

## Qingguo Wang, Ph.D.

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### Current Position

Professor of Computer Science and Data Science  
School of Applied Computational Sciences  
Meharry Medical College  
Nashville, TN

### Education / Training

Research Fellow, Memorial Sloan Kettering Cancer Center, New York, NY	2014 - 2014
Postdoctoral Fellow, Vanderbilt University School of Medicine, Nashville, TN	2011 - 2014
Ph.D. in Computer Science, University of Missouri, Columbia, MO	2006 - 2011
M.S. in Computer Science, University of Missouri, Columbia, MO	2006 - 2010
M.E. in Computer Technology, Shanghai Jiao Tong University, Shanghai, China	2001 - 2004
B.E. in Nuclear Technology, Chengdu University of Technology, Chengdu, China	1994 - 1998

### Academic Appointments

Professor of Computer Science and Data Science School of Applied Computational Sciences Meharry Medical College Nashville, TN	2021 - Present
Associate Professor of Data Science Department of Computational Sciences College of Computing & Technology Lipscomb University Nashville, TN	2016 - 2020
Bioinformatics Engineer III Marie-Josée and Henry R. Kravis Center for Molecular Oncology Memorial Sloan Kettering Cancer Center New York, NY	2014 - 2016
Postdoctoral Fellow Department of Biomedical Informatics Vanderbilt University School of Medicine Nashville, TN	2011 - 2014
Research Assistant Computer Science Department University of Missouri Columbia, MO	2006 - 2011
Research Assistant Computer Science Department Shanghai Jiao Tong University Shanghai, China	2001 - 2004

## Professional Positions and Experience

Senior Software Engineer Shanghai Digital Intelligence System Tech. Co., Ltd. Shanghai, China	2005 - 2005
Software Engineer Global Delivery China Center Shanghai Hewlett-Packard Co., Ltd Shanghai, China	2004 - 2005
Engineer, Team Lead Shanghai Institute of Applied Physics Chinese Academy of Sciences Shanghai, China	1998 - 2001

## Professional Development

Workshops / Training	Description	Date
1. IBM's Train-the-Trainer Workshop on Data Science	Two sessions of the workshop: (1) Data Science Practitioners, and (2) Design Thinking. I won two <a href="#">skill badges</a> through participation.	May 3 <sup>rd</sup> – 14 <sup>th</sup> , 2021
2. Blackboard training for new faculty	The training was offered by the Meharry Office of Information Technology (OIT)	April 2021
3. Training on Conflict of Interest, HIPAA Awareness, etc.	These trainings are required by Meharry Medical College for all new employees.	January, 2021
4. Classroom Technology Training by Center for Teaching and Learning (CTL)	Learned how to use two types of Zoom classrooms newly available on Lipscomb campus: Crestron and Kramer.	Aug. 10 <sup>th</sup> , 2020
5. Lipscomb Flex Training	Discussed a variety of ways to provide the flexibility of learning to students amid the covid-19 pandemic.	Aug. 7 <sup>th</sup> , 2020
6. May 2020 Technology Training	This training focused on Zoom technology and the conversation around online/blended teaching	May 2020
7. Technological preparation to transition courses to a remote teaching and learning	A variety of sessions provided to prepare faculties for remote teaching. The sessions I attended: (1) Remote Working 101, (2) Detailed technology information session.	Mar. 13 <sup>th</sup> , 2020
8. Center for Teaching and Learning (CTL) Workshop	Studied a published book "Small Changes, Big Results" for the purpose to improve the effectiveness of teaching	Jan. 22 <sup>nd</sup> , 2020
9. Student Engagement Techniques Workshop	A professional training workshop with Dr. Elizabeth Barkley as the invited speaker	May 6 <sup>th</sup> , 2019
10. CTL Canvas training	Discussed how to enhance Canvas courses with Multimedia Resource	April 24 <sup>th</sup> , 2019

11. Engage - Suicide Awareness Workshop	The workshop provided an opportunity to learn some risk factors and warning signs of suicide, as well as how to offer help to someone struggling with thoughts of suicide.	Fall 2018
12. Faith and Learning Seminar Session 9	Studied and discussed the history and tradition of Church of Christ	June 2018
13. Christian Scholars' Conference 2018	The theme of CSC 2018 was the Challenge of Emergent Truth	June 6 <sup>th</sup> , 2018
14. Canvas software training	Topic: helping faculties learn how to use Canvas	2017 - 2018
15. Faith and Learning Seminar	This seminar discussed the centering core of Christian higher education at Lipscomb	Oct. 3-5, 2017
16. Teaching Naked with Dr. Jose Bowen	In this workshop, we learned from Dr. Jose Bowen, a renowned speaker, musician, educator, and author of the international best-seller "Teaching Naked: How Moving Technology Out of Your College Classroom Will Improve Student Learning" & "Teaching Naked Techniques"	May 8, 2017
17. Faculty/staff training conducted by Lipscomb Veteran Office	The topic of this Insight workshop was to discuss veteran on campus and the challenges they encounter	April 27 <sup>th</sup> , 2017
18. Insight: A Community Learning Experience for Faculty	The topic of this Insight workshop was to discuss the challenges of first-generation college students	April 20 <sup>th</sup> , 2017
19. Insight: A Community Learning Experience for Faculty	The topic of this Insight workshop was to discuss how to befriend minority students, in particular international students	Nov. 3 <sup>rd</sup> , 2016
20. Grant Writers' Seminars and Workshops	The workshop taught how to write NIH grant proposals	May 2016
21. Drug Development and FDA Regulations Workshop	This workshop, which was sponsored by Weill Cornell Medicine, introduced the process of drug development	April 2016
22. CITI Collaborative Institutional Training	Passed the following required modules: (1) Biomed Refresher 2 – Instructions, (2) Biomed Refresher 2 – History and Ethical Principles, (3) How to Complete the CITI Refresher Course and Receive a Completion Report	2013-2014

**Professional Memberships and Activities**

ACM SIGKDD	2016 - present
The Association for Computing Machinery (ACM)	2016 - present
The Institute of Electrical and Electronics Engineers (IEEE)	2016 - present
Upsilon Pi Epsilon (UPE)	2010 - present
New York Academy of Sciences	2014 - 2016

## Educational Activities

### Course Design

Modern Computing Application for Data Science	Developer	2016 - 2018
Introduction to Data Science	Co-developer	2018 - 2019

### Data science courses taught

Modern Computing Application for Data Science	Lecturer	2016 - present
Introduction to Data Science	Co-lecturer	2018 - present
MSDS Practicum II	Lecturer	2016 - present
MSDS Principles of Data Science	Co-lecturer	2016

### Computer science courses taught

Data Structures and Algorithms	Lecturer	2016 - 2018
Design & Analysis of Algorithm	Lecturer	2016 - present
Numerical Methods	Lecturer	2017 - present
Database Management System	Lecturer	2018 - present

### Course-induced publications

	Title	# Student authors	Date
1.	Prediction of Number of Personnel to Deploy for Wildfire Containment	1	2020 - 2021
2.	Predicting Number of Personnel to Deploy for Wildfire Containment	2	2019 - 2020
3.	A Multigraph-Based Method for Improving Music Recommendation	3	2019 - 2020
4.	Measles Rash Image Detection Using Deep Convolutional Neural Network Kimberly	3	2019 - 2020
5.	Police Precinct Optimization: Using Distance as an Evaluation Metric	2	2018 - 2019
6.	Autoencoder Neural Networks for Detecting Lateral Movement in Computer Networks.	4	2018 - 2019
7.	Analyzing Inventory Data Using K-Means Clustering	4	2017 - 2018
8.	Integrative Analysis of CDC and Census Data Revealed Significance of Suicide-Related Risk Factor	4	2017 - 2018

### Mentoring

- As a mentor helped Dr. Vibhuti Gupta, an assistant professor in the School of Computational Sciences at Meharry Medical College, apply for an ACS DCRIDG Pilot Grant, April - May 2021.
- Helped Maeve Mueller, an undergraduate student in the College of Computing & Technology, apply for and win the prestigious Upsilon Pi Epsilon (UPE) Scholarship Award, November 2020.
- My research assistant, Cecilia Sui, an undergraduate student in Computer Science, was accepted into a Ph.D. program at Washington University in St. Louis with full tuition remission and a stipend, Spring 2020.
- My graduate student John Carr was inducted as a member of Alpha Chi Honor Society and I attended his induction ceremony as his mentor, January 2020.
- Helped student James M Pugh apply and win the prestigious Upsilon Pi Epsilon (UPE) Scholarship Award, Fall 2019.
- My graduate students, Ronald Holt and Auston DeVille, presented their research paper in the 21st International Conference on Artificial Intelligence (ICAI'19), July 2019.
- A student I supervised, Paul Harnagel, was among the awardees of the Outstanding Presentation Award at the 8th Annual Student Scholars Symposium at Lipscomb, April 2019.
- I wrote a reference letter to support my graduate student, Ronald Holt, to apply to Carnegie Mellon University for PhD study. He was accepted into CMU's PhD program in March 2019.
- My research assistant, Thais Minet, joined Amazon as a Software Engineer after graduation, December 2018.

10. Assisted Jake Hunink, the President of Upsilon Pi Epsilon (UPE) Honor Society Lipscomb Chapter, in bringing student UPE members to visit World Christian Broadcasting in Franklin, TN, November 2018.
11. My research assistant, Sinney Chan, won the UPE Scholarship Award in Fall 2018. UPE is the only international honor society in the Computing and Information discipline.
12. My graduate student, Maxfield Thompson, presented his research paper in the 14<sup>th</sup> International Conference on Data Science (ICDATA'18), Jul. 30 - Aug. 2, 2018.
13. Helped my research assistant, Thais Minet, prepare a poster, which was presented in the Council on Undergraduate Research (CUR) Conference in Arlington, VA, July 1-3, 2018.
14. I wrote a reference letter to support a graduate student in my class, Mingjian Shi, to apply for a Staff Scientist position at Vanderbilt University Medical Center and he was offered the position in May 2018.
15. My research assistant, Thais Minet, won the Outstanding Presentation Award, at the 7th Annual Student Scholars Symposium at Lipscomb, April 2018.
16. Participated in a mentoring project at Lipscomb, The Joshua Project, which aims to help change life through mentoring, Fall 2017.
17. My research assistant, Thais Minet, won the UPE scholarship award, Fall 2017.
18. The graduate students in my class, Toni Brandt, Gilberto Diaz, and Ashwini Yenamandra, presented their research project at the 16th Annual UT-KBRIN Bioinformatics Summit, April 21-23, 2017.
19. Our Lipscomb Chapter of the Upsilon Pi Epsilon (UPE) Honor Society won Chapter Award in the 2017 national convention of UPE, March 31, 2017. I am the faculty advisor of the local Chapter.
20. Assisted Andrew Kerley, the President of Upsilon Pi Epsilon (UPE) Honor Society Lipscomb Chapter, in bringing student UPE members to visit the Advanced Computing Center for Research and Education (ACCRE) at Vanderbilt University, March 2017.
21. Providing advice on selecting courses to college students on a semester basis.

## Honors and Awards

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|---|-------------|
| 1. Helped students win UPE Scholarship Awards four years in a row                 | 2017 - 2020 |
| 2. Dean's Award, College of Computing & Technology, Lipscomb University           | 2019        |
| 3. Our paper in a short list of candidates to win best poster award in HEALTHINF  | 2018        |
| 4. The UPE chapter I supervised won Outstanding Chapter Award                     | 2017        |
| 5. Researcher of the Year, College of Computing & Technology                      | 2017        |
| 6. Our paper for VirusFinder is among the top 10% most cited PLOS ONE articles    | 2013        |
| 7. Nominated for Donald K. Anderson GRA Award (1 per year at Univ. of Missouri)   | 2011        |
| 8. Outstanding Student Award, College of Engineering, University of Missouri      | 2011        |
| 9. Our Missouri team won the top honor in the worldwide competition CASP9         | 2010        |
| 10. Upsilon Pi Epsilon (UPE) Scholarship Award                                    | 2010        |
| 11. 2nd place, CS Department Poster Competition, University of Missouri           | 2009        |
| 12. Shumaker Fellowship, University of Missouri                                   | 2008        |
| 13. Outstanding Graduate Student Award, Sichuan Province, China                   | 1998        |
| 14. Outstanding Undergraduate Student Scholarship, Sichuan Province, China        | 1997        |
| 15. 2nd place, National Collegiate Electronics Design Contest in Sichuan Province | 1997        |
| 16. 2nd place, National Collegiate Mathematical Contest in Modeling, China        | 1996        |
| 17. 1st place, Mathematical Contest in Modeling, Chengdu University of Technology | 1995        |

## Recent grants

Topic	Source	My role	Year	Status
MRI: Acquisition of a High-Performance Computer System to Support Research and Training in Computational Biology and Data Science at Meharry Medical College	NSF	Co-PI	2021	Pending
Detecting Virus Integration in Tumor Genomes using Google Cloud	Google	PI	May 2021 - May 2022	Ongoing

Developing new algorithm for identifying disease-causing splicing variants in patient samples	Lipscomb University Provost's Office	PI	2018	Completed
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## Publications

### Journals

1. K. Glock, C. Napier, A. Louie, T. Gary, J. Gigante, W. Schaffner, **Q. Wang\*** (2020) Measles Rash Identification Using Residual Deep Convolutional Neural Network. *arXiv:2005.09112*
2. J.N. Gallant, A. Sewell, K. Almodovar, **Q. Wang**, K.B. Dahlman, R.G. Abramson, M.E. Kapp, B.T. Brown, K.L. Boyd, J. Gilbert, D.N. Cohen, W.G. Yarbrough, Z. Zhao, C.M. Lovly (2019) Genomic landscape of a rare metastatic malignant proliferating tricholemmal tumor and its response to PI3K inhibition. *Npj Precision Oncology*, 3(1):5
3. **Q. Wang**, J Armenia, C. Zhang, A.V. Penson, E. Reznik, L. Zhang, T. Minet, A. Ochoa, B.E. Gross, C. A. Iacobuzio-Donahue, D. Betel, B.S. Taylor, J. Gao, N. Schultz (2018) Unifying cancer and normal RNA sequencing data from different sources. *Scientific Data*, 5:180061
4. E. Reznik, **Q. Wang (co-first author)**, K. La, N. Schultz, C. Sander (2017) Mitochondrial Respiratory Gene Expression is Suppressed in Many Cancers. *eLife*, 6: e21592
5. M.G. Dalin, A. Desrichard, N. Katabi, V. Makarov, L.A. Walsh, K.W. Lee, **Q. Wang**, J. Armenia, L. West, S. Dogan, L. Wang, D. Ramaswami, A.L. Ho, I. Ganly, D.B. Solit., M.F. Berger, N.D. Schultz, J.S. Reis-Filho, T.A. Chan, L.G.T. Morris (2016) Comprehensive molecular characterization of salivary duct carcinoma reveals actionable targets and similarity to apocrine breast cancer. *Clinical Cancer Research*, 22(18):4623-33
6. Y. Liu, C. Chen, Z. Xu, C. Scuoppo, C.D. Rillahan, J. Gao, B. Spitzer, B. Bosbach, E.R. Kastenhuber, T. Baslan, S. Ackermann, L. Cheng, **Q. Wang**, T. Niu, N. Schultz, R.L. Levine, A.A. Mills, S.W. Lowe (2016) Deletions linked to TP53 loss drive cancer through p53-independent mechanisms. *Nature*, 531(7595): 471-475
7. The Cancer Genome Atlas Research Network (2015) The molecular taxonomy of primary prostate cancer. *Cell*, 163(4): 1011-25
8. K. E. Hutchinson, D. B. Johnson, A. S. Johnson, V. Sanchez, M. Kuba, P. Lu, X. Chen, E. deStanchina, M. Kelley, **Q. Wang**, Z. Zhao, M. Kris, J. A. Sosman, W. Pao (2015) ERBB activation modulates sensitivity to MEK1/2 inhibition in a subset of driver-negative melanoma. *Oncotarget*, 6(26):22348-60
9. L.R. Thomas, **Q. Wang**, B.C. Grieb, J. Phan, Q. Sun, E.T. Olejniczak, T. Clark, S. Dey, A.M. Foshage, S. Lorey, G.C. Howard, B. Cawthon, K.C. Ess, C.M. Eischen, Z. Zhao, S.W. Fesik, W.P. Tansey (2015) Interaction with WDR5 promotes target gene recognition and tumorigenesis by MYC. *Molecular Cell*, 58(3):440-452
10. T. Brien, P. Jia, J. Xia, U. Saxena, H. Jin, H. Vuong, P. Kim, **Q. Wang**, M. Aryee, A. J. Iafrate, J. Engelman, R. S. Heist, M. Mino-Kenudson, L. P. Le, W. Pao, Z. Zhao (2015) Inconsistency and features of single nucleotide variants detected in whole exome sequencing versus transcriptome sequencing: A case study in lung cancer. *Methods*, 83:118-27
11. **Q. Wang**, P. Jia, and Z. Zhao (2015) VERSE: a novel approach to detect virus integration in host genomes through reference genome customization. *Genome Medicine*, 7(1):1-9
12. C.M. Lovly, N.T. McDonald, H. Chen, S. Ortiz-Cuaran, L.C. Heukamp, Y. Yan, A. Florin, L. Ozretić, D. Lim, L. Wang, Z. Chen, X. Chen, P. Lu, P.K. Paik, R. Shen, H. Jin, R. Buettner, S. Ansén, S. Perner, M. Brockmann, M. Bos, J. Wolf, M. Gardizi, G.M. Wright, B. Solomon, P.A. Russell, T.-M. Rogers, Y. Suehara, M. Red-Brewer, R. Tieu, E.d. Stanchina, **Q. Wang**, Z. Zhao, D.H. Johnson, L. Horn, K.-K. Wong, R.K. Thomas, M. Ladanyi, W. Pao (2014) Rationale for co-targeting IGF-1R and ALK in ALK fusion positive lung cancer. *Nature Medicine*, 20 (9):1027-34
13. **Q. Wang**, P. Jia, F. Li, H. Chen, H. Ji, D. Hucks, K. B. Dahlman, W. Pao, and Z. Zhao (2013) Detecting somatic point mutations in cancer genome sequencing data: a comparison of mutation callers. *Genome Medicine*, 5(10):91 **Highly accessed**

14. **Q. Wang**, P. Jia, and Z. Zhao (2013) VirusFinder: software for efficient and accurate detection of viruses and their integration sites in host genomes through next generation sequencing data. *PLOS ONE*, 8(5): e64465
15. M. Zhao, **Q. Wang**, Q. Wang, P. Jia, Z. Zhao (2013) Computational tools for copy number variation (CNV) detection using next-generation sequencing data: features and perspectives. *BMC Bioinformatics*, 14(Suppl 11): S1 **Highly accessed**
16. **Q. Wang**, J. Xia, P. Jia, W. Pao, and Z. Zhao (2013) Application of next generation sequencing to human gene fusion detection: computational tools, features and perspectives. *Briefings in Bioinformatics*, 14(4): 506-19
17. **Q. Wang**, C. Shang, D. Xu, and Y. Shang (2013) New MDS and clustering based algorithms for protein model quality assessment and selection. *International Journal on Artificial Intelligence Tools*, 22(5): 1360006
18. J. Xia, **Q. Wang (co-first author)**, P. Jia, W. Pao, and Z. Zhao (2012) NGS Catalog: a database of next generation sequencing studies in humans. *Human Mutation*, 33(6): e2341-55
19. **Q. Wang**, Y. Shang, and D. Xu (2011) Improving consensus approach for protein structure selection by removing redundancy. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 8(6):1708-15
20. **Q. Wang**, K. Vantasin, D. Xu, and Y. Shang (2011) MUFOLD-WQA: A new selective consensus method for quality assessment in protein structure prediction. *Proteins: Structure, Function, and Bioinformatics*, 79(S10):185-95
21. J. Zhang, **Q. Wang**, K. Vantasin, J. Zhang, Z. He, I. Kosztin, Y. Shang, and D. Xu (2011) A multi-layer evaluation approach for protein structure prediction and model quality assessment. *Proteins: Structure, Function, and Bioinformatics*, 79(S10):172-84
22. **Q. Wang**, D. Korkin, and Y. Shang (2011) A fast multiple longest common subsequence (MLCS) algorithm. *IEEE Transactions on Knowledge and Data Engineering*, 23(3):321-34
23. J. Zhang, **Q. Wang**, B. Barz, Z. He, I. Kosztin, Y. Shang, and D. Xu (2010) MUFOLD: A new solution for protein 3D structure prediction. *Proteins: Structure, Function, and Bioinformatics*, 78(5): 1137-52

#### Peer-reviewed conference articles

24. O. Samples, T. Gary, **Q. Wang\*** (to appear) Prediction of Number of Personnel to Deploy for Wildfire Containment. In *Transactions on Computational Science & Computational Intelligence*, Springer.
25. J. Waggoner, R. Dunkleman, Y. Gao, T. Gary, **Q. Wang\*** (to appear) A multigraph-based method for improving music recommendation. In *Advances in Artificial Intelligence and Applied Cognitive Computing*, Springer, Book ID: 89066307, Editors: Robert Stahlbock, et al.
26. J. Carr, M. Lewis, **Q. Wang\*** (to appear) Predicting Number of Personnel to Deploy for Wildfire Containment. In *Advances in Artificial Intelligence and Applied Cognitive Computing*, Springer, Book ID: 89066307, Editors: Robert Stahlbock, et al.
27. A. Grubbs, B. Lodge, **Q. Wang\*** (2019) Police Precinct Optimization: Using Distance as an Evaluation Metric. *The 2019 International Conference on Data Science (ICDATA'19)*
28. R. Holt, S. Aubrey, A. DeVille, W. Haight, T. Gary, **Q. Wang\*** (2019) Autoencoder Neural Networks for Detecting Lateral Movement in Computer Networks. *The 2019 International Conference on Artificial Intelligence (ICAI'19)*
29. M. Pigman, H. Le, U. Bhagat, M. Thompson, and **Q. Wang\*** (2018). Analyzing Inventory Data Using K-Means Clustering. *The 2018 International Conference on Data Science (ICDATA'18)*
30. G. Diaz, J. Jones, T. Brandt, A. Yenamandra, T. Gary, and **Q. Wang\*** (2018) Integrative Analysis of CDC and Census Data Revealed Significance of Suicide-Related Risk Factor. *International Conference on Health Informatics (HEALTHINF)*
31. **Q. Wang**, Z. Zhao (2012) A comparative study of methods for detecting small somatic variants in disease-normal paired next generation sequencing data. *IEEE International Workshop on Genomic Signal Processing and Statistics (GENSIPS)*
32. **Q. Wang**, D. Xu, and Y. Shang (2011) A hybrid consensus and clustering method for protein structure selection. *IEEE International Conference on Tools with Artificial Intelligence (ICTAI)*
33. **Q. Wang**, M. Pan, Y. Shang, and D. Korkin (2010) A fast heuristic search algorithm for finding the longest common subsequence of multiple strings. *AAAI Conf. on Artificial Intelligence (AAAI)*

34. **Q. Wang**, Y. Shang, and D. Xu (2010) Protein structure selection based on consensus. *IEEE Congress on Evolutionary Computation (CEC)*
35. **Q. Wang**, D. Korkin, and Y. Shang (2009) Efficient dominant point algorithms for the multiple longest common subsequence (MLCS) problem. *International Joint Conference on Artificial Intelligence (IJCAI)*
36. D. Korkin, **Q. Wang**, and Y. Shang (2008) An efficient parallel algorithm for the multiple longest common subsequence (MLCS) problem. *International Conference on Parallel Processing (ICPP)*
37. **Q. Wang**, Y. Shang, and D. Xu (2008) A new clustering-based method for protein structure selection. *International Joint Conference on Neural Networks (IJCNN)*
38. Y. Shang, R. Bondugula, D. Xu, and **Q. Wang** (2007) A new method for protein tertiary structure prediction. *IASTED International Conference on Computational Intelligence (CI)*
39. P. Zhuang, **Q. Wang**, Y. Shang, H. Shi, and B. Hua (2007) Wireless sensor network aided search and rescue in trails. *International Conference on Scalable Information Systems (Infoscale)*
40. P. Zhuang, **Q. Wang**, Y. Shang, and H. Shi (2007) Minimizing location uncertainty in access points deployment. *IEEE International Symposium on Wireless Pervasive Computing (ISWPC)*
41. **Q. Wang**, and Y. Shang (2007) Optimal access point placement for target localization along trails. *IEEE Consumer Communications and Networking Conference (CCNC)*

#### Book chapters

42. J. Zhang, Z. He, **Q. Wang**, B. Barz, I. Kosztin, Y. Shang, and D. Xu (2012) Prediction of protein tertiary structures using MUFOLD. *Functional Genomics*, 815:3-13. M. Kaufmann and C. Klinger, Editor. Springer New York Press
43. Y. Shang, **Q. Wang**, J. Zhang, B. Barz, R. Bondugula, I. Kosztin, and D. Xu (2009) A new computational intelligent approach to protein tertiary structure prediction. *Computational Intelligence and Its Applications*. X. Yao, X. Li, and D. Tao, Editor. University of Science and Technology of China Press

#### Published Abstracts and Presentations

1. J. Waggoner, R. Dunkleman, Y. Gao, **Q. Wang\*** (2020) A multigraph-based method for improving music recommendation. In *CSCI 2020 BOOK of ABSTRACTS*, ISBN # 1-60132-512-6, p. 66
2. J. Carr, M. Lewis, **Q. Wang\*** (2020) Predicting number of personnel to deploy for wildfire containment. In *CSCI 2020 BOOK of ABSTRACTS*, ISBN # 1-60132-512-6, p. 59
3. **Q. Wang\*** (2018) Application of Deep Learning to Batch Effect Correction in RNA Sequencing Data. *Proceedings of the Council on Undergraduate Research (CUR) Conference*. Arlington, VA July 1-3, 2018
4. J. Jones, T. Brandt, G. Diaz, **Q. Wang**, T. Gary, A. Yenamandra (2017) P2 Levels of education attainment and income rates to suicide rates in USA: A comprehensive analysis of CDC mortality and US Census data. *Proceedings of the 16th Annual UT-KBRIN Bioinformatics Summit*. Burns, TN April 21-23, 2017
5. J. Gao, J. Lindsay, S. Watt, I. Bahceci, P. Lukasse, A. Abeshouse, H. Chen, I. de Bruijn, B. Gross, D. Li, R. Kundra, Z. Heins, J. Reis-Filho, O. Sumer, Y. Sun, J. Wang, **Q. Wang**, H. Zhang, P. Kumari, M F. Sahin, S. de Ridder, F. Schaeffer, K. van Bochove, U. Dogrusoz, T. Pugh, C. Sander, E. Cerami, N. Schultz (2016) The cBioPortal for cancer genomics and its application in precision oncology. *Cancer Research*, 76(14): 5277-5277
6. J. Zhang, Z. He, **Q. Wang**, J. Zhang, I. Kosztin, Y. Shang, and D. Xu (2010) MUFOLD-Server: Predicting Protein Tertiary Structure Based on a Multi-Dimensional Scaling Method, *CASP9 Abstract Book*, p. 162
7. **Q. Wang**, K. Vantasin, J. Zhang, I. Kosztin, D. Xu, and Y. Shang (2010) MUFOLD-QA: Removing Redundant Models in Consensus-Based QA, *CASP9 Abstract Book*, p. 166
8. K. Vantasin, **Q. Wang**, J. Zhang, I. Kosztin, D. Xu, and Y. Shang (2010) MUFOLD-WQA: Taking the Middle Path: A Band-Pass Consensus QA Method, *CASP9 Abstract Book*, p. 168
9. J. Zhang, J. Zhang, **Q. Wang**, D. Xu, Y. Shang, and I. Kosztin (2010) MUFOLD-MD: Selection of Near-native Structures by Means of Molecular Dynamics Simulations, *CASP9 Abstract Book*, p. 164
10. B Barz, **Q Wang**, J Zhang, Z He, D Xu, Y Shang, and I Kosztin (2010) Selection of Near-Native Protein Structures by Means of Molecular Dynamics Simulations. *Biophysical Journal* 98(3): 196a



## Oral Presentations

1. Title: "Applying Computing Methods to Analyze Big Genomic, EHR & Wearables Data", by Vibhuti Gupta, Aize Cao, and Qingguo Wang, presented to medical students at Meharry, April 6<sup>th</sup>, 2021.
2. Title: "Applications of Computer Science to Cancer Research", Presented to ACM Student Chapter at Lipscomb, Nashville, TN, Nov. 19<sup>th</sup>, 2020
3. Title: "Detecting Splice Variants in Sequencing Data", Lipscomb University Summer Grant Research Presentation. Nashville, TN, Nov. 1<sup>st</sup> 2018
4. Title: "Applications of Computational Sciences to Cancer Research", Presented to Information System Technology Lab at the Shanghai Jiaotong University. Shanghai, China, June 2<sup>nd</sup>, 2017
5. Title: "RNAseqDB: Enabling cross-study analysis of RNA-Sequencing data", The 16th Annual UT-KBRIN Bioinformatics Summit. Burns, TN, April 21-23, 2017
6. Title: "Summary of TARGET Project", Internal Presentation at The Nikolaus Schultz Lab, Memorial Sloan Kettering Cancer Center, New York, NY, March 2015
7. Title: "Precision Medicine: Identifying Actionable Mutations and Genes in Cancer from Next-Generation Sequencing Data", Vanderbilt University Center for Quantitative Sciences (CQS) Workshop Series. Nashville, TN, February 21st, 2014
8. Title: "Tools and Applications for Next Gen Sequencing", The Twelfth Annual UT-ORNL-KBRIN Bioinformatics Summit. Buchanan, TN, March 22nd, 2013
9. Title: "A comparative study of methods for detecting small somatic variants in disease-normal paired next generation sequencing data". IEEE International Workshop on Genomic Signal Processing and Statistics. Washington, DC, December 2-4, 2012
10. Title: "A fast heuristic search algorithm for finding the longest common subsequence of multiple strings", The Twenty-Fourth AAAI Conference on Artificial Intelligence. Atlanta, Georgia, July 11-15, 2010.
11. Title: "Efficient dominant point algorithms for the multiple longest common subsequence (MLCS) problem", The Twenty-First International Joint Conference on Artificial Intelligence. Pasadena, California, July 11-17, 2009

## Poster Presentations

1. Title: "Application of Deep Learning to Batch Effect Correction in RNA Sequencing Data", The Council on Undergraduate Research (CUR) Conference. Arlington, VA, July 1-3, 2018
2. Title: "RNAseqDB: Enabling cross-study analysis of RNA-Sequencing data", The 16th Annual UT-KBRIN Bioinformatics Summit. Burns, TN, April 21-23, 2017
3. Title "VirusFinder 2: software for systematic characterization of intra-host viruses through next generation sequencing data", The CSHL Biology of Genomes annual meeting, Cold Spring Harbor Laboratory, New York, 2014
4. Title "A fast heuristic search algorithm for finding the longest common subsequence of multiple strings", The Twenty-Fourth AAAI Conference on Artificial Intelligence. Atlanta, GA, July 11-15, 2010
5. Title "Removing Redundant Models in Consensus-Based QA", The 9th Critical Assessment of Protein Structure Prediction (CASP9) Conference. Asilomar, CA, December 2010

## Other Creative Products

### Software I created / contributed to

1. **RNAseqDB**: open-source software for processing, correcting, and integrating RNA-seq data.  
URL of the source code: <https://github.com/mskcc/RNAseqDB>  
URL of the published paper: <https://www.nature.com/articles/sdata201861>
2. **MAF2MAF**: a program I contributed to for cleaning and converting files from / to MAF files.  
URL of the source code: <https://github.com/mskcc/vcf2maf/blob/main/maf2maf.pl>
3. **VirusFinder**: open-source tool for detecting viruses and their insertion sites in human genomes.  
URL of the source code: <https://bioinfo.uth.edu/VirusFinder/>  
URL of the latest paper: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4333248/>
4. **NGS Catalog**: a database for collecting NGS studies and their mutation characteristics.  
URL of the database: <https://bioinfo.uth.edu/NGS/index.html?csrt=11534114009283502775>  
URL of the published paper: <https://pubmed.ncbi.nlm.nih.gov/22517761/>

## Professional Community Activities

### Professional services

1. Program Committee, Int. Conf. on Data Science, Technology and Applications 2021
2. Interviewing faculty candidates for Data Science Institute, Meharry Medical College 2020
3. Program Committee, Int. Conf. on Data Science, Technology and Applications 2020
4. Helping interview candidates for Dean of the College of Computing & Technology 2020
5. Advisor of the Upsilon Pi Epsilon (UPE) Honor Society Lipscomb Chapter 2016 - 2020
6. Program Committee, Int. Conf. Intelligent Biology and Medicine (ICIBM) 2012 - 2019
7. Preparing KPIs/artifacts for ABET accreditation of our IT/IT-SEC programs 2019
8. Helped arrange Dr. Ming Wang, a world-class eye surgeon, to visit Lipscomb 2019
9. Served as a judge to review applications for Summer Faculty Grants 2019
10. Served as a judge in Student Scholars Symposium 2019
11. Session chair, International Conference on Artificial Intelligence (ICAI'18) 2018
12. Faculty Welfare Committee, Lipscomb University 2016 - 2018
13. Preparing artifacts for ABET accreditation of our Computer Science program 2016 - 2017
14. Guest Editor, Cancer Informatics 2015
15. Program Committee, BIBM Workshop on Integrative Data Analysis in Systems Biology 2014
16. Workshop speaker, Vanderbilt University Center for Quantitative Sciences 2014
17. Session Chair, Program Committee, Int. Conf. Intelligent Biology and Medicine 2013
18. Chair of Trainee Committee, Int. Conf. Intelligent Biology and Medicine 2013
19. Workshop speaker, The 12th Annual UT-ORNL-KBRIN Bioinformatics Summit 2013
20. Editor, ISCB-Asia/SCCG, Shenzhen, China 2012
21. Program Committee, IEEE Conference on Bioinformatics and Biomedicine 2011

### Paper review activities

1. Briefings in Bioinformatics
2. Nucleic Acids Research (NAR)
3. Scientific Reports
4. Genome Medicine
5. BMC Structural Biology
6. IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)
7. Journal of Computers
8. Cell Proliferation
9. BioMed Research International
10. Frontiers in Genetics
11. International Journal of Computational Biology and Drug Design (IJCBD)
12. International Conference on Research in Computational Molecular Biology (RECOMB)
13. International Conference on Intelligent Biology and Medicine (ICIBM)
14. IEEE International Conference on Bioinformatics and Biomedicine (BIBM)
15. ISCB-Asia/SCCG 2012
16. Biomedical Sciences