GEORGIA D. TOURASSI, PHD

Curriculum Vitae
Division Director & Distinguished Scientist
National Center for Computational Sciences
Oak Ridge National Laboratory
https://www.ornl.gov/staff-profile/georgia-tourassi

SUMMARY

- **Division Director** of the National Center for Computational Sciences (NCCS) and Director of the Oak Ridge Leadership Computing Facility (OLCF) in the Computing and Computational Sciences Directorate, Oak Ridge National Laboratory. Leads a premier division of 175 scientific and technical staff members with an annual budget of $280M. The division provides world leading high performance computing and data science infrastructure and related computational capabilities to accelerate scientific discovery and engineering. Notable accomplishments include (i) staff growth by 40% since becoming division director, (ii) 5-year renewal of strategic interagency partnerships (NCI, NOAA, AirForce Weather), (iii) procurement of a new HPC infrastructure for NOAA and deployment of new HPC infrastructure for AFW, (iv) spearheaded a new capability for DOE leadership computing to enable stakeholders with sensitive data to perform analyses at scale on OLCF resources. OLCF is the first leadership computing facility in the DOE complex to support projects with PHI/PII and ITAR data, and (v) delivery of Frontier, the world's first exascale computing system dedicated to open science.
- **Distinguished Biomedical Scientist**. Research focused on artificial intelligence, scalable data analytics, and high-performance computing for biomedical discovery and biomedical informatics. More than 280 peer-reviewed journal articles, conference proceedings articles, book chapters, and editorials, as well as 15 invention disclosures and patents. To date research portfolio of $70M 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:
  DOE's Secretary Honors Award – COVID 19 Insights Partnership Team (2021)
  DOE's Secretary Honors Award – COVID 19 HPC Resource Team (2021)
  Elected Distinguished IEEE Engineering in Medicine and Biology Society Lecturer (2019-20)
  DOE Secretary's Appreciation Award for leadership in the DOE–NCI Joint Design of Advanced Computing Solutions for Cancer initiative (2016)
  R&D 100 Award – "iSPM: Intelligent Software Suite for Personalized Modeling of Expert Opinions, Decisions, and Errors in Visual Examination Tasks" (2014)
- **Elected Fellow** of the American Institute of Medical and Biological Engineering, the American Association of Physicists in Medicine, the International Society for Optics and Photonics, and the American Association for the Advancement of Sciences.
- **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

- **Division Director**, National Center of Computational Sciences (2019 – now).
- **Director of the Oak Ridge Leadership Computing Facility** (2019 – now).
- **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

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 **UT-Battelle Distinguished Researcher Award**.

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

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, (2001-present)

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

- **Associate Editor,** *IEEE Journal of Biomedical and Health Informatics* (2020 -).
- **Associate Editor,** *IEEE Access* (2019 -).
- **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

2022 **Invited Speaker,** ExSAIS 2022: Workshop on Extreme Scaling of AI for Science, Jun 3, 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

2022 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

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

Peer-Reviewed Journal Articles

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.

78. Bhattacharya, T., Brettin, T., Doroshow, J. H., Evrard, Y. A., Greenspan, E. J., Gryshuk, A. L., ... Tourassi,G. (2019). AI Meets Exascale Computing: Advancing Cancer Research With Large-Scale High Performance Computing. Frontiers in Oncology, 9.

77. Alawad, M., Gao. S., Qiu, J.X.,…, Tourassi.G.D. "Automatic Extraction of Cancer Registry Reportable Information from Free-Text Pathology Reports Using Multi-Task Convolutional Neural Networks" Journal of American Medical Informatics Association 27.1 (2019): 89-98.

76. Gao, S, Qiu, J.X., Alawad, M.A., ….,Tourassi, G.D*. Ramanathan A.* "Classifying Cancer Pathology Reports with Hierarchical Self-Attention Networks." Artificial Intelligence in Medicine 101 (2019): 101726.

75. Rivera, D. Lee. J, Hsu E., Khoury M.J., Meng F., Olivero, O., Penberthy L., Tourassi, G.D.," Harnessing the Power of Collaboration and Data Science Training to Generate Real World Evidence in the Era of Precision Oncology." Clinical Pharmacology and Therapeutics (2019).

74. E. Begoli, J. Brase, B. DeLaRosa, P. Jones, D. Kusnezov, J. Paragas, R. Stevens, F. Stritz, G.D. Tourassi, "Precision Medicine as an Accelerator for Next generation Cognitive Supercomputing," International Journal of Supercomputing Frontiers and Innovations (submitted April 2018)

73. J.X. Qiu, H.-Y. Yoon, K. Srivastava, T. Watson, J.B. Christian, A. Ramanathan, X-C Wu, G.D. Tourassi, P.A. Fearn, "Scalable Deep Text Comprehension for Cancer Surveillance on High-Performance Computing," BMC BIOINFORMATICS, 19(18), 488 (2018).

72. F. Alamudun, H.-Y. Yoon, G. Morin-Ducote, G.D. Tourassi, "Modeling Sequential Context Effects in Diagnostic Interpretation of Screening Mammograms," Journal of Medical Imaging 5, no. 3 (2018): 031408.

71. S. Gao, M.T. Young, J.X. Qiu, J.B. Christian, P.A. Fearn, G.D. Tourassi, A. Ramanathan, "Hierarchical Attention Networks for Information Extraction from Cancer Pathology Reports," Journal of American Medical Informatics Association 25:3(1):321-330 (2018).

70. J.X. Qiu, H.-Y. Yoon, P.A. Fearn, G.D. Tourassi, "Deep Learning for Automated Extraction of Primary Sites from Cancer Pathology Reports," IEEE Journal of Biomedical and Health Informatics 22(1): 244-251 (2018)

69. H.-Y. Yoon, G.D. Tourassi, "Investigating Sociodemographic Disparities in Cancer Risk Using Web-Based Informatics," Journal of Human Performance in Extreme Environments 14(1), Article 2 (2018).

68. H.-Y. Yoon, F. Alamudun, K.B. Hudson, G. Morin-Ducote, G.D. Tourassi, "Deep Gaze Velocity Analysis During Mammographic Reading for Biometric Identification of Radiologists," Journal of Human Performance in Extreme Environments 14(1), Article 3 (2018).

67. F. Alamudun, H.-Y. Yoon, K.B. Hudson, G. Morin-Ducote, T. Hammond, G.D. Tourassi, "Fractal Analysis of Visual Search Strategy in Mammographic Screening," Medical Physics 9787: 1 (2017).

66. S.G. Armato, K. Drukker, F. Li, L. Hadjiiski. G.D. Tourassi, R.M. Engelmann,... & Petrick, N. A., "Letter to the Editor: Use of Publicly Available Image Resources", Academic Radiology, 24(7), 916-917 (2017).

65. S.G. Armato, K. Drukker, F. Li, L. Hadjiiski. G.D. Tourassi, R.M. Engelmann, M.L. Giger, G. Redmond, K. Garahani, J.S. Kirby, L.P. Clarke, "The LUNGx Challenge for Computerized Lung Nodule Classification", Journal of Medical Imaging 3(4): 044506-044506 (2016).

64. G.D. Tourassi, H-J Yoon, S. Xu, "A Novel Cyber-Informatics Approach for Automated Surveillance of Cancer Mortality Trends", Journal of Biomedical Informatics (JBHI) 61: 110-118 (2016).

63. G.D. Tourassi, H-J Yoon, S. Xu, X. Han. "The Utility of Web Mining for Epidemiological Research: Exploring the Association Between Parity and Cancer Risk", Journal of American Medical Informatics (JAMIA) 23(3), 588-595 (2016).

62. S.G. Armato, L. Hadjiiski, G.D. Tourassi, K. Drukker, M.L. Giger, F. Li, G. Redmond, L.P. Clarke. "Guest Editorial: LUNGx Challenge for computerized lung nodule classification: reflections and lessons learned" Journal of Medical Imaging 2(2), 020103-020103 (2015).

61. S. Xu, H-J Yoon, G.D. Tourassi, "A user-oriented web crawler for selectively acquiring online content in e-health research," Bioinformatics 14:104-114 (2014).

60. G.D. Tourassi, S. Xu, H-J Yoon, G. Morin-Ducote, K.A. Hudson, "Comparative Analysis of Data Collection Methods for Individualized Modeling of Radiologists' Visual Similarity Judgments in Mammograms", Academic Radiology 20(11): 1371-1380 (2013).

59. S. Voisin, F. Pinto, G. Morin-Ducote, K.A. Hudson, G.D. Tourassi, "Predicting Diagnostic Error in Radiology via Eye-Tracking and Image Analytics: Application in Mammography", Medical Physics 40(10): 101906 (2013).

58. N. Petrick, B. Sahiner, S. G. Armato III, A. Bert, L. Correale, S. Delsanto, M. T. Freedman, D. Fryd, D. Gur, L. Hadjiiski, Z. Huo, Y. Jiang, L. Morra, S. Paquerault, V. Raykar, M. Salganicoff, F. Samuelson, R. M. Summers, G. Tourassi, H. Yoshida, B. Zheng, C. Zhou, H.-P. Chan, "Evaluation of computer-aided detection and diagnosis systems," Medical Physics 40(8): 087001 (2013).

57. M.J. Khoury, T.K. Lam, J.P.A. Ioannidis, P. Hartge, M.R. Spitz, J.E. Buring, S.J. Chanock, R.T. Croyle, K.A. Goddard, G.S. Ginsburg, Z. Herceg, R.A. Hiatt, R.N. Hoover, D.J. Hunter, B.S. Kramer, M.S. Lauer, J.A. Meyerhardt, O.I. Olopade, J.R. Palmer, T.A. Sellers, D. Seminara, D.F. Ransohoff, T.R. Rebbeck, G.D. Tourassi, D.M. Winn, A. Zauber, S.D. Schully, "Transforming Epidemiology for 21st Century Medicine and Public Health", Cancer Epidemiology, Biomarkers & Prevention 22:508-516 (2013).

56. G.D. Tourassi, S. Voisin, V. Paquit, E.A. Krupinski, "Investigating the Link Between Radiologists' Gaze, Diagnostic Decision, and Image Content", Journal of American Association of Medical Informatics (JAMIA) 20 (Nov/Dec): 1067-1075 (2013).

55. M.M. Mazurowski, H. Barnhart, J.A. Baker, G.D. Tourassi, “Identifying error-making patterns in assessment of mammographic BI-RADS descriptors among radiology residents using statistical pattern recognition”, Academic Radiology 19(7):865–871 (2012).

54. J.M. Malof, M.A. Mazurowski, G.D. Tourassi, “The effect of class imbalance on case selection for case-based classifiers: an empirical study in the context of medical decision support”, Neural Networks 25: 141-145 (2012).

53. M.M. Mazurowski, , J.Y. Lo, B. P. Harrawood, G.D. Tourassi, “Mutual information-based template matching scheme for detection of breast masses: application to mammography and digital breast tomosynthesis”, J Biomedical Informatics 44:815-822 (2011).

52. M.M. Mazurowski, J.M. Malof, G.D. Tourassi, “Comparative analysis of instance selection algorithms for instance-based classifiers in the context of medical decision support”, Phys Med Biol 56: 473-489 (2011).

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9. G.D. Tourassi, C.E. Floyd Jr., H.D. Sostman, and R.E. Coleman, “Performance Evaluation of An Artificial Neural Network for the Diagnosis of Acute Pulmonary Embolism: Effect of Case and Observer Selection”, 80th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), Chicago, Illinois, November 27-December 2, 1994.

8. G.D. Tourassi, C.E. Floyd Jr., H.D. Sostman, and R.E. Coleman, “Artificial Neural Network for Diagnosis of Acute Pulmonary Embolism”, 79th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), Chicago, Illinois, November 28-December 3, 1993.

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3. M.T. Munley, C.E. Floyd, G.D. Tourassi, J.E. Bowsher, and R.E. Coleman, "Out-Of-Plane Scatter Detection and Compensation In SPECT", Annual Meeting of the Society of Nuclear Medicine (SNM), Washington, DC, June 19-22, 1990. J Nucl Med Vol. 31, p. 798.

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

Database	Author ID	Documents	Citations	h-Index	Field-Weighted Citation Impact
SCOPUS	7003845683	210	3801	30	1.45
Google Scholar	O_0diUoAAAAJ	322	6307	37	

SELECTED MEDIA COVERAGE

https://www.top500.org/news/ornls-frontier-first-to-break-the-exaflop-ceiling/ (May 30, 2022)

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)

https://www.wvlt.tv/content/news/ORNL-supercomputing-helps-sharpen-breast-cancer-detection-487696441.html (July 9, 2018)

https://www.medimaging.net/industry-news/articles/294774021/researchers-use-ai-to-improve-mammogram-interpretation.html (July 4, 2018)

https://medicalxpress.com/news/2018-06-ai-mammogram.html (June 20, 2018)

https://eteconline.org/news/ornl-researchers-use-ai-to-improve-mammogram-interpretation/ (June 19, 2018)

https://www.onartificialintelligence.com/articles/13981/novel-method-for-energy-efficient-deep-neural-networks (April 2, 2018)

https://www.labmanager.com/news/2018/03/researchers-design-novel-method-for-energy-efficient-deep-neural-networks#.W7wSsqlRf_Q (March 16, 2018)

https://www.ornl.gov/news/ornl-researchers-design-novel-method-energy-efficient-deep-neural-networks (March 14, 2018)

https://www.eurekalert.org/pub_releases/2018-03/drnl-ord031418.php (March 14, 2018)

http://pulse.embs.org/january-2017/tracking-disease/ (January/February 2017)

https://ascr-discovery.org/2016/11/machine-learning-curve/ (November, 2016)

http://finance.yahoo.com/news/nvidia-teams-national-cancer-institute-030000301.html (November 14, 2016)

http://nvidianews.nvidia.com/news/nvidia-teams-with-national-cancer-institute-u-s-department-of-energy-to-create-ai-platform-for-accelerating-cancer-research (November 14, 2016)

https://www.ornl.gov/news/accelerating-cancer-research-deep-learning (November 6, 2016)

https://www.ornl.gov/news/medicine-deep-learning-cancer-research (October 3, 2016)

https://www.ornl.gov/news/computing-towards-cure (July 28, 2016)

https://www.amia.org/education/webinars/utility-web-mining-epidemiological-research-studying-association-

between-parity (January 14, 2016)

http://vkc.mc.vanderbilt.edu/notables/2015/06/2015-hobbs-discovery-grants-announced/ (June 4, 2015)

http://aimbe.org/georgia-d-tourassi-ph-d-to-be-inducted-into-medical-and-biological-engineering-elite/ (March 5, 2015)

https://gcn.com/articles/2015/01/28/onrl-hpc-health-data.aspx, "How a computing powerhouse delivers health care insights", January 28, 2015

http://www.cray.com/blog/unlocking-the-full-potential-of-health-data/, "Unlocking the Full Potential of Health Data", October 28, 2014

http://www.rdmag.com/award-winners/2014/08/better-decision-making "Better Decision Making", *R&D Magazine*, August 25, 2014

http://spie.org/newsroom/technical-articles/5026-developing-personalized-decision-support-tools-in-radiology?highlight=x2416&ArticleID=x102634] "Developing personalized decision support tools in radiology", *SPIE Biomedical Optics & Medical Imaging*, August 1, 2013

http://iopscience.iop.org/0031-9155/page/Highlights%20of%202008, *Physics in Medicine and Biology, Highlights* of 2008 Collection, 2008

http://www.economist.com/node/7270191, "The Bosom Buddy", published on *The Economist* August 11, 2006

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http://www.auntminnie.com/index.aspx?sec=ser&sub=def&pag=dis&ItemID=71925, "Pilot study: Entropy-driven CAD zips through vast breast image database", *AuntMinnie.com*, August 2, 2006

http://psychcentral.com/news/archives/2006-07/aiop-gpf072506.html , "Google-like process for mammogram images speeds up computer's second opinions", *PsychCentral*, August 2006

http://news.bio-medicine.org/medicine-news-3/Google-like-process-for-mammogram-images-speeds-up-computers-second-opinions-3805-1/ "Google-like process for mammogram images speeds up computer's second opinions", *Bio-Medicine News*, July 25, 2006

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RESEARCH AWARDS

DURATION	ROLE	TITLE	FUNDING AGENCY	BUDGET
2020 - now	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 - now	Co-PI	JDACS4C: Joint Design of Advanced Computing Solutions for Cancer	NIH/NCI	$35,000,000
2016 - now	Co-PI	CANDLE: Cancer Distributed Learning Environment	DOE / ASCR	$24,855,000
2016 - 2018	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 - 2016	PI	Algorithms for Context-Specific Analysis of Heterogeneous Unstructured Big Health Data	ORNL / DOE	$800,000
2013 - 2015	Co-I	Computational National Healthcare Model for Value-Based-Purchasing Cost Projections (PI: Shankar)	ORNL / DOE	$800,000
2012 - 2016	Lead PI	Cyber-Informatics Tools to Study Migration and Environmental Cancer Risk	NIH/NCI	$1,600,000
2011 - 2013	PI	Perception-Driven Decision Support in Medical Imaging	ORNL / DOE	$760,000
2010 - 2011	PI	Information Theoretic Based CAD in Mammography	Duke Medical Center	$100,000
2005 - 2010	PI	Information Theoretic Based CAD in Mammography	NIH / NCI	$1,250,000
2010 - 2013	Co-I	3D Digital Breast Phantoms For Multimodality Research (PI: Segars, co-I till 2011)	NIH / NCI	$1,700,000
2009 - 2012	Co-I	In Vivo Diagnosis of Breast Cancer Using Gamma-Stimulated Emission-Computed Tomography (PI: Kapadia)	DOD	$600,000
2008 - 2010	Co-PI	Knowledge-based optimization of radiation treatment planning for prostate cancer (PI: Lo)	W. H. Coulter Partners	$200,000
2006 - 2009	Mentor	Simulations to evaluate accuracy and patient dose in neutron stimulated emission computed tomography (NSECT) for breast cancer diagnosis	DOD Postdoctoral Fellowship	$90,000
2004 - 2007	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 - 2005	Co-I	Predicting breast cancer with ultrasound and mammography (PI: Lo)	NIH / NCI	$310,000
2001 - 2003	Co-I	Improved diagnosis of breast micro-calcification clusters (PI: Lo)	NIH / NCI	$310,000
2001 - 2002	PI	A Constraint Satisfaction Neural Network Approach for Data Mining Classification and Association Rules in Breast Cancer Databases	USAMRMC	$90,000
1999 - 2003	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**