

BII – Advanced Spatial Omics with Quantum and Generative AI

** (Publications sorted: Newest – Oldest)

1.	Morgan D, Zhang B, Fidan K, Pan W, Vaiyapuri TS, Raju A, Hei D, See TY, Sari IN, Chan JW, Majee P, Balachander A, Yu J, Wong AHH, Mok MMH, Foo SH, Tang WL, Ang N, Tan I, Peng YF, Jaynes P, Xu S, Ghosh G, Shahabi S, Jeyasekharan AD, Ikawa M, Zhang Y, Howland SW, Lau MC, Wang VYF, Lam KP & Tergaonkar V. The transcription complex p52–ETS1 is essential for germinal center formation . Nat Immunol 26, 1553–1566 (2025).
2.	Neo SY, Shuen TWH, Khare S, Chong J, Lau M, Shirgaonkar N, Chua L, Zhao J, Lee K, Tan C, Ba R, Lim J, Chua J, Cheong HS, Chai HM, Chan CY, Chung AYF, Cheow PC, Jeyaraj PR, Teo JY, Koh YX, Chok AY, Chow PKH, Goh B, Wan WK, Leow WQ, Loh TJZ, Tang PY, Karunanithi J, Ngo NT, Lim TKH, Xu S, Dasgupta R, Toh HC, Lam KP. Atypical memory B cells acquire Breg phenotypes in hepatocellular carcinoma . JCI Insight. 2025 Feb 25:e187025.
3.	Tay RE, Ho CM, Ang NDZ, Tay HC, Lopez DZ, Na QR, Tan YW, Koh SM, Tan KP, Lee W, Lim J, Lau MC, Toh HC, Rotzschke O, Rénia L. Serotonin receptor 5-HT2A as a potential target for HCC immunotherapy . JITC. 2025;13:e011088.
4.	Lau MC, Borowsky J, Väyrynen JP, Haruki K, Zhao M, Dias Costa A, Gu S, da Silva A, Ugai T, Arima K, Nguyen MN, Takashima Y, Yeong J, Tai D, Hamada T, Lennerz JK, Fuchs CS, Wu CJ, Meyerhardt JA, Ogino S, Nowak JA. Tumor-immune partitioning and clustering algorithm for identifying tumor-immune cell spatial interaction signatures within the tumor microenvironment . PLoS Comput Biol. 2025 Feb 18;21(2):e1012707.
5.	Ugai T, Väyrynen JP, Ugai S, Zhong R, Haruki K, Lau MC, Zhao M, Zhong Y, Yao Q, Matsuda K, Guerriero JL. Long-term marine ω-3 polyunsaturated fatty acids intake in relation to incidence of colorectal cancer subclassified by macrophage infiltrates . The Innovation Medicine. 2024 Aug 17;2(3):100082.
6.	Azam AB, Wee F, Väyrynen JP, Yim WW, Xue YZ, Chua BL, Lim JCT, Somasundaram AC, Tan DSW, Takano A, Chow CY, Khor LY, Lim TKH, Yeong J, Lau MC, Cai Y. Training immunophenotyping deep learning models with the same-section ground truth cell label derivation method improves virtual staining accuracy . Front. Immunol. 2024 Jun 28;15:1404640.
7.	Elomaa H, Härkönen J, Väyrynen SA, Ahtiainen M, Ogino S, Nowak JA, Lau MC, Helminen O, Wirta EV, Seppälä TT, Böhm J, Mecklin JP, Kuopio T, Väyrynen JP. Quantitative multiplexed analysis of IDO and ARG1 expression and myeloid cell infiltration in colorectal cancer . Mod Pathol. 2024 Feb 16:100450.
8.	Hong JH, Yong CH, Heng HL, Chan JY, Lau MC, Chen J, Lee JY, Lim AH, Li Z, Guan P, Chu PL, Boot A, Ng SR, Yao X, Wee FYT, Lim JCT, Liu W, Wang P, Xiao R, Zeng X, Sun Y, Koh J, Kwek XY, Ng CCY, Klanrit P, Zhang Y, Lai J, Tai DWM, Pairojkul C, Dima S, Popescu I, Hsieh S-Y, Yu M-C, Yeong J, Kongpetch S, Jusakul A, Loilome W, Tan P, Tan J, Teh BT. Integrative multiomics enhancer activity profiling identifies therapeutic vulnerabilities in cholangiocarcinoma of different etiologies . Gut.
9.	Meng J, Tan JYT, Joseph CR, Ye J, Lim JCT, Goh D, Xue Y, Lim X, Koh VCY, Wee F, Tay TKY, Chan JY, Ng CCY, Iqbal J, Lau MC, Lim EH, Toh HC, Teh BT, Dent RA, Tan PH, Joe Yeong YPS. The prognostic value of CD39 as a marker of tumor-specific T cells in triple-negative breast cancer in Asian women . Lab. Invest. 2023. 100303.

10.	Kaya NA, Tai D, Lim X, Lim JQ, Lau MC, Goh D, Phua CZJ, Wee FYT, Joseph CR, Lim JCT, Neo ZW, Ye J, Cheung L, Lee J, Loke KSH, Gogna A, Yao F, Lee MY, Shuen TWH, Toh HC, Hilmer A, Chan YS, Lim TKH, Tam WL, Choo SP, Joe Y, Zhai W. Multimodal molecular landscape of response to Y90-resin microsphere radioembolization followed by nivolumab for advanced hepatocellular carcinoma . JITC. 2023;11:e007106.
11.	Cheung CCL, Seah YHJ, Fang J, Orpilla NHC, Lau MC, Lim CJ, Lim X, Lee JNLW, Lim JCT, Lim S, Cheng Q, Toh HC, Choo SP, Lee SY, Lee JJX, Liu J, Lim TKH, Tai D and Yeong J. Immunohistochemical scoring of LAG-3 in conjunction with CD8 in the tumor microenvironment predicts response to immunotherapy in hepatocellular carcinoma . Front. Immunol. 14:1150985.
12.	Melissa Zhao, Lau MC, Haruki K, Väyrynen J, Gurjao C, Väyrynen S, Dias Costa A, Borowsky J, Fujiyoshi K, Arima K, Hamada T, Lennerz J, Fuchs C, Nishihara R, Chan A, Ng K, Zhang X, Meyerhardt J, Song M, Wang M, Giannakis M, Nowak J, Yu KH, and Ugai T, Ogino S. Bayesian risk prediction model for colorectal cancer mortality through integration of clinicopathologic and genomic data . NPJ Precis. Oncol. 7(1), 57.
13.	Lee RY, Ng CW, Rajapakse MP, Ang N, Yeong J, Lau MC. The promise and challenge of spatial omics in dissecting tumour microenvironment and the role of AI . Front Oncol, 13, 1837.
14.	Lee R, Wu Y, Goh D, Tan V, Ng CW, Lim JC, Lau MC, Sheng JY. Application of Artificial Intelligence to In Vitro Tumor Modeling and Characterization of the Tumor Microenvironment . Adv. Healthc. Mater. 2023 Apr 15:2202457.
15.	Tsai PC, Lee TH, Kuo KC, Su FY, Lee TL, Marostica E, Ugai T, Zhao M, Lau MC, Väyrynen JP, Giannakis M, Takashima Y, Kahaki SM, Wu K, Song M, Meyerhardt JA, Chan AT, Chiang JH, Nowak J, Ogino S, Yu KH. Histopathology images predict multi-omics aberrations and prognoses in colorectal cancer patients . Nat. Commun. 2023 Apr 13;14(1):2102.
16.	Elomaa H, Ahtiainen M, Väyrynen SA, Ogino S, Nowak JA, Lau MC, Helminen O, Wirta EV, Seppälä TT, Böhm J, Mecklin JP. Spatially resolved multimarker evaluation of CD274 (PD-L1)/PDCD1 (PD-1) immune checkpoint expression and macrophage polarisation in colorectal cancer . BJC. 2023 Mar 31:1-2.
17.	Liu J, Liu W, Liao X, Luo Z, Yang Y, Lau MC, Jiao Y, Shi X, Zhai W, Ji H, and Yeong J. Probabilistic embedding, clustering, and alignment for integrating spatial transcriptomics data with PRECAST . Nat Commun. 2023;14:296.
18.	Williams HL, Dias Costa A, Zhang J, Raghavan S, Winter PS, Kapner KS, Ginebaugh SP, Väyrynen SA, Väyrynen JP, Chen Y, Navia AW, Wang J, Yang A, Bosse TL, Kalekar RL, Lowder KE, Lau MC, Elganalny D, Morales-Oyarvide V, Robinson DA, Singh H, Perez K, Cleary JM, Clancy TE, Wang J, Mancias JD, Brais KL, Hill ER, Kozak MM, Linehan DC, Dunne RF, Chang DT, Koong AC, Hezel AF, Hahn WC, Shalek AK, Aguirre AJ, Nowak JA, Wolpin BM. Spatially-resolved single-cell assessment of pancreatic cancer expression subtypes reveals co-expressor phenotypes and extensive intra-tumoral heterogeneity . Cancer Res. 83(3) (2023): 441-455.
19.	Goh D, Chan JCT, Fernández SB, Joseph CR, Edwards SG, Neo ZW, Lee JN, Caballero SG, Lau MC, and Yeong J. Case Report: Persistence of residual antigen and RNA of the SARS-CoV-2 virus in tissues of 2 patients with long COVID Front Immunol. 2022:5147.

20.	Lau MC, Yi Y, Goh D, Cheung CCL, Tan B, Lim CTJ, Joseph CR, Wee F, Lee NJ, Lim X, Lim CJ, Leow WQ, Lee JY, Ng CYC, Bashiri H, Cheow PC, Chan CY, Koh YX, Tan TT, Kalmimuddin S, Tai WMD, Ng JL, Low GHJ, Lim KHT, Jin L, Yeong PSJ. Case Report: Understanding the Impact of Persistent Tissue-localization of SARS-CoV-2 on Immune Response Activity via Spatial Transcriptomic Analysis of Two Cancer Patients with COVID-19 Co-Morbidity . Front Immunol. 2022 Sep 12;13:978760.
21.	Kishikawa J, Ugai T, Fujiyoshi K, Chen Y, Haruki K, Liu L, Arima K, Akimoto N, Hamada T, Inamura K, Kosumi K, Twombly TS, Shi S, Lau MC, Du C, Li P, Guo C, Väyrynen JP, Väyrynen SA, Gu S, Song M, Zhang X, Dai G, Giannakis M, Drew DA, Chan AT, Fuchs CS, Meyerhardt JA, Nishihara R, Nowak JA, Ogino S, and Wu K. Smoking and Colorectal Cancer Survival in Relation to Tumor LINE-1 Methylation Levels: A Prospective Cohort Study . Epigenetics Commun. 2022 Jun 20;2(1):4.
22.	Arima K, Zhong R, Ugai T, Zhao M, Haruki K, Akimoto N, Lau MC, Okadome K, Mehta RS, Väyrynen JP, Kishikawa J, Twombly TS, Shi S, Fujiyoshi K, Kosumi K, Ogata Y, Baba H, Wang F, Wu K, Song M, Zhang X, Fuchs CS, Sears CL, Willett WC, Giovannucci EL, Meyerhardt JA, Garrett WS, Huttenhower C, Chan AT, Nowak JA, Giannakis M, and Ogino S. Western-style Diet, pks Island-Carrying Escherichia coli, and Colorectal Cancer: Analyses from Two Large Prospective Cohort Studies . Gastroenterology. 163(4), 862-874.
23.	Akimoto N, Väyrynen JP., Zhao M, Ugai T, Fujiyoshi K, Borowsky J, Zhong R, Haruki K, Arima K, Lau MC, Kishikawa J, Twombly TS, Takashima Y, Song M, Zhang X, Wu K, Chan AT, Meyerhardt JA, Giannakis M, Nowak JA, Ogino S. 2022. Desmoplastic reaction, immune cell response, and prognosis in colorectal cancer . Front. immunol, p.1045.
24.	Ugai T, Väyrynen JP, Lau MC, Borowsky J, Akimoto N, Väyrynen S, Zhao M, Zhong R, Haruki K, Dias Costa A, Fujiyoshi K, Arima K, Wu K, Chan AT, Cao Y, Song M, Fuchs CS, Wang M, Lennerz JK, Ng K, Meyerhardt JA, Giannakis M, Nowak JA, Ogino S. Immune cell profiles in the tumor microenvironment of early-onset, intermediate-onset, and later-onset colorectal cancer . Cancer Immunol Immunother. 2022;71(4):933-942.
25.	Fincham REA, Bashiri H, Lau MC, Joe PSJ. Multiplex Immunohistochemistry/Immunofluorescence Technique: The Potential and Promise for Clinical Application . Front. Mol. Biosci. 2022;9.
26.	Väyrynen JP, Haruki K, Lau MC, Väyrynen SA, Ugai T, Akimoto N, Zhong R, Zhao M, Dias Costa A, Borowsky J, Bell P, Takashima Y, Fujiyoshi K, Arima K, Kishikawa J, Shi S, Twombly TS, Song M, Wu K, Chan AT, Zhang X, Fuchs CS, Meyerhardt JA, Giannakis M, Ogino S, Nowak JA. Spatial organization and prognostic significance of NK and NKT-like cells via multimarker analysis of the colorectal cancer microenvironment . Cancer Immunol. Res. 2022;10(2):215-227.
27.	Yang Y, Shi X, Zhou Q, Lau MC, Sun L, Yeong J, Liu J. SC-MEB: spatial clustering with hidden Markov random field using empirical Bayes . Brief. Bioinformatics. 2022;23(1): bbab466
28.	Ugai T, Väyrynen JP, Haruki K, Akimoto N, Lau MC, Zhong R, Kishikawa J, Väyrynen SA, Zhao M, Fujiyoshi K, Costa AD, Borowsky J, Arima K, Guerriero JL, Fuchs CS, Zhang X, Song M, Wang M, Giannakis M, Meyerhardt JA, Nowak JA, Ogino S. Smoking and Incidence of Colorectal Cancer Subclassified by Tumor-Associated Macrophage Infiltrates . JNCI. 2022;114(1):68–77.

29.	Ugai T, Haruki K, Väyrynen JP, Borowsky J, Fujiyoshi K, Lau MC, Akimoto N, Zhong R, Kishikawa J, Arima K, Shi SS, Fuchs CS, Zhang X, Giannakis M, Song M, Nan H, Wang M, Meyerhardt JA, Nowak JA, Ogino S. Coffee Intake of Colorectal Cancer Patients and Prognosis According to Histopathologic Lymphocytic Reaction and T-Cell Infiltrates . Mayo Clin Proc. 2022;97(1):124- 133
30.	Ugai T, Zhao M, Shimizu T, Akimoto N, Shi S, Takashima Y, Zhong R, Lau MC, Haruki K, Arima K, Fujiyoshi K, Langworthy B, Masugi Y, da Silva A, Nosho K, Baba Y, Song M, Chan AT, Wang M, Meyerhardt JA, Giannakis M, Väyrynen JP, Nowak JA, Ogino S. Association of PIK3CA mutation and PTEN loss with expression of CD274 (PD-L1) in colorectal carcinoma . Oncoimmunology. 2021;10(1):1956173.
31.	Penny HL, Sieow JL, Gun SY, Lau MC, Lee B, Tan J, Phua C, Toh F, Nga Y, Yeap WH, Janela B, Kumar D, Chen H, Yeong J, Kenkel JA, Pang A, Lim D, Toh HC, Hon TLK, Johnson CI, Khameneh HJ, Mortellaro A, Engleman EG, Rotzschke O, Ginhoux F, Abastado JP, Chen J, Wong SC. Targeting Glycolysis in Macrophages Confers Protection Against Pancreatic Ductal Adenocarcinoma . Int J Mol Sci. 2021;22(12):6350.
32.	Rouers A, Appanna R, Chevrier M, Lum J, Lau MC, Tan L. Tay A, Sathiakumar D, Kaur K, Boehme J, Leo YS, Howland SW, Singhal A, Chen J, Fink K. CD27hiCD38hi plasmablasts are activated B cells of mixed origin with distinct function . iScience. 2021;24(5):102482.
33.	Sikavi DR, Nguyen LH, Haruki K, Ugai T, Ma W, Wang DD, Thompson KN, Yan Y, Branck T, Wilkinson JE, Akimoto N, Zhong R, Lau MC, Mima K, Kosumi K, Morikawa T, Rimm EB, Garrett WS, Izard J, Cao Y, Song M, Huttenhower C, Ogino S, Chan AT. The Sulfur Microbial Diet and Risk of Colorectal Cancer by Molecular Subtypes and Intratumoral Microbial Species in Adult Men . Clin Transl Gastroenterol. 2021;12(8):e00338.
34.	Väyrynen SA, Zhang J, Yuan C, Väyrynen JP, Dias Costa A, Williams H, Morales-Oyarvide V, Lau MC, Robinson DA, Dunne RF, Kozak MM, Wang W, Agostini-Vulaj D, Drage MG, Brais L, Reilly E, Rahma O, Clancy T, Wang J, Linehan DC, Aguirre AJ, Fuchs CS, Coussens LM, Chang DT, Koong AC, Hezel AF, Ogino S, Nowak JA, Wolpin BM. Composition, Spatial Characteristics, and Prognostic Significance of Myeloid Cell Infiltration in Pancreatic Cancer . Clin Cancer Res. 2021;27(4):1069-1081.
35.	Borowsky J, Haruki K, Lau MC, Dias Costa A, Väyrynen JP, Ugai T, Arima K, da Silva A, Felt KD, Zhao M, Twombly TS, Fujiyoshi K, Väyrynen SA, Hamada T, Mima K, Bullman S, Ng K, Meyerhardt JA, Song M, Giovannucci EL, Wu K, Zhang X, Freeman GJ, Huttenhower C, Garrett WS, Chan AT, Leggett BA, Whitehall VLJ, Walker N, Brown I, Bettington M, Nishihara R, Fuchs CS, Lennerz JK, Giannakis M, Nowak JA, and Ogino S. Association of Fusobacterium nucleatum with Specific T Cell Subsets in the Colorectal Carcinoma Microenvironment . Clin Cancer Res. 2021;27(10):2816-2826.
36.	Väyrynen JP, Haruki K, Väyrynen SA, Lau MC, Dias Costa A, Borowsky J, Zhao M, Ugai T, Kishikawa J, Akimoto N, Zhong R, Shi S, Chang T-W, Fujiyoshi K, Arima K, Twombly TS, Da Silva A, Song M, Wu K, Zhang X, Chan AT, Nishihara R, Fuchs CS, Meyerhardt JA, Giannakis M, Ogino S, Nowak JA. Prognostic significance of myeloid immune cells and their spatial distribution in the colorectal cancer microenvironment . J Immunother Cancer. 2021;9(4): e002297.
37.	Väyrynen JP, Haruki K, Lau MC, Väyrynen SA, Zhong R, Dias Costa A, Borowsky J, Zhao M, Fujiyoshi K, Arima K, Twombly TS, Kishikawa J, Gu S, Aminmozaffari S, Shi S, Baba Y, Akimoto N, Ugai T, Da Silva A, Guerriero JL, Song M, Wu K, Chan AT, Nishihara R, Fuchs CS, Meyerhardt JA, Giannakis M, Ogino S, and Nowak JA. The prognostic role of macrophage

	polarization in the colorectal cancer microenvironment . Cancer Immunol Res. 2021;9(1):8-19
38.	Fujiyoshi K, Väyrynen JP, Borowsky J, Papke DJ., Arima K, Haruki K, Kishikawa J, Akimoto N, Ugai T, Lau MC, Gu S, Shi S, Zhao M, da Silva A, Twombly TS, Nan H, Meyerhardt JA, Song M, Zhang X, Wu K, Chan AT, Fuchs CS, Lennerz JK, Giannakis M, Nowak JA, and Ogino S. Tumour budding, poorly differentiated clusters, and T-cell response in colorectal cancer . EBioMedicine. 2020;57:102860.
39.	Haruki K, Kosumi K, Li P, Arima K, Väyrynen JP, Lau MC, Twombly TS, Hamada T, Glickman JN, Fujiyoshi K, Chen Y, Du C, Guo C, Väyrynen SA, Dias Costa A, Song M, Chan AT, Meyerhardt JA, Nishihara R, Fuchs CS, Liu L, Zhang X, Wu K, Giannakis M, Nowak JA, Ogino S. An integrated analysis of lymphocytic reaction, tumour molecular characteristics, and patient survival in colorectal cancer . Br J Cancer 2020;122(9):1367-1377.
40.	Ugai T, Haruki K, Väyrynen JP, Zhong R, Borowsky J, Fujiyoshi K, Lau MC, Zhao M, Akimoto N, Chang TW, Kishikawa J, Arima K, Shi S, Gu S, Fuchs CS, Giovannucci E, Giannakis M, Zhang X, Song M, Meyerhardt JA, Wang M, Nowak JA, Ogino S. Coffee Intake and Colorectal Cancer Incidence According to T-Cell Response . JNCI Cancer Spectr. 2020; 4(6):pkaa068.
41.	Fujiyoshi K, Chen Y, Haruki K, Ugai T, Kishikawa J, Hamada T, Liu L, Arima K, Borowsky J, Väyrynen JP, Zhao M, Lau MC, Gu S, Shi S, Akimoto N, Twombly TS, Drew DA, Song M, Chan AT, Giovannucci EL, Meyerhardt JA, Fuchs CS, Nishihara R, Lennerz JK, Giannakis M, Nowak JA, Zhang X, Wu K, Ogino S. Smoking status at diagnosis and colorectal cancer prognosis according to tumor lymphocytic reaction . JNCI Cancer Spectr. 2020;4(5):pkaa040.
42.	Haruki K, Kosumi K, Hamada T, Twombly TS, Väyrynen JP, Kim SA, Masugi Y, Qian ZR, Mima K, Baba Y, da Silva A, Borowsky J, Arima K, Fujiyoshi K, Lau MC, Li P, Guo C, Chen Y, Song M, Nowak JA, Nishihara R, Yanaga K, Zhang X, Wu K, Bullman S, Garrett WS, Huttenhower C, Meyerhardt JA, Giannakis M, Chan AT, Fuchs CS, Ogino S. Association of autophagy status with amount of Fusobacterium nucleatum in colorectal cancer . J Pathol. 2020;250(4):397-408.
43.	Arima K, Lau MC, Zhao M, Haruki K, Kosumi K, Mima K, Gu M, Väyrynen JP, Twombly TS, Baba Y, Fujiyoshi K, Kishikawa J, Guo C, Baba H, Richards WG, Chan AT, Nishihara R, Meyerhardt JA, Nowak JA, Giannakis M, Fuchs CS, Ogino S. Utility of Metabolic Profiling of Formalin-Fixed Paraffin-Embedded Tissue Materials in Colorectal Cancer . Mol Cancer Res. 2020;18(6):883-890.
44.	Väyrynen JP, Lau MC, Haruki K, Väyrynen SA, Dias Costa A, Borowsky J, Zhao M, Fujiyoshi K, Arima K, Twombly TS, Kishikawa J, Gu S, Aminmozaffari S, Shi S, Baba Y, Akimoto N, Ugai T, da Silva A, Song M, Wu K, Chan AT, Nishihara R, Fuchs CS, Meyerhardt JA, Giannakis M, Ogino S, Nowak JA. Prognostic significance of immune cell populations identified by machine learning in colorectal cancer using routine hematoxylin & eosin stained sections . Clin Cancer Res. 2020; 26(16):4326-4338.
45.	Kared H, Tan SW, Lau MC, Chevrier M, Tan C, How W, Wong G, Strickland M, Malleret B, Amoah A, Pilipow K, Zanon V, Govern NM, Lum J, Chen JM, Lee B, Florian MC, Geiger H, Ginhoux F, Ruiz-Mateos E, Fulop T, Rajasuriar R, Kamarulzaman A, Ng TP, Lugli E, Larbi A. Immunological history governs human stem cell memory CD4 heterogeneity via the Wnt signaling pathway . Nat Commun. 2020;11(1):821.
46.	Janela B, Patel AA, Lau MC, Goh CC, Msallam R, Kong WT, Fehlings M, Hubert S, Lum J, Simon Y, Malleret B, Zolezzi F, Chen J, Poidinger M, Satpathy AT, Briseno C, Wohn C, Malissen B, Murphy KM, Maini AA, Vanhoutte L, Guillelliams M, Vial E, Hannequin L, Newell E,

	Ng LG, Musette P, Yona S, Rachinel FH, Ginhoux F. A subset of type I conventional dendritic cells controls cutaneous bacterial infections through VEGFa-mediated recruitment of neutrophils. <i>Immunity</i> . 2019;50:1069-1084;e8.
47.	Chen H, Lau MC, Wong MT, Newell EW, Poidinger M, Chen JM. Cytofkit: A bioconductor package for an integrated mass cytometry data analysis pipeline. <i>PLoS Comput Biol</i> . 2016;12(9);e1005112.
48.	Lau MC, Srinivasan R. A hybrid CPU-graphics processing unit (GPU) approach for computationally efficient simulation-optimization. <i>Comput. & Chem. Eng.</i> 2016;87:49-62.