

**UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
GRADUATE FACULTY APPLICATION**

1. Name: Xiuzhen Huang, PhD
2. UAMS Graduate Program Sponsor: Bioinformatics Major field: Computer Science
3. Present UAMS academic title or administrative position: Processing Adjunct Fac in Biomedical Informatics
- Date appointed this rank/position: _____ Employed by: Ark State University (Professor of Computer Science)

4. **Comments of Department Chair/Head or Program Director including: evidence of scholarly development, effectiveness as a teacher, quality of publications and reallocation of duties if this application is approved.**

Dr. Huang will be an adjunct faculty member in the UAMS Department of Biomedical Informatics. He will teach extensively in the new program that is currently awaiting approval by ADHE. He will also serve on graduate student committees. He will not be a major advisor until he has served on a few committees. He was very helpful in developing the curriculum for our new program tht will offer Certificate, MS and PhD degrees in Biomedical Informatics.

He also has an excellent funding history.

Fred Prior, PhD (Chair-Biomedical Informatics) April 15, 2017

 Department Chair/Head or Program Director Date Graduate Council Representative

I have read the comments of my Department Chair/Head or Program Director and I do, do not (circle one) wish to supply additional information in support of my application.

Xiuzhen Huang 4-14-2017
 Applicant's Signature Date

Approvals
Patricia Wright 4/20/2017
 Chair, Graduate Faculty Committee Date

Eric Crist 4/20/2017
 Chair, Graduate Council Date

Korbin Gilliland 4/20/2017
 Dean of the Graduate School Date

5. **List your planned involvement in graduate education (courses, theses, dissertations):**

Dr. Huang will teach in several of the Biomedical Informatic courses and the plan is that in the near future he will serve as a course director of some of the online offerings.

He will also serve on graduate student committees, but will not serve as a major advisor until he has been on a few other advisory committees as a member.

6. **Briefly summarize your experience in graduate-level classroom teaching:**

He has significant experience teaching at ASU, and has been a mentor to students in the joint UIAMS/UALR Bioinformatics program.

7. **Briefly summarize your experience in research and student research mentoring:**

8. **Attach Curriculum Vita** showing educational background (including institutions attended, degrees awarded and dates), honors or awards received, scholarly or professional organization affiliations, teaching experience (give school, dates and advanced and graduate subjects taught), including student theses and/or dissertations supervised. Cite publications and research in progress.

Xiuzhen Huang

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Arkansas State University
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Education

- **PhD in Computer Science**, Texas A&M University, College Station, TX, 2004.
- **MS in Computer Engineering**, Shandong University, China, 1999.
- **BS in Computer Science**, Shandong University, China, 1996.

Employment

- 2015 - Current **Professor**, Department of Computer Science,
Arkansas State University, Jonesboro, AR
- 2010 - 2015 **Associate Professor**, Department of Computer Science,
Arkansas State University, Jonesboro, AR
- 2004 - 2010 **Assistant Professor**, Department of Computer Science,
Arkansas State University, Jonesboro, AR

Joint/Adjunct Appointments

- **Adjunct Faculty**, Information Science Department, University of Arkansas at Little Rock (UALR), Little Rock, AR
- **Graduate Faculty**, University of Arkansas at Little Rock (UALR) and University of Arkansas for Medical Sciences (UAMS) Joint Graduate Program in Bioinformatics, Little Rock, AR
- **Graduate Faculty**, Molecular Biosciences PhD Program, Arkansas State University, Jonesboro, AR

Research Interests

- **Bioinformatics and computational biology**: effective modeling of biological and biomedical objects and systems, development of non-trivial computational approaches and algorithms, including novel discrete and continuous mathematical approaches (related to high-dimensional data, next-generation sequencing, genomics data and imaging data analysis for studying stress reactions, genetic diseases, and human cancer study.)
- **Research in theoretical computer science**: Algorithm design and development, Parameterized computation and complexity, Theory of computation

Active Grants:

- **X. Huang (PI)**, Novel algorithms for de novo transcriptome assembly using RNA-seq data and for metagenome assembly, supported by National Science Foundation (CISE/IIS # 1553680), 2015-2017.
- **X. Huang (PI)**, EAGER: Building a Starting Core for No-Boundary Education and Research Network, supported by National Science Foundation (CISE/IIS #1452211), 2014-2017.
- **X. Huang (serving as senior personnel)**: Collaborative research on plant stress response through innovations in phenomics and molecular imaging technologies. PI: G. McClure, Arkansas Science & Technology Authority, supported by NSF EPSCoR TrackII, 2014-2017.

Selected Recent Publications (From 2015 -)

- Identification of driver modules in pan-cancer via coordinating coverage and exclusivity, B. Gao, G. Li, J. Liu, Y. Li and X. Huang, *Oncotarget* 2017, doi: 10.18632/oncotarget.16433.
- SparRec: An effective matrix completion framework of missing data imputation for GWAS, B. Jiang, S. Ma, J. Causey, L. Qiao, M.P. Hardin, I. Bitts, D. Johnson, S. Zhang and X. Huang, *Scientific Reports* 6, 2016.
- BinPacker: Packing-based de novo transcriptome assembly from RNA-seq data. J. Liu, G. Li, Z. Chang, R. McMullen, P. Chen, and X. Huang. *PLOS Computational Biology* 12(2): e1004772, 2016.
- UniBic: Sequential row-based biclustering algorithm for analysis of gene expression data, Z. Wang, G. Li, R. Robinson and X. Huang, *Scientific Reports* 6, 2016.
- Bridger: A New Framework for de novo Transcriptome Assembly Using RNA Sequence Data, Z. Chang, G. Li, J. Liu, Y. Zhang, C. Ashby, D. Liu, C. Cramer, and X. Huang, *Genome Biology* 16:30, 2015.
- SPARCoC: a new framework for molecular pattern discovery and cancer gene identification, S. Ma, D. Johnson, C. Ashby, D. Xiong, C. Cramer, J. Moore, S. Zhang and X. Huang, *PLOS ONE* 10(3): e0117135, 2015.
- Goldindec: A Novel Algorithm for Raman Spectrum Baseline Correction, J. Liu, J. Sun, X. Huang, G. Li, B. Liu, *Applied Spectroscopy*, 69 (7), pp. 834-842, 2015.

Book and Book Chapter

- Integrative Bioinformatics for Biomedical Research: A No-Boundary Thinking Approach, Book editors: Xiuzhen Huang and Jason Moore, to be delivered 2017, Cambridge University Press.
- Tensor Models: Solution Methods and Applications, Shiqian Ma, Bo Jiang, Xiuzhen Huang, and Shuzhong Zhang. Chapter in "Big Data over Networks", editors: Shuguang (Robert) Cui, Alfred O. Hero III, Zhi-Quan (Tom) Luo, and Jose M. F. Moura. Cambridge University Press. 2015

Editorial Board

Associate Editor, IEEE/ACM Transactions on Computational Biology and Bioinformatics

Ph.D. Students Mentored (as Advisor):

- **Dr. C. Ashby**, Assistant Professor, Department of Biomedical Informatics, University of Arkansas for Medical Sciences, (graduated in May 2014).
- **Dr. K. Walker**, Assistant Professor and Graduate Coordinator, Department of Computer Science, University of Arkansas at Pine Bluff, (graduated in May 2014).
- **Dr. D. Johnson**, Director of Bioinformatics Core, University of Tennessee Health Science Center, (graduated in May 2015).