Lingfei Wu

CONTACT INFORMATION	School of Computing and Information The University of Pittsburgh Pittsburgh, PA 15260, USA	Mobile: (480) 435-2217 E-mail: wlf850927@gmail.com Homepage: lingfeiwu.github.io

ACADEMIC POSITIONS

The University of Pittsburgh
  Assistant Professor, School of Computing and Information, 2019–*present*
The University of Chicago
  Postdoctoral Fellow, Department of Sociology, 2016–2019
Arizona State University
  Postdoctoral Researcher, Global Biosocial Complexity Initiative, 2014–2015

EDUCATION

City University of Hong Kong	Communication	Ph.D., 2013
Peking University	Communication	M.A., 2009
China University of Political Science and Law	Political Science	B. A., 2006

REPRESENTATIVE RESEARCH PUBLICATIONS

- **Wu, L.**, Wang, D., & Evans, J. A. (2019). Large teams develop and small teams disrupt science and technology. *Nature*, 566(7744), 378-382.
- Xu, F., Wu, L., & Evans, J. (2022). Flat Teams Drive Scientific Innovation. *Proceedings of the National Academy of Sciences (PNAS)*, 119(23), e2200927119.

The New York Times Can Big Science Be Too Big?
The Atlantic Small Teams of Scientists Have Fresher Ideas
Forbes It Takes More Than Members to Make a Team
Harvard Business Review When Small Teams Are Better Than Big Ones

- Börner, K., Scrivner, O., Gallant, M., Ma, S., Liu, X., Chewning, K., **Wu, L.**, Evans, J. A. (2018). Skill discrepancies between research, education, and jobs reveal the critical need to supply soft skills for the data economy. *Proceedings of the National Academy of Sciences (PNAS)*, 115(50), 12630-12637.

The Conversation How to fix the gap between school and work in South Africa
Complexity Science In an Age of Workplace Automation, Being Human Matters
Open Science Learning as Part of a Community Is a Powerful Skill

- **Wu, L.**, & Zhang, J. (2011). Accelerating growth and size-dependent distribution of human online activities. *Physical Review E*, 84(2), 026113.
- **Wu, L.** (2011), The accelerating growth of online tagging systems. *European Physical Journal B*, 83(2), 283.

New Scientist Why Social Networks Are Sucking up More of Your Time
Science Daily Online Activity Grows in a Similar Pattern to Real-Life Networks
Springer Select Predicting Collective Online Behavior

GRANTS	PI, "Understanding Team Age Dynamics and Scientific Innovation", Alfred P. Sloan Foundation, $250k, 2023–2026 (tentative).
	PI, "Sideline to Frontline: Data-driven Technologies to Reskill Displaced Workers for Healthcare Economy and Beyond", Richard King Mellon Foundation, $100k, 2020–2021.
	Co-PI, "Quantifying Hyperlocal Digital Disadvantage: A Path to Supporting Digital Participation", NSF RAPID, $196,271, 2020–2023.
	PI, "Measuring Worldviews: A Map of Stubborn Social Skills", Institute for Cyber Law, Policy, and Security, University of Pittsburgh, $6500, 2020-2021.
	PI, "International Symposium on Complex Systems, Geometry, and Machine Learning", Kaifeng Foundation, $442,930, 2016–2026.
	PI, "International Symposium on Artificial Intelligence and Public Policy", Tencent Research Institute, $43,700, 2018–2019.
	Senior personnel, "Collaborative Research: Understanding Team Success and Failure", National Science Foundation (NSF) Award #1829344, $592,772, 2018–2021.
	Senior personnel, "Understanding Online Attention and User-generated Content Creation", Australian Research Council (ARC) Discovery Grant #140103688, $225,000, 2014–2016.
AWARDS	*Oxford Martin Fellowship* by University of Oxford, 2021 *Top 100 most-discussed papers across all sciences* by Altmetric, 2019 *LinkedIn's Economic Graph Research Award, 2016*
BOOK	Wu, L. (2014). *Data Visualization*, https://lingfeiwu1.gitbooks.io/data-mining-in-social-science/
UNDER REVIEW	Lin, Y., Frey, C. B., & **Wu, L.** (2022). Remote Collaboration Fuses Fewer Breakthrough Ideas. arXiv preprint arXiv:2206.01878. ***Nature***.
	Cui, H., **Wu, L.**, & Evans, J. A. (2022). Aging Scientists and Slowed Advance. arXiv preprint arXiv:2202.04044. ***Nature Communication***.
	Tong, D., Wu, L., & Evans, J. A. (2021). Low-skilled Occupations Face the Highest Re-skilling Pressure. arXiv preprint arXiv:2101.11505. ***PNAS***.
IN PREPARATION	Risha, Z., Lin, Y., Leahey, E., & Wu, L. The Productivity Cost of Convergence Science.
	Chen, M., Neffke, F., & Wu, L. The Hard Challenge of Soft Knowledge.
	Lin, Y. & Wu, L. Two kinds of Innovation in Science and Technology.

PUBLICATIONS
(FULL LIST)

1. Xu, F., Wu, L., & Evans, J. (2022). Flat Teams Drive Scientific Innovation. *Forthcoming in **Proceedings of the National Academy of Sciences (PNAS)***

2. Wu, L., Kittur, A., Youn, H., Milojević, S., Leahey, E., Fiore, S. M., & Ahn, Y. Y. (2022). Metrics and Mechanisms: Measuring the Unmeasurable in the Science of Science. ***Journal of Informetrics,*** 16(2), 101290.

3. Lin, Y., Evans, J. A., & Wu, L. (2022). New directions in science emerge from disconnection and discord. ***Journal of Informetrics***, 16(1), 101234.

4. Li, L., Wu, L., & Evans, J. A. (2020). Social centralization and semantic collapse: Hyperbolic embeddings of networks and text. ***Poetics***, 101428.

5. Xu, H., Zhang, Z., Wu, L., & Wang, C. J. (2019). The Cinderella Complex: Word embeddings reveal gender stereotypes in movies and books. ***PLOS ONE***, 14(11).

6. Wu, L., Wang, D., & Evans, J. A. (2019). Large teams develop and small teams disrupt science and technology. ***Nature***, 566(7744), 378-382.

7. Börner, K., Scrivner, O., Gallant, M., Ma, S., Liu, X., Chewning, K., Wu, L., Evans, J. A. (2018). Skill discrepancies between research, education, and jobs reveal the critical need to supply soft skills for the data economy. ***Proceedings of the National Academy of Sciences (PNAS)***, 115(50), 12630-12637.

8. Wu, L., & Wang, C. J. (2016). Tracing the attention of moving citizens. ***Scientific Reports***, 6, 33103.

9. Wang, C. J., Wu, L., Zhang, J., & Janssen, M. A. (2016). The collective direction of attention diffusion. ***Scientific Reports***, 6, 34059.

10. Wang, C. J., & Wu, L. (2016). The scaling of attention networks. ***Physica A: Statistical Mechanics and its Applications***, 448, 196-204.

11. Wu, L., Baggio, J. A., & Janssen, M. A. (2016). The role of diverse strategies in sustainable knowledge production. ***PLOS ONE***, 11(3), e0149151.

12. Zhang, J., Li, X., Wang, X., Wang, W. X., & Wu, L. (2015). Scaling behaviours in the growth of networked systems and their geometric origins. ***Scientific reports***, 5, 9767.

13. Li, X., Wang, X., Zhang, J., & Wu, L. (2015). Allometric scaling, size distribution and pattern formation of natural cities. ***Palgrave Communications***, 1, 15017.

14. Wu, L., Zhang, J., & Zhao, M. (2014). The metabolism and growth of Web forums. ***PLOS ONE***, 9(8), e102646.

15. Wu, L., & Ackland, R. (2014). How Web 1.0 fails: The mismatch between hyperlinks and clickstreams. ***Social Network Analysis and Mining***, 4(1), 202.

16. Zhang J. and Wu, L. (2013), Allometry and dissipation of ecological networks. ***PLOS ONE***, 8(9), e72525.

17. Wu, L. and Zhang, J. (2013), The decentralized structure of collective attention on the Web. ***European Physical Journal B***, 86(6), 266.

18. **Wu, L.**, & Zhang, J. (2011). Accelerating growth and size-dependent distribution of human online activities. ***Physical Review E***, 84(2), 026113.

19. **Wu, L.** (2011), The accelerating growth of online tagging systems. ***European Physical Journal B***, 83(2), 283.

20. <u>Wu, L.</u>, Cai, Y., and Liu, D. (2011), Online shopping among Chinese consumers: An exploratory investigation of demographics and value orientation. ***International Journal of Consumer Studies***, 35(4), 458.

TEACHING
- **Data Visualization**
  Information Visualization, Class in the Master of Science in Information Science (INSCI2415), University of Pittsburgh, 2019–present

- **Computational Social Science**
  AI for Team Science and Innovation, Doctoral Seminar (INFSCI 3350), University of Pittsburgh, 2020–present
  Computational Communication Seminar, Nanjing University. 2015
  Complex Network Analysis Seminar, Arizona State University. 2014

TALKS
International Conference on the Science of Science and Innovation, DC, 2022
Zhejiang University, Department of Sociology. 2022.
Peking University, Department of Information Management. 2022.
Monash University, Department of Economics. 2021.
UT Austin, School of Information. 2021.
CMU, Societal Computing program. 2021.
MIT Sloan, Future of Work program. 2021.
Wuhan University, School of Information Management. 2021.
International Conference on Computational Social Science. 2020.
CMU, Social Cybersecurity Working Group, 2020
UC Davis, Computational Communication Research Lab, 2020
Harvard Kennedy School, Center for International Development. 2018
National Opinion Research Center (NORC). 2018.
International Conference on Computational Social Science. 2018.
Science of Team Science Conference. 2018.
National Natural Science Foundation of China (NSFC). 2018.
Science of Team Science Conference. 2017.
International Conference on Social Informatics. 2014.
International Communication Association Conference. 2012.
Nanyang Tech. University. School of Comm. and Information. 2011.
The Commonwealth Scientific and Industrial Research Organisation. 2011.
Australian National University, Demographic & Social Research Inst. 2011.
Wolfram Research. 2010.
Agricultural and Applied Economics Association Conference. 2009.
ACM Web Science Conference. 2009.

MEDIA COVERAGE
SAGE Research Methods Ask a Researcher: Lingfei Wu on Networks and Computational Social Science
SAGE Big Data & Data Visualization in the Study of the Science of Science
The New York Times Can Big Science Be Too Big?
The Atlantic Small Teams of Scientists Have Fresher Ideas
Forbes It Takes More Than Members to Make a Team
Harvard Business Review When Small Teams Are Better Than Big Ones
New Scientist Why Social Networks Are Sucking up More of Your Time
Science Daily Online Activity Grows in a Similar Pattern to Real-Life Networks
Springer Select Predicting Collective Online Behavior
The Conversation How to fix the gap between school and work in South Africa

Complexity Science In an Age of Workplace Automation, Being Human Matters
Open Science Learning as Part of a Community Is a Powerful Skill

SERVICE

Conference/Workshop Co-Chair/Organizer
International Conference on Computational Social Science (IC2S2) 2022
International Science of Team Science Conference (SciTS) 2022
Network Science Society Conference (NetSci) 2017, 2019, 2021, 2022
The Web Conference (WWW) 2020
Duke Forest Conference 2016
Conference on Complex Systems (CCS) 2015

Invited Reviewer for Academic Journals
Scientometrics
Quantitative Science Studies
Journal of the Association for Information Science and Technology (JASIST)
Physica A: Statistical Mechanics and its Applications
PLOS ONE

Invited Reviewer for Funding Agencies
National Science Foundation
U.S. Department of Energy

SKILLS

Python, R, Mathematica, STATA, IBM SPSS, SQL, Adobe Illustrator, Processing