

NSF BIOGRAPHICAL SKETCH

NAME: Qin, Hong

POSITION TITLE & INSTITUTION: Associate Professor, Dept of Computer Science, Dept of Biology, University of Tennessee at Chattanooga

(a) PROFESSIONAL PREPARATION

| INSTITUTION | LOCATION | MAJOR / AREA OF STUDY | DEGREE (if applicable) | YEAR YYYY |
|---------------------------------|----------------|---------------------------------------|---------------------------|--------------|
| Tsinghua University | Beijing | Biological Science and Technology | BS | 1991 |
| Tsinghua University | Beijing | Biophysics | MS | 1994 |
| University of Chicago | Chicago, IL | Biochemistry and Molecular Biology | PHD | 2000 |
| Loyola University of Chicago | Chicago, TN | Computer Science | MS | 2002 |

(b) APPOINTMENTS

- 2016 - present Associate Professor, Dept of Computer Science, Dept of Biology, University of Tennessee at Chattanooga, Chattanooga, TN
- 2015 - 2016 Associate Professor, Dept of Biology, Spelman College, Atlanta, GA
- 2009 - 2015 Assistant Professor, Dept of Biology, Spelman College, Atlanta, GA
- 2007 - 2009 Assistant Professor, Dept of Agriculture and Biology, Tuskegee University, Tuskegee, AL
- 2004 - 2006 Research Assistant Professor, Dept of Computational Biology and Biostat, University of Rochester, Rochester, NY

(c) PRODUCTS

Products Most Closely Related to the Proposed Project

1. Guo HB, Qin H. Association study based on topological constraints of protein-protein interaction networks. *Sci Rep.* 2020 Jul 1;10(1):10797. PubMed PMID: [32612246](#); PubMed Central PMCID: [PMC7329836](#).
2. Ledesma DA, Powell CA, Shaw J, Qin H. Enabling automated herbarium sheet image post-processing using neural network models for color reference chart detection. *Appl Plant Sci.* 2020 Mar;8(3):e11331. PubMed PMID: [32185122](#); PubMed Central PMCID: [PMC7073326](#).
3. Qin H. Estimating network changes from lifespan measurements using a parsimonious gene network model of cellular aging. *BMC Bioinformatics.* 2019 Nov 20;20(1):599. PubMed PMID: [31747877](#); PubMed Central PMCID: [PMC6865033](#).
4. Powell C, Motley J, Qin H, Shaw J. A born-digital field-to-database solution for collections-based research using collNotes and collBook. *Appl Plant Sci.* 2019 Aug;7(8):e11284. PubMed PMID: [31467807](#); PubMed Central PMCID: [PMC6711348](#).
5. Güven E, Akçay S, Qin H. The Effect of Gaussian Noise on Maximum Likelihood Fitting of

Gompertz and Weibull Mortality Models with Yeast Lifespan Data. *Exp Aging Res.* 2019 Mar-Apr;45(2):167-179. PubMed PMID: [30849020](#).

Other Significant Products, Whether or Not Related to the Proposed Project

1. Qin H, Driks A. Contrasting evolutionary patterns of spore coat proteins in two *Bacillus* species groups are linked to a difference in cellular structure. *BMC Evol Biol.* 2013 Nov 27;13:261. PubMed PMID: [24283940](#); PubMed Central PMCID: [PMC4219348](#).
2. Jiang Y, Qin H, Yang L. Using network clustering to predict copy number variations associated with health disparities. *PeerJ.* 2015;3:e677. PubMed PMID: [25780754](#); PubMed Central PMCID: [PMC4358638](#).
3. Gilchrist MA, Qin H, Zaretzki R. Modeling SAGE tag formation and its effects on data interpretation within a Bayesian framework. *BMC Bioinformatics.* 2007 Oct 18;8:403. PubMed PMID: [17945026](#); PubMed Central PMCID: [PMC2217564](#).
4. Qin H, Lu HH, Wu WB, Li WH. Evolution of the yeast protein interaction network. *Proc Natl Acad Sci U S A.* 2003 Oct 28;100(22):12820-4. PubMed PMID: [14557537](#); PubMed Central PMCID: [PMC240702](#).
5. Qin H. Teaching computational thinking through bioinformatics to biology students. *ACM SIGCSE Bulletin.* 2009 March 04; 41(1):188-191.

(d) SYNERGISTIC ACTIVITIES

1. CyberCorps, Scholarship for Service. Dr. Qin manages the UTC scholarship program for cybersecurity in collaboration with Tuskegee University.
2. Co-organizer of BIOKDD 2020. Dr. Qin co-organized the 2020 BIO KDD workshop in the 2020 Knowledge Discovery and Data mining conference (KDD 2020).
3. Inter-disciplinary computational REU: Dr. Qin directs a 10-week summer REU that host 10 students per year. The REU research projects include mathematical modeling, computational studies, bioinformatics, molecular dynamics simulations, machine learning, and artificial intelligence for big data.
4. Biological Big Data: Dr. Qin leads a four-institution project on biology big data, which include offer training bootcamps and workshops on biological big data.
5. YouTube Educational Channel. Dr. Qin's YouTube education channel currently has over 1000 subscribers and over 494,000 views. Educational videos include data science, bioinformatics, molecular biology, experimental techniques, microbiology genetics, etc.