K. C Koskinas, K. Yamaji, M. Taniwaki, D. Heg, M. D Radu, M. I Papafaklis, F. Kalatzis, K. K Naka, D. I Fotiadis, A. Mathur, P. W Serruys, L. K Michalis, H. M Garcia-Garcia, A. Karagiannis, S. Windecker, "Utility of multimodality intravascular imaging and the local hemodynamic forces to predict atherosclerotic disease progression" *JACC: Cardiovascular Imaging*, 13(4), 1021-1032, 2020.

[38] AI Sakellarios, DI Fotiadis "Editorial commentary: The pleiotropic effect of statins on the atherosclerotic plaque and coronary heart disease" *Trends in cardiovascular medicine* 29 (8), 456, 2020.

[39] D. S. Pleouras, A. I. Sakellarios, P. Tsompou, V. Kigka, S. Kyriakidis, S. Rocchiccioli, D. Neglia, J. Knuuti, G. Pelosi, L. K. Michalis, D. I. Fotiadis, "Simulation of atherosclerotic plaque growth using computational biomechanics and patient-specific data" *Nature Scientific Reports*, Under minor revision.

#### **Papers in journals under review:**

[40] N. S. Tachos, A. I. Sakellarios, G. A. Rigas, A. Bibas, F. Böhnke and D. I. Fotiadis, "The Influence of Ossicular Ligaments in Middle Ear Transfer Function: Insights into Normal Physiology and Pathology", *Journal of Engineering in Medicine*, Under revision.

[41] P.K. Siogkas, L. Lakkas, A.I. Sakellarios, George Rigas, S. Kyriakidis, K.A. Stefanou, C.D.

Anagnostopoulos, R. Liga, G. Pelosi, O. Parodi, D. Neglia, L.K. Michalis and D.I. Fotiadis "SmartFFR: A new functional assessment index of coronary stenosis: comparison with invasive FFR data" European Heart Journal, Cardiovascular Imaging, Under revision.

[42] V. I. Kigka, A. Sakellarios, E. Georga, S. Kyriakidis, P. Tsompou, P. Siogkas, L. K. Michalis, K. Naka, D. Neglia, S. Rocchiccioli, G. Pelosi, D. I. Fotiadis, "Machine Learning Coronary Artery Disease Prediction based on Imaging and non-Imaging data" Artificial Intelligence in Medicine, Under revision.

[43] G.-E. Kalykakis, A.S. Antonopoulos, T. Pitsargiotis, P. Siogkas, T. Exarchos, A. Sakellarios, P. Kafouris, R. Liga, A. Tzifa, A. Giannopoulos, A.J.H.A. Scholte, P.A. Kaufmann, O. Parodi, J. Knuuti, D. I Fotiadis, D. Neglia, C.D Anagnostopoulos, "Performance of CTCA derived functional and morphological features in predicting impaired coronary vasodilation by PET-MPI" JACC Cardiovascular Imaging, Submitted.

### **Published chapters in books:**

[1] A.I. Sakellarios, C. Bourantas, L. Athanasiou, K.K. Naka, L. Michalis, D.I. Fotiadis, "IVUS image processing methodologies in Intravascular imaging: Current applications and Research Developments", In Intravascular Imaging: Current Applications and Research Developments. IGI global.

[2] A. Rammos, A. Sakellarios, D. I. Fotiadis, C. V. Bourantas, L. Athanasiou, K.K. Naka, L. K. Michalis. "3D reconstruction of coronary arteries anatomy using imaging modalities methods: Methods applications and challenges." In 3D Imaging: Theory, technology and applications. Nova Science Publishers Inc, Chapter 5, Page 45-66.

[3] V. Kigka, T. Exarchos, G. Rigas, A. Sakellarios, P. Siogkas, L.K. Michalis and D.I. Fotiadis. "IVUS tracking: Advantages and Disadvantages of Intravascular Ultrasound in the Detection of Artery Geometrical Features and Plaque Type Morphology" submitted in "Handbook of Speckle Filtering and Tracking in Cardiovascular Ultrasound Imaging and Video", published by "The Institution of Engineering and Technology".

[4] E.I. Georga, N.S. Tachos, A.I. Sakellarios, V.I. Kigka, T.P. Exarchos, G. Pelosi, O. Parodi, L.K. Michalis, D.I. Fotiadis. "Artificial Intelligence and Data Mining Methods for Cardiovascular Risk Prediction" In Cardiovascular Computing - Methodologies and Clinical Application, Series in BioEngineering, Springer.

### **Books under preparation:**

[1] Multiscale Modelling in Biomedical Engineering, Dimitrios I. Fotiadis, Antonis I. Sakellarios, and Vassiliki T. Potsika, The IEEE and Wiley Publishing, Under preparation, delivered not later than May 6th, 2019.

### **Published papers in conference proceedings**

[1] A.I. Sakellarios, D.I. Fotiadis and L.K. Michalis, "Finite Element Modeling of LDL Transfer in Carotid Artery Bifurcation," 4th European Congress for Medical and Biomedical Engineering 2008 "Engineering for Health" Antwerp, Belgium.

[2] A.I. Sakellarios, V. D. Tsakanikas, N. D. Filipovic, L. K. Michalis, "ARTool: A platform for atherosclerosis multi-level modeling", 2nd South East European Conference on Computational Mechanics, 2009, Rhodes, Greece.

[3] A. Sakellarios, V. Tsakanikas, L. Michalis, D. Fotiadis, N. Filipovic, "A tool for the automated processing of artery imaging modalities and modelling of atherosclerotic plaque development" CARS, Computer Assisted Radiology and Surgery 2009, Berlin, Germany.

[4] A.I. Sakellarios, M.I. Papafaklis, D.I. Fotiadis and L.K. Michalis, "Prediction of atherosclerotic plaque formation based on LDL transport for a 3D patient specific coronary artery with deformable walls" The 9th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Engineering 2009, Patra, Greece.

[5] D. Petsios, A. I. Sakellarios, V. D. Tsakanikas, D. I. Fotiadis. A method for atherosclerotic plaque growth based on a markup representation of blood flow simulation, 17th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB) & 8th European Conference on Computational Biology (ECCB) 2009, Stocholm June 27 - July 2.

[6] A. I. Sakellarios, P. Siogkas, V. Tsakanikas, K. Stefanou, K. Naka, L. Michalis, D. Fotiadis, "Blood



Flow Simulation in 3D Patient-Specific MRI Reconstructed Carotid Arteries” International VPH Conferences, 2010, Brussels, Belgium.

[7] A. Sakellarios, P. Siogkas, V. Tsakanikas, L. Michalis, D. Fotiadis, “Simulation of the effect of tachycardia on atherosclerotic plaque development based on the LDL transport in coronary arteries” 2010 Computing in Cardiology conference, Belfast, Northern Ireland, United Kingdom.

[8] P. K. Siogkas, I. Sakellarios, K. A. Stefanou, T. P. Exarchos, L. Athanasiou, K.G. Siogkas, L. K. Michalis, . K. Naka, C. V. Bourantas, C. B.-Philipp and D. I. Fotiadis. “Exploring the Effect of Arterial Geometry in a Realistic 3D Coronary Arterial Model” 10th International Workshop on Biomedical Engineering, 2011.

[9] P. K. Siogkas, A. I. Sakellarios, K. A. Stefanou, T. P. Exarchos, V. D. Tsakanikas, L. K. Michalis, K. K. Naka, M. I. Papafaklis, C. V. Bourantas, D. I. Fotiadis. “Blood Flow in Coronary Arteries with Deformable Walls” 9th HSTAM International Congress on Mechanics, 2010.

[10] P. Siogkas, A. Sakellarios, V. Tsakanikas, K. Stefanou, T. Exarchos, K. Naka, L. Michalis, C. Bludszweit-Philipp, D. I. Fotiadis. “Quantification of the Effect of Percutaneous Coronary Angioplasty on a Stenosed Right Coronary Artery” 10th IEEE International Conference on Information Technology and Applications in Biomedicine, ITAB 2010, Corfu, Greece.

[11] A.I. Sakellarios, T. Exarchos, P. Siogkas, K. Stefanou,, C.V. Bourantas, E. Fotiou, K.K. Naka, L.K. Michalis, D. Koutsouris, D.I. Fotiadis “Influence of arterial geometry and stenosis on LDL accumulation in arteries”, 7th GRACM International Congress on Computational Mechanics.

[12] A.I. Sakellarios, K. Stefanou, P. Siogkas. T. Exarchos, K. Naka, L.K. Michalis, D.I. Fotiadis, “The effects of rheology in the atheromatous plaque development. Presentation of a novel model for the prediction of regions prone to atheromatous plaque formation based upon both wall shear stress and LDL transportation to the arterial wall” 32o Panhellenic Cardiology Conference, HCS 2011.

[13] A.I. Sakellarios, K. Stefanou, P. Siogkas, T. Exarchos, K. Naka, L.K. Michalis, D.I. Fotiadis, “Computation blood flow modeling validation using MRI carotid angiography” 32o Panhellenic Cardiology Conference, HCS 2011.

[14] A. I Sakellarios, P. Siogkas, T.P. Exarchos, K. Stefanou, L. Athanasiou, C.V. Bourantas, M. Papafaklis, E. Fotiou, K.K. Naka, L.K. Michalis, D.I. Fotiadis, O. Parodi, “Augmented low density lipoprotein accumulation in coronary regions with endothelial dysfunction and low shear stress: A computational modeling study”. European Atherosclerosis Society Congress, 2012.

[15] E.Tripoliti, A. Sakellarios, M. Peroulis, E. Petrakis, J. Berends, E. Tinsson, “Training Scenarios for Vascular Surgeons of Peripheral Arteries”, Modeling of Patient Safety Workshop, VPH2012 Conference, Sept. 18-20, London, UK.

[16] E. Tripoliti, A. Sakellarios, M. Peroulis, E. Petrakis M., Zervakis. “Real-Time Simulation for Safer Vascular Stenting – The Training Application” 34th Annual International Conference of the IEEE in Medicine and Biology Society (EMBC'2012), San Diego, California.

[17] E. Tripoliti, A. Sakellarios, M. Peroulis, E. Petrakis. “The Vascular Training Medicine Application” 26th International Congress and Exhibition, Computer Assisted Radiology and Surgery (CARS'2012), June 27-30, 2012, Pisa, Italy.

[18] L.S. Athanasiou, C.V. Bourantas, P.K. Siogkas, A.I. Sakellarios, T.P. Exarchos, K.K. Naka, M.I. Papafaklis, D.I. Fotiadis, “3D reconstruction of coronary arteries using Frequency Domain Optical Coherence Tomography images and biplane angiography” Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS 2012 art. no. 6346508 , pp. 2647-2650.

[19] T.P. Exarchos, A. Sakellarios, P.K. Siogkas, D.I. Fotiadis, Z. Milosevic, D. Nikolic, N. Filipovic, O. Parodi, “Patient specific multiscale modelling for plaque formation and progression” Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS 2012, art. no. 6346568 , pp. 2893-2896.

[20] A.I. Sakellarios, P.K. Siogkas, L.S. Athanasiou, T.P. Exarchos, M.I. Papafaklis, C.V. Bourantas, K.K. Naka, L.K. Michalis, N. Filipovic, O. Parodi, D.I. Fotiadis, “Three-dimensional modeling of oxidized-LDL accumulation and HDL mass transport in a coronary artery: A proof-of-concept study for predicting the region of atherosclerotic plaque development” Conf Proc IEEE Eng Med Biol Soc. 2013 Jul;2013:4513-6.

[21] P.K. Siogkas, M.I. Papafaklis, A.I. Sakellarios, K.A. Stefanou, C.V. Bourantas, L.M. Athanasiou,

- C.V. Bellos, T.P. Exarchos, K.K. Naka, L.K. Michalis, O. Parodi, D.I. Fotiadis, "Computational assessment of the fractional flow reserve from intravascular ultrasound and coronary angiography data: A pilot study" *Conf Proc IEEE Eng Med Biol Soc.* 2013 Jul;2013:3885-8.
- [22] L.S. Athanasiou, C.V. Bourantas, G.A. Rigas, T.P. Exarchos, A.I. Sakellarios, P.K. Siogkas, M.I. Papafaklis, K.K. Naka, L.K. Michalis, F. Prati, D.I. Fotiadis, "Fully automated calcium detection using optical coherence tomography" *Conf Proc IEEE Eng Med Biol Soc.* 2013 Jul;2013:1430-3.
- [23] G.S. Karanasiou, A.I. Sakellarios, E.E. Tripoliti, E.G.M. Petrakis, M.E. Zervakis, F. Migliavacca, G. Dubini, E. Dordoni, L.K. Michalis, D.I. Fotiadis, "Modeling stent deployment in realistic arterial segment geometries: The effect of the plaque composition" *13th IEEE International Conference on BioInformatics and BioEngineering, IEEE BIBE 2013*, Article number 6701537.
- [24] G. Karanasiou, A. Sakellarios, E. Tripoliti, E. Petrakis, M. Zervakis, F. Migliavacca, G. Dubini, E. Dordoni, L. Michalis, D. Fotiadis, "Modeling of stent implantation in a human stenotic artery" *XIII Mediterranean Conference on Medical and Biological Engineering and Computing*, September 25-28, 2013, Sevilla Spain.
- [25] G. Rigas, L. Athanasiou, A. Sakellarios, T.P. Exarchos, O. Parodi and D.I. Fotiadis, An automated method for three-dimensional reconstruction of coronary arteries and plaque characterization using computed tomography. *2013 5ο Πανελλήνιο Συνέδριο Βιοϊατρικής Τεχνολογίας*, Athens.
- [26] G. A. Rigas, L. S. Athanasiou, A. I. Sakellarios, T. P. Exarchos, P. K. Siogkas, K. K. Naka, D. Panetta, G. Pelosi, L. K. Michalis, O. Parodi, and D. I. Fotiadis, "Methodology for micro-CT data inflation using Intravascular Ultrasound images" *Engineering in Medicine and Biology Society (EMBC), 2014 36th Annual International Conference of the IEEE*, pp. 1099 – 1102, 2014.
- [27] P.A. Bizopoulos, A.I. Sakellarios, D.D. Koutsouris, D. Iliopoulou, L.K. Michalis, D.I. Fotiadis, "Randomly generated realistic vessel geometry using spline interpolation and 2D Perlin noise" *2014 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2014*. Article number 6864328, Pages 157-160.
- [28] P. A. Bizopoulos, A. I. Sakellarios, D. D. Koutsouris, J. Kountouras, L. Kostretzis, S. Karagergou, et al., "Prediction of atheromatic plaque evolution in carotids using features extracted from the arterial geometry," *Conf Proc IEEE Eng Med Biol Soc*, vol. 2015, pp. 6556-9, Aug 2015.
- [29] A. I. Sakellarios, P. Bizopoulos, K. Stefanou, L. S. Athanasiou, M. I. Papafaklis, C. V. Bourantas, et al., "A proof-of-concept study for predicting the region of atherosclerotic plaque development based on plaque growth modeling in carotid arteries," *Conf Proc IEEE Eng Med Biol Soc*, vol. 2015, pp. 6552-5, Aug 2015.
- [30] L. S. Athanasiou, G. A. Rigas, A. I. Sakellarios, T. P. Exarchos, P. K. Siogkas, L. K. Michalis, et al., "Three-dimensional reconstruction of coronary arteries and plaque morphology using CT angiography - comparison and registration using IVUS," *Conf Proc IEEE Eng Med Biol Soc*, vol. 2015, pp. 5638-41, Aug 2015.
- [31] P. K. Siogkas, L. S. Athanasiou, A. I. Sakellarios, K. A. Stefanou, T. P. Exarchos, M. I. Papafaklis, et al., "Validation study of a 3D-QCA coronary reconstruction method using a hybrid intravascular ultrasound and angiography reconstruction method and patient-specific Fractional Flow Reserve data," *Conf Proc IEEE Eng Med Biol Soc*, vol. 2015, pp. 973-6, Aug 2015.
- [32] I. F. Spiridon, A. I. Sakellarios, G. A. Rigas, A. Tagaris, C. V. Bellos, A. Bibas, et al., "Effect of modeling parameters on the frequency response of the middle ear by means of finite element analysis," *Conf Proc IEEE Eng Med Biol Soc*, vol. 2015, pp. 925-8, Aug 2015.
- [33] A. I. Sakellarios, N. S. Tachos, G. Rigas, T. Bibas, G. Ni, F. Böhnke, et al., "3D reconstruction of cochlea geometries using human microCT images," In: Kyriacou E., Christofides S., Pattichis C. (eds) *XIV Mediterranean Conference on Medical and Biological Engineering and Computing 2016. IFMBE Proceedings*, vol 57. Springer, Cham, 2016, pp. 320-325.
- [34] P. A. Bizopoulos, M. Vavuranakis, T. G. Papaioannou, D. A. Vrachatis, A. I. Sakellarios, D. Iliopoulou, et al., "A preliminary study on In-Vivo 3-D imaging of Bioprosthetic Aortic Valve deformation," In: Kyriacou E., Christofides S., Pattichis C. (eds) *XIV Mediterranean Conference on Medical and Biological Engineering and Computing 2016. IFMBE Proceedings*, vol 57. Springer, Cham, 2016, pp. 332-336.
- [35] K. M. Tsiouris, S. Konitsiotis, S. Markoula, D. D. Koutsouris, A. I. Sakellarios, and D. I. Fotiadis, "An unsupervised methodology for the detection of epileptic seizures in long-term EEG signals," in

2015 IEEE 15th International Conference on Bioinformatics and Bioengineering, BIBE, 2015.

[36] N. S. Tachos, A. I. Sakellarios, G. A. Rigas, I. Spiridon, A. Bibas, F. Böhnke, et al., "A computational study of ligaments effect in middle ear chain anatomy behavior," in 2015 IEEE 15th International Conference on Bioinformatics and Bioengineering, BIBE 2015, 2015.

[37] G. S. Karanasiou, D. A. Gatsios, M. G. Lykissas, K. A. Stefanou, G. A. Rigas, I. E. Lagaris, et al., "Fluid-structure interaction analysis of anastomosis in patient specific arterial segment," in 2015 IEEE 15th International Conference on Bioinformatics and Bioengineering, BIBE 2015, 2015.

[38] AI Sakellarios, NS Tachos, G Rigas, T Bibas, DI Fotiadis, A visualization system for histological image annotation and 3D reconstruction of parametric geometries of the inner ear, in IEEE International Conference Imaging Systems and Techniques (IST), 2016, 549-553, Chania, Greece.

[39] AI Sakellarios, G Rigas, TP Exarchos, DI Fotiadis, A methodology and a software tool for 3D reconstruction of coronary and carotid arteries and atherosclerotic plaques, IEEE International Conference Imaging Systems and Techniques (IST), 2016, 549-553, Chania, Greece.

[40] V. Isailovic, M. Nikolic, T. Bibas, A. Sakellarios, N. Tachos, M. Milosevic and N. Filipovic, Numerical simulation of human hearing system, 2nd EAI International Conference on Future Access Enablers of Ubiquitous and Intelligent Infrastructures, 2016, Belgrade, Serbia.

[41] NS Tachos, AI Sakellarios, G Rigas, V Isailovic, G Ni, F Böhnke, N Filipovic, T Bibas, DI Fotiadis, Middle and inner ear modelling: From microCT images to 3D reconstruction and coupling of models, IEEE 38th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2016, 5961-5964, Orlando, Florida.

[42] P A Bizopoulos, A Sakellarios, L K Michalis, D D Koutsouris, D I Fotiadis, 3-D Registration on Carotid Artery imaging data: MRI for different timesteps, IEEE 38th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2016, 1159-1162, Orlando, Florida.

[43] S. Rocchiccioli, D. Panetta, A. Sakellarios, T. Exarchos, M. Azzarone, M., M. Ferrari, D. Fotiadis, O. Parodi, G. Pelosi, A feasibility study of integrated clinical risk assessment in carotid artery disease based on a multilevel pipeline associating molecular and hemodynamic factors with plaque pathology. 5th International Work-Conference on Bioinformatics and Biomedical Engineering, 2017, Granada, Spain.

[44] I. O. Andrikos, A. I. Sakellarios, P. K. Siogkas, T. P. Exarchos, A. Karanasos, K. Toutouzas, L. K. Michalis, D. I. Fotiadis, A semi-automate reconstruction of coronary bifurcations using angiography and OCT. International Conference on Biomedical and Health Informatics (BHI), 2017, Orlando, Florida, USA.

[45] P. Siogkas, K. Vassiliki, G. Rigas, A. Sakellarios, T. P. Exarchos, D. I. Fotiadis, Analysis of coronary CTA for 3D reconstruction of arterial trees and plaque detection. International Conference on Biomedical and Health Informatics (BHI), 2017, Orlando, Florida, USA.

[46] T. Bampali, L. Lakkas, A. Sakellarios, P. Siogkas, J. Andrikos, A. Kotsia, M. Papafaklis, C. Katsouras, D. I. Fotiadis, D. Karpaliotis, E. Brilakis, L. Michalis, The correlation of Near-Infrared-Spectroscopy lipid pools with computationally measured accumulation of low density lipoprotein in coronary arteries. European Atherosclerosis Society Congress, 2017, Prague, Czech Republic.

[47] V. I. Kigka, . Rigas, A. I. Sakellarios, P. Siogkas, T. P. Exarchos, J. Knuuti, G. Pelosi, O. Parodi, D. I. Fotiadis. "A Hybrid Median to improve image quality in Computed Tomography Angiography Images" IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2017.

[48] I.O. Andrikos, A.I. Sakellarios, P.K. Siogkas, G. Rigas, T.P. Exarchos, L.S. Athanasiou, A. Karanasos, K. Toutouzas, D. Tousoulis, L.K. Michalis, D.I. Fotiadis, A novel hybrid approach for reconstruction of coronary bifurcations using angiography and OCT. IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2017.

[49] A. I. Sakellarios, G. Rigas, V. Kigka, P. Siogkas, P. Tsompou, G. Karanasiou, T. Exarchos, I. Andrikos, N. Tachos, G. Pelosi, O. Parodi, D. I. Fotiadis. SMARTool: A Tool for Clinical Decision Support for the Management of Patients with Coronary Artery Disease Based on Modeling of Atherosclerotic Plaque Process. IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2017.

[50] A. Karanasos, K. Toutouzas, I. Andrikos, A. Sakellarios, P. Siogkas, G. Rigas, T. Exarchos, A. Synetos, G. Latsios, E. Tsiamis, L. Michalis, D. Fotiadis, D. Tousoulis. Evaluation of flow dynamics in

bifurcations by fusion of 3d angiography and two-vessel OCT. European Society of Cardiology Congress, 2017, Barcelona, Spain.

[51] P. K. Siogkas, A. I. Sakellarios, T. P. Exarchos, R. Liga, J. Knuuti, A. J.H.A. Scholte, M. I. Papafaklis, O. Parodi, L. K. Michalis, D. Neglia, D. I. Fotiadis, C. D. Anagnostopoulos. Non-invasive quantification of coronary artery disease based on CCTA images and Computational Fluid Dynamics: comparison to PET derived perfusion values. European Society of Cardiology Congress, 2017, Barcelona, Spain.

[52] G. Karanasiou, N. Tachos, A. Sakellarios, C. Conway, L. Michalis, E. Edelman, D. Fotiadis. In silico assessment of the effects of material on stent deployment. 17th IEEE International Conference on Bio-Informatics and Bio-Engineering (BIBE - 2017), Washington DC.

[53] E. I. Georga, N. S. Tachos, A. I. Sakellarios, T. P. Exarchos, S. Rocchiccioli, G. Pelosi, O. Parodi, L. K. Michalis, and D. I. Fotiadis, Towards Precise Predictive Modelling of Coronary Artery Disease Elaborating on Omics Data. 2018 IEEE International Conference on Biomedical and Health Informatics, March 4-7, 2018, Las Vegas, NV, USA.

[54] P. I. Tsompou, P. K. Siogkas, A. I. Sakellarios, P. A. Lemos, L. K. Michalis, D. I. Fotiadis, Non-invasive Assessment of Coronary Stenoses and Comparison to Invasive Techniques: A Proof-of-Concept Study, 2017 IEEE 30th International Symposium on Computer-Based Medical Systems (CBMS), Thessaloniki, Greece.

[55] A. Sakellarios, P. Siogkas, E. Georga, N. Tachos, V. Kigka, P. Tsompou, I. Andrikos, G. S. Karanasiou, S. Rocchiccioli, J. Correia, G. Pelosi, P. Stofella, N. Filipovic, O. Parodi, D. I. Fotiadis, Clinical Decision Support Platform for the Risk Stratification, Diagnosis, and Prediction of Coronary Artery Disease Evolution, IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2018, Hawaii.

[56] G. S. Karanasiou, N. S. Tachos, A. Sakellarios, C. Conway, G. Pennati, L. Petrini, L. K. Michalis, E. R. Edelman, D. I. Fotiadis, In Silico analysis of stent deployment - effect of stent design, IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2018, Hawaii.

[57] G. S. Karanasiou, G. A. Rigas, S. K. Kyriakidis, N. S. Tachos, A. I. Sakellarios, D. I. Fotiadis, InSilc: 3D Reconstruction and plaque characterization tool, IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2018, Hawaii.

[58] V. I. Kigka, E. I. Georga, A. I. Sakellarios, N. S. Tachos, I. Andrikos, P. Tsompou, S. Rocchiccioli, G. Pelosi, O. Parodi, L. K. Michalis, D. I. Fotiadis, A Machine Learning Approach for the Prediction of the Progression of Cardiovascular Disease based on Clinical and Non-Invasive Imaging Data, IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2018, Hawaii.

[59] P. I. Tsompou, A. I. Sakellarios, P. K. Siogkas, I. O. Andrikos, V. I. Kigka, P. A. Lemos, L. K. Michalis, and D. I. Fotiadis, Comparison of 3D reconstruction methods based on different cardiovascular imaging: a study of multimodality reconstruction method, IEEE 39th Annual International Conference of the Engineering in Medicine and Biology Society (EMBC), 2018, Hawaii.

[60] T. Zanchin, A. Karagiannis, A. Sakellarios, K. C. Koskinas, K. Yamaji, Y. Ueki, D. Fotiadis, M. Roffi, G. Pedrazzini, C. Matter, L. K. Michalis, A. Baumbach, T. Lüscher, S. Windecker, L. Räber, The Effect of Endothelial Shear Stress on Fibroatheroma Progression: A Serial Intravascular Ultrasound, Optical Coherence Tomography and Blood Flow Simulation Study, European Society of Cardiology, 2018, Munich.

[61] T. Zanchin, A. Karagiannis, A. Sakellarios, K. C. Koskinas, K. Yamaji, Y. Ueki, D. Fotiadis, M. Roffi, G. Pedrazzini, C. Matter, L. K. Michalis, A. Baumbach, T. Lüscher, S. Windecker, L. Räber, Angiographic derived endothelial shear stress: a new predictor of atherosclerotic disease progression, EuroPCR, 2018, Paris.

[62] G. Pelosi, A. Sakellarios, N. Tachos, E. Georga, A.J.H.A. Scholte, D. Neglia, R. Buechel, J. Knuuti, F. Barbon, J. Correia, M. Brivio, M. Schuette, O. Parodi, S. Rocchiccioli, D. I. Fotiadis on behalf of SMARTool Study Investigators, An e-Health platform for coronary artery disease management: The SMARTool H2020 project, VPH Conference, 2018, Zaragoza.

[63] S. Rocchiccioli, M. Shuette, N. Tachos, E. Georga, S. Sbrana, J. Campolo, C. Caselli, A. Sakellarios, F. Vozi, JM. Smit, AJHA. Scholte, D. Neglia, D. I. Fotiadis, O. Parodi, G. Pelosi, on behalf of

SMARTool Study Investigators, The impact of genomics in the development of a diagnostic model for stable, coronary artery disease, VPH Conference, 2018, Zaragoza.

[64] A. I. Sakellarios, N. Tachos, P. Tsompou, V. Kigka, S. Kyriakidis, G. Karanasiou, G. Pelosi, O. Parodi, D. I. Fotiadis, A computational multi-level patient-specific model for the simulation of the mechanisms of atherosclerotic plaque growth, World Congress of Biomechanics, 2018, Dublin.

[65] E. I Georga, N. S Tachos, A. I Sakellarios, G. Pelosi, S. Rocchiccioli, O. Parodi, L. K Michalis, D. I Fotiadis, "A Multimodal Machine Learning Approach to Omics-Based Risk Stratification in Coronary Artery Disease" World Congress on Medical Physics and Biomedical Engineering 879-882, 2018, Prague.

[66] V. I Kigka, A. Sakellarios, G. Rigas, P. Tsobou, I. O Andrikos, L. K Michalis, D. I Fotiadis, "A Three-Dimensional Quantification of Calcified and Non-calcified Plaque Based on Computed Tomography Coronary Angiography Images: Comparison with Virtual Histology" World Congress on Medical Physics and Biomedical Engineering 207-211, 2018, Prague.

[67] A. I Sakellarios, N. Tachos, E. Georga, G. Rigas, V. Kigka, P. Siogkas, S. Kyriakidis, G. Karanasiou, P. Tsompou, I. Andrikos, S. Rocchiccioli, G. Pelosi, O. Parodi, D. I Fotiadis, "A Novel Concept of the Management of Coronary Artery Disease Patients Based on Machine Learning Risk Stratification and Computational Biomechanics: Preliminary Results of SMARTool Project" World Congress on Medical Physics and Biomedical Engineering, 629-633, 2018, Prague.

[68] I. O. Andrikos, A. I. Sakellarios, P. K. Siogkas, P. I. Tsompou, V. I. Kigka, L. K. Michalis, and D. I. Fotiadis, "A new method for the 3D reconstruction of coronary bifurcations pre and post the angioplasty procedure using the QCA," Conf Proc IEEE Eng Med Biol Soc, vol. 2019, pp. 5757-5760, Jul 2019, Berlin.

[69] V. I. Kigka, A. I. Sakellarios, P. Tsompou et al., "Site specific prediction of atherosclerotic plaque progression using computational biomechanics and machine learning," Conf Proc IEEE Eng Med Biol Soc, vol. 2019, pp. 6998-7001, Jul 2019, Berlin.

[70] D. Pleouras, S. Rocchiccioli, G. Pelosi et al., "A computational multi-level atherosclerotic plaque growth model for coronary arteries," Conf Proc IEEE Eng Med Biol Soc, vol. 2019, pp. 5010-5013, Jul 2019, Berlin.

[71] A. I. Sakellarios, G. Pelosi, D. I. Fotiadis et al., "Predictive Models of Coronary Artery Disease Based on Computational Modeling: The SMARTool System," Conf Proc IEEE Eng Med Biol Soc, vol. 2019, pp. 7002-7005, Jul 2019, Berlin.

[72] P. K. Siogkas, A. I. Sakellarios, S. K. Kyriakidis et al., "The effect of error propagation in the 3D reconstruction of coronary segments using CTCA images on crucial hemodynamic parameters," Conf Proc IEEE Eng Med Biol Soc, vol. 2019, pp. 5006-5009, Jul 2019, Berlin.

[73] P. I. Tsompou, P. K. Siogkas, A. I. Sakellarios et al., "A comparison of three multimodality coronary 3D reconstruction methods," Conf Proc IEEE Eng Med Biol Soc, vol. 2019, pp. 5812-5815, Jul 2019, Berlin.

[74] G. I Grigoriadis, A. I Sakellarios, K. Naka, I. Kosmidou, C. Ellis, L. K Michalis, D. I Fotiadis. "Computational Fluid Dynamics of Blood Flow at the Left Atrium and Left Atrium Appendage," Mediterranean Conference on Medical and Biological Engineering and Computing, Publisher Springer, Cham, Pages 938-946.

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EUROPEAN COMMISSION, ERC EVALUATION SYSTEM

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## CITATIONS ANALYSES

Citations metrics	Total	Since 2012
<u>Citations</u>	807	716

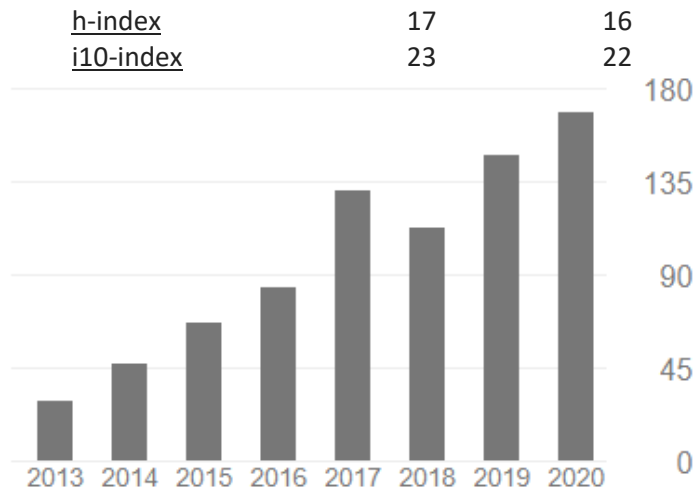


Figure 1: Number of citations per year (from Google Scholar Account) (accessed 11/11/2020).  
 Google Scholar Account: <https://scholar.google.gr/citations?user=TYJS6IAAAAJ&hl=en>