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Workshop/Tutorial title:	Big data and artificial intelligence in cancer imaging
Organizers	Prof. Karim Lekadir, Universitat de Barcelona, Spain Prof. Luis Martí-Bonmatí, La Fe University, Spain Prof. Manolis Tsiknakis, FORTH, Greece Mrs. Gianna Tsakou, Athens R&D Lab of Maggioli S.P.A., Italy
Short Description	The organizers of the workshop are the coordinators of the four projects that have recently been funded by the EC in the context of a relevant H2020 call (H2020-SC1-FA-DTS-2019-1 - AI for Health Imaging), i.e. CHAIMELEON (https://chaimeleon.eu/), EuCanImage (https://eucanimage.eu/), INCISIVE (https://incisive-project.eu/), ProCancer-I (https://www.procancer-i.eu/) and PRIMAGE (https://www.primageproject.eu/) a relevant R&D project funded in a previous H2020 call.
Contents	The workshop will provide a detailed report of the challenges identified so far, by the recently funded project in the domain by the European Union; it will also present current approaches towards consensus building and critically discuss alternatives. Particular emphasis will be given to the issues related to the evaluation of AI-based diagnostic imaging algorithms including robustness, trust and explainability.
CVs of the Organizers	**Karim Lekadir** is the Coordinator of the EuCanImage H2020 project. **Luis Martí-Bonmatí** is the coordinator the PRIMAGE and CHAIMELEON Horizon 2020 projects. **Manolis Tsiknakis** is the Coordinator of the ProCAncer-I H2020 project and **Gianna Tsakou** is the Coordinator of INCISIVE project.

Short CVs of the Organizers

Karim Lekadir is a Ramon y Cajal Researcher and Director of the Artificial Intelligence in Medicine Lab at the Universitat de Barcelona (BCN-AIM). He holds a PhD from Imperial College London (UK) and was previously a Visiting Scholar at Stanford University (USA). His current research focuses on the development of data science and machine learning approaches for the analysis of large-scale biomedical data, including imaging, clinical, lifestyle and mobile data. The software he developed during his PhD for cardiac functional quantification has been CE marked and commercialised by CMRtools, and is now used in more than 250 clinical centres worldwide. He is the Coordinator of the euCanSHare H2020 project (2018-2022), developing a big data platform for cardiovascular research. He is the Coordinator of the EarlyCause H2020 project (2019-2023), which investigates multi-morbidity using experimental and data science approaches. He is also the Coordinator of the EuCanImage H2020 project (2020-2024), which is building a federated artificial intelligence environment for cancer imaging. He is WP leader in the LongITools H2020 project (2019-2024), developing a mobile app for cardio-metabolic risk prediction based on exposome data. He is General Chair for the MICCAI 2024 Conference (Medical Image Computing and Computer-Assisted Intervention), which will take place for the first time in Africa (Marrakesh, Morocco). He is an Associate Editor of IEEE Transactions on Medical Imaging.

Luis Martí-Bonmatí is Director of the Medical Imaging Department and Chairman of Radiology at La Fe University and Polytechnic Hospital in Valencia, Spain. He is also founder and director of the Biomedical Imaging Research Group (GIBI230) at La Fe Health Research Institute. His main interests are computational imaging radiomics and biomarkers, image processing, imaging biobanks and clinical innovations in medical imaging and artificial intelligence. He has authored over 585 publications and his numerous research collaborations continue to facilitate joint efforts between different specialties and significantly improve the development and validation of imaging biomarkers. He is active in several European initiatives, coordinating the PRIMAGE and CHAIMELEON Horizon 2020 projects on medical imaging, artificial intelligence, image repositories and predictive models with observational studies. Prof. Martí Bonmatí is also co-founder of Quibim, a spin-off company from La Fe that applies AI and advanced computing techniques to medical images to process, analyse, extract and measure radiomic data and imaging biomarkers that can be used in clinical diagnostics and research. He is a full academic member of the Spanish Royal National Academy of Medicine, representing radiology, and a member of the Spanish National Radiology Commission, advising the Spanish Ministry of Health in specialty advanced education. Prof. Martí-Bonmatí has served as president of scientific societies such as the European Society of Magnetic Resonance in Medicine and Biology (ESMRMB), Spanish Society of Radiology (SERAM), Spanish Society of Abdominal Radiology (SEDIA) and European Society of

Gastrointestinal and Abdominal Radiology (ESGAR). He is also former president of the SERAM and ESGAR annual meetings and has received the Gold Medal of the SERAM, SEDIA and ESGAR.

Prof. Martí-Bonmatí has been a member of the ESR's Executive Council in 2010-2013, serving as director of the Research Committee and initiating the Imaging Biomarkers Subcommittee. He represented radiology in the European Council for Health Research at the Alliance for Biomedical Research in Europe. He is now a member of the ESR eHealth and Informatics Subcommittee. He has received honorary fellowship of the European Society of Medical Imaging Informatics (EuSoMII) and the American College of Radiology (ACR), and more recently the Most Effective Radiology Educator award from Aunt Minnie Europe. He is now the proud Editor in Chief of Insights into Imaging, achieving a 3.579 Impact Factor last year and positioning the journal in the first quartile of the medical imaging journal.

Manolis Tsiknakis, received his Master (1983) and PhD (1989) degrees from the University of Bradford, UK. He performed his post-doctoral training at the University of Bradford (1990-1991) and the Institute of Computer Science at FORTH (1992). He served as a Principal Researcher at the CBML of FORTH/ICS, acting as the lab Director during 2000 - 2006. Since 2012 he is a Professor of Biomedical Informatics and eHealth at the Department of Electrical and Computer Engineering at the Hellenic Mediterranean University and a visiting research Professor at the Computational Biomedicine Laboratory of FORTH/ICS. He has been the scientific coordinator or the technical leader of several large, EU funded, collaborative projects. Currently he is the Coordinator of the ProCAncer-I H2020 project (2020-2024), which is building an AI platform integrating imaging data and models, supporting precision care through prostate cancer's continuum. He is also a WP leader in the ODIN project (2021 – 2024) funded under the *H2020-DT-ICT-12-2020-1-AI for the smart hospital of the future* action line, focusing on leveraging AI based technology to transform the future of health care delivery in Leading Hospitals in Europe. He was an eEurope/eHealth award winner in 2003 and the recipient of FORTH's award for the most innovative applied research in 2004. He is an Associate Editor of IEEE Journal of Biomedical and Health Informatics and an Editorial Board member of the European Biomedical Informatics Journal. He is the author of over 300 publications. His main areas of expertise include biomedical informatics and engineering, approaches for semantic health data integration and interoperability of health information systems; affective computing and its application in developing smart eHealth solutions; and service platforms for pervasive eHealth and mHealth services.

Gianna Tsakou is a Senior Project Manager / Senior Analyst in the Research and Development Lab of Maggioli S.P.A., which she joined in November 2020. She is currently the Coordinator of INCISIVE, a 10M€ EC funded R&I project implemented by 26 partners, targeting the development of a multimodal AI-based Toolbox and an interoperable health imaging repository for the empowerment of imaging analysis related to the diagnosis, prediction and follow-up of cancer. Before joining Maggioli, Gianna worked as a Senior Project Manager / Analyst in the European Projects Department of SingularLogic S.A. (2008-2020) and in other public institutes and private companies. She has been acting as project coordinator / analyst and researcher of EC and nationally funded IT research projects since 1999, conducting research in over 25 R&D projects through which she has acquired expertise and know-how in a wide range of research areas. Since 2003, she is being invited every year by the EC as expert evaluator and reviewer for several different EC Programmes (H2020 – several research challenges areas, EASME and CEF Programmes).

4 lines CVs of the Organizers

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Manolis Tsiknakis is a Professor of Biomedical Informatics at the Hellenic Mediterranean University and a visiting research professor at FORTH. He is the Coordinator of the ProCAncer-I H2020 project, which is building an AI platform integrating imaging data and models, supporting precision care through prostate cancer's continuum. He is an Associate Editor of IEEE Journal of Biomedical and Health Informatics.

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