

# Cheng Hua

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## EDUCATIONAL BACKGROUND

- 2017-2023; Ph.D. degree in Educational Research, University of Alabama, AL, Tuscaloosa
- 2013-2017; Master's degree in educational psychology, University of Alabama, AL, Tuscaloosa
- 2007-2010; Bachelor's degree in Psychology, Fudan University, China, Shanghai
- 2003-2006; Associate degree in Computer Science, Shanghai Finance University, China, Shanghai

## SUMMARY OF WORKING EXPERTISE

- Assistant Professor in Educational Research from 2023 Fall
  - Teach UM course:
    - EDF 526: *Assessment and Data Analysis for Instructional Improvement*
    - EDF 600: *Measurement in Educational Counseling*
    - EDL 691: *Research and Planning for School Improvement*
- Graduate Teaching Assistant from 2015 to 2023
  - Teach UA course *Educational Statistics* (BER-345) for a year with three sections
    - Preparing the class materials in the Blackboard system
    - Giving the lectures weekly
    - Grading and supporting undergraduate students
  - Co-teach UA graduate courses with professors, including *Introduction to Psychometrics* (BER 558), *Survey Research in Education* (BER 603), *Advanced Quantitative Method* (BER 640), *Advanced Regression Methods* (BER 642), *Rasch Measurement Theory* (BER 670), *Cognitive Diagnosis Modeling* (BER671), *Introduction to Bayesian Modeling* (BER 695), and *Item Response Theory* (BER 669)
    - Designing the class materials in the R programming language

- Leading the class R-sessions
- Graduate Research Assistant from 2014 to 2023
  - Graduate representative of the College of Education Assessment Committee.
    - Collecting the college-wide student data from various database
    - Running statistical models on college-wide student data
    - Presenting the data in the annual report
  - Working closely with professors for the academic purpose
    - Published several psychometric peer-reviewed journals
    - Presented various psychometric works at academic conferences
    - Presented two Workshops at academic conferences
- Graduate Ambassador for the University of Alabama from 2019 to 2022
  - Referring potential graduate students to the Graduate School for assistance in applying to The University of Alabama
  - Working with potential graduate students' respective Colleges on departmental recruitment activities
  - Responding to e-mail queries from potential graduate students
- Registered psychological consultant (State of second-grade license) from 2011 to 2013
  - Give lectures to college students in China concerning psychological topics
  - Provide counseling service to students who have difficulty in learning content knowledge (primarily high school or middle school level)

#### RELATED BOOK AND PEER-REVIEWED JOURNAL ARTICLES

- Wind, S. A., Hua, C.\*, & Sebok-Syer, S. S. (in press). Impacts of open-book assessment on the precision of test-taker and item estimates: An exploration in the context of an online medical knowledge assessment. *Journal of Applied Measurement*.
- Wind, S. A. & Hua, C. (2022). *Rasch Measurement Theory analysis in R: Illustrations and practical guidance for researchers and practitioners*. Chapman & Hall/CRC The R Series. <https://www.routledge.com/Rasch-Measurement-Theory-Analysis-in-R/Wind-Hua/p/book/9780367776398>
- Hua, C., Stager, C., & Wind, S. A. (2022). Using an exploratory quantitative text analysis (EQTA) to synthesize research articles. *Journal of Applied Measurement*, 22(1/2), 114–132.

- Lu, J., Mumba, M. J., Lynch, S., Li, C., **Hua, C.**, & Allen, R. S. (2019). Nursing students' trait mindfulness and psychological stress: A correlation and mediation analysis. *Nurse Education Today*, 75, 41–46.
- **Hua, C.**, & Wind, S. A. (2018). Exploring the psychometric properties of the mind-map scoring rubric. *Behaviormetrika*, 46(1), 73–99. <https://doi.org/10.1007/s41237-018-0062-z>
- Wind, S. A., **Hua, C.**, Porter, M., Stager, C., & Zhang, S. (2017). An updated version of Ben Wright's method and meaning of measurement infographic. *Rasch Measurement Transactions*, 30(3), 1595–1597.
- Schumacker R. & **Hua, C.** (2016). Synthesis of articles in Evaluation and Program Planning: 2010-2016. *Evaluation and Program Planning*, 56,194–198.
- Sun, J.-P., Xia, J.-G., **Hua, C.**, Man, K.-W., Johnson, B. (*Under review*). Examining the psychometric properties of the data-informed school leadership survey: Paper submitted to School Leadership and Management.

#### RELATED PAPERS PRESENTED AT PEER-REVIEWED CONFERENCE

- **Hua, C.** & Ma, W. C. Using ROC statistics to assess model fit for diagnostic classification models. Paper presented to the annual meeting of NCME, Chicago, Illinois.
- Leithwood, K., Sun, J.-P., Schumacker, R., & **Hua, C.** (Accepted for AERA 2023). Psychometric Properties of the Successful School Leadership Survey. Paper presented to the annual meeting of the American Educational Research Association, Chicago, Illinois.
- Sun, J.-P., **Hua, C.** & Xia, J. -G. (Accepted for AERA 2023). Examining the Psychometric Properties of the Data-Informed School Leadership Survey. Paper presented to the annual meeting of the American Educational Research Association, Chicago, Illinois.
- Zhang, S. -J., Zhang, H. -Y., & **Hua, C.** (Accepted for AERA 2023). Methodological Review of Quantitative Research Methods in Educational Leadership (2013-2022). Paper presented to the annual meeting of the American Educational Research Association, Chicago, Illinois.
- **Hua, C.**, Stager, C. & Wind, A. (2022, April). An Exploratory Qualitative Text Analysis (EQTA) for synthesizing research articles. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- **Hua, C.**, Sun, J. -P., Zhang, H. -Y., & Ting, H. (2021, November). Validating an integrated teacher commitment questionnaire using exploratory factor analysis and partial credit Rasch

modeling. Paper presented at the annual meeting of the University Council of Educational Administration [Virtual].

- Sun, J.-P., **Hua, C.**, Leithwood, K., Li, L., & Wind, S. (2021, November). Examining the psychometric properties of a Chinese version of the successful school leadership survey using the many-facet Rasch model. Paper presented at the annual meeting of the University Council of Educational Administration [Virtual].
- **Hua, C.** (2021, June). How open-book assessment impacts the precision of person and item estimates. Paper presented at the annual meeting of the National Council on Measurement in Education [Virtual].
- **Hua, C.** (2021, April). Synthesis of articles in the Journal of Applied Measurement: 2010-2019. Paper presented at the annual meeting of the American Educational Research Association [Virtual].
- Huang, W., **Hua, C.** (2021, April). Applying cognitive diagnostic models on U.S. students' computer and information literacy. Paper presented at the annual meeting of the American Educational Research Association [Virtual].
- **Hua, C.**, Wenchao, M. (2020, August). Comparing GDINA package with CDM package on their functional difference. Paper presented at the annual meeting of the American Psychological Association [Virtual].
- **Hua, C.**, Zhang, H. Y., & Wind, S. A. (2020, August). Running Rasch dichotomous model between Winsteps and R packages: a comparison study. Paper presented at the annual meeting of the American Psychological Association [Virtual].
- **Hua, C.**, Wind, S. A. (2020, April). A comparison study between R packages with Rasch modeling. Paper presented at the annual meeting of the International Outcomes Measurement Workshop [Virtual].
- **Hua, C.**, Patricia, E., Wind, S. A. (2019, August). Mind mapping-based pedagogy on 8th-grade physics class: A sequential explanatory experimental design. Paper presented at the American Psychological Association, Chicago, IL.
- Wind, S. A., **Hua, C.**, Asilkalkan, A. (2019, April). Exploring the impact of score resolution on person fit and decision consistency in rater-mediated assessments. Paper presented at the American Educational Research Association, Toronto, Canada.

- **Hua, C.,** Patricia, E, Wind, S. A. (2019, April). Mind mapping-based pedagogy on 8th-grade physic class: A sequential explanatory experimental design. Paper presented at the 11th Educational Studies Graduate Research Symposium, Tuscaloosa, AL.
- **Hua, C.,** Wind, S. A. (2018, March). Exploring the psychometric properties of the Mind Map scoring rubric. Paper presented at the 10th Educational Studies Graduate Research Symposium, Tuscaloosa, AL.
- **Hua, C.,** Wind, S. A. (2017, September). Exploring the psychometric properties of the Mind Map scoring rubric. Paper presented at the annual meeting of the International Outcomes Measurement Conference, Chicago, IL.
- **Hua, C.,** Wind, S. A. (2017, September). Synthesis of articles in the Journal of Applied Measurement: 2000 – 2016. Poster and paper presented at the annual meeting of the International Outcomes Measurement Conference, Chicago, IL.
- Stager, C., **Hua, C.** (2016, August). Reconciling coh-Metrix measurements and manual raters: Validity testing for writing placement exams. Paper presented at the annual meeting of the American Psychology Association, Denver, CO.
- **Hua, C.** (2016, March). Implicit memory and its neural correlates as well as implications for education. Paper presented at the 8th Educational Studies Graduate Research Symposium, Tuscaloosa, AL.
- **Hua, C.** (2015, March). The utilization of the Mind Map in education. Poster presentation at the 7<sup>th</sup> Educational Studies Graduate Research Symposium, Tuscaloosa, AL.

#### **RELATED INVITED WORKSHOPS**

- Toton, S. L., Man, K., Pan, Y., & **Hua, C.** (2023, April). Applying data mining methods to detect test fraud. Invited training session at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- Man, K., **Hua, C.,** Shi, Q., & Rajeb, M. (2022, April). Applying data mining methods to detect test fraud. Invited training session at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- Schumacker, R., **Hua, C.,** Zhang, S. J. et. (2016, October). Synthesis of articles in Evaluation and Program Planning: 2010 – 2016. Invited presentations at the annual meeting of the American Evaluation Association, Atlanta, GA.

## **RELEVANT ASSOCIATIONS & COMMUNITY SERVICE**

- National Council on Measurement in Education (NCME) Member (2014 - Present)
  - Membership Committee Member (2021- Present)
- American Educational Research Association (AERA, 2014 - Present)
  - Division C, Division D.
- American Psychological Association (APA, 2014 - Present)
  - Division for Quantitative and Qualitative Methods
- Graduate Student Ambassador for the University of Alabama (2020 - Present)
- American Evaluation Association (AEA, 2015-2016)
- Reviewer for APA, AERA, & NCME conference submissions (2016 - Present)
- Reviewer for Journal of Applied Measurement (2021-2022)

## **ACADEMIC AWARDS & RESEARCH FUNDING**

- Outstanding Quantitative Student Award, 2023, University of Alabama, Tuscaloosa, AL.
- Graduate Research Fellow, National Science Foundation (FUND CODE-7980), HRD Division, 2022-2023
- ATLAS Research Fellowship, 2021-2022, University of Kansas, KS
- Anna & Harold Paige Scholarship, 2021-2022, University of Alabama, Tuscaloosa, AL
- Graduate Summer Stipends, 2019-2021, University of Alabama, Tuscaloosa, AL
- Stephen J. Thoma Travel Award, 2020, University of Alabama, Tuscaloosa, AL
- Brad S. Chissom Memorial Scholarship, 2019-2020, University of Alabama, Tuscaloosa, AL
- William E. Sexton Scholarship, 2018-2019, University of Alabama, Tuscaloosa, AL
- ESPMRC Graduate Research Symposium Outstanding Poster Presentation Award, 2018, University of Alabama, Tuscaloosa, AL
- Graduate Travel Funding, 2016-2022, University of Alabama, Tuscaloosa, AL

## **RELEVANT STATISTICAL SOFTWARE EXPERIENCE (ALPHABETICALLY)**

Experience conducting statistical analyses using the following programs:

- Facets®
- flexMIRT®
- JMP®
- NVivo®

- R Programming language (two selective R book projects that I have worked on)
  - Rasch R Book: <https://bookdown.org/connect/#/apps/5286/access/1060>
  - Advanced Regression R Book:  
<https://bookdown.org/connect/#/apps/5299/access/1062>

- SAS®/Enterprise Miner

- SPSS®

- STATA

- Winsteps®

#### **REFERENCE**

Available upon request.

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