

PART I: General Information

Name: Hasan H. Otu

DATE PREPARED: April 20, 2025

Office Address: University of Nebraska-Lincoln, Department of Electrical and Computer Engineering, SEC C290D, Lincoln, NE 68588-0511, USA

Web: <http://otulab.unl.edu>
<https://engineering.unl.edu/ece/person/hasan-otu/>
<https://scholar.google.com/citations?user=rzVvi18AAAAJ&hl=en>

Tel: (402) 472-3771

Fax: (402) 472-4732

E-Mail: hotu2@unl.edu

Education:

<i>Year</i>	<i>Degree</i>	<i>Institution</i>
1996	B.S.	Electrical and Electronics Engineering, Bogazici University, Istanbul, Turkey
1997	M.S.	Electrical and Electronics Engineering, Bogazici University, Istanbul, Turkey
2002	Ph.D.	Electrical Engineering, University of Nebraska-Lincoln, USA

Academic Appointments:

<i>Year</i>	<i>Title</i>	<i>Institution</i>
1996-1997	Teaching Asst.	Bogazici University, Department of Electrical and Electronics Engineering
1997-2000	Teaching Asst.	University of Nebraska-Lincoln, Department of Electrical Engineering
2000-2002	Instructor of EE	University of Nebraska-Lincoln, Department of Electrical Engineering
2002-2003	Research Fellow	Harvard Medical School, Boston, MA
2003- 2012	Instructor of Medicine	Harvard Medical School, Boston, MA
2010-2013	Assistant Prof.	Istanbul Bilgi University Department of Bioengineering, Istanbul, Turkey
2013-	Professor	University of Nebraska-Lincoln, Department of Electrical Engineering (Tenure 2013)

Visiting and Other Academic Appointments:

<i>Year</i>	<i>Title</i>	<i>Institution</i>
2005- 2008	Adjunct Instructor	Boston Uni. Bioinformatics Program, Boston, MA
2005- 2006	Teaching Instructor	Northeastern University Department of Biology, Graduate Program in Bioinformatics, Boston, MA
2006-2007	Assistant Prof.	Yeditepe University Department of Genetics and Bioengineering, Istanbul, Turkey
2008	Assistant Prof.	Sabanci University Department of Biological Sciences and Bioengineering, Istanbul, Turkey

Major Administrative Responsibilities:

<i>Year</i>	<i>Title</i>	<i>Institution</i>
2003-2007	Director	Bioinformatics Core, BIDMC Genomics Center
2004-2012	Associate Director	Dana-Farber/Harvard Cancer Center Proteomics Core
2006-2008	Steering Committee	Biotechnology Institute, Yeditepe University
2007-2012	Associate Director	Bioinformatics Core, BIDMC Genomics Center
2010-2013	Founding Chair	Department of Bioengineering, Istanbul Bilgi U.
2016-	Advisory Committee	Department of Bioengineering, Istanbul Bilgi U.
2017-2022	Executive Committee	Department of Electrical and Computer Engineering, University of Nebraska-Lincoln (Member 2017-2019, Chair 2020-2022)
2023-	Senator	Faculty Senate, University of Nebraska-Lincoln

Professional Societies:

<i>Year</i>	<i>Role</i>	<i>Society</i>
2004-	Member	American Association for the Advancement of Science
2004-	Member	International Society for Computational Biology

Editorial Boards and Program Committees:

<i>Year</i>	<i>Role</i>	<i>Journal/Conference</i>
2000-	Ad hoc reviewer	IEEE Transactions on Communications, Bioinformatics, Systematic Biology, Journal of Computational Chemistry, Journal of Molecular Modeling, Cancer Informatics, Journal of Molecular Evolution, BMC Bioinformatics, BMC Medical Genomics, Journal of Computational Biology, Molecular Simulation, The Computer Journal, African Journal of Biotechnology, European Journal of Human Genetics, Journal of Theoretical Biology, Acta Biotheoretica, Journal of Heredity, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Anatolian Journal of Cardiology, Biometrical Journal, Data Compression Conference, Entropy, Electro-Information Technology Conference, Nature Scientific Reports, PLOS One, Statistical Bioscience, Current Bioinformatics
2010-2017	Associate Editor	EURASIP Journal on Bioinformatics and Systems Biology
2011	PC Co-chair	The 6 th International Symposium on Health Informatics and Bioinformatics, (HIBIT)
2012	Organizer	Workshop, “Bioinformatics Approaches for Analysis of High-throughput Biological Data”, International Centre for Genetic Engineering and Biotechnology
2013-2017	Associate Editor	Advances in Biology

2014-2019	Editor in Chief	Journal of Bioinformatics, Computational and Systems Biology
2014-	Associate Editor	Journal of Bioinformatics, Proteomics and Imaging Analysis
2017	Member	Technical Program Committee Electro-Information Technology Conference
2017	Member	Program Committee International Symposium on Integrative Bioinformatics
2018-2020	Associate Editor	Advances in Bioinformatics
2020-	Associate Editor	Cells
2023-	Editorial Board Member	Frontiers in Plant Science - Plant Bioinformatics

Awards and Honors:

Year Name of Award

1992	Turkish Government scholarship for undergraduate studies (Ranked 27 th Nationwide)
1997	Turkish Oil Foundation monetary award for graduate studies
2001	Ranked 1st in Graduate Student Research Paper Competition, Department of Electrical Engineering, University of Nebraska-Lincoln
2001	Travel Award, 3rd Georgia Tech-Emory International Conference on Bioinformatics
2003	Cited by the National Physical Laboratory of the United Kingdom in its recommendations to the UK government as work that should be studied in order to meet future challenges in the bioinformatics area in NPL Report CMSC 23/03 Report to the National Measurement System Directorate, Department of Trade and Industry New Directions – Software Issues in Bioinformatics
2003	Invited Presentation and Travel Award, International Stem Cell Conference, Singapore
2003	Best Study Award, “Transcriptional Profiling for Detection of a Gene Signature in Renal Cell Cancer” 55 th Congress of the German Urological Society, Hamburg.
2004	Second Best Study Award, “Gene expression profiles in Renal Cell Cancer: Characterization of gene signatures in various histological subtypes and application of a metastatic signature” 56 th Congress of the German Urological Society, Hamburg.
2008	Research Grant Award, Dubai Harvard Foundation for Medical Research
2017	Outstanding Paper, Second Place Award, The International Conference on Electro-Information Technology.

Part II: Research, Teaching, and Clinical Contributions

A. Narrative Report of Research, Teaching, and Clinical Contributions.

My career to date has involved research in Information Theory and Bioinformatics developing computational methods to analyze biological and clinical data. My earlier work was in the areas of image compression and joint source/channel coding. With the availability of genomic sequences, my interest shifted into bioinformatics by trying to understand how information is organized in DNA sequences. Using Information Theory, I developed characterizations of this organization, with applications to fragment assembly and phylogeny reconstruction which led to two US patents.

My research at Harvard Medical School (HMS) focused on management and analysis of high-throughput biological data (HTBD) in the context of functional genomics and proteomics. These included, but were not limited to, transcription profiling, proteomics, and genotyping efforts targeting

questions in computational biology, systems biology, cancer, stem cells, heart disease, diabetes, and obesity. As the director of Bioinformatics Core at BIDMC Genomics Center, I managed the core to establish a state-of-the-art computer infrastructure and a research web portal, which functioned as the front end for automated experiment ordering, data storage and analysis. As part of this portal, we designed databases for various omics data types and developed embedded analysis tools and analytical methods for HTBD. Specifically, I focused on problems regarding data normalization, differential expression, clustering, functional group/pathway analysis and biomarker discovery.

During my post at Turkey and UNL, I focused on analysis of HTBD with two pillars: (i) use of network science as a common, intuitive language bridging computational and life scientists, and (ii) incorporation of existing biological and clinical knowledge in our analysis workflows. We used probabilistic graph models to identify active known pathways given experimental data, to reconstruct molecular interaction networks based on observed data, to infer multiomics interactivity, and to identify biomarkers based on network connectivity. In addition to omics analysis, I have also led sequencing projects that involved whole genome sequencing and metagenomics, such as the first-ever identification of the transcriptome of the Arabian camel, first-ever whole genome sequencing of a Turkish individual, and analysis of the gut microbiome.

Currently, I am developing methods that combine probabilistic graphs, e.g. Bayesian Networks (BN), and Artificial Intelligence (AI), e.g. Artificial Neural Networks (ANN), to build predictive models for biological and clinical data. Our goal is to reduce the complexity and data size requirements of ANN models using BNs, which are the main bottlenecks in AI. My research efforts have resulted in 6 US patents, 14 software packages, and ~140 journal articles and conference proceedings.

I have actively been teaching since 2000, performed in seven higher education institutes. I have developed 7 courses anew: Bioinformatics, Computational and Systems Biology, Bayesian Networks, Medical Informatics, Principles of Bioengineering (and associated lab), Microarrays, Engineering and Sciences, in addition to existing classes I've taught in the areas of Electrical and Computer Engineering, Computer Science, Bioengineering, Bioinformatics, Biostatistics, and Physics. I have co-authored seven book chapters and one textbook on Bioinformatics. I have participated in developing Bioengineering undergraduate curricula at Yeditepe and Bilgi Universities (as the founding chair in the latter) as well as graduate/undergraduate curricula for Biotechnology, Bioinformatics, and Complex Biosystems programs at Yeditepe U. and UNL. As part of my teaching and research efforts, I have supervised and trained summer interns, IT personnel, BS/MS/PhD students, post-docs and research scientists totaling around 50 people over the last 23 years.

B. Funding Information

2002-2003	NIH/NIDDK; Project No: 5U24DK058739-03; "NIDDK Biotechnology Center"; Libermann (PI); \$595,856; Role: Investigator
2002-2007	NIH/NCI; Project No: P01 CA92664-03; "Spatial and Temporal Regulation of Angiogenesis"; Dvorak (PI); \$141,237; Role: Investigator
2003-2005	NIH/NIAID; Project No: P01 AI041521; "Costimulation and Cytokines in Tolerance"; Turka (PI); \$1,459,884; Role: Investigator
2003-2005	NIH/NCI; Project No: 1R21 CA108303-01; "Proteomics and Biomarkers for Hepatocellular Cancer"; Afdahl (PI); \$100,000; Role: Investigator
2004-2009	NIH/NCI; Project No: P01 HL076540; "Endothelial Cell Phenotypes in Health and Disease"; Aird (PI); \$80,000; Role: Investigator

2005-2007 NIH/NIAID; Project No: R21 CA107352-01; “Novel Approaches to Gene Profiling in Ovarian Cancer”; Libermann (PI); \$86,000; Role: Investigator

2006-2010 Michigan State University-NAY Project; Project No: MSU 95464; “Direct Dedifferentiation of Primary Somatic Cells”, Cibelli (PI); Role: Consultant

2007-2010 King Abdulaziz City for Science and Technology; Project No: 26-64; “Camel Genome Project Phase I”; Al-Swailem (PI), Otu (Co-PI); \$519,281.

2009-2012 The Dubai Harvard Foundation for Medical Research; “Analysis of high-throughput genomic data using an integrated approach; Otu (PI); \$182,000

2011-2013 Istanbul Bilgi University Research Fund; “Human Whole Genome Sequencing” Otu (PI); \$25,000

2011-2013 The Scientific and Technological Research Council of Turkey; Project No: 111E042; “Bayesian Network Analysis of High Throughput Biological Data: A Systems Biology Approach”; Otu (PI); \$85,000

2016-2021 NIH/NIA; Project No: R01AG051658; “Advancing the Understanding of Postoperative Delirium Mechanisms via Multi-Omics”; Marcantonio/Libermann (MPI’s), Otu (Co-PI); ~\$2.3M

2018-2021 NIH/NLM; Project No: R21LM012759; “Identification and characterization of interaction atlases in human”; Otu (PI); \$443,862

2018-2024 NIH/NIA; Project No: P01AG031720; “Delirium, Dementia, and the Vulnerable Brain: An Integrative Approach”; Inouye (PI); ~\$15M – “The role of inflammation in the pathophysiology of delirium and its associated long term cognitive decline (Project 2)”; Marcantonio/Libermann (MPI’s), Otu (Co-PI); ~2M

2020-2021 The University of Nebraska Foundation, Jane Robertson Layman Fund; “Integrating Meta-Multiomic Data Using Probabilistic Graph Representations”; Otu (PI); \$10,000

2022-2027 NIH/NIA; Project No: R01AG051658; “AD/ABR and biological aging proteomic signatures in the etiopathology of delirium and its associated long-term cognitive decline”; Marcantonio/Libermann (MPI’s), Otu (Co-PI); ~\$4.2M

2025 DARPA; eX Virentia (eXVi) Phase 0, “Plants as Silent Sentinels”; Cutler (Teledyne), Boehm (UNL) (MPIs); Otu (Co-PI); ~400K

Pending/In Preparation:

Identification of Bacterial Interaction and Association Networks Using Genomic and Multi-Omic Data (To be resubmitted as NSF/BIO 21-509, Otu – PI)

C. Report of Current Research Activities

<i>Project</i>	<i>Role</i>
Gene Interaction Atlas Generation	Method Development/Supervision
Applications of Random Matrix Theory on Biological Networks	Method Development/Supervision
Predictive Models for Methylation Disposition of CpG Islands	Method Development/Supervision
Probabilistic Graph Representations for Multi-omic Data Integration in Human and Bacteria	Method Development/Supervision
Comparative Analysis of Gastrointestinal Cancers using Network Theory	Method Development/Supervision

Correlation Network/Pathway Analysis using Network Pruning, Bisociation, and Compressive Sensing	Method Development/Supervision
Biomarker discovery in NASH disease	Method Development/ Data Analysis (w/Harvard Medical School)
TGFB3 involvement in cleft palate	Method Development/ Data Analysis (w/UNMC)
Effect of Simvastatin in Bone Regeneration Following Dental Grafts	Method Development/ Data Analysis (w/UNMC)
Exosome Proteomics	Method Development/ Data Analysis (w/Harvard Medical School)
Multi-omics of Delirium	Method Development/ Data Analysis/Leadership/Training (w/Harvard Medical School)
Mechanisms of Cellular Reprogramming	Method Development/Data Analysis (w/Michigan State University)
Probiotic Identification Using Bacterial Interaction and Association Networks	Method Development/ Data Analysis
Proteomics of IBD	Method Development/ Data Analysis (w/Harvard Medical School)

D. Report of Teaching

Graduate and Undergraduate Courses

i. Bogazici University, Istanbul, Turkey

- 1996 Department of Electrical and Electronics Engineering. EE 374 Communication Engineering (current listing). Lecturer. ~20 senior EE students. Teaching: 2 hrs/week. Preparation: 3hrs/week. Duration: Fall Semester.
- 1997 Department of Electrical and Electronics Engineering. EE 477 Digital Communications (current listing). Lecturer. ~20 senior EE students. Teaching: 2 hrs/week. Preparation: 3hrs/week. Duration: Spring Semester.
- 1997 Department of Electrical and Electronics Engineering. EE 210 Introduction to Electrical Engineering (current listing). Lecturer. ~50 sophomore/junior EE students. Teaching: 2 hrs/week. Preparation: 3hrs/week. Duration: Spring Semester.

ii. University of Nebraska-Lincoln, Lincoln, NE USA

- 2000-2002 Department of Electrical Engineering ELEC 464/864 Digital Communication Systems. Core Faculty. ~10 senior Electrical Engineering students and ~10 Electrical Engineering graduate students. Teaching: 3hrs/week. Preparation: 5hrs/week. Duration: Spring Semester (each year).

- 2000-2002 Department of Electrical Engineering. ELEC 462/862 Communication Systems. Core Faculty. ~10 senior Electrical Engineering students and ~10 Electrical Engineering graduate students. Teaching: 3hrs/week. Preparation: 5hrs/week. Duration: Fall Semester (each year).
- 2013- Department of Electrical and Computer Engineering. ELEC 450/850 Bioinformatics. Core Faculty. ~15 senior/graduate engineering students. Teaching: 3hrs/week. Preparation: 5hrs/week. Duration: Fall Semester (each year).
- 2013- Department of Electrical and Computer Engineering. ELEC 498/898 (later received the permanent course number ELEC 453/853) Computational and Systems Biology. Core Faculty. ~15 senior/graduate engineering students. Teaching: 3hrs/week. Preparation: 5hrs/week. Duration: Spring Semester (each year).
- 2016- Department of Electrical and Computer Engineering. ELEC 996 Bayesian Networks. Core Faculty. ~15 graduate engineering/sciences students, Teaching: 3hrs/week. Preparation: 5hrs/week. Duration: Spring Semester (each odd year).
- 2017- Department of Electrical and Computer Engineering. ECEN 215 Electronics and Circuits I. Core Faculty. ~90 undergraduate engineering/sciences students, Teaching: 3hrs/week. Preparation: 5hrs/week. Duration: Fall Semester (each year).
- iii. Northeastern University, Boston, MA USA
- 2005 Biology Department, Graduate Program in Bioinformatics. BIO G385, Seminar in Bioinformatics. Core Faculty. ~5 Bioinformatics graduate students. Teaching: 2hrs/week. Preparation: 5hrs/week. Duration: Fall Semester.
- iv. Yeditepe University Istanbul, Turkey
- 2006 Department of Genetics and Bioengineering GBE 313, Experimental Bioengineering Lab. Core Faculty. 6 GBE undergraduate students. Teaching: 4hrs/week. Preparation: 5hrs/week. Duration: Fall Semester.
- 2007 Department of Genetics and Bioengineering GBE 311, Principles of Bioengineering. Core Faculty. 13 GBE undergraduate students. Teaching: 3hrs/week. Preparation: 5hrs/week. Duration: Spring Semester.
- v. Sabanci University Istanbul, Turkey
- 2008 Department of Biological Sciences and Bioengineering BIO 512, Advanced Computational Biology. Core Faculty. 3 graduate students; 9 participants. Teaching: 3hrs/week. Preparation: 7hrs/week. Duration: Spring Semester.
- vi. Acibadem University Istanbul, Turkey

- 2010 Medical School, MED 106, Medical Informatics. Core Faculty. 23 undergraduate students. Teaching: 5hrs/week. Preparation: 5hrs/week. Duration: Spring Semester.
- vii. Istanbul Bilgi University Istanbul, Turkey
- 2010 College of Engineering, ENG 179, Engineering in Society. Guest Lecturer. 12 undergraduate students. Teaching: 3hrs lecture on Human Genome Project. Duration: Fall Semester.
- 2011 College of Engineering, ENG 180, Engineering and Sciences. Adjunct Faculty. 43 undergraduate students. Teaching: 10hrs lecture on Introduction to Bioengineering. Duration: Spring Semester.
- 2011 College of Engineering, PHYS 101 Physics I. Adjunct Faculty. 43 undergraduate students. Teaching: Problem Sessions 2hrs/week. Duration: Spring Semester.
- 2011 College of Engineering, PHYS 100 Physics for Scientists and Engineers. Faculty. ~60 undergraduate students. Teaching: Lecture, 2 sections, 3 hrs/week per section. Problem Sessions / Laboratory, 3 sections, 2hrs/week per section. Duration: Fall Semester.
- 2012 College of Engineering, PHYS 100 Physics for Scientists and Engineers. Faculty. ~45 undergraduate students. Teaching: Lecture, 3 hrs/week. Duration: Spring Semester.
- 2012 College of Engineering, ENGR 230 Probability and Random Processes. Faculty. ~30 undergraduate students. Teaching: Lecture, 2 hrs/week. PS / Lab, 2hrs/week. Duration: Spring Semester.
- 2012 College of Engineering, PHYS 100 Physics for Scientists and Engineers. Faculty. ~65 undergraduate students. Teaching: Lecture, 3 hrs/week. Duration: Fall Semester.
- 2012 College of Engineering, BIOE 341 Bioinformatics. Faculty. ~10 undergraduate students. Teaching: Lecture, 2 hrs/week. PS / Lab, 2hrs/week. Duration: Fall Semester.
- 2013 College of Engineering, BIOE 346 Microarrays. Faculty. 8 undergraduate students. Teaching: Lecture, 3 hrs/week. Duration: Spring Semester.
- 2013 College of Engineering, BIOE 241 Fundamentals of Biostatistics and Experimental Design. Faculty. ~30 undergraduate students. Teaching: Lecture, 3 hrs/week. PS / Lab, 2hrs/week. Duration: Spring Semester.

Local Invited Teaching Presentations

- 2002 Characterization of DNA Sequences. BIDMC Genomics Center Invited Lecture. Attending: ~20 HMS Faculty, Post-doctoral Fellows and Residents. Presentation and Follow-up: 5 hrs. Preparation: 20 hrs.
- 2003 Networks. BIDMC Genomics Center Core Meeting. Attending ~15 Post-doctoral Fellows and Residents. Presentation: 1 hr. Preparation: 10 hrs.

2004	Bioinformatics Core at BIDMC Genomics Center. MIT CSBI BioMicro Center. ~50 Faculty, Post-doctoral fellows and graduate students. Presentation and Follow-up: 2 hrs. Preparation: 10 hrs.
2005	Progress of Challenges in Bioinformatics: From Sequence to Function to Networks. Boston University Bioinformatics Program. ~20 Faculty, Post-doctoral fellows and graduate students. Presentation and Follow-up: 5 hrs. Preparation: 20 hrs.

Advisees and trainees

2003	Jian Li	PhD student at Baylor College of Medicine
2003	Charles Bailey	Student at Tufts School of Veterinary Medicine
2003	Chris Porter	Children's Hospital IT department
2003	Osman Osman	Student at MIT EECS Dept.
2003-2006	Shakir A. Kolia	Research Associate at BIDMC Genomics Center Bioinformatics Core
2005-2006	Taehyun Park	Research Associate at BIDMC Genomics Center
2006-2008	Al-Arawi MS, Al-Khider AY, Al-Muhaimeed AN, Al-Qahtani FH, Al-Manee MM, Al-Shomrani BM (KACST Bioinformatics Group)	
2007-2013	Senol Isci	PhD student at Bogazici University Biomedical Engineering Institute
2007-2009	Caner Akdemir	Undergraduate student at Yeditepe University Department of Computer Engineering and Department of Genetics and Bioengineering
2007-2011	Cem Meydan	PhD student at Sabanci University Department of Biological Sciences and Bioengineering
2007-2011	Aydin Albayrak	PhD student at Sabanci University Department of Biological Sciences and Bioengineering
2007-2011	Yasin Bakis	PhD student at Sabanci University Department of Biological Sciences and Bioengineering
2010-2013	Haluk Dogan	Teaching Assistant at Istanbul Bilgi University, Department of Bioengineering and MS student at Bogazici University Department of Computer Engineering
2011-2013	Umut Agyuz	MS Student, Bogazici University Institute of Biomedical Engineering
2011-2013	Melike Korucuoglu	MS Student, Bogazici University Department of Computer Engineering
2013-2016	Haluk Dogan	PhD student at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering
2014-2016	Zeynep Hakguder	PhD student at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering

2014-2020	Dicle Yalcin	PhD student at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering
2016-	Undergrad RA(Fund)	Jemimah Ndugwa (UNL), Beibei Xiong (UCARE), Ege Ozcan (UNL), Nirmitee Gite (UNL), Jenna Knudtson (UNL), Kyle Hancock (UCARE), Parker Brown (SNERP), Tate Anderson (SNERP), Adam Sauer (UNL), Sam Goddard (UCARE), Elizabeth Westfall (UCARE), Jacob Ashman (UCARE)
2016-	Sree Chanumolu	Postdoctoral researcher at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering
2017-	Mustafa Albahrani	Adjunct Research Scientist
2017-2023	Bridget Tripp	PhD student at University of Nebraska-Lincoln, Program in Complex Biosystems
2018	Yu Shi	PhD student at University of Nebraska-Lincoln, Program in Complex Biosystems (rotation)
2020-2022	Dillon Burgess	MS student at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering
2022-2023	Jacob Abaare	PhD student at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering
2023-	Cooper Schmer	MS student at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering

Regional, national, or international contributions

1997	A Compression Algorithm that Preserves NDVI and NDWI Values. Conference Presentation. Asilomar Conference on Circuits, Systems and Computers. Monterey, California, USA.
1998	A Joint Source Channel Coder with Block Constraints. Conference Presentation. IEEE International Conference on Acoustics, Speech, and Signal Processing. Seattle, Washington, USA.
1999	Issues in Joint Source Channel Coding. Seminar. UNL EE Dept. Journal Club. Lincoln, NE USA.
2001	A New Approach to Sequence Assembly Using Divide and Conquer Algorithms. Conference Presentation. 3rd Georgia Tech-Emory International Conference on Bioinformatics. Atlanta, Georgia, USA.
2002	An Information-theoretic Sequence Distance Measure with applications to Phylogeny Analysis. Seminar. UNL EE Dept. Journal Club. Lincoln, NE USA.
2004	A Seminar in Bioinformatics: Looking for Familiar Faces in the Neighborhood. Invited Lecture. Bogazici University, Institute of Biomedical Engineering, Istanbul, Turkey.

- 2004 Challenges in Bioinformatics: DNA Sequence Analysis and Frontiers in Functional Genomics. Invited Lecture. Sabanci University, Faculty of Engineering and Natural Sciences, Istanbul, Turkey.
- 2004 From Sequence to Function: Issues in Computational Biology. Invited Lecture. Koc University, Department of Chemical and Biological Engineering, Istanbul, Turkey.
- 2006 Progress of Challenges in Bioinformatics: From Sequence to Function to Networks. Invited Lecture. Yeditepe University, Department of Genetics and Bioengineering, Istanbul, Turkey.
- 2007 Challenges in Bioinformatics: Invited Lecture. King Abdulaziz City for Science and Technology, Riyadh, KSA.
- 2007 Experimental Design and Analysis of High-Throughput Biological Data. Invited Lecture. Sabanci University, Faculty of Engineering and Natural Sciences, Istanbul, Turkey.
- 2007 DNA Sequence Analysis and Applications in Functional Genomics. Seminar. Bogazici University, Institute of Biomedical Engineering, Istanbul, Turkey.
- 2007 Algorithmic and practical approaches to issues in Bioinformatics. Seminar. Izmir Institute of Technology, Izmir, Turkey.
- 2008 Computational Approaches in DNA Sequence Analysis and Functional Genomics and Proteomics. Seminar. Bilgi University, Istanbul, Turkey.
- 2008 Computational Approaches in DNA Sequence Analysis and Functional Genomics and Proteomics. Seminar. Halic University, Istanbul, Turkey.
- 2009 Biomarker Discovery – Pregnancy Success. Seminar. Michigan State University, East Lansing, MI USA
- 2009 Analysis and Applications of High-throughput Biological Data. Seminar. University of Nebraska Medical Center, Lincoln/Omaha, NE USA
- 2009 Bioinformatic Approaches for High-throughput Biological Data Analysis. Seminar. Middle East Technical University, Ankara, Turkey
- 2010 Looking for Familiar Faces in the Old Neighborhood. Invited Lecture. Bogazici University, Department of Electrical and Electronics Engineering, Istanbul, Turkey.
- 2010 From Sequence to Function to Networks: Analysis Issues in Bioinformatics. Istanbul Technical University, Program in Biomedical Engineering, Istanbul, Turkey.
- 2010 Sequence, Function, and Networks based Analysis Issues in Bioinformatics. Istanbul University, Institute for Experimental Medicine, Istanbul, Turkey. Similar talk is given at N.K.U. Faculty of Engineering Corlu, Tekirdag, Kadir Has University, Fatih University, Bogazici University (Department of Computer Engineering), Bilgi University, Pakize Tarzi Laboratories, all in Istanbul, Turkey
- 2010 Algorithms in Bioinformatics, 9th National Medical Genetics Congress, Istanbul Turkey
- 2011 Contemporary Issues in and Applications of Computational Biology, Inonu University, School of Medicine, Malatya, Turkey

2011	Bioengineering Education in Turkey, Yildiz Technical University, Bioengineering Days.
2011	Bayesian Network based pathway analysis of microarray data, European Biotechnology Congress, Istanbul, Turkey
2012	Systems Biology, Bogazici University, Molecular Biology and Genetics Weekend, Istanbul, Turkey
2012	Bioinformatics, ITU Biotech, Istanbul, Turkey
2012	A Crash Course on Microarray Data Analysis, DONE Genetics and Bioinformatics, Istanbul, Turkey
2012	Bayesian Pathway Analysis, Sabanci University, Istanbul, Turkey
2012	HTBD Analysis within a BN Framework, Istanbul University, Institute for Experimental Medicine, Istanbul, Turkey.
2014	Pathway Analysis of Biological Data using Bayesian Networks. University of Nebraska Medical Center, Omaha, NE USA
2018	Keynote Speaker, UNL Plant Science Retreat Network Analysis of Multiomic Data Using Probabilistic Graph Representations
2019	Probabilistic Graph Models for Biological Data Analysis Using External Knowledge, Northwestern University, Evanston, IL USA
2019	Bioinformatics @ ECE, External Advisory Board Meeting, Electrical and Computer Engineering, UNL, Lincoln, NE USA
2020	Omic Data Analysis Using Network Science, Istanbul Bilgi University, Department of Genetics and Bioengineering
2020	Network-based approaches for biological data analysis, Mini-symposium on AI/machine learning, Northwestern University
2021	Omics Data Analysis in Systems Biology, Biotech Conference, Bogazici University
2021	Utilization of Bayesian Networks in Systems Biology, ICGEB International Seminar Programme, South Africa
2023	Computational and Systems Biology, IEEE/UNL
2025	An Integrated Clinical Multiomics Platform for Preventative, Predictive, and Personalized Medicine, Istinye University

Description of major curriculum offerings, teaching cases or innovative educational programs developed

2007	Development of Undergraduate Curriculum at Yeditepe University, Department of Genetics and Bioengineering, Istanbul, Turkey.
2007	Development of Graduate Curriculum (both MS and PhD) at Yeditepe University, Bioengineering Institute, Istanbul, Turkey.
2010	Development of Undergraduate Curriculum at Istanbul Bilgi University, Department of Bioengineering, Istanbul, Turkey.
2013	Development of Bioinformatics Program at University of Nebraska-Lincoln, Department of Electrical and Computer Engineering.
2017	Development of the Complex Biosystems PhD Program at University of Nebraska-Lincoln.

Part III: Bibliography

Books

1. Bioinformatics: A One Semester Course, Khalid Sayood and Hasan H. Otu, Springer, 1st Edition (2023) ISBN: 978-3-031-20016-8.

Original Articles

1. Otu HH, Sayood K. "A joint source/channel coder with block constraints" *IEEE Transactions on Communications* 1999; 47(11):1615-1618.
2. Sayood K, Otu HH, Demir N. "Joint source/channel coding for variable length codes" *IEEE Transactions on Communications* 2000; 48(5):787-794.
3. Otu HH, Sayood K. "A divide and conquer approach to fragment assembly" *Bioinformatics* 2003; 19(1):22-29.
4. Fortunel NO*, Otu HH*, Ng HH*, Chen J, Mu X, Chevassut T, Li X, Joseph M, Bailey C, Hatzfeld JA, Usta F, Vega VB, Long PM, Liberman TA, Lim B. "Comment on 'Stemness: Transcriptional Profiling of Embryonic and Adult Stem Cells' and 'A Stem Cell Molecular Signature'" *Science* 2003; 302:393b.
5. Otu HH, Sayood K. "A new sequence distance measure for phylogenetic tree construction" *Bioinformatics* 2003; 19(16):2122-2130.
6. Bastola DR, Otu HH, Doukas SE, Sayood K, Hinrichs SH, Iwen PC. "Utilization of the relative complexity measure to construct a phylogenetic tree for fungi" *Mycological Research* 2004; 108(2):117-125. [This journal is called "Fungal Biology" as of Jan. 2010].
7. Voisine P, Ruel M, Khan TA, Bianchi C, Xu SH, Kohane I, Libermann TA, Otu HH, Saltiel AR, Sellke FW "Differences in gene expression profiles of diabetic and non-diabetic patients undergoing cardiopulmonary bypass and cardioplegic arrest" *Circulation* 2004; 110:II-280-286.
8. von Stechow D, Zurakowski D, Pettit AR, Muller R, Gronowicz G, Otu HH, Libermann TA, Alexander JM "Differential transcriptional effects of PTH and estrogen during anabolic bone formation" *J. Cell. Biochem.* 2004; 93:476-490.
9. Aivado M, Spentzos D, Alterovitz G, Otu HH, Grall F, Porter C., Cho JY, Giagounidis AAN, Germing U, Ramoni M, Libermann TA "Optimization and evaluation of surface-enhanced laser desorption/ionization time-of-flight mass spectrometry (SELDI-TOF MS) with reversed-phase protein arrays for protein profiling" *Clinical Chemistry and Laboratory Medicine* 2005; 43(2), 133-140.
10. Jones J, Otu HH, Spentzos D, Kolia S, Inan M, Beecken WD, Fellbaum C, Gu X, Joseph M, Jonas D, Libermann TA. "Gene signatures of progression and metastasis in Renal Cell Cancer" *Clinical Cancer Research* 2005; 11:5730-5739.
11. Spentzos D, Levine DA, Kolia S, Otu HH, Boyd J, Libermann TA, Cannistra SA. "Unique gene expression profile based upon pathologic response in epithelial ovarian cancer" *Journal of Clinical Oncology* 2005; 23(31):7911-7918.
12. Wada Y, Otu HH, Wu S, Abid R, Okada H, Libermann TA, Kodama T, Shih S-C, Minami T, Aird WC. "Preconditioning of primary human endothelial cells with inflammatory mediators alters the "set point" of the cell" *FASEB Journal* 2005; 19(13):1914-1916.
13. Ijiri K, Zerbin LF, Peng H, Correa RG, Lu B, Walsh N, Zhao Y, Taniguchi N, Huang XL, Otu HH, Hong W, Wang JF, Komiya S, Ducey P., Rahman MU, Flavell RA, Libermann TA,

*These authors contributed equally to this work

- Goldring MB. "A novel role for GADD45 β as a mediator of MMP-13 gene expression during chondrocyte terminal differentiation" *Journal of Biological Chemistry* 2005; 280 (46): 38544-38555.
14. Ramnarain DB, Park S, Lee DY, Hatanpaa KJ, Scoggin SO, Otu HH, Libermann TA, Raisanen JM, Ashfaq R, Wong ET, Wu J, Elliott R, Habib AA. "Differential gene expression analysis reveals generation of an autocrine loop by a mutant EGFR in glioma cells" *Cancer Research* 2006; 66(2): 867-874.
 15. El Essawy B, Otu HH, Choy B, Xiao XZ, Libermann TA, Strom T. "Proteomic analysis of the allograft response" *Transplantation* 2006; 82(2): 267-274.
 16. Kocabas AM, Crosby J, Ross PJ, Otu HH, Beyhan Z, Can H, Leong TW, Rosa GJM, Halgren RG, Lim B, Fernandez E and Cibelli JB. "The transcriptome of human oocytes" *Proceedings of the National Academy of Sciences*, 2006; 103: 14027-14032.
 17. Steidl U, Rosenbauer F, Verhaak RGW, Gu X, Ebralidze A., Otu HH, Klippel S, Steidl C, Bruns I, Costa DB, Wagner K, Aivado M, Kobbe G, Valk PJ, Passequé E, Libermann TA, Delwel R, Tenen DG. "Essential role of Jun family transcription factors in PU.1 knockdown-induced leukemic stem cells" *Nature Genetics*, 2006; 38(11):1269-77.
 18. Abid R, Shih SC, Otu HH, Curiel DC, Spokes KC, Aird WC. "A novel class of vascular endothelial growth factor-responsive genes that require forkhead activity for expression" *Journal of Biological Chemistry* 2006; 281(46):35544-53.
 19. Zerbini LF, Czibere A, Wang Y, Correa RG, Otu HH, Joseph M, Takayasu Y, Silver M, Gu X, Ruchusatsawat K, Li L, Sarkar D, Zhou JR, Fisher PB, Libermann TA. "A novel pathway involving melanoma differentiation associated gene-7/interleukin-24 mediates nonsteroidal anti-inflammatory drug-induced apoptosis and growth arrest of cancer cells" *Cancer Res.* 2006; 66(24):11922-31.
 20. Aivado M, Spentzos D, Germing U, Alterowitz G, Meng XY, Grall F, Giagounidis AAN, Klement G, Steidl U, Otu HH, Czibere A, Prall WC, Iking-Konert C, Shayne M, Ramoni MF, Gattermann N, Haas R, Mitsiades CS, Fung ET, Libermann TA. "Serum proteome profiling detects myelodysplastic syndromes and identifies CXC chemokine ligands 4 and 7 as markers for advanced disease" *Proceedings of the National Academy of Sciences*, 2007; 104(4):1307-12.
 21. Otu HH, Can H, Spentzos D, Nelson RG, Hanson RL, Looker HC, Knowler WC, Monroy M, Libermann TA, Karumanchi SA, Thadhani R. "Prediction of diabetic nephropathy using urine proteomic profiling 10 years prior to development of nephropathy" *Diabetes Care*, 2007; 30:638-643.
 22. Otu HH, Naxerova K, Can H, Ho K, Nesbitt N, Libermann TA, Karp SJ. "Restoration of liver mass after injury requires proliferative and not embryonic transcriptional patterns" *Journal of Biological Chemistry*, 2007; 282(15):11197-204.
 23. Gu X, Zerbini LF, Otu HH, Joseph MG, Correa R, Libermann TA. "Reduced PDEF expression increases invasion and expression of mesenchymal genes in prostate cancer cells" *Cancer Research*, 2007; 67(9):4219-26.
 24. Kennedy AR, Pissios P, Otu HH, Xue B, Asakura K, Furukawa N, Marino FE, Liu F, Kahn B, Libermann T, Maratos-Flier E. "A high fat, ketogenic diet induces a unique metabolic state in mice" *American Journal of Physiology-Endocrinology and Metabolism*, 2007; 292(6):E1724-39.
 25. Ramlawi B, Otu HH, Rudolph JL, Mieno S, Kohane IS, Can H, Libermann TA, Marcantonio ER, Bianchi C, Sellke FW. "Genomic expression pathways associated with brain injury after cardiopulmonary bypass" *Journal of Thoracic and Cardiovascular Surgery*, 2007; 134(4):996-1005.

26. Zhang X, Zhang L, Yang H, Huang X, Otu HH, Libermann T, DeWolf WC, Khosravi-Far R, Olumi AF. "c-Fos as a proapoptotic agent in TRAIL-induced apoptosis in prostate cancer cells" *Cancer Research*, 2007; 67(19):9425-9434.
27. Ramlawi B, Otu HH, Mieno S, Boodhwani M, Sodha NR, Clements RT, Bianchi C, Sellke FW. "Oxidative stress and atrial fibrillation after cardiac surgery: a case-control study" *Ann. Thoracic Surgery*, 2007; 84(4):1166 - 1173.
28. Zinkin NT, Grall F, Bhaskar KK, Otu HH, Spentzos D, Kalmowitz BD, Wells M, Guerrero M, Asara J, Libermann TA, Afdhal NH. "Serum proteomics and biomarkers in hepatocellular carcinoma and chronic liver disease" *Clinical Cancer Research*, 2008; 14(2):470-477.
29. Jones J, Otu HH, Grall F, Spentzos D, Can H, Aivado M, Figlin RA, Belldegrun AS, Pantuck AJ, Libermann TA. "Proteomic identification of interleukin-2 therapy response in metastatic renal cell cancer" *Journal of Urology*, 2008; 179(2):730-736.
30. Marselli L, Thorne J, Ahn JB, Omer A, Sgroi DC, Libermann T, Otu HH, Sharma A, Bonner-Weir S, Weir GC. "Gene expression of purified beta cell tissue obtained from human pancreas with laser capture microdissection" *The Journal of Clinical Endocrinology & Metabolism*, 2008; 93(3):1046-1053.
31. Nikolova-Krstevski V, Bhasin M, Otu HH, Libermann T, Oettgen P. "Gene expression analysis of embryonic stem cells expressing VE-cadherin (CD144) during endothelial differentiation" *BMC Genomics*, 2008; 9:240.
32. Ijiri K, Zerbini LFC, Peng H, Otu HH, Tsuchimochi K, Otero M, Walsh N, Bierbaum BE, Mattingly D, van Flandern G, Komiya S, Aigner T, Libermann TA, Goldring MB. "Differential expression of GADD45beta in normal and osteoarthritic cartilage: potential role in homeostasis of articular chondrocytes" *Arthritis & Rheumatism*, 2008; 58(7):2075-87.
33. Dusek JA*, Otu HH*, Wohlhueter AL, Bhasin M, Zerbini LF, Joseph MG, Benson H, Libermann TA. "Genomic counter-stress changes induced by the relaxation response" *PLoS ONE*, 2008; 3(7):e2576.
34. Russell DJ, Otu HH, Sayood K. "Grammar-based distance in progressive multiple sequence alignment" *BMC Bioinformatics*, 2008; 9:306.
35. Haram KM, Peltier HJ, Lu B, Bhasin M, Otu HH, Choy B, Regan M, Libermann TA, Latham GJ, Sanda MG, Arredouani MS. "Gene expression profile of mouse prostate tumors reveals dysregulations in major biological processes and identifies potential murine targets for preclinical development of human prostate cancer therapy" *The Prostate*, 2008; 68(14):1517-30.
36. Prall WC, Czibere A, Grall F, Spentzos D, Steidl U, Giagounidis AA, Kuendgen A, Otu H, Rong A, Libermann TA, Germing U, Gattermann N, Haas R, Aivado M. "Differential gene expression of bone marrow-derived CD34+ cells is associated with survival of patients suffering from myelodysplastic syndrome" *Int. J. Hematol.* 2009; 89(2):173-87.
37. Ramlawi B, Otu HH, Russo MJ, Novick RJ, Bianchi C, Sellke FW. "Aprotinin attenuates genomic expression variability following cardiac surgery" *J. Card. Surg.*, 2009; 24, 772-780.
38. Al-Swailem AM, Shehata MM, Abu-Duhier FM, Al-Yamani EJ, Al-Busadah KA, Al-Arawi MS, Al-Khider AY, Al-Muhaimeed AN, Al-Qahtani FH, Al-Manee MM, Al-Shomrani BM, Al-Qhtani SM, Al-Harthi AS, Akdemir KC, Inan MS, Otu HH. "Sequencing, analysis, and annotation of expressed sequence tags for camelus dromedaries" *PLoS ONE*, 2010; 5(5):e10720.

*These authors contributed equally to this work

39. Bhasin M, Yuan L, Keskin DB, Otu HH, Libermann TA, Oettgen P. "Bioinformatic identification and characterization of human endothelial cell-restricted genes" *BMC Genomics*, 2010; 11:342.
 40. Ho KJ, Do N, Otu HH, Dib MJ, Ren X, Enjyoji K, Robson SC, Terwilliger EF, Karp SJ. "Tob1 is a constitutively expressed repressor of liver regeneration" *Journal of Experimental Medicine*, 2010; 207(6):1197-208.
 41. Kang J, Yoo J, Lee S, Tang W, Aguilar B, Swapnika R, Inho C, Otu HH, Shin JW, Dotto GP, Koh CJ, Detmar M, Hong, YK. "An exquisite cross-control mechanism among endothelial cell fate regulators directs the plasticity and heterogeneity of lymphatic endothelial cells" *Blood*, 2010; 116(1):140-150.
 42. Albayrak A, Otu HH, Sezerman OU. "Clustering of protein subfamilies into functional subtypes using relative complexity measure" *BMC Bioinformatics*, 2010; 11(1):428.
 43. Isci S, Jones J, Ozturk C, Otu HH. "Pathway analysis of high throughput biological data within a Bayesian Network framework" *Bioinformatics*, 2011; 27(12):1667-1674.
 44. Wang K, Otu HH, Chen Y, Lee Y, Latham K, Cibelli JB. "Reprogrammed transcriptome in rhesus-bovine interspecies somatic cell nuclear transfer embryos" *PLoS One*, 2011; 6(7):e22197.
 45. Bakis Y, Otu HH, Sezerman OU. "Inferring Phylogenies from Physico-Chemical Properties of DNA" *American Journal of Bioinformatics Research*, 2012; 2(1): 1-6
 46. Iager AE*, Kocabas AM*, Otu HH*, Ruppel P, Langerveld A, Schnarr P, Suarez M, Jarrett JC, Conaghan J, Rosa GJM, Fernández E, Rawlins RG, Cibelli JB, Crosby JA. "Identification of a novel gene signature in human cumulus cells predictive of an oocyte's pregnancy potential" *Fertility and Sterility*, 2013; 99 (3): 745-752.
 47. Meydan C, Otu HH, Sezerman OU. "Prediction of peptides binding to MHC class I and II alleles by temporal motif mining" *BMC Bioinformatics*, 2013; 14(Suppl 2):S13.
 48. Bakis Y, Otu HH, Tasci N, Meydan C, Bilgin N, Yuzbasioglu S, Sezerman OU. "Testing robustness of relative complexity measure method constructing robust phylogenetic trees for *Galanthus L.* using the relative complexity measure" *BMC Bioinformatics*, 2013; 14:20.
 49. Coskun S, Otu HH, Awartani KA, Al-Alwan LA, Al-Hassan S, Al-Mayman H, Kaya N, Inan MS. "Gene expression profiling of granulosa cells from PCOS patients following varying doses of human chorionic gonadotropin" *J Assist Reprod Genet.*, 2013; 30(3):341-352.
 50. Isci S, Dogan H, Ozturk C, Otu HH. "Bayesian Network Prior: Network Analysis of Biological Data Using External Knowledge" *Bioinformatics*, 2014; 30(6):860-867.
 51. Dogan H, Can H, Otu HH. "Whole Genome Sequencing of a Turkish Individual" *PLoS One*, 2014; 9(1): e85233.
 52. Korucuoglu M, Isci S, Ozgur A, Otu HH. "Bayesian Pathway Analysis of Cancer Microarray Data" *PLoS One*, 2014; 9(7): e102803.
 53. Gonzalez-Muñoz E, Arboleda-Estudillo Y, Otu HH, Cibelli JB. "Histone chaperone ASF1A is required for maintenance of pluripotency and cellular reprogramming" *Science*, 2014; 345(6198):822-825.
 54. Yalcin D, Hakguder ZM, Otu HH. "Bioinformatics approaches to single-cell analysis in developmental biology" *Mol Hum Reprod.*, 2016; 22(3):182-192.
 55. Wang F, Kaplan JL, Gold BD, Bhasin MK, Ward NL, Kellermayer R, Kirschner BS, Heyman MB, Dowd SE, Cox SB, Dogan H, Steven B, Ferry GD, Cohen SA, Baldassano RN, Moran CJ, Garnett EA, Drake L, Otu HH, Mirny LA, Libermann TA, Winter HS,
-

- Korolev KS. "Detecting microbial dysbiosis associated with Pediatric Crohn's disease despite the high variability of the gut microbiota" *Cell Rep.*, 2016; 14(4):945-55
56. Ozturk F, Sheldon E, Sharma J, Canturk KM, Otu HH, Nawshad A. "Nicotine Exposure During Pregnancy Results in Persistent Midline Epithelial Seam With Improper Palatal Fusion" *Nic. & Tob. Res.*, 2016; 18(5):604-612.
 57. Bhasin MK, Ndebele K, Bucur O, Yee EU, Otu HH, Plati J, Bullock A, Gu X, Castan E, Zhang P, Najarian R, Muraru MS, Miksad R, Khosravi-Far R, Libermann TA. "Meta-analysis of transcriptome data identifies a novel 5-gene pancreatic adenocarcinoma classifier" *Oncotarget*, 2016; 7(17):23263-23281.
 58. Tomov ML, Olmsted ZT, Dogan H, Gongorurler E, Tsompana M, Otu HH, Buck M, Chang EA, Cibelli J, Paluh JL. "Distinct and Shared Determinants of Cardiomyocyte Contractility in Multi-Lineage Competent Ethnically Diverse Human iPSCs" *Sci Rep.*, 2016; 6:37637.
 59. Dillon ST, Vasunilashorn SM, Ngo L, Otu HH, Inouye SK, Jones RN, Alsop DC, Kuchel GA, Metzger ED, Arnold SE, Marcantonio ER, A. Libermann TA. "Higher C-reactive Protein Levels Predict Postoperative Delirium in Older Patients Undergoing Major Elective Surgery: A Longitudinal Nested Case-Control Study" *Biological Psychiatry*, 2017; 81(2): 145-153.
 60. Vasunilashorn SM, Ngo LH, Chan NY, Zhou W, Dillon ST, Otu HH, Inouye SK, Wyrobnik I, Kuchel GA, McElhaney JE, Xie Z, Alsop DC, Jones RN, Libermann TA, Marcantonio ER. "Development of a Dynamic Multi-Protein Signature of Postoperative Delirium" *The Journal of Gerontology: Series A*, 2019; 74(2):261-268.
 61. Mueller SK, Nocera AL, Dillon ST, Gu X, Otu HH, Libermann TA, Bleier BS. "Non-invasive exosomal proteomic biosignatures including cystatin SN, peroxiredoxin-5, and glycoprotein VI, accurately predict chronic rhinosinusitis with nasal polyps" *Int. Forum Allergy Rhinol.*, 2019; 9(2):177-186.
 62. Workman AD, Nocera AL, Mueller SK, Otu HH, Libermann TA, Bleier BS. "Translating transcription: proteomics in chronic rhinosinusitis with nasal polyps reveals significant discordance with messenger RNA expression" *Int. Forum Allergy Rhinol.*, 2019; 9(7):776-786.
 63. Liu J, Chanumolu SK, Krei Z, Albahrani M, Akhtam A, Jia Z, Wang X, Wang D, Otu HH, Reinhardt RA, Nawshad A. "Identification of genes differentially expressed in simvastatin-induced alveolar bone formation" *Journal of Bone and Mineral Research Plus*, 2019; 3(5):e10122.
 64. Gonzalez-Munoz E, Arboleda-Estudillo Y, Chanumolu SK, Otu HH, Cibelli JB. "Zebrafish macroH2A variants analysis reveals distinct embryo localization and function" *Scientific Reports*, 2019; 9(1):8632.
 65. Xie Z, Kuhns DB, Gu X, Otu HH, Libermann TA, Gallin JI, Parikh SM, Druey KM. "Neutrophil activation in Systemic Capillary Leak Syndrome (Clarkson Disease)" *Journal of Cellular and Molecular Medicine.*, 2019; 23(8):5119-5127.
 66. Chanumolu SK, Albahrani M, Otu HH. "FQStat: a parallel architecture for very high-speed assessment of sequencing quality metrics" *BMC Bioinformatics*, 2019 20(1):424.
 67. Workman AD, Miyake M, Nocera AL, Mueller SK, Finn K, Otu HH, Libermann TA, Bleier BS. "Unexpected effects of systemic steroids on the CRSwNP proteome: Is protein upregulation more important than inhibition" *Int. Forum Allergy Rhinol.*, 2020 10(3):334-342.
 68. Shainker SA, Silver BM, Modest AM, Hacker MR, Hecht JH, Salahuddin S, Dillon ST, Ciampa EJ, D'Alton ME, Otu HH, Abuhamad AZ, Einserson BD, Branch DW, Wylie BJ, Libermann TA, Karumanchi SA. "Placenta Accreta Spectrum: Biomarker Discovery using Plasma Proteomics" *Am J Obstet Gynecol.*, 2020; 223(3):433.e1-433.e14.

69. Morad G, Daisy CC, Otu HH, Liebermann TA, Dillon S, Moses M. “Cdc42-dependent transfer of mir301 from breast cancer-derived extracellular vesicles regulates the matrix modulating ability of astrocytes at the blood–brain barrier” *Int. J. Mol. Sci.*, 2020 21(11):3851.
70. Can H, Chanumolu SK, Gonzalez-Munoz E, Prukudom S, Otu HH*, Cibelli JB*. “Comparative analysis of single-cell transcriptomics in human and zebrafish oocytes” *BMC Genomics*, 2020 21(1):471.
71. Liu J, Chanumolu SK, White KM, Albahrani M, Otu HH, Nawshad A. “Transcriptional analysis of cleft palate in TGF- β 3 mutant mice” *Scientific Reports*, 2020; 10(1):14940.
72. Fong TG, Chan N, Dillon ST, Zhou W, Tripp B, Ngo LH, Otu HH, Inouye SK, Vasunilashorn SM, Cooper Z, Xie Z, Marcantonio E, Libermann T. “Identification of plasma proteome signatures associated with surgery and post-operative outcomes using SOMAscan” *Annals of Surgery*, 2021; 273(4):732-742.
73. Yalcin D, Otu HH. “An unbiased predictive model to detect DNA methylation propensity of CpG islands in the human genome” *Current Bioinformatics*, 2021; 16(2):179-196.
74. Yakah W, Singh P, Brown J, Stoll B, Burrin D, Premkumar MH, Otu HH, Gu X, Dillon ST, Liberman TA, Freedman SD, and Martin CR. “Parenteral lipid emulsions induce unique ileal fatty acid and metabolomic profiles but do not increase the risk of necrotizing enterocolitis in preterm pigs” *Am J Physiol Gastrointest Liver Physiol*, 2021; 320(2):G227-G239.
75. Chanumolu SK, Albahrani M, Can H, Otu HH. “KEGG2Net: deducing gene interaction networks and acyclic graphs from KEGG pathways” *EMBnet.journal*, 2021, 26:e949.
76. Tripp BA, Dillon ST, Yuan M, Asara JM, Vasunilashorn SM, Fong TG, Inouye SK, Metzger ED, Xie Z, Ngo LH, Marcantonio E, Libermann T, Otu HH. “Targeted metabolomics analysis identifies risk and disease markers of postoperative Delirium” *Scientific Reports*, 2021; 11(1):1521.
77. Vasunilashorn SM, Dillon ST, Chan NY, Fong TG, Joseph M, Tripp B, Inouye SK, Xie Z, Ngo LH, Lee C, Elias JA, Otu HH, Marcantonio ER, Libermann TA. “Proteome-wide analysis using Somascan identifies and validates Chitinase-3-like protein 1 as a risk and disease marker of Delirium among older adults undergoing major elective surgery” *The Journal of Gerontology: Series A*, 2022; 77(3):484-493.
78. Tripp BA, Otu HH. “Integration of Multi-omics Data Using Probabilistic Graph Models and External Knowledge” *Current Bioinformatics*, 2022; 17(1):37-47.
79. Chanumolu SK, Otu HH. “Identifying large scale interaction atlases using probabilistic graphs and external knowledge” *J. Clin. Transl. Sci.*, 2022; 6(1):e27.
80. Muruve DA, Debiec H, Dillon ST, Gu X, Plaisier E, Can H, Otu HH, Libermann TA, Ronco P. “Serum protein signatures using aptamer-based proteomics for minimal change disease and membranous nephropathy” *KI Reports*, 2022; 7(7):1539-1556.
81. Dillon ST, Otu HH, Ngo LH, Fong TG, Vasunilashorn SM, Xie Z, Kunze L, Vlassakov K, Abdeen A, Lange J, Earp B, Cooper Z, Schmitt E, Arnold S, Hsieh T, Jones R, Inouye SK, Marcantonio ER, Libermann TA. “Patterns and persistence of perioperative plasma and CSF neuroinflammatory protein biomarkers after elective orthopedic surgery using SOMAscan” *Anesthesia & Analgesia*, 2023; 136(1):163-175.
82. Temilola DO, Wium M, Paccez J, Salukazana AS, Otu HH, Carbone GM, Kaestner L, Cacciatore S, Zerbini LF. “Potential of miRNAs in Plasma Extracellular Vesicle for the Stratification of Prostate Cancer in a South African Population” *Cancers*, 2023; 15(15):3968.

* Co-senior authors

83. Can H*, Chanumolu SK, Nielsen B, Alvarez S, Naldrett MJ, Unlu G, Otu HH*. “Integration of Meta-Multi-Omics Data Using Probabilistic Graphs and External Knowledge” *Cells*, 2023; 12(15):1998.
84. Dillon ST, Vasunilashorn SM, Otu HH, Ngo LH, Fong TG, Gu X, Cavallari M, Touroutoglou A, Shafi M, Inouye SK, Xie Z, Marcantonio ER, Libermann TA. “Aptamer-Based Proteomics Measuring Preoperative Cerebrospinal Fluid Protein Alterations Associated with Postoperative Delirium” *Biomolecules*, 2023; 13(9):1395.
85. Temilola DO, Wium M, Pacciez J, Salukazana AS, Rotimi SO, Otu HH, Carbone GM, Kaestner L, Cacciatore S, Zerbini LF. “Detection of Cancer-Associated Gene Mutations in Urinary Cell-Free DNA among Prostate Cancer Patients in South Africa” *Genes*, 2023; 14(10):1884.
86. Tripp BA, Dillon ST, Yuan M, Asara JM, Vasunilashorn SM, Fong TG, Inouye SK, Ngo LH, Marcantonio E, Xie Z, Libermann T, Otu HH. “Integrated multi-omics analysis of cerebrospinal fluid in postoperative delirium” *Biomolecules*, 2024; 14(8):924.
87. Lai M, Dillon ST, Gu X, Morhardt TL, Xu Y, Chan NY, Xiong B, Can H, Ngo LH, Jin L, Zhang X, Moreira CC, Leite NC, Villela-Nogueira CA, Otu HH, Schattenberg JM, Schuppan D, Afdhal NH, Libermann TA. “Serum Protein Risk Stratification Score for Diagnostic Evaluation of Metabolic Dysfunction-Associated Steatohepatitis (MASH)” *Hepatology Communications*, 2024; 8(12):e0586.
88. Gonçalves McB, Khera T, Otu HH, Narayanan S, Dillon ST, Shanker A, Gu X, Jung Y, Ngo LH, Marcantonio ER, Libermann TA, Subramaniam B. “Multivariable model of postoperative delirium in cardiac surgery patients: proteomic and demographic contributions” *Anesthesia & Analgesia*, 2025; 140(2):476-487.

Proceedings of Meetings

1. Otu HH, Sayood K. “A Compression Algorithm that Preserves NDVI and NDWI Values” Proceedings of Thirty-First Asilomar Conference on Circuits, Systems and Computers, pp. 205-208, 1997 November; Monterey, California, 1997. DOI: 10.1109/ACSSC.1997.680056
2. Otu HH, Sayood K. “A Joint Source Channel Coder with Block Constraints” Proceedings of 1998 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 3461-3464, 1998 May; Seattle, Washington.
3. Arnavut Z, Otu HH. “Compressing Color-mapped Images with Burrows-Wheeler Transformation” Proceedings of Signal Processing Conference IASTED, pp.185-189, 2001 July; Rhodes, Greece.
4. Jones J, Inan M, Otu HH, Cho JY, Gu X, Beecken W, Bailey C, Joseph M, Fellbaum C, Jonas D, Libermann TA. “Transcriptional Profiling for Detection of a Gene Signature in Renal Cell Cancer” 55th Congress of the German Urological Society, Der Urologe (A) Suppl 1: p. S19, 2003; Hamburg.
5. Jones J, Inan MS, Otu HH, Cho JY, Gu XS, Beecken WD, Joseph M, Fellbaum C, Libermann TA. “Gene Expression Analysis for Identification of a Gene Signature in Renal Cell Cancer”, 56th Congress of the German Urological Society, 36th Annual Meeting of the American Society of Nephrology, Journal of the American Society of Nephrology, 14: Suppl S p.367A, November 2003; San Diego, California.
6. El Essawy B, Otu HH, Aivado M, Kim YS, Libermann T, Strom T. “Proteomic analysis of the allograft response” American Transplant Congress, American Journal of Transplantation, 4: Spl. 8 p.512, May 2004; Boston, Massachusetts.

* Corresponding authors

7. Aivado M, Spentzos D, Germing U, Alterovitz G, Meng XY, Grall F, Giagounidis AAN, Klement G, Steidl U, Otu HH, Iking-Konert C, Czibere A, Prall WC, Shayne M, Ramoni MF, Gattermann N, Mitsiades CS, Haas R, Fung ET, Libermann TA. "Serum protein profiling with mass spectrometry for the diagnosis of Myelodysplastic Syndromes (MDS)" 46th Annual Meeting of the American Society of Hematology, Blood (104)11: 2362, December 2004; San Diego, California.
8. Jones J, Inan M, Otu HH, Spentzos D, Gu X, Joseph M, Beecken W, Jonas D, Libermann TA. "Gene expression profiles in Renal Cell Cancer: Characterization of gene signatures in various histological subtypes and application of a metastatic signature" 56th Congress of the German Urological Society, Der Urologe (A) Suppl 1: p. S23, 2004; Hamburg.
9. Ijiri K, Peng H, Zerbini LFC, Walsh N, Wedig M, Gray M, Komiya S, Aigner T, Otu HH, Libermann TA, Goldring MB. "Growth arrest and dna damage-inducible gene 45 β expression in normal and osteoarthritic cartilage" 9th World Congress of the Osteoarthritis Research Society International, Osteoarthritis and Cartilage 12: Suppl. B, p. S8-S9, December 2004; Chicago, Illinois.
10. Aivado, M., Dimitrios Spentzos, Ulrich Germing, Frank Grall, Aristoteles A. N. Giagounidis, Hasan H. Otu, Norbert Gattermann, Rainer Haas, Constantine S. Mitsiades, Eric Fung, Towia A. Libermann. "Noninvasive detection of myelodysplastic syndromes using serum proteome profiling." *Leukemia Research*. (2005); 29:S7. DOI: 10.1016/S0145-2126(05)80019-0
11. Jones, Jon, Dimitrios Spentzos, Hasan Otu, Manuel Aivado, Arie Belldegrun, Robert Figlin, Allan Pantuck, and Towia Libermann. "Proteomic identification of interleukin-2 therapy response in metastatic renal cell cancer." *Cancer Research*. (2005); 65(9S):733-733.
12. Zinkin NT, Otu HH, Spentzos D, Aivado M, Wells M, Libermann TA, Afdhal NH. "Proteomic profiling of hepatocellular carcinoma with seldi-tof mass spectrometry in patients with chronic liver disease" 106th Annual Meeting of the American Gastroenterological Association, *Gastroenterology* 128 (4): Suppl. 2, p. A30 May 2005; Chicago, Illinois.
13. Zinkin NT, Otu HH, Spentzos D, Aivado M, Wells M, Kalmowitz BD, Bhaskar KK, Libermann TA, Afdhal NH. "A combined proteomic and serologic approach to diagnosis of hepatocellular carcinoma" 56th Annual Meeting of the American Association for the Study of Liver Diseases, *Hepatology* 42 (4): Suppl. 1, p. 239A, November 2005; San Francisco, California.
14. Jones J, Spentzos D, Otu H, Aivado M, Kolia S, Paullus J, Belldegrun AS, Figlin RA, Libermann TA, Pantuck AJ. "Proteomic identification of interleukin-2 therapy responders in metastatic renal cell cancer" Annual Meeting of the American Urological Association, *Journal of Urology* 173 (4): Suppl. S, pp. 171-172, May 2005; San Antonio, Texas.
15. Otu HH, Kolia S, Jones J, Osman O, Libermann TA. "Significance analysis of clustering high-throughput biological data" *Proceedings of IEEE Electro/Information Technology Conference*, pp. 247-252, May 2005. DOI: 10.1109/EIT.2005.1627001
16. Steidl U, Rosenbauer F, Verhaak RGW, Gu X, Otu HH, Kolia S, Owens BM, Klippel S, Wagner K, Aivado M, Passequé E, Libermann TA, Delwel R, Tenen DG. "Essential Role of Jun Family Transcription Factors in PU.1-induced Leukemic Stem Cell Transformation" 47th Annual Meeting of the American Society of Hematology, *Blood* 106 (11): pp. 463, December 2005; Atlanta, Georgia.
17. Jones, J., H. Otu, D. Spentzos, S. Kolia, R. Blaheta, D. Jonas, and T. A. Libermann. "Gene Signatures of Progression and Metastasis in Renal Cell Cancer." *Aktuelle Urologie*. (2006); 37(S1):V1. DOI: 10.1055/s-2006-947390

18. Singh, Ajita V., Hasan Otu, Towia Libermann, and Jin-Rong Zhou. "Modulation of gene expression by soy phytochemicals in orthotopic bladder tumors in mice by using affymetrix microarray assay." *Cancer Research*. (2006); 66(8S):1297-1297.
19. Abid MR, Shih SC, Otu HH, Spokes KC, Okada Y, Curiel DT, Minami T, Aird WC. "A novel class of VEGF-responsive genes that require forkhead activity for expression" 7th Annual Conference on Arteriosclerosis, Thrombosis and Vascular Biology, Arteriosclerosis Thrombosis and Vascular Biology 26 (5): p. E45, April 2006; Denver, Colorado.
20. Zhang XP, Yang HM, Zhang LA, Huang X, Otu H, Libermann T, Khosravi-Far R, DeWolf WC, Olumi AF. "c-FOS promotes trail-induced apoptosis by repressing c-FLIP(L)" Coatings Science International Conference, *Journal of Urology* 177(4): Suppl. S, p. 222, June 2006; Noordwijk, Netherlands. DOI: 10.1016/S0022-5347(18)30901-7
21. Ramlawi B, Otu HH, Kohane IS, Bianchi C, Sellke FW. "Genomic expression pathways associated to brain injury after cardiopulmonary bypass" 79th Annual Scientific Session of the American-Heart-Association, *Circulation* 114 (18): Suppl. S, p. 402 November 2006; Chicago, Illinois.
22. Kang JJ, van den Akker NMS, Aguilar B, Tang WL, Kafka D, Lee SJ, Ramu S, Ganesan SK, Otu HH, van Vugt JMG, Shin JW, Dotto GP, Detmar M, Gittenberger-de Groot AC, Hong YK. "Dysregulated Notch signaling induces pathological arterialization of developing lymphatics in Down syndrome fetus" *Experimental Biology* 2007 Annual Meeting, The FASEB Journal 21(5): p.A15, April 2007; Washington D.C.
23. Haram, Kerstyn, Heidi Peltier, Bin Lu, Towia Libermann, Bob Choy, Hasan Otu, Gary Latham, and Martin Sanda. "Gene expression profile of Transgenic Adenocarcinoma of the Mouse Prostate (TRAMP) reveals murine targets for preclinical development of human prostate cancer therapy." *Cancer Research*. (2007); 67(9):3882. AACR Annual Meeting.
24. Otu HH, Can H, Kaya N, Al-alwan L, Ozand P, Inan MS. "Computational analysis of transcriptional profiling in Dysmorphic Syndrome" *Proceedings of IEEE 15th Signal Processing and Communication Applications Conference*, pp. 75-78, June 2007; Eskisehir, Türkiye. DOI: 10.1109/SIU.2007.4298831
25. Marselli L, Sgroi DC, Thorne J, Dahiya S, Torri S, Omer A, Del Prato S, Libermann T, Otu HH, Sharma A, Bonner-Weir S, Marchetti P, Weir GC. "Evidence of inflammatory markers in beta cells of type 2 diabetic subjects" 43rd Annual Meeting of the European Association for the Study of Diabetes, *Diabetologia* 50: Suppl 1, pp. S178-S179, September 2007; Amsterdam, Netherlands.
26. Ramlawi B, Otu HH, Mieno S, Boodhwani M, Sodha NR, Clements RT, Bianchi C, Sellke FW. "Oxidative stress and postoperative atrial fibrillation after cardiac surgery" *Canadian Cardiovascular Congress, Canadian Journal of Cardiology* 23: p. 292C, October 2007; Quebec, Canada.
27. Jones J, Otu HH, Spentzos D, Beldegrun AS, Libermann TA, Pantuck AJ. "Proteomic identification and validation of interleukin-2 therapy response in metastatic renal cell cancer" 103rd Annual Meeting of the American-Urological-Association, *Journal of Urology* 179(4): Suppl. S, pp. 35-36, May 2008; Orlando, Florida. DOI: 10.1016/S0022-5347(08)60108-1
28. Ramlawi B, Otu HH, Emani S, Bianchi C, Sellke FW. "Tissue permeability associated with chemokine-class inflammatory response following cardiac surgery" 95th Annual Clinical Congress of the American-College-of-Surgeons, *Journal of the American College of Surgeons* 209(3): Suppl. S., pp. S29-S30, October 2009; Chicago, Illinois. DOI: 10.1016/j.jamcollsurg.2009.06.060

29. Bakis Y, Sezerman OU, Otu HH. "Physico-chemical properties of DNA in phylogeny construction." In 5th International Symposium on Health Informatics and Bioinformatics, pp. 27-30. IEEE, 2010. DOI: 10.1109/HIBIT.2010.5478912
30. Bakis Y, Sezerman OU, Otu HH. "Resampling techniques for non-alignment based sequence distance methods" Proceedings of the 16th National Biotechnology Conference S-D5: 235-237, 2009; Antalya, Turkey.
31. Meydan C, Sezerman U, Otu HH. "Prediction Of Peptides Binding To MHC Class I Alleles By Partial Periodic Pattern Mining" Proceedings of International Joint Conference on Bioinformatics, Systems Biology and Intelligent Computing, pp. 315-318, August 2009, Shanghai, PRC. DOI: 10.1109/IJCBS.2009.122
32. Iager, A. E., A. M. Kocabas, H. H. Otu, P. Ruppel, A. Langerveld, P. Schnarr, M. Suarez, J. C. Jarrett, J. Conaghan, G. J. M. Rosa, E. Fernández, R. G. Rawlins, J. B. Cibelli, J. Crosby. "A novel biomarker signature expressed in human cumulus cells predicts oocyte pregnancy potential during ART." Human Reproduction. (2012); 27(Suppl 2):ii1-ii3. DOI: 10.1093/humrep/27.s2.2
33. Isci S, Agyuz U, Ozturk C, Otu HH. "Detecting Gene Interactions within a Bayesian Network Framework Using External Knowledge" Proceedings of the 7th International Symposium on Health Informatics and Bioinformatics, (HIBIT 2012), pp. 82-87, April 2012. DOI: 10.1109/HIBIT.2012.6209047
34. Iager, A. E., A. M. Kocabas, H. H. Otu, E. Fernández, J. B. Cibelli, and J. A. Crosby. "Pregnancy outcome following IVF can be predicted by a gene expression signature in human cumulus cells." Fertility and Sterility. (2012); 345(6198):S101. DOI: 10.1016/j.fertnstert.2012.07.371
35. Agyuz U, Isci S, Ozturk C, Ademoglu A, Otu HH. "A Dynamic Bayesian Framework to Learn Temporal Gene Interactions Using External Knowledge" Proceedings of the 8th International Symposium on Health Informatics and Bioinformatics, (HIBIT 2013), pp. 1-5, September 2013. DOI: 10.1109/HIBIT.2013.6661680
36. Yalcin D, Otu H.H. "CpG Island (CGI) Annotation Database and Analysis of CGIs in Human Genome" Proceedings of the Festival of Genomics; 2016 June 27-29; Boston, MA.
37. Yalcin D and Otu HH. "Comparative Analysis of Human and Mouse CpG Islands Using dbCGI", Proceedings of the 2017 IEEE International Conference on Electro Information Technology (EIT) pp. 211-216, (appeared in IEEE Xplore). DOI: 10.1109/EIT.2017.8053357
38. Morad, Golnaz, Hasan H. Otu, Simon T. Dillon, and Marsha A. Moses. "Using proteomics profiling to elucidate the interactions of breast cancer-derived exosomes with the blood-brain barrier." Cancer Research. (2018); 78(13 Supplement):5083. DOI: 10.1158/1538-7445.AM2018-5083
39. Lai, M., H. Otu, L. Ngo, S. Dillon, X. Gu, N. Afdhal, and T. Libermann. "Identification of serum protein biomarkers for non-invasive discrimination between NASH and simple steatosis using SOMAscan." Journal of Hepatology. (2018); 68:S98-S99. DOI: 10.1016/S0168-8278(18)30417-3
40. Libermann, T. A., S. T. Dillon, H. H. Otu, S. M. Vasunilashorn, W. Zhou, L. H. Ngo, S. K. Inouye, and E. R. Marcantonio. "SOMAscan as a discovery platform to identify plasma protein biomarkers for postoperative delirium." Innovation in Aging. (2018); 2(Suppl 1):204. DOI: 10.1093/geroni/igy023.750
41. Morhardt, Tina, Simon T. Dillon, Hasan H. Otu, Gabor Veres, Emma Li, Xuesong Gu, Towia A. Libermann, and Harland Winter. "SOMAscan As a Discovery Platform to Identify Predictive Serum Proteomic Biomarkers of Infliximab Response in Pediatric Patients with

- Crohn's Disease." *Gastroenterology*. (2019); 156(6):S-394. DOI: 10.1016/S0016-5085(19)37834-5
42. Dillon, Simon T., Hasan H. Otu, Tina L. Morhardt, Xuesong Gu, Emma Li, Jess Kaplan, Christopher J. Moran, Harland Winter, and Towia A. Libermann. "Identification of Serum Protein Biomarkers for Non-Invasive Diagnosis of Pediatric IBD Using Somascan." *Gastroenterology*. (2019); 156(6):S-657. DOI: 10.1016/S0016-5085(19)38548-8
 43. Tripp BA, Dillon ST, Vasunilashorn SM, Ngo LH, Fong TG, Marcantonio ER, Libermann TA, Otu HH. "Metabolomics of Delirium: A Case-Control Study" The Gerontological Society of America (GSA) Annual Scientific Meeting, 2019, Innovation in Aging 3(S1):S92.
 44. Vasunilashorn SM, Ngo LH, Dillon ST, Otu HH, Tripp BA, Fong TG, Arnold SE, Xie Z, Inouye SK, Libermann TA, Marcantonio ER. "Inflammation as a Potential Shared Mechanism for Postoperative Delirium and Long-Term Cognitive Decline in Older Adults Undergoing Major Surgery" Alzheimer's Association International Conference, 2019 Alzheimer's & Dementia: The Journal of the Alzheimer's Association, 15(7):P1607
 45. Vasunilashorn SM, Ngo LH, Zhou W, Dillon ST, Otu HH, Tripp BA, Inouye SK, Libermann TA, Marcantonio ER. "An Inflammatory Signature of Postoperative Delirium" The Gerontological Society of America (GSA) Annual Scientific Meeting, 2019, Innovation in Aging 3(S1):S820-S821.
 46. Wu MC, Dillon ST, Omede M, Gu X, Otu HH, Ngo L, Winter H, Libermann TA. "Novel proteomic analysis of 11,000 serum proteins distinguishes between Crohn's disease and ulcerative colitis in pediatric patients" 19th Congress of ECCO Stockholm, Sweden, *Journal of Crohn's and Colitis*, 2024; 18(Supplement 1):i686.
 47. Winter H, Baldassano RN, Pfeffkorn MD, Wali P, Verstraete SG, Picoraro JA, Washek MA, Kumar N, Mortan W, Havard- Jr M, Blystone L, Trombler B, Pursley C, Lin X, Dillon ST, Gu X, Otu HH, Ngo L, Libermann TA. "Personalizing treatment for predicting response to infliximab in children with Crohn's disease using proteomic biomarkers" 19th Congress of ECCO Stockholm, Sweden, *Journal of Crohn's and Colitis*, 2024; 18(Supplement 1):i506.

Book Chapters

1. Otu HH and Libermann TA. "From Microarrays to Gene Networks". In: Appasani K., editor. *Bioarrays: From Basics to Diagnostics*, pp. 45-61. Humana Press Totowa, NJ. 2007 ISBN: 1588294765.
2. Thomson A, Hui NG, Robson P, Otu HH, Lim B. "Embryonic Stem cells as a model for Systems Biology". In: Rigoutsos I. and Stephanopoulou D., Eds. *Systems Biology 2*, pp. 297-319. Oxford University Press. 2007 ISBN: 0195300807.
3. Otu HH. "Bioinformatics". In: Dundar M. and Bagis H., Eds. *Modern Biotechnology and Applications*, pp. 425-462. Erciyes University Press 2010 ISBN: 9789756478639.
4. Dogan H and Otu HH. "Objective Functions". In: Russel D., editor. *Multiple Sequence Alignment Methods*, pp. 45-58. Humana Press. 2013 ISBN: 1627036458.
5. Otu HH. "Bioinformatics". In: Dundar M. and Bagis H., Eds. *Current Biotechnology and Applications*, pp. 401-424. Erciyes University Press 2017 ISBN: 978-60567442-0-4.

Thesis

1. Otu HH. Characterization and use of structure and complexity of DNA sequences [doctoral dissertation]. Department of Electrical Engineering, University of Nebraska-Lincoln, Lincoln, NE USA; 2002.
2. Otu HH. Constrained Joint Source/Channel Coder [M.S. thesis]. Department of Electrical and Electronics Engineering, Bogazici University, Istanbul, TURKEY; 1997.

Nonprint Materials (refer to <http://otulab.unl.edu/>)

1. Otu HH. Fr-As, 2002. A computer program to calculate the contigs resulting from a shotgun sequencing data. Distributed as academic freeware.
2. Otu HH. OS Distance, 2002. A computer program to calculate the OS distance measure for a set of sequences. Distributed as academic freeware.
3. Otu HH and Kolia S. Annotation Database, 2003. A web-based tool to cross annotate more than 80 information facets regarding a gene or a protein. Available through free registration at www.bidmcgenomics.org.
4. Otu HH and Usta F. Statistical Analysis of Gene Expression (STAGE), 2003. A stand-alone computer program to analyze gene microarray data. Distributed as academic freeware.
5. Otu HH and Kolia S. and Osman O. Assigning Significance to Subclusters of Experimental SampleS (ASSESS), 2003. A stand-alone computer program to assign statistical significance to clustering of gene microarray data. Distributed as academic freeware.
6. Isci S and Otu HH. Bayesian pathway Analysis (BPA), 2011. A stand-alone computer program to find active pathways given High Throughput Biological Data. Distributed as academic freeware.
7. Isci S and Otu HH. Bayesian Network Prior (BNP), 2013. A stand-alone computer program to incorporate external knowledge to build interaction networks for given High Throughput Biological Data. Distributed as academic freeware.
8. Yalcin D and Otu HH. Database of CpG Islands (dbCGI), 2017. A web portal acting as a database and tool for analysis of CGIs in different organisms.
9. Chanumolu SK, Otu HH. FQStat, 2019. A stand-alone computer program that performs quality control (QC) analysis for DNA/RNA sequencing fastq files using a parallel programming architecture. Distributed as academic freeware.
10. Chanumolu SK, Otu HH. KEGG2Net, 2019. A web portal that identifies gene-gene interaction networks from KEGG pathways and further constructs directed acyclic graphs (DAGs) from these networks for approaches like Bayesian networks.
11. Yalcin D and Otu HH. methylProp Predictor – an unbiased machine learning model that predicts the methylation propensity of CpG islands
12. Tripp B, Otu HH. OBANK, 2021. An application to model interactions between heterogeneous high-dimensional biological data (multi-omics) using Bayesian networks and external knowledge to elucidate networks and emergent relationships.
13. Chanumolu SK, Otu HH. ATLAS, 2022. A divide-and-conquer approach to generate large scale gene interaction networks for human transcriptomic data using experimental and external knowledge.
14. Can H, Chanumolu S, Otu HH. MEMINEX, 2023. MEta-Multi-omics Integration using Networks and EXternal knowledge

Patents

1. Divide and Conquer System and Method of DNA Sequence Assembly. File Number: 20030224384.
2. System and Method for Sequence Distance Measure for Phylogenetic Tree Construction. File Number: 20070225918.
3. Human Transcriptome Corresponding To Human Oocytes And Use Of Said Genes Or The Corresponding Polypeptides To Trans-Differentiate Somatic Cells. File Number: 20090028835.
4. Genes differentially expressed by cumulus cells and assays using same to identify pregnancy competent oocytes. File Number: 20130053261/20140296104.
5. Protein biomarkers for early detection of Pancreatic Cancer, provisional.
6. Markers for the diagnosis and treatment of non-alcoholic steatohepatitis (NASH) and advanced liver fibrosis. File Number: 2019099706.

Abstracts (over 50, not listed)