GEORGIA D. TOURASSI, PHD

Curriculum Vitae
Associate Laboratory Director
Computing & Computational Sciences Directorate
Oak Ridge National Laboratory
https://www.ornl.gov/staff-profile/georgia-tourassi

SUMMARY

- **Associate Laboratory Director** of Computing and Computational Sciences, Oak Ridge National Laboratory. Leads a premier directorate of 530+ scientific and technical staff members with an annual budget of $400M. The directorate provides world leading high performance computing (HPC) and data science infrastructure and related computational capabilities to accelerate scientific discovery and engineering advances. We bring together HPC, artificial intelligence, quantum information sciences, edge computing, and disparate data to bear on problems and missions of national importance. Notable accomplishments include (i) the delivery of Frontier, the world's first exascale computing system dedicated to open science, (ii) deployment of a new capability for DOE leadership computing to enable stakeholders with sensitive data to perform analyses at scale on Oak Ridge Leadership Facility (OLCF) resources. OLCF is *the only* leadership computing facility in the DOE complex to support projects with PHI/PII and ITAR data, (iii) launched a new OLCF director's discretionary allocation program for hybrid HPC + quantum computing applications, (v) built strategic interagency partnerships (NIH, NOAA, AirForce Weather, Veterans Administration), (vi) aggressive campaign for workforce development and a culture of research with high impact scientific and technical artifacts.
- **Distinguished Biomedical Scientist**. Research focused on artificial intelligence, scalable data analytics, and high-performance computing for biomedical discovery and biomedical informatics. More than 250 peer-reviewed journal articles, conference proceedings articles, book chapters, and editorials, as well as 11 invention disclosures and patents. To date research portfolio of $74M as PI or co-PI.
- **Recognized** for contributing to the development of computer-assisted medical diagnosis and the application of exascale computing in cancer research. Extensive service record for the scientific community, the National Institutes of Health, and the Department of Energy. Notable recent awards:

  2024 DOE's Secretary Honor Award – "Frontier – The first exascale system"
  2023 R&D 100 Award – "CANDLE (CANcer Distributed Learning Environment)"
  2022 NCI Director's Award – Division of Cancer Control and Population Sciences, Cancer Surveillance Data Collaborators, for Data Science-Scientific
  2022 DOE's Secretary Honor Award – Driving U.S. Competitiveness and Innovations in HPC/AI Team
  2021 DOE's Secretary Honor Award – COVID 19 Insights Partnership Team
  2021 DOE's Secretary HonorsAward – COVID 19 HPC Resource Team
  IEEE Engineering in Medicine and Biology Society Elected Distinguished Lecturer (2019-20)
  2016 DOE Secretary's Appreciation Award for leadership in the DOE–NCI Joint Design of Advanced Computing Solutions for Cancer initiative
  2014 R&D 100 Award – "iSPM: Intelligent Software Suite for Personalized Modeling of Expert Opinions, Decisions, and Errors in Visual Examination Tasks"
- **Elected Fellow** of the Institute of Electrical and Electronics Engineers (IEEE), the American Institute of Medical and Biological Engineering (AIMBE), the American Association of Physicists in Medicine (AAPM), the International Society for Optics and Photonicsm(SPIE), and the American Association for the Advancement of Sciences (AAAS).
- **Committed** to fostering scientific innovation, operational excellence, a diverse and inclusive workplace, the proactive mentorship of early-career scientists and underrepresented groups, and organizational health.

PROFFESIONAL EXPERIENCE

2011 – Present **Oak Ridge National Laboratory**, Oak Ridge, TN

- **Associate Laboratory Director**, Computing & Computational Sciences Directorate (2023 – now).
- **Division Director**, National Center of Computational Sciences (2019 – 2023).
- **Director of the Oak Ridge Leadership Computing Facility** (2019 – 2023).
- **Distinguished R&D Scientist** and **Group Leader**, Biomedical Sciences, Engineering, & Computing (2016 – 2019).
- **Founding Director,** Health Data Sciences Institute (2014 – 2019).
  - **Senior R&D Scientist** and **Director**, Biomedical Sciences & Engineering Center (2011-2013).
  - **UT-ORNL Joint Faculty,** Bredesen Center, University of Tennessee at Knoxville (2017 – now).
  - **UT-ORNL Joint Professor** of Mechanical, Aerospace, and Biomedical Engineering, University of Tennessee at Knoxville (2016 – now).
  - **Adjunct Professor of Radiology** appointment at the University of Tennessee at Knoxville (2014 – now).
  - **Adjunct Professor of Radiology** appointment at Duke University (2011 – now).

1988 – 2011 **Duke University**, Durham, NC

- **Associate Professor** of Radiology & Medical Physics, School of Medicine (2006 - 2011).
- **Assistant Professor** of Radiology, School of Medicine (1996 - 2006).
- **Research Associate** of Radiology, School of Medicine (1993 - 1995).
- **Research Assistant**, Biomedical Engineering (1988 - 1993).
- On leave at the University of Louisville as Assistant Professor of Radiology (1996 - 1997) and Visiting Associate Professor of Computer Engineering and Computer Science (2004).

EDUCATION

1995	**Duke University Medical Center**	Postdoctoral Training in Radiology / Medical Physics
1993	**Duke University**	PhD in Biomedical Engineering
1987	**Aristotle University of Thessaloniki**	BSc in Physics

AWARDS AND RECOGNITION

2024 **DOE's Secretary Honors Award** – "Frontier – The first exascale system"

2023 **R&D 100 Award** – "CANDLE (CANcer Distributed Learning Environment)"

2022 **NCI Director's Award –** Division of Cancer Control and Population Sciences, Cancer Surveillance Data Collaborators, for Data Science-Scientific

2022 **DOE Secretary's Honors Award** for contributions in Driving U.S. Competitiveness and Innovations in HPC/AI Team.

2021 **DOE Secretary's Honors Award** for contributions in the COVID-19 Insights Partnership Team.

2021 **DOE Secretary's Honors Award** for contributions in the COVID-19 HPC Resource Team.

2020 **Elected Fellow**, American Association for the Advancement of Sciences (AAAS).

2020 **Elected Chair** of the SPIE Medical Imaging Symposium.

2019 **UT-Battelle Award** for Research Leadership at the Group Level.

2019 **Elected co-Chair** of the SPIE Medical Imaging Symposium (leading international medical imaging conference of the International Society for Optics and Photonics).

2019-20 **Elected Distinguished Lecturer,** Institute of Electrical and Electronic Engineers (IEEE) - Engineering in Medicine & Biology Society (EMBS).

2017 **Elected Fellow**, International Society for Optics and Photonics (SPIE).

2017 **UT-Battelle Distinguished Researcher Award**.

2017 **ORNL Director's Award** for Outstanding Individual Accomplishment in Science and Technology.

2017 **HPCwire Readers' and Editors' Choice Awards**, "Best Use of AI", November 2017.

2016 **DOE Secretary's Appreciation Award** for leadership in the DOE–NCI Joint Design of Advanced Computing for Cancer Research.

2015 **Elected Fellow,** American Association of Medical Physicists (AAPM).

2015 **Elected Fellow,** American Institute of Medical and Biological Engineering (AIMBE).

2015 **R&D 100 Finalist** – "iCRAWL: A User-Oriented Intelligent Web Crawler".

2014 **R&D 100 Award** – "iSPM: Intelligent Software Suite for Personalized Modeling of Expert Opinions, Decisions, and Errors in Visual Examination Tasks".

2013 **YWCA – East TN Honoree** for STEM mentorship of minorities.

2006 **Reviewer's Choice Award**, American Association of Physicists in Medicine.

1998 **Whitaker Foundation Young Investigator's Award.**

1994 **NIH Young Investigator's Award.**

1988 **Graduate Fellowship**, 5-year award, Duke University.

1983 **Undergraduate Fellowship**, 4-year award, National Fellowship Foundation, Athens, Greece.

SUMMARY OF PROFESSIONAL SERVICE BY ORGANIZATION

AAAS Elected member of the Electorate Nominating Committee (2020–22)

AAPM Joint Working Group for Research Seed Funding Initiative (2008-11)

AAPM Computer Aided Detection in Diagnostic Imaging (CAD) Subcommittee (2008-15)

AAPM Education Coordination Subcommittee (2008-11)

FDA Radiology Devices Review Panel (2008-present)

NIH CSR Grant Reviewer for 40+ NIH study sections and panelist for various workshops,

NIH CSR Charter Member: Biomedical Computing and Health Informatics Study Section (2014-2018) and Biomedical Imaging Technology Study Section (2007-2011).\

RSNA Refresher Course Committees, RSNA (2008-10) – AAPM Liaison

RSNA Co-Director & Refresher Course Faculty, "CAD: The hope, the hype, and the hard truth" (2009-11)

RSNA Refresher Course Faculty, "Breast Imaging: Physics, Technology & Clinical Applications" (2010-12)

SPIE Medical Imaging Conference – CAD Committee Program Member (2010-2021)

SPIE Medical Imaging Conference – Co-Chair of Computer Aided Diagnosis (2015)

SPIE Medical Imaging Conference – Chair of Computer Aided Diagnosis (2016)

SPIE Medical Imaging Conference – Elected Co-Chair of the Full International Symposium (2019)

SPIE Medical Imaging Conference – Elected Lead Chair of the Full International Symposium (2020)

AIMBE Fellows Review Subcommittee – Member (2018)

EDITORSHIP ROLES

- **Steering Committee Member,** *IEEE Transactions on Sustainable Computing* (2025 – 2026).
- **Senior Editor,** *British Journal of Radiology – Artificial Intelligence* (2023 -).
- **Chief Editor** for Computational Medicine, *Frontiers in Medical Engineering* (2022 -).
- **Associate Editor,** *IEEE Journal of Biomedical and Health Informatics* (2020 -).
- **Associate Editor,** *IEEE Access* (2019 - 2024).
- **Editorial Board Member,** *IEEE Access* (2024 -).
- **Guest editor,** *IEEE Journal of Biomedical and Health Informatics special issue on "AI-enabled Connected Health Informatics"* (2019)
- **Senior Member,** Institute of Electrical and Electronic Engineers (IEEE).
- **Senior Member**, International Neural Network Society (INNS).
- **Associate Editor**, *Radiology* (2000-2007).
- **Associate Editor**, *Neurocomputing* (2007-2012).
- **Editorial Board Member**, *Intelligent Decision Technologies* (2007-2011).
- **Editorial Board Member,** *Foundations of Data Science* (2019 - 2020).

SPEAKING ENGAGEMENTS & TESTIMONIALS

2024 **Invited Panelist,** National Strategic Computing Reserve (NSCR) Tabletop Exercise organized by the Science and Technology Policy Institute (OSTP), August 21, 2024.

2024 **Invited Speaker,** "AI Approaches to Target 'Undruggable' Cancer Targets" NIH Workshop co-organized by DOE, August 14, 2024.

2024 **Keynote Speaker,** 38th ACM SIGSIM PADS Conference, "Powering Progress in Leadership Computing in the Era of Generative AI and Energy Constraints", June 24, 2024.

2024 **Keynote Speaker,** "Accelerating Biology 2024: The Exascale Leap" Symposium, February 6, 2024.

2023 **Invited Speaker,** CECAM workshop on *"Biomolecular simulation and machine learning in the exascale era: first applications and perspectives",* June 2, 2023.

2023 **Plenary Speaker,** The New York Academy of Sciences conference on "The New Wave of AI in Healthcare", May 23-24, 2023.

2023 **Moderator,** Congressional Lunch Event "Maintaining U.S. leadership in supercomputing – Implications on national and economic security ", March 22, 2023.

2022 **Plenary Speaker,** Supercomputing (SC22) - HPC Accelerates: The Many Dimensions of HPC Acceleration, November 14, 2022.

2022 **Invited Speaker,** HPE Discovery Keynote Session, June 29, 2022

2022 **Invited Speaker,** HPE Discovery Innovation Session I An Edge-to-Exacale Paradigm with Every Byte, Everywhere, June 30, 2022

2022 **Invited Speaker,** ExSAIS 2022: Workshop on Extreme Scaling of AI for Science, Jun e3, 2022

2021 **Keynote Speaker,** XLOOP 2021: The 3rd Annual Workshop on Extreme-Scale Experiment-in-the-Loop Computing, Supercomputing November 19, 2021

2021 **Expert Panelist,** National AI Research Resource (NAIRR) Task Force meeting, August 30, 2021

2021 **Expert Panelist,** "AI and the Productivity of Science" Workshop organized by Organization for Economic Co-operation and Development (OECD), November 4, 2021

2021 **Testimony to the House Committee on Science, Space and Technology,** "Accelerating Discovery: the Future of Scientific Computing at the Department of Energy", May 19, 2021

2019 **Keynote Speaker**, "SuperCompCloud: Workshop on Interoperability of Supercomputing

and Cloud Technologies" workshop at the 2019 Supercomputing conference, Denver, CO, November 17-22, 2019

2019 **Keynote Speaker**, 2nd Commonwealth Computational Summit 2018, Lexington, KY, October 23, 2018

2019 **Expert Panelist,** "Forecasting Costs for Preserving and Promoting Access to Biomedical Data" workshop organized by the National Academy of Sciences, July 11-12, 2019

2019 **Testimony to the House Committee on Science, Space and Technology,** "Artificial Intelligence: Ethical and Societal Implications", June 26, 2019

2019 **DOE/ORNL Representative**, "TechDay for Health" event organized by the White House highlighting three "AI for Health" applications (May 15, 2019)

2019 **Invited Speaker**, presenting at the White House HDSI's artificial intelligence technology for better matching cancer patients with clinical trials as part of The Opportunity Project (TOP) initiative (February 28, 2019)

2019 **Keynote Speaker**, 16th INFORMS Computing Society Conference, Knoxville, TN, January 6-8, 2019

CONFERENCE ORGANIZATION

2017 - now Organizing committee member, "*Computational Approaches for Cancer"* Workshop (CAFCW), Supercomputing Conference

2023 General Co-Chair, IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI'23), Pittsburgh, PA (October 15-18, 2023).

2023 Lead Organizer of a workshop on "*The Second Workshop on Federated and Privacy Preserving AI for HPC*" for the 2022 Supercomputing Conference, Denver, CO (accepted)

2023 Co-organizer of the DOE-NIH workshop on "*Advancing Medical Care through Discovery in the Physical Sciences: Radiation Detection*", (March 15-16, 2023)

2022 Lead Organizer of a workshop on "*The First Workshop on Federated and Privacy Preserving AI for HPC*" for the 2022 Supercomputing Conference, Dallas, TX (November 14, 2022)

2022 Technical Program Co-Chair for the 2022 International Conference on Biomedical and Health Informatics (BHI 21), September 26-30, 2022

2022 Technical Program Committee Member, ExSAIS 2022: *Workshop on Extreme Scaling of AI for Science*, June 3, 2022

2022 Lead organizer of "*ASCR Workshop on Visualization for Scientific Discovery, Decision-Making, & Communication"* (January 18-20, 2022)

2021 Technical Program Co-Chair for the 2021 International Conference on Biomedical and Health Informatics (BHI 21), Virtual Conference (July 27-30, 2021)

2020 Lead Chair of the SPIE Medical Imaging Symposium, February 15-20, 2020

2019 Co-Chair of the SPIE Medical Imaging Symposium (an international symposium composed of nine conferences lead in parallel), February 16-21, 2019

2019 Technical Program Co-Chair for the 2019 International Conference on Biomedical and Health Informatics (BHI 19), Las Vegas, NV (May 10-13, 2019)

2018 Organizer of a workshop on "*Computational Phenomics at Scale: From Supercomputers to Bedside*" for the 2018 Supercomputing Conference, Dallas, TX (November 16, 2018)

2018 Invited Panelist at the 2018 Frontiers of Predictive Oncology Conference (FPOC) Panel, Santa Clara, CA (August 14-16, 2018)

2018 Invited Panelist at the 2018 Smoky Mountain Conference (SMC) Panel on "*The Ethics of AI*", Gatlinburg, TN (August 30, 2018)

2018 Technical Program Co-Chair for the 2018 International Conference on Biomedical and Health Informatics (BHI 18), Las Vegas, NV (March 4-8, 2018)

2018 Organizer of a mini-symposium on "*Actionable Health Intelligence*" at the international 2018 Platform for Advanced Scientific Computing (PASC) Conference, Bern, Switzerland (July 5, 2018)

2017 Organizing Committee Member for the 2nd "*Open Science in Big Data*" Workshop for the 2017 International Conference on Big Data, Washington, DC (December 11-14, 2017)

2016 Organizing Committee Member for the 1st "*Open Science in Big Data*" Workshop for the 2016 IEEE International Conference on Big Data, Washington, DC (December 5-7, 2016)

2016 Organizer of the "*Web-Based Public Health Informatics*" Workshop for the 2016 International Conference on Biomedical and Health Informatics (BHI'16), Las Vegas, NV (February 27, 2016)

2015 Organizing Committee Member for the Smoky Mountain Computational Science and Engineering Conference, Gatlinburg, TN (August 31 – September 2, 2014)

2015 Organizer of the annual ORNL Biomedical Science and Engineering Conference: *Data Sciences for Actionable Health Insights, Knoxville*, TN (August 25-27, 2015)

2014 Organizing Committee Member of the US-Japan Exascale Applications Workshop, Life and Health Sciences Session Lead, Gatlinburg, TN (September 5-6, 2014)

2014 Organizing Committee Member for the Smoky Mountain Computational Science and Engineering Conference, Gatlinburg, TN (September 2-4, 2014)

2014 Invited Panelist on the Health Datapalooza workshop "*Is the Randomized Controlled Trial (RCT) Dead- A New Generation of Evidence Development*", Washington, DC (June 3, 2014)

2014 Organizer of the annual ORNL Biomedical Science and Engineering Conference: *The Multi-Scale Brain: Spanning Molecular, Cellular, Systems, Cognitive, Behavioral, and Clinical Neuroscience*, Knoxville, TN (May 6-8, 2014)

2013 Organizer of the annual ORNL Biomedical Science and Engineering Conference: *Integrating Experiments, Simulations and Modeling for Biomedical Advances: From Single Molecules to Public Health Dynamics*, Knoxville, TN (May 21-23, 2013)

2012 Invited Panelist on the NCI sponsored workshop "*Frontiers in Epidemiology: What is the emerging role of epidemiology in reducing the burden of cancer and other diseases in the 21st century?*" Bethesda, MD (December 12-13, 2012)

2011 Organizer of Workshop on "*Biomedical Instrumentation*", Future of Instrumentation International Workshop (FIIW), Knoxville, TN (November 7-8, 2011)

2011 Organizer of Workshop on "*Computational Image Analysis: From Desktop to Bedside*" at the annual ORNL Biomedical Science and Engineering Conference, Knoxville, TN (March 15, 2011)

2010 Member of the International Program Committee for the 2nd KES International Symposium on Intelligent Decision Technologies, Cardiff, UK (September 8-10, 2010)

2009 Co-Organizer of International Joint Conference on Neural Networks and of the Special Session: "*Computational Intelligence in Medical Diagnosis*", Atlanta, GA, (June 14-19, 2009)

STUDENT SUPERVISION

- Mentored 26 undergraduate and graduate intern students via DOE sponsored programs (from 18 different US universities and colleges).
- Served as academic advisor for one (1) MS and eleven (11) PhD candidates to completion.

PATENTS AND INVENTION DISCLOSURES

YEAR	PATENTS	TITLE	INVENTORS
2017	62/594,240 (provisional)	Energy-Efficient Stochastic-Based Deep Spiking Neural Networks for Sparse Datasets	Hong-Jun Yoon, Mohammed Alawad, & Georgia Tourassi
2015	US 20150046875 A1	High-efficacy capturing and modeling of human perceptual similarity opinions	Songhua Xu & Georgia Tourassi

YEAR	DISCLOSURES	TITLE	INVENTORS
2018	ID201804205	Computationally Efficient Learning of Quality Controlled Word Embeddings for Natural Language Processing	Mohammed Alawad, Georgia Tourassi
2017	ID201703968	Energy-Efficient Stochastic-Based Deep Spiking Neural Networks for Sparse Datasets	Hong-Jun Yoon, Mohammed Alawad, & Georgia Tourassi
2015	ID201503533	Optimized High-Performance Computer Infrastructure for Precision Medicine	Sreenivas Sukumar & Georgia Tourassi
2014	ID201403249	Gaze as a Biometric	Georgia Tourassi
2013	ID201303148	A System for Visually Exploring Large-Scale, Heterogeneous Environmental Monitoring	Songhua Xu & Georgia Tourassi
2013	ID201303143	A Web Crawler for Acquiring Online Content in e-Health Research	Songhua Xu & Georgia Tourassi
2013	ID201303080	Studying Breast Cancer and Pregnancy Association Through Web Mining,	Songhua Xu & Georgia Tourassi
2012	ID201202917	Predicting Diagnostic Error from Visual Gaze Characteristics	Georgia Tourassi
2012	ID201202915	Cyber-informatics to Study Links Between Migration and Environmental Cancer Risk	Songhua Xu & Georgia Tourassi

PUBLICATIONS

http://orcid.org/0000-0002-9418-9638

Database	Author ID	Citations	h-Index	Field-Weighted Citation Impact
SCOPUS	7003845683	5045	36	1.82
Google Scholar	O_0diUoAAAAJ	8593	45	

Peer-Reviewed Journal Articles

113. Rodriguez, A., Kim, Y., Nandi, T.N., Keat, K., Kumar, R., Bhukar, R., Conery, M., Liu, M., Hessington, J., Maheshwari, K., Schmidt, D., Begoli, E., Tourassi, G.G., …, Madduri, R. (2024). Accelerating Genome-and Phenome-Wide Association Studies using GPUs–A case study using data from the Million Veteran Program. bioRxiv.

112. Mahmood, U., Shukla-Dave, A., Chan, H. P., Drukker, K., Samala, R. K., Chen, Q., ..., Tourassi, G.D,…& Hadjiiski, L. (2024). Artificial intelligence in medicine: mitigating risks and maximizing benefits via quality assurance, quality control, and acceptance testing. BJR| Artificial Intelligence, 1(1), ubae003.

111. Samala, R.K., Drukker, K., Shukla-Dave, A., Chan, H.P.,...., Tourassi, G.D,…, "AI and machine learning in medical imaging: key points from development to translation," BJR| Artificial Intelligence 1 (1), ubae006 (2024).

110. Mahmood, U., Shukla-Dave, A., Chan, H.P.,...., Tourassi, G.D., "Artificial intelligence in medicine: mitigating risks and maximizing benefits via quality assurance, quality control, and acceptance testing," BJR| Artificial Intelligence 1 (1), ubae003 (2024).

109. Verma, A., Huffman, J.E., Rodriguez, A.,...., Tourassi, G.D.,…,"Diversity and scale: Genetic architecture of 2068 traits in the VA Million Veteran Program," Science 385 (6706), eadj1182, 2024.

108. Hsu, E., Hanson, H., Coyle, L., Stevens, J., Tourassi, G.D., Penberthy L., "Machine learning and deep learning tools for the automated capture of cancer surveillance data," JNCI Monographs 2024 (65), 145-151.

107. Buchsbaum, J., Capala, J., Obcemea, C., …,Tourassi, G.D…., "The United States Department of Energy and National Institutes of Health Collaboration: Medical Care Advances by Discovery in Radiation Detection," Medical Physics, 2024 (DOI: 10.1002/mp.17333).

106. Yoon, H.J., Klasky, H.B., Blanchard, A.E. JB Christian, EB Durbin, XC Wu, ..., Tourassi, G.D. "Development of message passing-based graph convolutional networks for classifying cancer pathology reports," BMC Medical Informatics and Decision Making 24 (Suppl 5), 262

105. Peluso A., Danciu I., Yoon H.J., …, Tourassi G.D., Gao S., "Deep learning uncertainty quantification for clinical text classification," Journal of Biomedical Informatics, 149, 104576 (2023).

104. Yin, J., Dash, S., Gounley, J., Wang, F., Tourassi, G.D. "Evaluation of pre-training large language models on leadership-class supercomputers," Journal of Supercomuting, 2023 (accepted) https://doi.org/10.1007/s11227-023-05479-7

103. Tourassi, G.D. "Computational Medicine: Grand Challenges and Opportunities for Revolutionizing Personalized Healthcare." Frontiers in Medical Engineering 1: 4.

102. Hadjiiski, Lubomir,…,Tourassi, G.D.,et al. "AAPM task group report 273: Recommendations on best practices for AI and machine learning for computer-aided diagnosis in medical imaging." Medical Physics 50.2 (2023): e1-e24.

101. Manubens-Gil, Linus,…,Tourassi, G.D., et al. "BigNeuron: a resource to benchmark and predict performance of algorithms for automated tracing of neurons in light microscopy datasets." Nature Methods (2023): 1-12.

100. Keppel, C., Weisenberger, A., Atanasijevic, T., Wang, S., Zubal, G., Buchsbaum, J., ... Tourassi, G.D., …,Woody, C. (2023). The United States department of energy and national institutes of health collaboration: medical care advances via discovery in physical sciences. Medical Physics. (2023).

99. De Angeli, K., Gao, S., Blanchard, A., Durbin, E. B., Wu, X. C., Stroup, A., ..., Tourassi, G.D., Yoon, H. J. (2022). Using ensembles and distillation to optimize the deployment of deep learning models for the classification of electronic cancer pathology reports. JAMIA open, 5(3), ooac075.

98. Hadjiiski, L., Cha, K., Chan, H. P., Drukker, K., Morra, L., Näppi, J. J., ... Tourassi, G.D.,… & Armato III, S. G."AAPM task group report 273: Recommendations on best practices for ai and machine learning for computer-aided diagnosis in medical imaging." Medical Physics (2022).

97. Manubens-Gil, L., Zhou, Z., Chen, H., Ramanathan, A., Liu, X., Liu, Y., ..., Tourassi, G.D., … & Peng, H. (2022). BigNeuron: A resource to benchmark and predict best-performing algorithms for automated reconstruction of neuronal morphology. bioRxiv.

96. Yoon, H. J., Stanley, C., Christian, J. B., Klasky, H. B., Blanchard, A. E., Durbin, E. B., ... & Tourassi, G. D. (2022). Optimal vocabulary selection approaches for privacy-preserving deep NLP model training for information extraction and cancer epidemiology. Cancer Biomarkers, 33(2), 185-198.

95. Buchsbaum, J. C., Jaffray, D. A., Ba, D., Borkon, L. L., Chalk, C., Chung, C., ..., Tourassi, G.D., … & Willcox, K. E. (2022). Predictive Radiation Oncology–A New NCI–DOE Scientific Space and Community. Radiat Res (2022) 197 (4): 434–445.

94. Blanchard, A., Gao, S., Yoon, H. J., Christian, B., Durbin, E. B., Wu, X. C., ... & Tourassi, G. D. (2022). A Keyword-Enhanced Approach to Handle Class Imbalance in Clinical Text Classification. To appear in IEEE Journal of Biomedical and Health Informatics (2022).

93. De Angeli, K., Gao, S., Danciu, I., Durbin, E. B., Wu, X. C., Stroup, A., ... Tourassi, G.D., & Yoon, H. J. (2022). Class imbalance in out-of-distribution datasets: Improving the robustness of the TextCNN for the classification of rare cancer types. Journal of biomedical informatics, 125, 103957.

92. Elemento, O., Leslie, C., Lundin, J., & Tourassi, G. (2021). Artificial intelligence in cancer research, diagnosis and therapy. Nature Reviews Cancer, 21(12), 747-752.

91. Stewart, Mark,…,G.D. Tourassi,… et al. "COVID-19 Evidence Accelerator: A parallel analysis to describe the use of Hydroxychloroquine with or without Azithromycin among hospitalized COVID-19 patients." Plos one 16.3 (2021): e0248128.

90. H. Gerlovin, …, G.D. Tourassi, …, & K. Cho. "Pharmacoepidemiology, Machine Learning and COVID-19: An intent-to-treat analysis of hydroxychloroquine, with or without azithromycin, and COVID-19 outcomes amongst hospitalized US Veterans." American Journal of Epidemiology 190(11), 2405-2419 (2021)

89. S. Dhaubhadel, J. Mohd-Yusof, K. Ganguly, G. Chennupati,…, G.D. Tourassi, ... & T. Bhattacharya. "Why I'm not Answering: An Abstention-Based Approach to Classify Cancer Pathology Reports." arXiv e-prints, arXiv-2009 (2021).

88. H.J. Yoon, H. Klasky, C. Stanley, J.B. Christian, G.D. Tourassi, E.B. Durbin,… & L. Penberthy. "Privacy-Preserving Knowledge Transfer with Bootstrap Aggregation of Teacher Ensembles.", (2021).

87. M. Alawad, S. Gao, M.C. Shekar, S.M. Hasan, J.B. Christian, X.C. Wu, ... & G.D. Tourassi, "Integration of Domain Knowledge using Medical Knowledge Graph Deep Learning for Cancer Phenotyping." arXiv preprint arXiv:2101.01337 (2021).

86. K. De Angeli, S. Gao, M. Alawad, H.J. Yoon, N. Schaefferkoetter, X.C. Wu,…, & G.D. Tourassi, "Deep active learning for classifying cancer pathology reports." BMC bioinformatics, 22(1), 1-25 (2021).

85. S. Gao, M. Alawad, M.T. Young, J. Gounley, N. Schaefferkoetter, H.J. Yoon, X.C. Wu,…, & G.D. Tourassi, "Limitations of Transformers on Clinical Text Classification." IEEE Journal of Biomedical and Health Informatics 25(9), 3596-3607. (2021).

84. M. Stewart, C. Rodriguez-Watson, A. Albayrak, G.D. Tourassi,…, & Allen, J. (2021). COVID-19 Evidence Accelerator: A parallel analysis to describe the use of Hydroxychloroquine with or without Azithromycin among hospitalized COVID-19 patients. Plos one, 16(3), e0248128 (2021).

83. H-J. Yoon, H. Klasky, J. Gounley, M. Alawad, S. Gao, J.B. Christian, G. Tourassi, L. Penberthy, X. Wu, E.Durbin, A. Stroup, J. Doherty. "Accelerated Training of Bootstrap Aggregation-based Deep Information Extraction Systems from Cancer Pathology Reports" Journal of Biomedical Informatics 110: 103564 (2020).

82. Gao, S., M. Alawad, N. Schaefferkoetter, …, G.D. Tourassi, "Using case-level context to classify cancer pathology reports" PLoS One 15(5), e0232840.

81. Alawad M., Gao. S., , Tourassi.G.D. "Privacy-Preserving Deep Learning NLP Models for Cancer Registries" IEEE Transactions on Emerging Topics in Computing Transactions on Emerging Topics in Computing, 9(3), 1219-1230

80. Hasan S., J.B. Christian,…, G.D. Tourassi, "Knowledge Graph-Enabled Cancer Data Analytics," IEEE Journal of Biomedical and Health Informatics 24(7), 1952-1967.

79. Savova, G. K., Danciu, I., Alamudun, F., Miller, T., Lin, C., Bitterman, D. S., ... & Warner, J. L. (2019). Use of Natural Language Processing to Extract Clinical Cancer Phenotypes from Electronic Medical Records. Cancer Research, 79(21), 5463-5470.

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https://insidehpc.com/2022/03/oak-ridge-frontier-exascale-to-deliver-full-user-operations-on-jan-1-2023-crusher-test-system-now-running-code/ (March 28, 2022)

https://www.hpcwire.com/off-the-wire/meet-gina-tourassi-director-of-the-ornl-national-center-for-computational-sciences/ (November 23, 2021)

https://www.ornl.gov/news/new-ornl-ai-tool-revolutionizes-process-matching-cancer-patients-clinical-trials (March 4, 2019)

https://www.energy.gov/artificial-intelligence-and-machine-learning (5 out of the 6 DOE applications listed under Medicine are led by Dr. Tourassi)

https://ncip.nci.nih.gov/blog/population-level-pilot-population-information-integration-analysis-modeling-precision-surveillance/ (July 18, 2018)

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RESEARCH AWARDS

DURATION	ROLE	TITLE	FUNDING AGENCY	BUDGET
2020 - 2023	PI	Childhood Cancer Data Initiative National Childhood Cancer Registry Development and Refinement of Algorithm Tools	NIH/NCI	$2,500,000
2020 - 2021	Lead PI	Privacy-Preserving AI with Sensitive Data on HPC Platforms	DOE / ASCR	$750,000
2016 - 2023	Co-PI	JDACS4C: Joint Design of Advanced Computing Solutions for Cancer	NIH/NCI	$35,000,000
2016 - 2023	Co-PI	CANDLE: Cancer Distributed Learning Environment	DOE / ASCR	$24,855,000
2016 - 18	PI	Energy-Efficient Training Protocol for Scalable Deep Learning	ORNL / DOE	$700,000
2016	PI	Deep-learning Enabled Clinical Cancer Surveillance (DECCS) for Exascale Computing	ORNL / DOE	$150,000
2014 - 16	PI	Algorithms for Context-Specific Analysis of Heterogeneous Unstructured Big Health Data	ORNL / DOE	$800,000
2013 - 15	Co-I	Computational National Healthcare Model for Value-Based-Purchasing Cost Projections (PI: Shankar)	ORNL / DOE	$800,000
2012 - 16	Lead PI	Cyber-Informatics Tools to Study Migration and Environmental Cancer Risk	NIH/NCI	$1,600,000
2011 - 13	PI	Perception-Driven Decision Support in Medical Imaging	ORNL / DOE	$760,000
2010 - 11	PI	Information Theoretic Based CAD in Mammography	Duke Medical Center	$100,000
2005 - 10	PI	Information Theoretic Based CAD in Mammography	NIH / NCI	$1,250,000
2010 - 13	Co-I	3D Digital Breast Phantoms For Multimodality Research (PI: Segars, co-I till 2011)	NIH / NCI	$1,700,000
2009 - 12	Co-I	In Vivo Diagnosis of Breast Cancer Using Gamma-Stimulated Emission-Computed Tomography (PI: Kapadia)	DOD	$600,000
2008 - 10	Co-PI	Knowledge-based optimization of radiation treatment planning for prostate cancer (PI: Lo)	W. H. Coulter Partners	$200,000
2006 - 09	Mentor	Simulations to evaluate accuracy and patient	DOD	$90,000

		dose in neutron stimulated emission computed tomography (NSECT) for breast cancer diagnosis	Postdoctoral Fellowship	
2004 - 07	PI	Breast Elemental Composition (Original PI: Floyd –deceased, PI as of 2006)	NIH/NCI	$385,000
1999 - 2001	Co-I	Computer Aid for the Decision to Biopsy Breast Lesions (PI: Floyd)	NIH / NCI	$310,000
2002 - 05	Co-I	Predicting breast cancer with ultrasound and mammography (PI: Lo)	NIH / NCI	$310,000
2001 - 03	Co-I	Improved diagnosis of breast micro-calcification clusters (PI: Lo)	NIH / NCI	$310,000
2001 - 02	PI	A Constraint Satisfaction Neural Network Approach for Data Mining Classification and Association Rules in Breast Cancer Databases	USAMRMC	$90,000
1999 - 03	PI	Computer-Aided Analysis of Ventilation-Perfusion Lung Scans for Detection and Classifications of Lung Diseases	Whitaker Foundation	$320,000
1994 - 2000	PI	Acute Pulmonary Embolism: Computer-Aided Diagnosis	NIH / NHLBI	$750,000

Research funding awarded as PI, Lead PI and Mentor:	**$10,155,000**
Research funding awarded as co-PI:	**$59,835,000**
Research funding awarded as co-Investigator:	**$4,030,000**
Total research funding awarded to date:	**$74,020,000**