Alexandros Sigaras

Assistant Professor
of Research in
Physiology and Biophysics

1305 York Avenue
Box 140
New York, NY 10021

+1 (646) 962-5634
als2076@med.cornell.edu
https://vivo.med.cornell.edu/display/cwid-als2076

Research Interests

My scientific focus is on building secure and AI driven high scalable computing solutions in the cloud for genomic analysis focused on healthcare and more specifically cancer care and cancer research. Furthermore, to visualize these complex big data entities, I am also interested in spatial computing, Mixed Reality, Virtual Reality and Augmented Reality as solutions to enable immersive asynchronous remote collaboration and data visualization of healthcare and genomic data.

Education

December 2013	**M.S. in Computer Science**, *Columbia University*, Department of Computer Science, Fu Foundation School of Engineering and Applied Science, New York, NY, USA. **Track:** Thesis Research Track **GPA:** 3.851/4 **Thesis:** *Surgical Structured Light for 3D Minimally Invasive Surgical Imaging*
October 2011	**B.S. in Informatics,** *University of Piraeus,* Department of Informatics, Piraeus, Greece. **Track:** Information Systems Track **GPA:** 8.5/10 **Thesis:** *Self Adaptive Robotic Warehouse Management Systems with event and location-based triggers*

Experience

Weill Cornell Medical College April 2020 - Present	**Assistant Professor of Research in Physiology and Biophysics,** **Assistant Professor of Research in Computational Biomedicine,** **Director, AI-XR Lab** **Institute for Computational Biomedicine,** **Englander Institute for Precision Medicine**

- Maintain, develop and manage efforts pertaining to the Laboratory for Artificial Intelligence and Extended Reality (AI/XR Lab) including leading the development of novel software applications in precision medicine.

- Lead the design and development of novel software solutions supporting the clinical and research activities at the Joint Clinical Genomics Initiative and at the Englander Institute for Precision Medicine.
- Oversee the design, development, and deployment of containerized solutions for the clinical genomics laboratory management system and data analysis, including QC/QA tools.
- Lead the efforts of large-scale genomic analysis in the cloud for both clinic and research activities; coordinate the development of artificial intelligence solutions to support the precision medicine knowledge base and the case review and sign out process.

Weill Cornell Medical College

May 2017 – April 2020

Senior Research Associate in Computational Biomedicine,
Institute for Computational Biomedicine, Englander Institute for Precision Medicine

- Lead the design and development of novel software solutions supporting the clinical and research activities at the Joint Clinical Genomics Initiative and at the Englander Institute for Precision Medicine.
- Lead the development of the virtual and augmented reality program for precision medicine.
- Oversee the design, development, and deployment of containerized solutions for the clinical genomics laboratory management system and data analysis, including QC/QA tools
- Lead the efforts of large-scale genomic analysis in the cloud for both clinic and research activities; coordinate the development of artificial intelligence solutions to support the precision medicine knowledge base and the case review and sign out process.

Weill Cornell Medical College

April 2015 – May 2017

Research Associate in Computational Biomedicine,
Institute for Computational Biomedicine, Englander Institute for Precision Medicine

- Lead the search for new ways to leverage technology to advance precision medicine, including the use of Virtual Reality and Augmented Reality.
- Responsible for the design and implementation of the informatics infrastructure of the Englander Institute for Precision Medicine (EIPM), including the design and development of new tools to simplify user interaction with the laboratory information management system and the current IT infrastructure of WCM/NYP, collect and analyze user data and system performance within EIPM, and implement tools to report the results of the genomic analysis to the users via genomic portals.

Weill Cornell Medical College

March 2014 – April 2015

Programmer Analyst,
Institute for Computational Biomedicine, Englander Institute for Precision Medicine

Software Development Lead for all clinical and R&D activities of the Englander institution for Precision Medicine.

Key Responsibilities: Development of Next-Generation sequencing pipelines, LIS, cancer genomic portals and integrating genomic data to New York Presbyterian's HL7 infrastructure.

Columbia University	**Research Assistant (graduate), Robotics Lab**
September 2012 – March 2014	▪ **Project 1:** Developed prototype on Surgical Structured Light for 3D minimally invasive surgical imaging. ▪ **Project 2:** Developed brain computer interfaces for robotic grasping for people with locked-in syndrome.
Microsoft	**Internal Sales Education Specialist**
December 2011 – July 2012	Worked closely with universities and K-12 schools in Greece to provide cloud solutions and generally fulfill education institution needs in IT. Recipient of the Language Champion Award for the contribution to the Windows 8 International Review Program.
Microsoft	**Microsoft Student Partner**
November 2006 – December 2011	Member of Developers Platform Evangelists (DPE) group. Tasks included: administering the departmental Microsoft Developer Network Academic Alliance (MSDNAA) subscription, organizing technical presentations (for students) involving Microsoft products, advising students entering Microsoft's worldwide "Imagine Cup" programming contest, and setting up and moderating the studentguru.gr community website.

Honors and Awards

November 2015	**Nominee**, Forbes 30 under 30 in the Science and Healthcare categories
July 2012	**Language Champion Award** for Contribution to the Windows 8 International Review Program
June 2012	**Fulbright Scholar,** U.S Department of State's Bureau of Educational and Cultural Affairs
June 2012	**Scholarship** (for M.S. studies), Harry D. Triantafillu Scholarship Fund Award, Institute of International Education
October 2011	**Salutatorian**, University of Piraeus, Department of Informatics
October 2011	Graduated **summa cum laude**, University of Piraeus, Department of Informatics
November 2010	**Semi-Finalist**, Imagine Cup IT Challenge, Microsoft
December 2009	**Honorary Scholarship**, Hellenic American University

December 2009	**2nd place winner**, Athens Startup Weekend 2
November 2008	**Semi-Finalist**, Imagine Cup IT Challenge, Microsoft

Teaching

Teaching Assistant

- Created and graded homework, midterms, and final exams; prepared project material and gave lectures (Numbers in parentheses indicate enrollment).

COMS W4733	Computational Aspects of Robotics, Columbia University Instructor: Prof. Peter Allen, Fall 2013 (60)

Certifications

December 2011	Udacity – Introduction to Artificial Intelligence - (top 10%)
October 2010	MCP, MCTS - 70-680: Microsoft Technology Specialist – Windows 7, Configuration
June 2007	MCP, MCTS - 70-680: Microsoft Technology Specialist – Windows Vista, Configuration

Publications

Journal Articles

[J.14] Brendel M, Getseva V, Majd Al Assaad, Sigouros M, **Sigaras A**, Kane T, Khosravi P, Mosquera JM, Elemento O, Hajirasouliha I. Weakly-Supervised Tumor Purity Prediction From Frozen H&E Stained Slides. ***bioRxiv***; 2021.
doi: 10.1101/2021.11.09.467901.

[J.13] Matrai CE, Ohara K, Eng KW, Glynn SM, Chandra P, Chatterjee-Paer S, Motanagh S, Mirabelli S, Kurtis B, He B, **Sigaras, A**, Gupta D, Chapman-Davis E, Holcomb K, Sboner A, Elemento O, Ellenson LH, Mosquera JM. Molecular Evaluation of Low-grade Low-stage Endometrial Cancer With and Without Recurrence, ***International Journal of Gynecological Pathology*** September 06, 2021 - Volume - Issue -
doi: 10.1097/PGP.0000000000000798

[J.12] Khosravi P, Lysandrou M, Eljalby M, Li Q, Kazemi E, Zisimopoulos P, **Sigaras A**, Brendel M, Barnes J, Ricketts C, Meleshko D. A Deep Learning Approach to Diagnostic Classification of Prostate Cancer Using Pathology–Radiology Fusion. ***Journal of Magnetic Resonance Imaging***. 2021 Mar 14.
doi: 10.1002/jmri.27599

[J.11] Guo C, Crespo M, Gurel B, Dolling D, Rekowski J, Sharp A, Petremolo A, Sumanasuriya S, Rodrigues DN, Ferreira A, Pereira R, Figueiredo I, Mehra N, Lambros MBK, Neeb A, Gil V, Seed G, Terstappen L, Alimonti A, Drake CG, Yuan W, de Bono JS, Robinson D, Van Allen EM, Wu YM, Schultz N, Lonigro RJ, Mosquera JM, Montgomery B, Taplin ME, Pritchard CC, Attard G, Beltran H, Abida W, Bradley RK, Vinson J, Cao X, Vats P, Kunju LP, Hussain M, Tomlins SA, Cooney KA, Smith DC, Brennan C, Siddiqui J, Mehra R, Chen Y, Rathkopf DE, Morris MJ, Solomon SB, Durack JC, Reuter VE, Gopalan A, Gao J, Loda M, Lis RT, Bowden M, Balk SP, Gaviola G, Sougnez C, Gupta M, Evan YY, Mostaghel EA, Cheng HH, Mulcahy H, True LD, Plymate SR, Dvinge H, Ferraldeschi R, Flohr P, Miranda S, Zafeiriou Z, Tunariu N, Mateo J, Perez-Lopez R, Demichelis F, Robinson BD, Schiffman M, Nanus DM, Tagawa ST, **Sigaras A**, Eng KW, Elemento O, Sboner A, Heath EI, Scher HI, Pienta KJ, Kantoff P, Rubin MA, Nelson PS, Garraway LA, Sawyers CL, Chinnaiyan AM. CD38 in Advanced Prostate Cancers. ***European Urology***. 2021 Mar 5.
doi: 10.1016/j.eururo.2021.01.017

[J.10] Curchoe CL, Malmsten J, Bormann C, Shafiee H, Farias AFS, Mendizabal G, Chavez-Badiola A, **Sigaras A**, Alshubbar H, Chambost J, Jacques C, Pena CA, Drakeley A, Freour T, Hajirasouliha I, Hickman CFL, Elemento O, Zaninovic N, Rosenwaks Z. Predictive modeling in reproductive medicine: Where will the future of artificial intelligence research take us?. ***Fertility and Sterility*** 2020 Nov 1;114(5):934-40.
doi: 10.1016/j.fertnstert.2020.10.040

[J.9] Segal E, Zhang F, Lin X, King G, Shalem O, Shilo S, Allen WE, Alquaddoomi F, Altae-Tran H, Anders S, Balicer R, Bauman T, Bonilla X, Booman G, Chan AT, Cohen O, Coletti S, Davidson N, Dor Y, Drew DA, Elemento O, Evans G, Ewels P, Gale J, Gavrieli A, Geiger B, Grad YH, Greene CS, Hajirasouliha I, Jerala R, Kahles A, Kallioniemi O, Keshet A, Kocarev L, Landua G, Meir T, Muller A, Nguyen LH, Oresic M, Ovchinnikova S, Peterson H, Prodanova J, Rajagopal J, Rätsch G, Rossman H, Rung J, Sboner A, **Sigaras A**, Spector T, Steinherz R, Stevens I, Vilo J, Wilmes P. Building an international consortium for tracking coronavirus health status. ***Nat Med*** 26, 1161–1165 (2020).
doi: 10.1038/s41591-020-0929-x

[J.8] Khosravi P, Lysandrou M, Eljalby M, Brendel M, Li Q, Kazemi E, Barnes J, Zisimopoulos P, **Sigaras A**, Ricketts C, Meleshko D, Yat A, McClure T.D, Robinson B.D, Sboner A, Elemento O, Chughtai B, Hajirasouliha I. Biopsy-free prediction of prostate cancer aggressiveness using deep learning and radiology imaging. ***medRxiv***. 2019 Jan 1.
doi:10.1101/2019.12.16.19015057

[J.7] Khosravi P, Kazemi E, Zhan Q, Malmsten JE, Toschi M, Zisimopoulos P, **Sigaras A**, Lavery S, Cooper LA, Hickman C, Meseguer M. Deep learning enables robust assessment and selection of human blastocysts after in vitro fertilization. ***NPJ digital medicine***. 2019 Apr 4;2(1):1-9.
doi:10.1038/s41746-019-0096-y

[J.6] Sailer V, Eng KW, Zhang T, Bareja R, Pisapia D, **Sigaras A**, Bhinder B, Romanel A, Wilkes D, Sticca E, Cyrta C, Rao R, Sahota S, Pauli C, Beg S, Motanagh S, Kossai M, Fontunge J, Puca L, Rennert H, Xiang JZ, Greco N, Kim R, MacDonald TY, McNary T, Blattner-Johnson M, Schiffman MH, Faltas BM, Greenfield JP, Rickman D, Andreopoulou E, Holcomb K, Vahdat LT, Scherr DS, Koen van Besien, Barbieri CE, Robinson BD, Fine HA, Ocean AJ, Molina A, Shah MA, Nanus DM, Pan Q, Demichelis F, Tagawa ST, Song W, Mosquera JM, Sboner A,

Rubin MA, Elemento O, and Beltran H Integrative Molecular Analysis of Patients With Advanced and Metastatic Cancer. ***JCO Precision Oncology*** 2019 :3, 1-12.
doi:10.1200/PO.19.00047

[J.5] Sailer V, Schiffman MH, Kossai M, Cyrta J, Beg S, Sullivan B, Pua BB, Lee KS, Talenfeld AD, Nanus DM, Tagawa ST, Robinson BD, Rao RA, Pauli C, Bareja R, Beltran LS, **Sigaras A**, Eng KW, Elemento O, Sboner A, Rubin MA, Beltran H, Mosquera JM. Bone biopsy protocol for advanced prostate cancer in the era of precision medicine. ***Cancer****.* 2018 Mar 1;124(5):1008-1015.
doi: 10.1002/cncr.31173. Epub 2017 Dec 19.

[J.4] Pisapia DJ, Salvatore S, Pauli C, Hissong E, Eng K, Prandi D, Sailer VW, Robinson BD, Park K, Cyrta J, Tagawa ST, Kossai M, Fontugne J, Kim R, **Sigaras A**, Rao R, Pancirer D, Faltas B, Bareja R, Molina AM, Nanus DM, Rajappa P, Souweidane MM, Greenfield J, Emde AK, Robine N, Elemento O, Sboner A, Demichelis F, Beltran H, Rubin MA, Mosquera JM. Next-Generation Rapid Autopsies Enable Tumor Evolution Tracking and Generation of Preclinical Models. ***JCO Precis Oncol****.* 2017;2017.
doi: 10.1200/PO.16.00038. Epub 2017 Jun 14.

[J.3] Bose R, Karthaus WR, Armenia J, Abida W, Iaquinta PJ, Zhang Z, Wongvipat J, Wasmuth EV, Shah N, Sullivan PS, Doran MG, Wang P, Patruno A, Zhao Y, Robinson D, Van Allen EM, Wu YM, Schultz N, Lonigro RJ, Mosquera JM, Montgomery B, Taplin ME, Pritchard CC, Attard G, Beltran H, Abida W, Bradley RK, Vinson J, Cao X, Vats P, Kunju LP, Hussain M, Tomlins SA, Cooney KA, Smith DC, Brennan C, Siddiqui J, Mehra R, Chen Y, Rathkopf DE, Morris MJ, Solomon SB, Durack JC, Reuter VE, Gopalan A, Gao J, Loda M, Lis RT, Bowden M, Balk SP, Gaviola G, Sougnez C, Gupta M, Yu EY, Mostaghel EA, Cheng HH, Mulcahy H, True LD, Plymate SR, Dvinge H, Ferraldeschi R, Flohr P, Miranda S, Zafeiriou Z, Tunariu N, Mateo J, Perez-Lopez R, Demichelis F, Robinson BD, Schiffman M, Nanus DM, Tagawa ST, **Sigaras A**, Eng KW, Elemento O, Sboner A, Heath EI, Scher HI, Pienta KJ, Kantoff P, de Bono JS, Rubin MA, Nelson PS, Garraway LA, Sawyers CL, Chinnaiyan AM, Zheng D, Schultz N, Sawyers CL. ERF mutations reveal a balance of ETS factors controlling prostate oncogenesis. ***Nature***. 2017 Jun 29;546(7660):671-675. Epub 2017 Jun 14. PubMed PMID: 28614298; PubMed Central PMCID: PMC5576182.
doi: 10.1038/nature22820

[J.2] Beltran H, Eng K, Mosquera JM, **Sigaras A**, Romanel A, Rennert H, Kossai M, Pauli C, Faltas B, Fontugne J, Park K, Banfelder J, Prandi D, Madhukar N, Zhang T, Padilla J, Greco N, McNary TJ, Herrscher E, Wilkes D, MacDonald TY, Xue H, Vacic V, Emde AK, Oschwald D, Tan AY, Chen Z, Collins C, Gleave ME, Wang Y, Chakravarty D, Schiffman M, Kim R, Campagne F, Robinson BD, Nanus DM, Tagawa ST, Xiang JZ, Smogorzewska A, Demichelis F, Rickman DS, Sboner A, Elemento O, Rubin MA. Whole-Exome Sequencing of Metastatic Cancer and Biomarkers of Treatment Response. ***JAMA Oncol****.* 2015 Jul;1(4):466-74.
doi: 10.1001/jamaoncol.2015.1313.

[J.1] Robinson D, Van Allen EM, Wu YM, Schultz N, Lonigro RJ, Mosquera JM, Montgomery B, Taplin ME, Pritchard CC, Attard G, Beltran H, Abida W, Bradley RK, Vinson J, Cao X, Vats P, Kunju LP, Hussain M, Feng FY, Tomlins SA, Cooney KA, Smith DC, Brennan C, Siddiqui J, Mehra R, Chen Y, Rathkopf DE, Morris MJ, Solomon SB, Durack JC, Reuter VE, Gopalan A, Gao J, Loda M, Lis RT, Bowden M, Balk SP, Gaviola G, Sougnez C, Gupta M, Yu EY, Mostaghel EA, Cheng HH, Mulcahy H, True LD, Plymate SR, Dvinge H, Ferraldeschi R, Flohr P, Miranda S, Zafeiriou Z, Tunariu N, Mateo J, Perez-Lopez R, Demichelis F, Robinson BD,

Schiffman M, Nanus DM, Tagawa ST, **Sigaras A**, Eng KW, Elemento O, Sboner A, Heath EI, Scher HI, Pienta KJ, Kantoff P, de Bono JS, Rubin MA, Nelson PS, Garraway LA, Sawyers CL, Chinnaiyan AM. Integrative clinical genomics of advanced prostate cancer. ***Cell***. 2015 May 21;161(5):1215-1228.
doi: 10.1016/j.cell.2015.05.001.

Conference Proceedings

[C.1] A Reiter, **A Sigaras**, D Fowler, PK Allen. Surgical Structured Light for 3D minimally invasive surgical imaging. ***Intelligent Robots and Systems (IROS 2014), 2014 IEEE/RSJ International Conference on***. 2014 November 6, 1282 – 1287.
doi: 10.1109/IROS.2014.6942722

Abstracts

[A.11] Sboner A, **Sigaras A**, Davis J, Roshal S, Wilkes D, Hebding C, Bockelman D, Kane T, Ackermann S, Sigouros M, Catalano J, Mosquera JM, Sternberg C, Loda M, Weinstein H, Song W, Elemento O. mrLab: Leveraging Mixed Reality in a Precision Medicine Laboratory to Increase Safety and Productivity of Healthcare Workers during the COVID-19 Pandemic. ***In JOURNAL OF MOLECULAR DIAGNOSTICS*** 2020 Nov 1 (Vol. 22, No. 11, pp. S55-S56). doi: 10.1016/S1525-1578(20)30513-4

[A.10] Sboner A, Zisimopoulos P, Tang J, Oakley J, Spiewack M, Velu P, Solomon J, Song W, Park H, Kluk M, Mosquera J, Fernandez E, Simi M, Dorsaint P, Eng K, Catalano J, Pisapia D, Tran H, Tam W, Rennert H, Loda M, Elemento O, **Sigaras A**. Many NGS-Based Assays, One Platform: Ensuring a High-Quality Case Review and Sign-out Process with NGS Reporter (NGSR). ***In JOURNAL OF MOLECULAR DIAGNOSTICS*** 2020 Nov 1 (Vol. 22, No. 11, pp. S54-S54) doi: 10.1016/S1525-1578(20)30513-4

[A.9] Sboner A, Sternberg C, Mosquera JM, Song W, Kluk M, Tam W, Rennert H, Pisapia D, Catalano J, Cheang G, Wilkes D, Bulaon D, Martin LM, **Sigaras A**, Eng K, Bareja R, Kim R, Loda M, Elemento O. Abstract IA33: Precision medicine at Weill Cornell Medicine/New York Presbyterian: Breaking silos, integrating resources, being inclusive **Cancer Epidemiol Biomarkers** Prev June 1 2020 (29) (6 Supplement 2) IA33; doi: 10.1158/1538-7755.DISP19-IA33

[A.8] Sboner A, Eng K, Zisimopoulus P, **Sigaras A**, Simi M, Ramazanoglu S, Spiewack M, Oakley J, Parmar S, Tang J, Catalano J, Kim R, Tam W, Kluk M, Song W, Elemento O. Building Scalable and Robust Informatics Systems for Clinical Genomic Assays in the Precision Medicine Era ***In JOURNAL OF MOLECULAR DIAGNOSTICS*** (Vol. 22, No. 5, pp. S6-S6). STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA: ELSEVIER SCIENCE INC.

[A.7] McIntire P, Ginter P, Eng KW, Lapolla D, **Sigaras A**, Beg S, Manohar J, Greco N, Zhang T, Bareja R, Sboner A, Elemento O, Andreopoulou E, Mosquera JM. Whole exome sequencing analysis of local/regional and distant metastatic breast carcinoma. ***USCAP 2020 Abstracts:*** Index of Abstract Authors. Mod Pathol 33, 2097–2136 (2020) doi:10.1038/s41379-020-0486-3

[A.6] **Sigaras A**, Wilkes D, Hebding C, Martin LM, Bulaon D, Catalano J, Mosquera JM, Sternberg C, Loda M, Weinstein H, Song W, Elemento O, Sboner A. Mixed Reality for a Precision

Medicine Laboratory: The Future Is Now!. ***In JOURNAL OF MOLECULAR DIAGNOSTICS*** 2019 Nov 1 (Vol. 21, No. 6, pp. 1172-1172). doi:10.1016/S1525-1578(19)30391-5

[A.5] Uppal M, **Sigaras A**, Zisimopoulos P, Tang J, Sternberg C.N, Song W, David Pisapia D, Rennert H, Sboner A. A crowdsourcing approach for high-quality interpretation of cancer variants ***ICGC 15th Scientific Workshop and 2nd ARGO Meeting*** May 28 2019

[A.4] **Sigaras A**, Eng KW, Sticca E, Ramazanoglu S, Parmar S, Aljaludi A, Israel M, Artz D, Leslin C, D'Agoustine J, Cheang G. Integrating Clinical Genomics into Electronic Health Records to Foster Precision Medicine. ***In JOURNAL OF MOLECULAR DIAGNOSTICS*** 2018 Nov 1 (Vol. 20, No. 6, pp. 965-965). doi:10.1016/S1525-1578(18)30401-X

[A.3] J Gao, T Mazor, E Ciftci, P Raman, P Lukasse, I Bahceci, **A Sigaras**, A Abeshouse, I de Bruijn, B Gross, R Kundra, A Lisman, A Ochoa, R Sheridan, J Su, S O. Sumer, Y Sun, A Wang, J Wang, M Wilson, H Zhang, P Kumari, J Lindsay, K Kalletla, K Zhu, O Plantalech, F Schaeffer, S Tan, D Zaal, S van Hagen, K van Bochove, U Dogrusoz, T Pugh, A Resnick, C Sander, N Schultz, E Cerami Abstract 923: The cBioPortal for Cancer Genomics: An intuitive opensource platform for exploration, analysis and visualization of cancer genomics data. ***Proceedings: AACR Annual Meeting 2018***, Volume 78, Issue 13, April 14-18, 2018; Chicago, IL, doi: 10.1158/1538-7445.AM2018-923

[A2] J Catalano, G Cheang, D Pancirer, E Merzier, Y Li, H Tran, **A Sigaras**. 331 The Development of a Custom LIMS: An Introduction and Guide to Successful Implmentation. ***American Journal of Clinical Pathology***, Volume 149, Issue suppl_1, 11 January 2018, Pages S142–S143, doi: 10.1093/ajcp/aqx127.330

[A1] H Beltran, K Eng, J Mosquera, **A Sigaras**, A Romanel, H Rennert, M Kossai, C Pauli, B Faltas, J Fontugne, B Robinson, D Nanus, S Tagawa, J Xiang, F Demichelis, D Rickman, A Sboner, O Elemento and M Rubin. Precision cancer medicine program for whole-exome sequencing of metastatic tumors reveals biomarkers of response. ***Cancer Research***, Volume 75, Issue 15, 1 August 2015, Page 4745 doi: 0.1158/1538-7445.AM2015-4745

Posters

[P.9] Sboner A, **Sigaras A**, Davis J, Roshal S, Wilkes D, Hebding C, Bockelman D, Kane T, Ackermann S, Sigouros M, Catalano J, Mosquera JM, Sternberg C, Loda M, Weinstein H, Song W, Elemento O. mrLab: Leveraging Mixed Reality in a Precision Medicine Laboratory to Increase Safety and Productivity of Healthcare Workers during the COVID-19 Pandemic. ***AMP 2020 Annual Meeting & Expo,*** 19 November 2020

[P.8] Sboner A, Zisimopoulos P, Tang J, Oakley J, Spiewack M, Velu P, Solomon J, Song W, Park H, Kluk M, Mosquera J, Fernandez E, Simi M, Dorsaint P, Eng K, Catalano J, Pisapia D, Tran H, Tam W, Rennert H, Loda M, Elemento O, **Sigaras A**. Many NGS-Based Assays, One Platform: Ensuring a High-Quality Case Review and Sign-out Process with NGS Reporter (NGSR). ***AMP 2020 Annual Meeting & Expo,*** 19 November 2020

[P.7] McIntire P, Ginter P, Eng KW, Lapolla D, **Sigaras A**, Beg S, Manohar J, Greco N, Zhang T, Bareja R, Sboner A, Elemento O, Andreopoulou E, Mosquera JM. Whole exome sequencing

analysis of local/regional and distant metastatic breast carcinoma. ***USCAP 2020 Annual Meeting,*** 3 March 2020

[P.6] **Sigaras A**, Wilkes D, Hebding C, Martin LM, Bulaon D, Catalano J, Mosquera JM, Sternberg C, Loda M, Weinstein H, Song W, Elemento O, Sboner A. Mixed Reality for a Precision Medicine Laboratory: The Future Is Now!. ***AMP 2019 Annual Meeting & Expo***, 9 November 2019

[P.5] Uppal M, **Sigaras A**, Zisimopoulos P, Tang J, Sternberg C.N, Song W, David Pisapia D, Rennert H, Sboner A. A crowdsourcing approach for high-quality interpretation of cancer variants ***ICGC 15th Scientific Workshop and 2nd ARGO Meeting*** May 28 2019

[P.4] **A Sigaras**, K Eng, E Sticca, S Ramazanoglu, S Parmar, A Aljaludi, M Israel, D Artz, C Leslin, J D'Augustine, G Cheang, D Pancirer, J Tang, P Zisimopoulos, M Rubin, W Tam, M Kluk, H Rennert, J Catalano, R Kim, H Beltran, O Elemento, W Song, A Sboner. Integrating Clinical Genomics into Electronic Health Records to Foster Precision Medicine. ***AMP 2018 Annual Meeting & Expo***, 2 November 2018

[P.3] **A Sigaras**, S Roshal, A Sboner, M Rubin, O Elemento. Healthcare Applications for Immersive Remote Collaboration of 3D Medical Data using Virtual and Mixed Reality. ***2017 Startup Symposium***, Weill Cornell Medicine, 26 January 2017

[P.2] E Vinolo, D Alférez, F Amant, D Annibali, J Arribas, M Bentires-Alj, C Bernadó, A Bertotti, A Biankin, A Bruna, E Budinská, A Byrne, C Caldas, O Casanovas, D K. Chang, R B. Clarke, S Corso, G Coukos, V Dangles-Marie, D Decaudin, J Depreeuw, Z Dudová, O Elemento, S Giordano, E Gonzalez-Suarez, H Hafsi, E Hermans, M Hidalgo, G Inghirami, M Jarzabek, S de Jong, J Jonkers, K Kemper, A Křenek, M Kuba, L Lanfrancone, P López Casas, G Mælandsmo, E Marangoni, E Medico, I Miller, K Moran-Jones, B Morancho, F Nematti, J Henrik Norum, H Palmer, D Peeper, P Pelicci, A Piris-Giménez, M Pujana, S Roman, O Rueda, J Seoane, V Serra, **A Sigaras,** L Soucek, S Tejpar, M Tomas, L Trusolino, A van der Zee, M van de Ven; D Vanhecke, A Villanueva, B Wisman. The EurOPDX Consortium: Objectives, Achievements & Future Directions ***1st EurOPDX Workshop***, Switzerland, 3 October 2016

[P.1] A Reiter, **A Sigaras** and P Allen. Surgical Structured Light (SSL) for Real-Time Minimally-Invasive 3D Imaging. ***John Jones Symposium, Columbia University***, 10 May 2013

Reviewing Activities

Journals

Review Editor for Virtual Reality in Medicine - Journal of Frontiers in Virtual Reality

Talks, Lectures

Invited Talks

06/29/2021	**XR in Medicine in the era of Precision Medicine** Stanford Healthcare Innovation Lab
05/16/2021	**XR in Medicine in the era of Precision Medicine** 9th International Summer School in Medical Biosciences Research & Management World Hellenic Biomedical Association
07/24/2020	**XR in Medicine** 2nd Biomedical Big Data Symposium New York City College of Technology, City University of New York
02/14/2020	**AI and Mixed Reality in Precision Medicine** 2nd Biomedical Big Data Symposium New York City College of Technology, City University of New York
01/31/2020	**Mixed Reality in Precision Medicine** NYU Tandon School of Engineering, New York, NY
10/28/2019 – 10/29/2019	**Digital Technologies for Clinical Care** – Panelist **Artificial Intelligence for Cancer** – Discussion Leader Precision Medicine Research Symposium Cornell Tech and Weill Cornell Medicine, New York, NY
10/25/2019 – 10/26/2019	**XR in Healthcare** R Lab Master Class 2019
06/05/2019	**XR in Medicine in the era of Precision Medicine** R Lab Well 2019
06/19/2019	**Big Data Visualization and Spatial Computing in Precision Medicine** Biomedical Big Data Summer Bootcamp 2019 Weill Cornell Medicine
02/15/2019	**Big Data in Precision Medicine** 1st Biomedical Big Data Symposium New York City College of Technology, City University of New York
06/20/2018	**Big Data Visualization - Mixed Reality, Virtual Reality and Augmented Reality** Biomedical Big Data Summer Bootcamp 2018 Weill Cornell Medicine
01/11/2017	**How HoloLens transforms Healthcare** Microsoft Reactor, Grand Central Tech, NY
11/21/2008	**Introduction to Robotics with MS Robotics Studio** Microsoft, Athens, Greece

01/29/2008 **Robotics Warehouse Project**
Selected presentation/talk to the Chairman of Microsoft, Bill Gates and Kostas Karamanlis, Prime Minister of Greece at the inaugural opening of the Microsoft Innovation Center in Greece
Microsoft Innovation Center, Greece

12/17/2007 **Introduction to Robotics with MS Robotics Studio and LEGO Mindstorms NXT**
IEEE hosted event
University of Patras, Greece

Guest Lectures

11/17/2021 **Medical Extended Reality in the Era of Precision Medicine**
Data Structures and Algorithms for Computational Biology, Weill Cornell Medicine
Host: Prof. Iman Hajirasouliha

10/13/2021 **Medical Extended Reality in the Era of Precision Medicine**
Virtual and Augmented Reality, Cornell Tech
Host: Prof. Harald Haraldsson

12/04/2020 **XR in Medicine in the era of Precision Medicine**
Hostos Community College, City University of New York
Hosts: Prof. Yoel Rodriguez, Prof Anna Ivanova

11/21/2019 **Mixed Reality in Precision Medicine**
Virtual and Augmented Reality, Cornell Tech
Host: Prof. Harald Haraldsson

12/2/2015 **Precision Medicine**
Bioinformatics II, New York City College of Technology, City University of New York
Host: Prof. Evgenia Giannopoulou

11/24/2011 **Intro to Programming in C++ and C#**
Introduction to Programming, University of Piraeus, Greece
Host: Prof. Ioannis-Christos Panagiotopoulos

12/16/2010 **Introduction to Expression Blend**
Human Computer Interaction, University of Piraeus, Greece
Host: Prof. Maria Virvou

12/09/2010 **Introduction to Sketchflow**
E-learning, University of Piraeus, Greece
Host: Prof. Symeon Retalis

Selected Press and Media Coverage

08/30/2021 **New York Times**, *Experts still aren't sure about corporate meetings taking place in the metaverse.*
https://www.nytimes.com/live/2021/08/30/business/economy-stock-market-news#experts-still-arent-sure-about-corporate-meetings-taking-place-in-the-metaverse

01/30/2021 **NBC News, Peacock - The Overview,** *What Does the Future of Work Look Like?*
https://www.peacocktv.com/watch/playback/vod/GMO_00000000363812_01/b2c4bc2c-dafc-3391-900b-fde591ea42ef

05/28/2020 **Protocol,** *Coronavirus sent us home. Will VR bring us back together?*
https://www.protocol.com/vr-headset-future-of-work

07/15/2019 **CNN,** *Would you trust an algorithm to diagnose an illness?*
https://www.cnn.com/2019/07/15/business/artificial-intelligence-healthcare/index.html

04/24/2019 **NYP - Health Matters,** *Behind the Latest Advance in IVF Treatment*
https://healthmatters.nyp.org/behind-the-latest-advance-in-ivf-treatment/

04/11/2019 **Cornell Chronicle,** *Researchers test using AI to optimize IVF embryo selection*
https://news.cornell.edu/stories/2019/04/researchers-test-using-ai-optimize-ivf-embryo-selection

04/05/2019 **Wired,** *AI Could Scan IVF Embryos to Help Make Babies More Quickly*
https://www.wired.com/story/ai-could-scan-ivf-embryos-to-help-make-babies-more-quickly/

04/05/2019 **AI in Healthcare,** *AI optimizes embryo selection for IVF*
https://www.aiin.healthcare/topics/imaging/ai-optimizes-embryo-selection-ivf

04/04/2019 **Wall Street Journal,** *IVF Often Doesn't Work. Could an Algorithm Help?*
https://www.wsj.com/articles/ivf-often-doesnt-work-could-an-algorithm-help-11554386243

04/04/2019 **Weill Cornell News**, *Artificial Intelligence Approach Optimizes Embryo Selection for IVF*
https://news.weill.cornell.edu/news/2019/04/artificial-intelligence-approach-optimizes-embryo-selection-for-ivf

04/04/2019 **Science Daily**, *Artificial intelligence approach optimizes embryo selection for IVF*
https://www.sciencedaily.com/releases/2019/04/190404161003.htm

03/09/2018 **Microsoft Developer Blog**, *Voronoi Selection for Cancer Drug Network Visualization in Mixed Reality*
https://www.microsoft.com/developerblog/2018/03/09/voronoi-selection-cancer-drug-network-visualization-mixed-reality/

10/17/2017 **Channel 9**, *Behind the Scenes: How Weill Cornell Medicine built a chatbot for clinicians to gain fast access to medical data*
https://channel9.msdn.com/Blogs/DevRadio/DR1747

09/13/2017 **Microsoft Windows Blogs**, *Making mixed reality: a conversation with Alexandros Sigaras and Sophia Roshal*
https://blogs.windows.com/windowsexperience/2017/09/13/making-mixed-reality-conversation-alexandros-sigaras-sophia-roshal/#B0hV1JuJsZoIfG2Q.97

06/15/2017 **Microsoft Technical Case Studies**, *Bot gives Weill Cornell clinicians fast access to medical data*
https://microsoft.github.io/techcasestudies/bot%20framework/2017/06/15/WeillCornell.html

06/14/2017 **The Sociable**, *How Mixed Reality is Transforming Collaborative Cancer Research*
https://sociable.co/technology/mixed-reality-cancer/

03/26/2017 **Arirang, Special Documentary** *Smart with Heart*
https://www.youtube.com/watch?v=gHa4ddmdCUU

Winter 2016 **Weill Cornell Medicine Magazine, Volume 15, Number 3,** *Virtual Vision – 3D technology could offer a potent weapon in cancer care*
http://www.weillcornellmedicine-digital.com/weillcornellmedicine/vol_15_no_3?pg=20#pg20

01/27/2016 **ABC7 Eyewitness News**, *New 3D goggles help doctors search for mutations in cancerous tumors*
http://abc7ny.com/health/new-3d-goggles-help-doctors-search-for-mutations-in-cancerous-tumors/1176716/

07/15/2016 **Weill Cornell News**, *Researchers are Using Virtual Reality to Help Treat Cancer*
https://weillcornell.org/news/researchers-are-using-virtual-reality-to-help-treat-cancer

07/13/2016 **CBS New York**, *Seen At 11: Doctors Using Virtual Reality To Treat Cancer Patients*
http://newyork.cbslocal.com/2016/07/13/virtual-reality-cancer-patients/

02/24/2016 **Popular Science**, *Here's How Virtual Reality Could Help Doctors Treat Cancer*
https://www.popsci.com/how-virtual-reality-could-help-doctors-treat-cancer

05/21/2015 **Science Daily**, *Scientists unveil prostate cancer's 'Rosetta Stone'*
https://www.sciencedaily.com/releases/2015/05/150521133732.htm