BIOGRAPHICAL SKETCH

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NAME: Fu, Pingfu

eRA COMMONS USER NAME (credential, e.g., agency login): PINGFUFU

POSITION TITLE: Professor of Biostatistics

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Jiangxi Normal University, Jiangxi, P.R. China	BS	07/1984	Mathematics
Xiangtan University, Hunan, P.R. China	MS	07/1987	Mathematics
Case Western Reserve University, Cleveland, OH	MS	05/1996	Statistics
Case Western Reserve University, Cleveland, OH	PhD	05/2001	Biostatistics

A. Personal Statement

Dr. Fu has worked extensively in cancer research and has the record of working together with numerous investigators at Case Western Reserve medical school and Case Comprehensive Cancer Center (Case CCC) in particular. He has worked on numerous cancer projects including lung cancer, breast cancer, prostate cancer, leukemia among others, and applied many novel statistical methods in data from clinical studies. Specifically, he has helped investigators in protocol development regarding to study design and clinical trial conducting/monitoring, in grant development, in data analysis and scientific reporting. He has served in the Data Safety and Toxicity Committee (DSTC), Tissue Utilization Review Committee and been serving in the Protocol Review and Monitoring Committee (PRMC) at Case CCC. He has had interest in developing statistical methods to design clinical trials and to analyze data related to a wide range of health outcomes. Besides cancer research, he has got involved in other subject areas in medical research including dermatology, HIV/AIDS. He teaches *survival data analysis* annually and mentors/advises graduate students in biostatistics and in biomedical engineering as well as medical students, residents, and fellows in oncology. Dr. Fu is responsible for biostatistics on a large number of NIH grants, many which emphasize imaging. In summary, Dr. Fu has the training, expertise, experience, and motivation necessary to provide the support in terms of efficient, robust and reproducible study design, conduct, analysis, interpretation and reporting of results from all studies of the current grant proposal.

B. Positions, Scientific Appointments and Honors

2020- Professor (with tenure, School of Medicine), Department of Population and Quantitative Health Sciences, Case Western Reserve University, Cleveland, OH
2005- Member, Case Comprehensive Cancer Center, Cleveland, OH
2017- 2020 Associate Professor (with tenure, School of Medicine), Department of Population and Quantitative Health Sciences, Case Western Reserve University, Cleveland, OH
2011-2017 Associate Professor (with tenure, School of Medicine), Department of Epidemiology & Biostatistics, Case Western Reserve University, Cleveland, OH
2010-2011 Associate Professor, Department of Epidemiology & Biostatistics, Case Western Reserve University, Cleveland, OH
2003-2010 Assistant Professor, Department of Epidemiology & Biostatistics, Case Western Reserve University, Cleveland, OH
2001-2003 Senior Instructor, Department of Epidemiology & Biostatistics, Case Western Reserve University, Cleveland, OH
2000-2001 Research Associate, Department of Biostatistics & Epidemiology, Cleveland Clinic, Cleveland, OH
1996-2001 Teaching/Research Assistant, Department of Epidemiology & Biostatistics, Case Western Reserve

University, Cleveland, OH
1994-1996 Research Assistant, Department of Statistics, Case Western Reserve University, Cleveland, OH
1987-1994 Assistant Professor, Department of Mathematics, Jiangxi Normal University, PROC

Other Experience and Memberships

2021- Member, Editorial board, Journal of National Cancer Center
2021-2023 Member, Editorial board, Journal of Clinical Oncology
2009- Member, Editorial board, Reviews on Recent Clinical Trials
2006 - Member, American Statistical Association
Grant reviewer, The Centers for Disease Control and Prevention (CDC)
Grant reviewer, The Department of Defense (DoD)
Grant reviewer, NIH/NIAMS, NIH/NHLBI, NIH/NIDDK, NIH/NIDCD, NIH/NCI, NIH/CAM, NIH/NCCIH, NIH/NIA
Grant reviewer, NIH Study Sections: CONC, SBIR/STTR.

Honors

The-professor-of-the-year, Department of Epidemiology and Biostatistics, CWRU, 2010.

C. Contributions to Science

1. His published work directly tackled mathematical and statistical problems in the area of stochastic processes, survival analysis and tree-based methods. He has applied those methods to clinical studies of various types of cancers and made several novel observations in the area of melanoma, blood malignancies, lung cancer and HIV/AIDS.
    a. **P. Fu**, J. S. Rao (2004). On a simple method for analyzing multivariate survival data using sample survey methods. *Journal of Modern Applied Statistical Methods*, vol. 3 (2), 345-356.
    b. **P. Fu**, M. Laughlin and H. Zhang (2006). Comparison of Survival Times in a Transplant Study of Hematologic Disorders. *Contemporary Clinical Trials*, vol. 27 (2), 174-182. PMID: 16326144
    c. **P. Fu**, W. J. van Heeckeren, P. D. Wadhwa, D. J. Bajor, R. J. Creger, Z. Xu, B. W. Cooper, M. J. Laughlin, S. L. Gerson, O. N. Koç, H. M. Lazarus (2008). Time-Dependent Effect of Non-Hodgkin's Lymphoma Grade on Disease Free Survival of Relapsed/Refractory Patients treated with High-Dose Chemotherapy plus Autotransplantion. *Contemporary Clinical Trials*, vol. 29, 157-164. PMID: 17707140
    d. **P. Fu**, N. Pennell, N. Sharma, Q. Yi, A. Dowlati, B. Halmos (2017). Interaction of treatment and biomarker in advanced non-small cell lung cancer. *Reviews on Recent Clinical Trials*, vol. 12: 51 - 58. PMID: 27633965

2. His major contributions to science have been made through collaborative, interdisciplinary research as he has played key roles in numerous scientific studies, especially in the areas of head and neck cancer, lung cancer, breast cancer, prostate cancer, leukemia, dermatology and HIV/AIDS as demonstrated by the record of publications in top-tier science journals.
    a. W. O. Mwanda, J. Orem, **P. Fu**, C. Banura, J. Kakembo, C. A. Onyango, A. Ness, S. Reynolds, J. L. Johnson, V. Subbiah, J. Bako, H. Wabinga, F. K. Abdallah, H. J. Meyerson, C. C. Whalen, M. M. Lederman, J. Black, L.W. Ayers, E. Katongole-Mbidde, S. C. Remick (2009). Dose-Modified Oral Chemotherapy in the treatment of AIDS-Related Non-Hodgkin's Lymphoma in East Africa. *Journal of Clinical Oncology,* vol. 27 (21): 3480-3488. PMID: 19470940; PMCID: PMC2717754
    b. A. Dowlati, M. Lipka, K. McColl, S. Dabir, M. Behtaj, A. Miron, N. Sharma, **P. Fu**, G. Wildey (2016). Clinical Correlation of Extensive-Stage Small Cell Lung Cancer Genomics. *Annals of Oncology*, vol. 27 (4): 642-647. PMCID: PMC4803453
    c. W. Xie, N. Reder, C. Koyuncu, P. Leo, S. Hawley, H. Huang, C. Mao, N. Postupna, S. Kang, R. Serafin, G. Gao, Q. Han, K. Bishop, L. Barner, **P. Fu**, J. Wright, C. Keene, J. Vaughan, A. Janowczyk, A. Glaser, A. Madabhushi, L. True, J. Liu (2022). Prostate cancer risk stratification via non-destructive 3D pathology with deep learning-assisted gland analysis. *Cancer Research*, vol. 82 (2): 334-45. PMID: 34853071
    d. A. Wilkerson, P. Parthasarathy, N. Stabellini, C. Mitchell, P. Pavicic, **P. Fu**, A. Rupani, H. Husic, P. Rayman, S. Swaidani, J. Abraham, T. Budd, H. Moore, Z. Al-Hilli, J. Ko, J. Baar, T. Chan, T. Alban, M. Diaz-Montero, A. Montero (2024). Phase II Clinical Trial of Pembrolizumab and Chemotherapy Reveals Distinct Transcriptomic Profiles by Radiographic Response in Metastatic Triple-Negative Breast Cancer. *Clinical Cancer Research,* 30 (1): 82-93. PMID: 37882661

3. Radiomics for precision medicine. We have developed novel approaches using CT scans and digitized

pathology, artificial intelligence and machine learning methodologies 1) to diagnose and monitor disease progression; 2) to identify novel biomarkers for prediction of treatment response; 3) to translate risk predictions into actionable personalized managements of health care.

a. H. Bhargava, P. Leo, R. Elliott, A. Janowczyk, J. Whitney, S. Gupta, **P. Fu**, K. Yamoah, F. Khani, B. Robinson, T. Rebbeck, M. Feldman, P. Lal, A. Madabhushi (2020). Computationally derived image signature of stromal morphology is prognostic of prostate cancer recurrence following prostatectomy in African American patients. *Clinical Cancer Research*, vol. 26(8): 1915-1923. PMID: 32139401
b. C. Koyuncu, C. Lu, K. Bera, Z. Zhang, J. Xu, P. Andrea Toro Castano, G. Corredor, D. Chute**, P. Fu**, W. Thorstad, F. Faraji, J. Bishop, M. Mehrad, P. Castro, A. Sikora, L. Thompson, R. Chernock, K. Lang Kuhs, J. Luo, V. Sandulache, D. Adelstein, S. Koyfman, J. Lewis, A. Madabhushi (2021). Computerized Tumor Multinucleation Index (MuNI) is Prognostic in P16+ Oropharyngeal Carcinoma: A Multi-site Validation Study. *The Journal of Clinical Investigation*, vol. 131 (8): e145488. PMID: 33651718
c. X. Wang, C. Barrera, K. Bera, V. Viswanathan, S. Azarianpour-Esfahani, C. Koyuncu, P. Velu, M. Feldman, M. Yang**, P. Fu**, K. Schalper, H. Mahdi, C. Lu, V. Velcheti, A. Madabhushi (2022). Spatial interplay patterns of cancer nuclei and tumor infiltrating lymphocytes (TILs) predict clinical benefit for immune checkpoint inhibitors. *Science Advances*, vol. 8 (22): eabn3966. PMID: 35648850
d. Y. Chen, H. Li, A. Janowczyk, P. Toro, G. Corredor, J. Whitney, C. Lu, C. Koyuncu, M. Mokhtari, C. Buzzy, S. Ganesan, M. Feldman, **P. Fu**, H. Corbin, A. Harhajanka, H. Gilmore, L. Goldstein, N. Davidson, S. Desai, V. Parmar, A. Madabhushi (2023). Computational pathology improves risk stratification of a multi-gene assay for early stage ER+ Breast Cancer*. npj Breast Cancer*, vol. 9 (1): 40. PMID: 37198173.

4. Additional contributions to statistical science in the area of tree-based models, study design, missing value issues (i.e. measurements with limits of detection), and problem of separation were made with a team of collaborators.

a. B. J. Averbook, **P. Fu**, J. S. Rao and E. G. Mansour (2002). A long-term analysis of 1018 melanoma patients by classical Cox regression and tree-structured survival analysis at a major referral center: Implications on the future of cancer staging. *Surgery*, 132: 589-604. PMID: 12407342
b. **P. Fu**, A. Dowlati, M. Schluchter (2009). Comparison of power between randomized discontinuation design and upfront randomization design on progression free survival. *Journal of Clinical Oncology*, vol. 27 (25): 4135-4141. PMCID: PMC2734425
c. **P. Fu**, A. Panneerselvam, B. Clifford, A. Dowlati, P.C. Ma, G. Zeng, B. Halmos, R.S. Leidner (2015). Simpson's Paradox - Aggregating and Partitioning Populations in Health Disparities of Lung Cancer Patients. *Statistical Methods in Medical Research*, 24(6): 937-48. PMID: 22246415.
d. **P. Fu**, J. Hughes, G. Zeng, S. Hanook, J. Orem, O.W. Mwanda, S.C. Remick (2016). A comparative investigation of methods for longitudinal data with limits of detection through a case study. *Statistical Methods in Medical Research*, 25(1):153-66. PMID: 22504231.

Complete List of Published Work can be found in MyBibliography:
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