

# Zongchao Liu (刘宗超)

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## EDUCATION

<b>School of Oncology, Peking University</b>	<i>Beijing, China</i>
Ph.D. in <i>Epidemiology and biostatistics</i>	<i>2022-present</i>
<b>Mailman School of Public Health, Columbia University</b>	<i>New York, USA</i>
M.S. in <i>Biostatistics, theory and methods track</i>	<i>2019-2021</i>
<b>School of Population and Public Health, University of British Columbia</b>	<i>Vancouver, Canada</i>
Exchange student	<i>2017</i>
<b>School of Public Health, Shandong University</b>	<i>Jinan, China</i>
B.S. in <i>Preventive Medicine, division of biostatistics and epidemiology</i>	<i>2014-2019</i>

## SKILLS

**Area of Interest:** Biostatistics, Cancer epidemiology, Health Data Science, Computational biology, etc.

**Knowledge:** Statistical learning and deep learning, Computational biology, Biostatistical methods, etc.

**Operation system and software:** Linux, Python, R, SAS, MATLAB, LaTeX, Markdown, etc.

**Language:** Fluently both orally and written in English, Cantonese and Mandarin

## HONORS & AWARDS

Selected Young Scientist for the 72 <sup>nd</sup> Lindau Nobel Laureate Meeting (1 of 600 worldwide)	<i>2023</i>
Best Oral Presentation Award of AACR-KCA Joint Conference in Precision Oncology	<i>2023</i>
Peking University Outstanding Scientific Research Award	<i>2023</i>
Young Scientist Award for Entitled Papers in Gut IDDF (Co-authored)	<i>2023</i>
Ranked 2nd in CNKI Academic Essentials for high-impact medical papers (Sep-Oct 2023)	<i>2023</i>
Outstanding Graduates	<i>2019</i>
Excellent Student Scholarship	<i>2015-2019</i>
Member of China Anti-cancer Youth Committee	<i>2018</i>
Member of the Elite Class, Chinese Academy of Sciences	<i>2018</i>
Science and Technology Innovation Training Program Funding	<i>2016-2018</i>
Bronze Award, Information Technology and Entrepreneurship Competition	<i>2017</i>
First Prize, Shenzhen Cup Mathematical Modeling Competition	<i>2016</i>

## FUNDINGS & SUPPORTS

Peking University Cancer Hospital & Institute Scientific Research Grant - Lead researcher
National Natural Science Foundation of China – Participant
Summit' Talent Training Program (Beijing Center of Hospital management) - Participant
Baidu-PKU Fund – Participant

## RELEVANT WORK EXPERIENCES

<b>Beijing Anzhen Hospital</b>	<i>June. 2023-present</i>
Part-time biostatistician	<i>Beijing, China</i>
<b>Peking University Cancer Hospital &amp; Institute</b>	<i>Jun. 2021 – Aug. 2022</i>

Full-time Research assistant (Biostatistician)  
**Department of Mental Health Data Science, NYSPI**  
 Part-time Research assistant  
**Tsinghua University Vanke School of Public Health**  
 Part-time Research assistant  
**Qingdao Center for Disease Control and Prevention**  
 Staff Intern  
**Shandong Qianfoshan Hospital**  
 Intern staff & physician

Beijing, China  
 Mar. 2020 – May. 2021  
 New York, USA  
 Mar. 2020 – May. 2021  
 Beijing, China  
 Feb. 2019 – Jun. 2019  
 Qingdao, China  
 May. 2017 - Jul. 2017  
 Jinan, China

## SELECTED CONFERENCE ABSTRACTS

- **Zong-Chao Liu**, Heng-min Xu, Meng-Yuan Wang, Wei-Cheng You, Kai-Feng Pan, Wen-Qing Li, \*. Unveiling Genetically Influenced Metabotypes for Gastric Cancer Risk Stratification: A Multi-Omics Study with Preliminary Insights into Primary Prevention. AACR-KCA Joint Conference on Precision Medicine in Cancer 2023.
- Heng-Min Xu, **Zong-Chao Liu**, ..., Wen-Qing Li. Leveraging genetic predisposition to gastric lesion progression for risk assessment of gastric cancer and its precision primary prevention: a longitudinal genome-wide association study. *The International Digestive Disease Forum (Hong Kong) 2023*.
- **Liu ZC**, Huang S, You WC, Pan KF, Li WQ. Plasma lipids associated with gastric lesion progression to gastric cancer: a prospective lipidomics study. *World Cancer Conference 2022*.
- **Zong-Chao Liu**, Sha Huang, ..., Wen-Qing Li. Integrative proteomics and lipidomics analyses identifying potential pathways associated with gastric lesion progression to gastric cancer. *Chinese Congress on Oncology 2022*.
- **Liu Z.**, Li G., Excess comorbidities associated with autistic spectrum disorder diagnosis in pediatric hospital discharge records. *2021 APHA Annual Conference*.

## Other ACADEMIC ACTIVITIES

- **Sino-German Academic Annual Conference (2023)**: Presented recent research on upper gastrointestinal tumors; engaged in academic exchanges with Dr. Markus Gerhard's team, Technical University of Munich.
- **NEJM Watch Commentary (2023)**: Invited author for an official commentary on the recently published paper in NEJM, "*Helicobacter pylori*, Homologous-Recombination Genes, and Gastric Cancer" [[link](#)].
- **CNKI Academic Essentials (Sep-Oct 2023)**: First author of "Interpretation of the Global Cancer Statistics Report 2020," achieving 48,522 downloads and 1,717 citations; ranked as a high-impact medical paper.

## SELECTED PUBLICATIONS

- **Liu ZC** #, Wu WH #, Huang S, Li ZW, Li X, Shui GH, Lam SM, Li BW, Li ZX, Zhang Y, Zhou T, You WC, Pan KF, Li WQ. Plasma lipids signify the progression of precancerous gastric lesions to gastric cancer: a prospective targeted lipidomics study. *Theranostics*. 2022 Jun 6;12(10):4671-4683.
- Wenhui W #, **Zongchao L** #, Zhexuan L, Weidong L, Lanfu Z, Yang Z, Tong Z, Weicheng Y, Kaifeng P, Wenqing L. Effects of *Helicobacter pylori* eradication on the profiles of blood metabolites and their associations with the progression of gastric lesions: a prospective follow-up study. *Cancer Biol Med*. 2022 Aug 30;19(8):1259–73.
- Zhuang Z, **Liu Z** #, Li J, Wang X, Xie P, Xiong F, Hu J, Meng X, Huang M, Deng Y, Lan P, Yu H, Luo Y.

- Radiomic signature of the FOWARC trial predicts pathological response to neoadjuvant treatment in rectal cancer. *J Transl Med.* 2021 Jun 10;19(1):256.
- **Liu ZC**, Li ZX, Zhang Y, Zhou T, Zhang JY, You WC, Pan KF, Li WQ. Interpretation on the report of Global Cancer Statistics 2020. *Journal of Multidisciplinary Cancer Management (Electronic Version)*, 7(2): 1-13.
  - **Wu XZ #, Liu ZC #**, Qin XX, Li Y, Zhang LF, Li ZX, Zhang Y, Zhou T, Zhang JY, Liu WD, You WC, Pan KF, Li WQ. The risk of incident gastric cancer for populations with different precancerous gastric lesions: a prospective follow-up study. *Zhonghua Liu Xing Bing Xue Za Zhi.* 2022 Dec 10;43(12):1972-1978.
  - **Liu, Z. #**, Lin, Z. #, Cao, W., Li, R., Liu, L., Wu, H., & Tang, K. (2021). Identify Key Determinants of Contraceptive Use for Sexually Active Young People: A Hybrid Ensemble of Machine Learning Methods. *Children*, 8(11), 968.
  - Xu H, Han Y, **Liu Z**, *et al* IDDF2023-ABS-0124 Leveraging genetic predisposition to gastric lesion progression for risk assessment of gastric cancer and its precision primary prevention: a longitudinal genome-wide association study. *Gut* 2023;**72**:A1-A3.
  - Hu Z, **Liu Z**, Li W, You W, Pan K. Health economic evaluation on population-based *Helicobacter pylori* eradication and endoscopic screening for gastric cancer prevention. *Chin J Cancer Res.* 2023 Dec 30;35(6):595-605.
  - Li WQ #, Qin XX #, Li ZX, Wang LH, **Liu ZC**, Fan XH, Zhang LH, Li Y, Wu XZ, Ma JL, Zhang Y, Zhang LF, Li M, Zhou T, Zhang JY, Wang JX, Liu WD, You WC, Pan KF. Beneficial effects of endoscopic screening on gastric cancer and optimal screening interval: a population-based study. *Endoscopy.* 2022 Sep;54(9):848-858.
  - Li X #, Zheng NR #, Wang LH #, Li ZW, **Liu ZC**, Fan H, Wang Y, Dai J, Ni XT, Wei X, Liu MW, Li K, Li ZX, Zhou T, Zhang Y, Zhang JY, Kadeerhan G, Huang S, Wu WH, Liu WD, Wu XZ, Zhang LF, Xu JM, Gerhard M, You WC, Pan KF, Li WQ, Qin J. Proteomic profiling identifies signatures associated with progression of precancerous gastric lesions and risk of early gastric cancer. *EBioMedicine.* 2021 Dec;74:103714.
  - Su XQ, Yin ZY, Jin QY, **Liu ZC**, Han X, Hu ZQ, Zhang L, Ma JL, Li ZX, Zhang Y, Zhou T, Liu WD, You WC, Pan KF, Shi L, Li WQ. Allium vegetable intake associated with the risk of incident gastric cancer: a continuous follow-up study of a randomized intervention trial. *Am J Clin Nutr.* 2023 Jan;117(1):22-32.
  - Fan H, Li X, Li ZW, Zheng NR, Cao LH, **Liu ZC**, Liu MW, Li K, Wu WH, Li ZX, Zhou T, Zhang Y, Liu WD, Zhang LF, You WC, Wang Y, Wu J, Pan KF, Qin J, Li WQ. Urine proteomic signatures predicting the progression from premalignancy to malignant gastric cancer. *EBioMedicine.* 2022 Dec;86:104340.
  - Huo S, Wang K, **Liu Z**, Yang Y, Hee JY, He Q, Takesue R, Tang K. Influence of Maternal Exposure to Mass Media on Growth Stunting Among Children Under Five: Mediation Analysis Through the Water, Sanitation, and Hygiene Program. *JMIR Public Health Surveill.* 2022 Apr 6;8(4):e33394.
  - Wang K, Xu SS, **Liu Z**, Wang W, Hee J, Tang K. A quasi-experimental study on the effectiveness of a standardized comprehensive sexuality education curriculum for primary school students. *J Adolesc.* 2023 Aug 29.
  - Peng L, Guo Y, Gerhard M, Gao JJ, **Liu ZC**, Mejías-Luque R, Zhang L, Vieth M, Ma JL, Liu WD, Li ZX, Zhou T, Li WQ, You WC, Zhang Y, Pan KF. Metabolite Alterations and Interactions with Microbiota in *Helicobacter pylori*-Associated Gastric Lesions. *Microbiol Spectr.* 2023 Aug 17;11(4):e0534722.

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- **Zong-Chao Liu**, Heng-min Xu, Meng-Yuan Wang, Wei-Cheng You, Kai-Feng Pan, Wen-Qing Li, \*.

Unveiling Genetically Influenced Metabotypes for Gastric Cancer Risk Stratification: A Multi-Omics Study with Preliminary Insights into Primary Prevention. AACR-KCA Joint Conference on Precision Medicine in Cancer 2023.

- Heng-Min Xu, **Zong-Chao Liu**, ..., Wen-Qing Li. Leveraging genetic predisposition to gastric lesion progression for risk assessment of gastric cancer and its precision primary prevention: a longitudinal genome-wide association study. *The International Digestive Disease Forum (Hong Kong) 2023*.
- **Liu ZC**, Huang S, You WC, Pan KF, Li WQ. Plasma lipids associated with gastric lesion progression to gastric cancer: a prospective lipidomics study. *World Cancer Conference 2022*.
- **Zong-Chao Liu**, Sha Huang, ..., Wen-Qing Li. Integrative proteomics and lipidomics analyses identifying potential pathways associated with gastric lesion progression to gastric cancer. *Chinese Congress on Oncology 2022*.
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## RELEVANT PROJECTS

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- **Fragility Index for Clinical Trials:** *A designed online tool for fragility index calculation in meta-analysis research. See [here](#)*
- **A Simulation Study to Compare Two Bootstrapping Methods for propensity-score matching:** *Calculated and compared the variability of the average treatment effects with true variance by propensity score matching method under complex and simple bootstrap scenarios. See [here](#)*
- **Implementation and optimization of algorithms on cancer diagnosis dataset:** *Implement optimization algorithms (Newton Raphson; Gradient Decent; Path-wise Coordinate Descent) on the UCI breast cancer dataset. See [here](#)*
- **Analyses of daily COVID-19 cases across nations:** *Estimated parameters for logistic growth curve by gradient descent; Implemented both Gaussian Mixture Model with EM algorithm and K-means algorithm to cluster the estimated parameters for all the affected countries. See [here](#)*
- **A Bayesian model of hurricane trajectories:** *Implemented regular Metropolis–Hastings algorithm to achieve stationary distribution in Markov Chain; Estimated the parameters and numerical standard errors; Predicted the spatial moving trends and wind speed of the hurricanes. See [here](#)*