

PERSONAL DETAILS

Name Tero Antero Aittokallio

Date of birth June 11, 1974, Naantali, Finland

Websites: <https://www.fimm.fi/en/research/groups/aittokallio>
<http://users.utu.fi/teanai/>
https://www.researchgate.net/profile/Tero_Aittokallio

DEGREES

04/12/1997 M.Sc. in Applied Mathematics, University of Turku, Finland

12/08/2001 Ph.D. in Applied Mathematics, University of Turku, Finland

PhD thesis: "*Characterization and modelling of the cardiorespiratory system in sleep-disordered breathing*", accepted with honours, awarded for the best PhD thesis in Mathematics in 2001 in Finland, The Rolf Nevanlinna Institute Foundation award, Supervised by Prof. Mats Gyllenberg

DOCENTSHIPS

22/04/2004 Docent (Adjunct Professor) in Biomathematics, University of Turku, Finland

PROFESSORSHIPS

01/04/2015 Professor of Statistics and Applied Mathematics, responsible for applications in molecular biosciences, University of Turku, Finland

PROFESSIONAL APPOINTMENTS

1/1998 Assistant, Department of Mathematics, University of Turku, Turku, Finland

2/1998–8/2001 Doctoral student, Turku Centre for Computer Science (TUCS), Turku, Finland

9/2001–12/2003 Post-doctoral researcher, TUCS Biomathematics Research Group, Turku, Finland

1/2004–12/2005 Post-doctoral researcher, Graduate School in Computational Biology, Bioinformatics, and Biometry (ComBi), University of Turku, Turku, Finland

2/2006–7/2007 Post-doctoral fellow, Systems Biology Unit, Pasteur Institute, Paris, France

8/2007–7/2012 Academy research fellow, Department of Mathematics, University of Turku, Finland

8/2011– EMBL group leader, Institute for Molecular Medicine Finland (FIMM), University of Helsinki, Finland

8/2015– Professor of Statistics and Applied Mathematics, Department of Mathematics and Statistics, University of Turku, Finland

SUPERVISED DOCTORAL DISSERTATIONS

- 5/2006 Marius Codrea: *"Pattern Analysis of Chlorophyll Fluorescence Signals"*, University of Turku
Co-supervised with Prof. Olli Nevalainen and Docent Esa Tyystjärvi. Current position:
Scientist, Quantitative Biology Center, University of Tübingen, Germany
- 9/2006 Jussi Salmi: *"Improving Data Analysis in Proteomics"*, University of Turku. Co-supervised
with Prof. Olli Nevalainen and Docent Tuula Nyman. Current position: Senior Scientist,
Turku Centre for Biotechnology, Finland
- 11/2007 Arho Virkki: *"The human respiratory system – modelling, analysis and control"*, University
of Turku, co-supervised with Prof. Mats Gyllenberg. Current positions: Head of Auria
Clinical Informatics at Turku University Hospital; and Founder of Random Park, Finland
- 12/2007 Laura Elo: *"Strategies for dealing with incomplete information in gene expression studies"*,
University of Turku, awarded for the best PhD thesis in Bioinformatics in 2007 in Finland.
Current position: Group Leader and Research Director in Bioinformatics, Turku Centre for
Biotechnology, Finland; ERC Starting Grantee 2016
- 11/2014 Johannes Tuikkala: *"Algorithmic techniques in gene expression processing: from
imputation to visualization"*, University of Turku, co-supervised with Prof. Olli Nevalainen
Current position: Vaadin Expert and Project Manager, Vaadin Ltd., Turku, Finland
- 08/2015 Sebastian Okser: *"Scalable feature selection applications to genome-wide association
studies of complex diseases"*, University of Turku, co-supervised with Prof. Tapio Salakoski,
Docent Tapio Pahikkala and Prof. Olli Raitakari. Current position: Senior Director of
Analytics at Dashlane, New York, NY, United States
- 03/2017 Bhagwan Yadav: *"Quantitative modeling and analysis of drug screening data for
personalized cancer medicine"*, Faculty of Medicine, University of Helsinki, co-supervised
with Dr. Krister Wennerberg (FIMM). Current position: post-doctoral researcher with Prof.
Satu Mustjoki, Hematology Research Unit, Helsinki University Central Hospital, Finland
- 12/2017 Prson Gautam: *"Chemical systems biology studies of triple negative breast cancer cell
lines"*, Faculty of Medicine, University of Helsinki, co-supervisor, with Dr. Krister
Wennerberg (FIMM). Current position: post-doctoral researcher jointly with Bayer AG and
FIMM UH (Aittokallio group).
- 03/2018 Agnieszka Sz wajda: *"Bioinformatic identification of disease driver networks using
functional profiling data"*, Faculty of Medicine, University of Helsinki, co-supervised with
Prof. Krister Wennerberg (FIMM). Current position: Staff Statistician, Department of
Medical Epidemiology and Biostatistics (MEB), Karolinska Institute, Sweden.
- 06/2018 Alok Jaiswal: *"Integrative bioinformatics of functional and genomic profiles for cancer
systems medicine"*, Faculty of Medicine, University of Helsinki, co-supervised with Dr. Jing
Tang (FIMM). Current position: post-doctoral researcher with Prof. Aviv Regev, the Broad
Institute of MIT and Harvard, US.
- 10/2018 Anna Cichonska: *"Machine Learning for Systems Pharmacology"*, Aalto University School
of Science, co-supervised with Prof. Juho Rousu (HIIT) and Dr. Matti Pirinen (FIMM).
Current position: post-doctoral researcher jointly with HIIT, FIMM and University of Turku.

11/2018 Teemu Daniel Laajala: "Modeling and prediction of advanced prostate cancer", University of Turku, co-supervised with Prof. Matti Poutanen and Dr. Laure Elo. Current position: post-doctoral researcher with Prof. James Costello, Department of Pharmacology, University of Colorado Denver, US.

POSTDOCTORAL RESEARCHER SUPERVISION

- 2008-10 Laura Elo, current position: Group Leader and Research Director in Bioinformatics, Turku Centre for Biotechnology, Finland; ERC Starting Grantee 2016.
- 2012-16 Jing Tang, current position: Group Leader at FIMM, Helsinki, Finland, and Research Fellow at Turku Collegium for Science and Medicine (TCSM); ERC Starting Grantee 2017.
- 2012-14 Petteri Hintsanen, current position: Software Engineer, Furuno Finland Oy.
- 2013-14 Lu Cheng, current position: post-doctoral researcher with Prof. Harri Lähdesmäki, Computational systems biology group, Aalto University, Finland.
- 2014-16 Gopal Peddinti, current position: Senior Scientist, Computational Biology, VTT, Finland.
- 2016-17 Abhishekh Gupta, current position: postdoctoral researcher, Center for Quantitative Medicine at UConn Health with Prof. Pedro Mendes, University of Connecticut, US.
- 2017-18 Muhammad Ammad-ud-din, current position: Senior Data Scientist at Huawei Technologies Research & Development (Finland) Ltd.

EXAMINER ACTIVITIES

- 12/2005 Opponent of doctoral dissertation of Daniel Nicorici: "*Identification of functional clusters in microarray data and DNA sequences*", Tampere University of Technology, Finland
- 12/2007 Pre-examiner of doctoral thesis of Merja Oja: "*Methods for exploring genomic data sets - application to human endogenous retroviruses*", Helsinki University of Technology, Finland
- 04/2008 Pre-examiner of doctoral thesis of Niina Haiminen: "*Mining sequential data – in search of segmental structures*", University of Helsinki, Finland
- 10/2009 Pre-examiner of doctoral thesis of Pasi Rastas: "*Computational techniques for haplotype inference and for local alignment significance*", University of Helsinki, Finland
- 02/2010 Pre-examiner of doctoral thesis of Peddinti Gopalacharyulu: "*Data integration, pathway analysis and mining for systems biology*", Helsinki University of Technology, Finland
- 07/2011 Pre-examiner of doctoral thesis of Erno Lindfors: "*Network Biology: applications in medicine and biotechnology*", Aalto University School of Science, Finland
- 08/2012 Pre-examiner of doctoral thesis of Marko Laakso: "*Data integration methods to interpret genome-scale data from cancers*", University of Helsinki, Finland
- 08/2013 Pre-examiner of doctoral thesis of Mitja Kurki: "*Genomics and Bioinformatics Approaches in Search of Molecular Pathomechanisms of Saccular Intracranial Aneurysm, A Complex Disease*", University of Eastern Finland, Finland

- 03/2014 Pre-examiner of doctoral thesis of Lingjia Kong: *"Bioinformatic Approaches for Integration of High-Throughput Transcriptomic Data"*, Tampere University of Technology, Finland
- 11/2014 Pre-examiner of doctoral thesis of Antti Larjo: *"Computational methods for modelling and analysing biological networks"*, Tampere University of Technology, Finland
- 10/2018 Pre-examiner of doctoral thesis of Ali Oghabian: *"Bioinformatics analysis of intron retention events associated with the minor spliceosome"*, University of Helsinki, Finland
- 01/2019 Examiner of doctoral dissertation of Azedine Zoufir: *"Computational analyses of small molecules activity from phenotypic screens"*, University of Cambridge, United Kingdom

REVIEWER ACTIVITIES

- 11/2010 Expert reviewer of docentship application of Janne Nikkilä, University of Helsinki, Finland
- 08/2015 Expert reviewer of docentship application of Pekka Ruusuvuori, University of Tampere, Finland
- 2008– Reviewer for international research funding proposals:
The Dutch National Science Foundation, Computational Life Sciences (CLS 2008)
Netherlands Organisation for Scientific Research (NWO), Innovational Research Incentives Scheme (Vidi 2011)
Association for International Cancer Research (AICR 2013), United Kingdom
Estonian Research Council, Institutional Research Funding (IRF 2014)
Medical Research Council (MRC 2015), United Kingdom
European Commission, Health, demographic change and wellbeing (H2020-SC1-2017)
European Commission, ERC Synergy Grant, SyG2-Life Sciences B (ERC-SYG-LS-2018)
- 2011– Reviewer for books chapters in edited volumes:
Advances in Systems Biology, Springer Series, Experimental Medicine and Biology (2012)
- 2010– Editorial member for international scientific journals:
Review Editor for Frontiers in Bioengineering and Biotechnology, Synthetic Biology section
Review Editor for Frontiers in Pharmacology, Experimental Pharmacology and Drug Discovery
Guest Editor for PLOS Computational Biology
- 2000– Ad hoc reviewer for scientific journals (Publons ID: publons.com/a/1242644/):
ACS Combinatorial Science, Annals of Medicine, BioData Mining, Bioinformatics, Biomolecular Engineering, BioTechniques, BMC Bioinformatics, BMC Genomics, BMC Medical Genetics, BMC Systems Biology, BMJ Open, Briefings in Bioinformatics, Cancer Research, Cell Reports, Circulation: Cardiovascular Genetics, Clinical Physiology and Functional Imaging, Computer Methods and Programs in Biomedicine, Current Opinion in Systems Biology, Electrophoresis, Expert Opinion On Drug Discovery, Expert Review of Proteomics, F1000 Faculty Reviews, FEBS Letters, Frontiers in Genetics, Frontiers in Synthetic Biology, Frontiers in Pharmacology, Future Medicinal Chemistry, Genome Biology, IEEE/ACM Transactions on Computational Biology and Bioinformatics, International Journal of Neural Systems, Journal of Applied Physiology, Journal

of Biomedical Informatics, Journal of Chromatography, Journal of Experimental & Clinical Cancer Research, Journal of Mathematical Biology, Journal of Proteome Research, Mathematical Biosciences, Medical Engineering & Physics, Nature Chemical Biology, Nature Communications, Nucleic Acids Research, Oncotarget, Pattern Recognition, PeerJ, PLoS ONE, Proteomics, Scientific Reports, Statistical Applications in Genetics and Molecular Biology, The AAPS Journal, The Lancet Diabetes & Endocrinology

OTHER SCIENTIFIC ACTIVITIES

Program committee member in conferences:

ECCB 2010 Reviewer for track G, Protein interactions, molecular networks and systems biology
AISTATS 2014 Seventeenth International Conference on Artificial Intelligence and Statistics
ECCB 2018 Reviewer for the European Conference on Computational Biology (ECCB)

Participation in crowd-sourcing competitions:

2012 Member of the winning team of the NCI-DREAM7 Drug Sensitivity Prediction Sub-Challenge 1
2014 Leader of the team invited to the community phase of the DREAM 8.5 Rheumatoid Arthritis Responder Challenge
2014 Leader of the winning team of Broad-DREAM9 Gene Essentiality Prediction Sub-Challenge 3
2015 Leader of the winning team of NCI-DREAM 9.5 Prostate Cancer Prediction Sub-Challenge 1a
2017 Leader of the winning team of DREAM Idea Challenge: Drug-target interaction mapping
2017 Member of the winning team (iCombine) of Helsinki Challenge idea competition 2017
2018 Leader of the organizing team of IDG-DREAM Drug-Kinase Binding Prediction Challenge 2018

PATENT APPLICATIONS

2150683PC /k/16/2015: A DECISION MAKING TOOL FOR PREDICTING DISEASE BURDEN, DRUG RESPONSE AND RECURRENCE OF ENDOMETRIOSIS, Patent application PCT/Finland, US.

PUBLICATION METRICS

>170 articles in refereed international journals, citations > 2500, h-index 29 (Web of Science), citations > 5200, h-index 39 (Google Scholar). ORCID ID: <http://orcid.org/0000-0002-0886-9769>

POSITIONS AND MEMBERSHIPS

2002 – 2009 Senior member of Sleep Research Unit, Department of Physiology, University of Turku
2003 – 2016 Group leader in Turku Systems Biology Research Programme, BioCity Turku, Finland
2004 – 2007 Steering group member of Tekes project: *Probabilistic Methods in Microarray Analysis*
2004 – 2014 Supervisor in the Graduate Programme of Turku Centre for Computer Science (TUCS)
2005 – 2009 Board member of Graduate School in Computational Biology, Bioinformatics, and Biometry (ComBi)

- 2007 – Senior member of Biomathematics Group, Department of Mathematics and Statistics, University of Turku, Finland
- 2010 – 2012 Steering group member of Tekes project: *Translational models and biomarkers for hormonal cancer*
- 2010 – 2015 Member of the Board of Advisors of Finnish Doctoral Programme in Computational Sciences (FICS)
- 2011 – Deputy member of the Bioinformatics Infrastructure Network, Biocenter Finland (BF)
- 2011 – Member of the steering group of the Institute for Molecular Medicine Finland (FIMM)
- 2012 – Steering group member of TUCS BioHealth Research Programme, Turku, Finland
- 2012 – Supervisor in the Doctoral Programme in Biomedicine (DPBM), formerly HBGB
- 2013 – Supervisor in the Doctoral Programme in Drug Research (DRDP), formerly FPDP
- 2013 – Supervisor in the Doctoral Programme in Integrative Life Science (ILS), formerly FICS
- 2015 – Steering group member of Tekes project: *Development and commercialization of a decision making tool for endometriosis*
- 2015 – Steering group member of Tekes project: *Novel indications for HSD17B1 inhibition*
- 2016 – Co-director and affiliated PI of Turku BioCity Research Programme, Computational and Molecular Methodologies for Life Sciences, BioCity Turku, Finland
- 2016 – Member (PI) of the Foundations of Computational Health (FCHealth) Research Programme, Helsinki Institute for Information Technology (HIIT), Helsinki, Finland
- 2018 – Board member of the Doctoral Programme in Integrative Life Science (ILS), DSHealth
- 2018 – Steering group member of Western Cancer Centre (FICAN West), a part of the Cancer Center Finland (FICAN), Hospital districts of Southwest Finland, Satakunta and Vaasa.

LONG-TERM FOREIGN VISITS

- 01/2004 – 05/2004 Biophysics and Bioengineering Unit (with Prof. Ramón Farré), Faculty of Medicine, University of Barcelona, Spain
- 02/2006 – 07/2007 Systems Biology Group (with Dr. Benno Schwikowski), Pasteur Institute, Paris, France
- 11/2010 – 03/2011 Systems Biology Group (with Dr. Benno Schwikowski), Pasteur Institute, Paris, France

GRANTS AND AWARDS

- 07/1999 Sofia and Wilhelm Fagerholm scholarship fund, 4 520 FIM research grant for the PhD work
- 03/2001 Turun Suomalainen Yliopistoseura, 5 000 FIM personal grant for finishing the PhD thesis
- 11/2002 The Rolf Nevanlinna Institute Foundation, 2 500 EUR award for the best PhD thesis in mathematics in 2001
- 10/2003 The Turku University Foundation, 400 EUR travel grant for the research trip to Barcelona
- 11/2003 The Academy of Finland, 211 400 EUR research grant, Systems Biology research programme (co-PI, with Prof. Riitta Lahesmaa and Dr. Matej Oresic)

- 06/2006 Apteekkari Wäinö Edward Miettinen scholarship fund, 2 200 EUR travel grant to Paris
- 09/2006 The Academy of Finland, 56 600 EUR research grant, respiratory system modeling (role: PI)
- 04/2007 The Academy of Finland, 227 730 EUR research grant, Multilevel cell system modeling (PI)
- 09/2009 The Academy of Finland, 218 000 EUR research grant, Genetic interaction modeling (PI)
- 04/2010 The Finnish Funding Agency for Technology and Innovation (Tekes), 62 286 EUR, Translational cancer models and biomarkers (co-PI, with Prof. Matti Poutanen)
- 05/2010 The Academy of Finland, 104 000 EUR research grant, Multilevel cell system modeling (PI)
- 06/2013 The Academy of Finland, 337 642 EUR research grant, Synthetic Biology research programme (consortium-PI, with Drs. Patrik Jones, Ion Petre and Krister Wennerberg)
- 06/2013 The Academy of Finland, 377 918 EUR research grant, Personalized cancer medicine (PI)
- 04/2014 The Academy of Finland, 92 215 EUR research grant, Genomics, bioinformatics and systems medicine of ovarian cancer, joint research projects between Finland and Japan (co-PI, with Prof. Olli Kallioniemi and Prof. Johji Inazawa)
- 11/2014 Cancer Society of Finland, 80 000 EUR research grant, Hilda and Matti Tedre Foundation, Individualized drug target combinations: prediction, testing and translation (role: PI)
- 05/2015 European Commission, 262 000 EUR research grant, Horizon 2020, PHC-32-2014, MedBioinformatics (co-PI, with several PIs, <http://www.medbioinformatics.eu/>)
- 06/2015 The Academy of Finland, 333 596 EUR research grant, Personalised Health programme (co-PI, with Prof. Sampsa Hautaniemi, Prof. Olli Carpén and Prof. Seija Grénman)
- 12/2015 The Academy of Finland, 172 554 EUR research grant, ICT 2023: big data and open data (co-PI, with Prof. Juho Rousu, Prof. Sami Kaski, Prof. Jacucci Giulio, Prof. Raimo Sepponen)
- 01/2016 European Commission, 261 127 EUR research grant, Horizon 2020, PHC-2-2015, HERCULES (co-PI, with Prof. Sampsa Hautaniemi and several PIs, <http://www.project-hercules.eu/>)
- 01/2016 National Cancer Institute (NCI), National Institutes of Health (NIH), U.S., 90 341 USD, NCI-DREAM Challenge, Implementation of improved mCRPC Prediction Algorithm (role: PI)
- 11/2016 Cancer Society of Finland, 150 000 EUR research grant, Kaarina Savolainen Foundation, Modeling and therapeutic targeting of cancer clonal evolution (role: PI)
- 06/2017 The Academy of Finland, 590 775 EUR research grant, Improving pre-clinical drug response modeling and reproducibility (role: PI)
- 10/2017 The Academy of Finland, 94 555 EUR research grant, ICT 2023: Computation, Machine Learning and Artificial Intelligence (co-PI, with Profs. Pahikkala, Rousu, Karmitsa, Mustonen and Lähdesmäki)
- 12/2017 The Breast Cancer Now Catalyst Programme, UK, 399 054 GBP, Predictive markers for TNBC drug responses (co-PI, with Profs. Westermarck, Wennerberg and Klefström)
- 03/2018 Sigrid Jusélius Foundation, 165 000 EUR research grant, Treatment outcome prediction for aggressive prostate cancer patients (role: PI)
- 11/2018 European Commission, ERA PerMed Cofund, 425 326 EUR research grant, Horizon 2020, Novel individualized therapies in JAK/STAT driven T-cell malignancies, (co-PI, with Prof. Mustjoki and several other European and Canadian PIs)

