

## Hongwei “Patrick Yang”, Ph.D.

Assistant Professor

Department of Educational Research and Administration

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### EDUCATION

2008 - Ph.D. in Educational Psychology (Concentration: Evaluation, Statistics, & Measurement), Department of Educational Psychology and Counseling, University of Tennessee, Knoxville, TN

2008 - M.S. in Statistics (Intercollegiate Graduate Statistics Program (IGSP)), Department of Statistics, Operations, and Management Science, University of Tennessee, Knoxville, TN

2000 - B.Eng. in Electrical Engineering, Xidian University, Xi'an, China

### EMPLOYMENT

**Assistant Professor**, Department of Educational Research and Administration, College of Education and Professional Studies, University of West Florida, Pensacola, FL, August 2018 - Present

- Serving as a statistician in applied collaborative research for subject matter experts
- Teaching courses in quantitative research, mixed methods research, educational research methodology, academic and professional writing, and comprehensive examination and dissertation research (doctoral seminars)
- Advising and mentoring Ed.S. and Ed.D. students
  - Through comprehensive and dissertation committees
  - Through the Ed.S./Ed.D. faculty mentoring program
- Proving service on university, college and department committees, grant review panels and as manuscript reviewers

**Adjunct Faculty**, Office of Research and Scholarship, College of Nursing and Health Innovation, Arizona State University, Phoenix, AZ, September 2018 - June 2019

- Provided support to data-related work during the transition period
- Contributed to the recruitment of new research faculty in CONHI

**Research Assistant Professor and Data Lab Manager**, Office of Research and Scholarship, College of Nursing and Health Innovation, Arizona State University, Phoenix, AZ, August 2016 - July, 2018

- Managing the day-to-day operations of the Data Lab
  - Providing program evaluation and outcome analysis activities for various projects
  - Serving data analytic needs in research, grant and manuscript writing, and in student dissertation or thesis work with the support of the mentor
  - Providing guidance on data cleaning and management strategies, on running statistical analyses, and on programming using SAS, R, SPSS, MATLAB, and other languages
  - Collecting and putting together online statistics resources for faculty and students to use in research studies, program evaluation and operations
  - Offering statistics and methods workshops covering most common statistics, psychometrics and software topics
  - Building collaborative relationships across the university and within the local community

- Serving as local the REDCap administrator
  - Working with applied investigators and other clients to effectively and efficiently use REDCap in survey research and online data collection
  - Providing REDCap-related support and training on building and managing online surveys and databases, and on offline data collection using the REDCap mobile app
  - Maintaining and upgrading the local REDCap system
    - \* Including adding new features (e.g., Spanish language support) based on clients' requests
  - Attending the REDCap Weekly Consortium Meeting

**Senior Research Associate and Co-Manager for COMLEX-USA Level Three**, Division of Psychometrics and Research, National Assessment Service, National Board of Osteopathic Medical Examiners (NBOME), Chicago, IL, June 2015-August 2016

- Developed innovative psychometrics procedures and performed routine psychometrics analyses
  - Initiated, designed and implemented a novel IRT-guided automated test assembly (ATA) routine using the SAS Operations Research (SAS/OR) program
    - \* Developed the entire program in SAS and its interface to R
    - \* Prepared a detailed proposal on this new approach which was next scrutinized and endorsed in an external review
    - \* Trained other psychometricians to implement this approach in the testing programs that they each were responsible for: COMAT, COMLEX-USA Level Two, etc.
  - Implemented mixed modeling, large scale Monte Carlo simulations, constrained optimization through pure/mixed integer linear/nonlinear programming, moving average modeling, factor analysis and other advanced statistics and psychometrics methods in the analysis, presentation and interpretation of educational assessment data
  - Collaborated with other members of the Psychometrics and Research (PSYR) Division on research projects and operations
- Co-managed COMLEX-USA Level Three together with the Test Development (TD) Division
  - Performed day-to-day psychometrics operations work including key validation, equating, inventory check of item bank, assessment and graduation of pretesting items, quality control of test forms, forecast of candidate volume, among other things
  - Provided technical support to collaborating test development specialists
  - Contributed to the further development of COMLEX-USA Level Three for the next administration cycle

**Assistant Professor**, Department of Educational Policy Studies and Evaluation, College of Education, University of Kentucky, Lexington, KY, August 2008-June 2015

- Taught statistics and quantitative research methodology courses
  - General/generalized linear (mixed) modeling, categorical data analysis, multivariate statistics, structural equation modeling, SPSS Statistics/AMOS, SAS programming, and educational research methodology
- Conducted research in statistics and psychometrics
- Provided statistical consulting to research projects and grant proposals for faculty, students and staff
- Served on thesis and dissertation committees, on department, college and university committees

**RESEARCH EXPERTISE**

1. Methodology Toolbox for Research Collaboration and Grant Seeking
  - Survey research and program evaluation
    - Use of REDCap to design, implement and manage online surveys: Branching and skip logic, event and appointment scheduling, calculated fields, file uploading, data validation, stop action, etc.
    - Capturing crosssectional and/or longitudinal data (online or offline) for research projects and operational work
    - Survey data queries, reporting and exporting
    - Use of Qualtrics and other survey software to collect data, analyze trends, obtain insights and inform decision-making
  - Bayesian data analysis
    - Alternative solution to analysis of educational and psychological data
    - Application of the Bayesian methods to data analysis when also factoring in prior knowledge from the literature, etc.
    - Ensemble learning in Bayesian statistics: Bayesian model averaging
  - Generalized linear mixed models for the analysis of cross-sectional and/or longitudinal data with complex structures
    - Cross-sectional data analysis under Hierarchical Linear/Generalized Linear Models (HLM/HGLM)
    - Longitudinal data analysis under Hierarchical Linear/Generalized Linear Models (HLM/HGLM)
    - Bayesian statistical inference under the mixed modeling framework
  - General/generalized linear modeling and statistical inference
    - Multiple linear regression, ANOVA/ANCOVA, and t-tests
    - Categorical data analysis: Contingency table, loglinear modeling, poisson regression, negative binomial regression, logistic regression, probit regression
    - Bayesian statistical inference under commonly used statistical methods: Bayesian t-test, Bayesian linear regression, etc.
  - Structural equation modeling
    - Confirmatory approach to testing research hypotheses
    - Scale development and validation
    - Longitudinal data analysis using latent growth curve modeling
    - Categorical/continuous observed and/or latent variables in educational and psychological research
    - Bayesian structural equation modeling
  - Item response theory analysis
    - Analysis of binary, ordinal polytomous and nominal polytomous survey or testing data
    - Item calibration and subject scoring (two approaches)
    - Test equating and linking
    - Unidimensional and multidimensional item response theory models
    - Bayesian statistical inference under item response theory modeling
  - Constrained optimization
    - Educational policy analysis for informing and improving the decision making process in higher education institutions
    - Optimization of assigning students to schools in the public school system
  - Big data analysis: Data mining and machine learning
    - Data Mining and Machine Learning: Decision tree, random forest, neural network

- Solution to data-intensive and/or computationally expensive problems: Improving prediction/classification accuracy or stability through model ensemble, alternative models for big data applications with complex data/model structures, etc.
  - Exploratory Data Analysis: Data visualization and interpretation
  - Genetic algorithm as an effective and efficient non-gradient-based optimization method for the analysis (feature selection, etc.) of large scale educational data (PISA, etc.)
2. Methodology Research Interests
- Model evaluation and selection: Information Complexity (ICOMP) criteria
    - ICOMP criteria in extensions of linear models: (Generalized/generalized) linear (mixed) models and latent variable models
    - ICOMP criteria used with machine learning algorithms for data reduction and/or improved prediction/classification performance: Genetic algorithm with ICOMP for more efficient model specification search and/or model ensemble with ICOMP to improve prediction/classification accuracy
    - Use of Genetic Algorithm in high dimensional model specification search
  - Item Selection and Test Form Generation: Automated Test Assembly
    - Mixed/Pure Integer Linear or Nonlinear Programming
    - Constrained Optimization using LINGO, R lpSolve, or SAS/OR
    - Designs in test form assembly: Mother Form, Common Block, etc.
    - Under Classical Test Theory (CTT) and/or Item Response Theory (IRT)
    - Use of Genetic Algorithm in item selection and test assembly
3. Statistics Pedagogy Research
- Improvement of statistical literacy using technology
  - Statistics education through Monte Carlo simulations using R
  - Reviews of statistics software for more effective teaching and learning of statistics

## GRANT AND FUNDING ACTIVITIES

1. **UWF College of Education and Professional Studies Travel Award**
  - Years: Spring, 2019
  - Amount: \$1,500
  - Status: Funded
2. **UWF College of Education and Professional Studies Research Fellowship**
  - Years: Fall, 2018
  - Amount: \$500
  - Status: Funded
3. **Evaluating the Psychological Safety of Ambulatory Care Team Members**
  - Years: 2018
  - Source: ASU The Institute for Social Science Research
  - Amount: N/A
  - Role: Co-Investigator
  - Purposes:
    - To examine factors that influence of the psychological safety of medical assistants

- To close the gap in knowledge of individual medical team members' psychological safety and inform development of a comprehensive intervention to improve ambulatory care delivery
  - Status: Funded
4. **EPIC: A Group-based Intervention for Early-stage AD Dyads in Diverse Communities**
- Years: 5/15/2016-6/30/2021
  - Source: National Institute on Aging
  - Amount: \$3,600,000.00
  - Role: Co-Investigator
  - Purposes:
    - To assist with data analyses and randomization scheme
  - Status: Funded
5. **ADI-SSS Arizona's Dementia-Capable System Enhancement**
- Years: 09/01/2017-08/31/2020
  - Source: HHS: Administration for Community Living (ACL)
  - Amount: \$990,000.00
  - Role: Co-Investigator
  - Purposes:
    - To identify and address service gaps within community-based organizations which are working within existing, dementia-capable, long term services and supports systems and are committed to serving populations with the most need and living with or at risk of developing Alzheimer's disease or a related dementia
  - Status: Funded
6. **Student Health Outreach for Wellness (S.H.O.W.) Clinic Evaluation**
- Years: Each Semester
  - Source: S.H.O.W. Clinic
  - Amount: Internal Salary Recovery
  - Role: Statistician
  - Purposes:
    - To demographically describe student, faculty, and clinical preceptor participant volunteers
    - To assess select stakeholder perceptions of team collaboration and interprofessional facilitation
    - To assess student, faculty, and clinical preceptor interprofessional competency acquisition and proficiencies
    - To explore key stakeholder perceptions of educational infrastructure and inputs, technology readiness, and teamwork practice
    - To establish mechanisms for calculating and tracking costs associated with running the S.H.O.W. Community Health Initiative clinic
  - Status: Funded

## PEER-REVIEWED PUBLICATIONS

1. Gillen, M. L., **Yang, H.**, & Kim, H. (2020). Health literacy and difference in retirement wealth in later years. *Journal of Family and Economic Issues*. <https://doi.org/10.1007/s10834-019-09648-w>
2. Shao, C., Liu, S., **Yang, H.**, & Tsai, T.-H. (2019). Automated test assembly using SAS Operations Research Software in a medical licensing examination. *Applied Psychological Measurement*. <https://doi.org/10.1177/0146621619847169>
3. Olson, M. L., Renteria-Mexia, A., Connelly, M. A., Vega-Lopez, S., Soltero, E. G., Konopken, Y. P., Williams, A. N., Castro, F. G., Keller, C. S., **Yang, H.**, Todd, M. W., & Shaibi, G. Q. (2019). Decreased GlycA following lifestyle intervention among obese, pre-diabetic adolescent latinos. *Journal of Clinical Lipidology*. <https://doi.org/10.1016/j.jacl.2018.09.011>
4. **Yang, H.**, Wong, W. H., Bradley, K. D., & Toland, M. D. (2017). Partial and semi-partial correlations for categorical variables in educational research: Addressing two common misconceptions. *General Linear Model Journal*, 43(1), 1-15. <https://doi.org/10.31523/glmj.04301.001>
5. Cole, M., Wilhelm, J., & **Yang, H.** (2015). Student moon observations and spatial-scientific reasoning. *International Journal of Science Education*, 37(11), 1815-1833. <https://doi.org/10.1080/09500693.2015.1052861>
6. Cole, M., Wilhelm, J., Jackson, C., & **Yang, H.** (2013). Exploring the relationships between student moon observations and spatial-scientific reasoning. In M. Martinez, & A. C. Superfine (Eds.), *Proceedings of the Thirty-Fifth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 217). Chicago, IL: University of Illinois at Chicago.
7. **Yang, H.** (2013). The case for being automatic: Introducing the Automatic Linear Modeling (LINEAR) Procedure in SPSS Statistics. *Multiple Linear Regression Viewpoints*, 39(2), 27-37.
8. **Yang, H.** (2012). Visual assessment of residual plots in multiple linear regression: A model-based simulation perspective. *Multiple Linear Regression Viewpoints*, 38(2), 24-37.
9. **Yang, H.** (2011). Paying Attention to the default reference category in several SPSS Statistics procedures: An example of coding reversal. *Multiple Linear Regression Viewpoints*, 37(2), 34-40.
10. **Yang, H.**, & Bozdogan, H. (2011). Model selection with information complexity in multiple linear regression modeling. *Multiple Linear Regression Viewpoints*, 37(2), 1-13.
11. **Yang, H.**, & Bozdogan, H. (2011). Learning factor pattern in exploratory factor analysis using the genetic algorithm and information complexity as the fitness function. *Journal of Pattern Recognition Research*, 6(2), 307-326. <https://doi.org/10.13176/11.335>
12. **Yang, H.**, & Huck, S. W. (2010). The importance of attending to underlying statistical assumptions. *Newborn and Infant Nursing Reviews*, 10(1), 44-49. <https://doi.org/10.1053/j.nainr.2009.12.001>
13. **Yang, H.** (2009). Factor loadings. In N. J. Salkind (Ed.), *Encyclopedia of Research Design*. Thousand Oaks, CA: Sage.
14. Huck, S. W., Ren, B., & **Yang, H.** (2007). A new way to teach (or compute) Pearson's r without reliance on cross-products. *Journal of Teaching Statistics*, 29(1), 13-16. <https://doi.org/10.1111/j.1467-9639.2007.00240.x>
15. **Yang, H.** (2006). Normal curve. In N. J. Salkind (Ed.), *Encyclopedia of Measurement and Statistics* (Vol. 2, pp. 690-695). Thousand Oaks, CA: Sage.

## CONFERENCE PRESENTATIONS

1. **Yang, H.**, Nguyen, G.-N., Hu, S., Malisa, M., Yeboah, C. & Missedja, T. Q. (submitted). *Assessing measurement invariance of mathematics self-efficacy between Chinese (Shanghai) and American students*. Presentation submitted to the 14th International Congress on Mathematics Education (ICME 14) in Shanghai, China.
2. **Yang, H.**, Malisa, M., Nguyen, G.-N., Hu, S., Yeboah, C. & Missedja, T. Q. (submitted). *Assessing measurement invariance of PISA 2012 Mathematics Self-Efficacy scale between Mexico and the US Students: A multi-group confirmatory factor analysis*. Presentation submitted to the 64th Annual Conference of the Comparative and International Education Society in Miami, FL.
3. **Yang, H.**, & Su, J. (submitted). *Revisiting the dimensions of the Community of Inquiry survey: Empirical evidence for a general factor*. Presentation submitted to the 2020 annual meeting of the American Educational Research Association (AERA), San Francisco, CA.
4. **Yang, H.**, Xu, L., Liu, X., Kim, H. & Yuan, J. (submitted). *Reviewing SPSS AMOS for analyzing categorical data in structural equation modeling: A Bayesian approach*. Presentation submitted to the 2020 annual meeting of the American Educational Research Association (AERA), San Francisco, CA.
5. Coplan, B., Kelly, L., & **Yang, H.** (2019). *Investigating factors that affect the psychological safety of ambulatory care medical assistants*. Poster presented at the American Academy of Physician Assistants Annual Conference, Denver, CO.
6. Su, J., & **Yang, H.** (2019). *Evaluating the Self-Directed Learning Scale measuring graduate student online learning perceptions: A Rasch analysis approach*. Paper presented at the 2019 annual meeting of the American Educational Research Association (AERA), Toronto, Canada.
7. Su, J., **Yang, H.** & Bradley, K. D. (2019). *Psychometric validation of the Self-Directed Learning Scale for online learning*. Paper accepted for presentation at the 2019 annual meeting of the EDUCAUSE Learning Initiative (ELI), Anaheim, CA.
8. Xu, L., & **Yang, H.**. (2018). *A secondary analysis of NAEP visual arts data using Bayesian Structural Equation Modeling*. Paper presented at the 2018 annual meeting of the American Educational Research Association (AERA), NYC, NY.
9. Curry, K. A., Wilhelm, J. A., Cole, M., & **Yang, H.** (2018). *Using student characteristics/spatial-content knowledge and teacher spatial-content knowledge to predict lunar understanding*. Paper presented at the 2018 annual meeting of the American Educational Research Association (AERA), NYC, NY.
10. Rudolph, M., Maerten-Rivera, J., Rockich-Winston, N., & **Yang, H.**, Gillette, C., & Train, B. (2017). *How much are they learning? Modeling pharmacy student content knowledge growth on the PCOA*. Poster presentation submitted to the annual meeting of the American Association of Colleges of Pharmacy (AACP), Nashville, TN.
11. Yuan, J., & **Yang, H.** (accepted). *Using Bayesian Multilevel Modeling to analyze the PISA data*. Poster presentation submitted to the 19th International Conference on Psychology, Osaka, Japan.
12. **Yang, H.**, Song, H. & Kalinowski, K., (2016). *A review of PROC IRT in SAS/STAT*. Poster presented at the 2016 annual meeting of the Psychometric Society, Asheville, NC.
13. Yuan, J., & **Yang, H.** (2016). *A Bayesian multilevel modeling analysis of PISA 2012 data with informative priors*. Poster presented at the 2016 annual meeting of the Psychometric Society, Asheville, NC.
14. Hu, S., & **Yang, H.** (accepted). *Understanding US students' mathematics achievements: A genetic algorithm approach*. Poster to be presented at the 2016 annual meeting of the Psychometric Society, Asheville, NC.

15. Zhang, Q., & **Yang, H.** (2016). *Understanding marriage duration in the US using Bayesian survival analysis.* Poster presented at the 2016 annual meeting of the Psychometric Society, Asheville, NC.
16. Li, Z., & Zhou, H., **Yang, H.**, & Liu, R., (2016). *The influence of family literacy context on adolescents' mathematics achievement: A Bayesian hierarchical regression analysis with informative priors.* Poster presented at the 2016 Modern Modeling Methods ( $M^3$ ) Conference, Storrs, CT.
17. Song, H., Wang, Y., & **Yang, H.** (2016). *Characteristics of DO graduates entering ACGME residency programs in family medicine and factors that contributed to their GME success..* Poster presented at the 12th annual Association of American Medical Colleges (AAMC) Health Workforce Research Conference, Chicago, IL.
18. Song, H., & **Yang, H.** (2016). *Automated test assembly for COMLEX-USA: A SAS Operations Research (SAS/OR) Approach.* Paper presented at the 2016 annual conference of the American Association of Colleges of Osteopathic Medicine (AACOM), Washington, DC.
19. Bozdogan, H., Bollen, K., & **Yang, H.** (2016). *Information complexity for model selection in Structural Equation Models (SEMs).* Paper presented at the International Conference on Information Complexity and Statistical Modeling in High Dimensions with Applications (IC-SMHD-2016), Cappadocia, Turkey.
20. Bozdogan, H., Bollen, K., & **Yang, H.** (2016). *Information complexity and several other information theoretic criteria in the selection of structural equation models.* Paper presented at the 2016 annual meeting of the American Educational Research Association (AERA), Washington, DC.
21. **Yang, H.**, & Mai, J. (2015). *An introduction of Bayesian structural equation modeling (SEM) in SPSS AMOS.* Poster presented at the 80th annual meeting of the Psychometric Society, Beijing, China.
22. Zhang, Q., & **Yang, H.** (2015). *What decides when marriage ends in the US: An analysis of marriage survival through Bayesian censored regression modeling.* Poster presented at the 80th annual meeting of the Psychometric Society, Beijing, China.
23. Li, Z., **Yang, H.**, Liu, R., & Zhou, H. (2015). *Family context predictors of mathematics among U.S. middle school students: A Bayesian hierarchical regression analysis.* Poster presented at the 80th annual meeting of the Psychometric Society, Beijing, China.
24. Wong, W. H., Fisher, S., & **Yang, H.** (2015). *Perceived safety, social problem solving skills, and the nature of bullying.* Poster presented at the annual meeting of the National Association of School Psychologists, Orlando, FL.
25. Zhang, Q., & **Yang, H.** (2014). *Predictive data mining modeling with model ensemble: A demonstration and comparison using large scale family science applications.* Poster presented at the 79th annual meeting of the Psychometric Society, Madison, WI.
26. Zyznieuski, N., & **Yang, H.** (accepted). *Understanding duration time for Kentucky community college students to complete a Baccalaureate education: A Bayesian survival analysis using censored regression.* Poster accepted for presentation at the 79th annual meeting of the Psychometric Society, Madison, WI.
27. **Yang, H.** (2014) *A demonstration of a new linear model procedure in SPSS Statistics: Automatic Linear Modeling (LINEAR).* Paper presented at the 2014 Modern Modeling Methods ( $M^3$ ) Conference, Storrs, CT.
28. **Yang, H.** (2014) *Predictive data mining in very large data sets: A demonstration and comparison under model ensemble.* Poster presented at the the 2014 Modern Modeling Methods ( $M^3$ ) Conference, Storrs, CT.
29. **Yang, H.** (2014). *Introduction of Bayesian structural equation modeling (SEM) in SPSS AMOS.* Paper presented at the annual meeting of the Mid-South Educational Research Association, Knoxville, TN.

30. Cole, M., Wilhelm, J., Jackson, C., & **Yang, H.** (2013) *Exploring the relationships between student moon observations and spatial-scientific reasoning*. Poster presented at the Thirty-Fifth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA - Chicago, IL).
31. Cole, M., Wilhelm, J., Jackson, C., **Yang, H.**, & Wilhelm, R. (2013). *Exploring the relationships between student moon observations and spatial-scientific reasoning*. Poster presented at the 222nd meeting of the American Astronomical Society in Indianapolis, IN.
32. **Yang, H.** (2012). *Subset selection in multiple regression using information complexity*. Paper presented at the annual meeting of the Mid-South Educational Research Association, Lexington, KY.
33. **Yang, H.**, & Liu, N. (2011). *Item Response Theory modeling using general purpose statistics Programs: A survey of two approaches*. Paper presented at the annual meeting of the Mid-South Educational Research Association, Oxford, MS.
34. Liu, N., & **Yang, H.** (2011). *Predicting beyond regression: A data mining approach*. Poster presented at the annual meeting of the Mid-South Educational Research Association, Oxford, MS.
35. **Yang, H.** (2011). *Pilot study of estimating Item Response Theory models using a general purpose statistical program*. Poster presented at the annual meeting of the American Psychological Association, Washington, DC.
36. **Yang, H.**, Deniz, E., & Bozdogan, H. (2011). *A new family of model fit indices in confirmatory factor analysis: Information Complexity (ICOMP) Criteria*. Poster presented at the 76th annual meeting of the Psychometric Society, Hong Kong, China.
37. **Yang, H.**, & Liu, N. (2011). *Predictive data mining as an alternative to standard regression modeling in very large data sets*. Poster presented at the 76th annual meeting of the Psychometric Society, Hong Kong, China.
38. Sun, L., & **Yang, H.** (2011). *Coping with a wider range of outcomes: Demonstration of the generalized linear model platform in SPSS Statistics*. Poster presented at the Joint Statistical Meetings, Miami Beach, FL.
39. **Yang, H.**, & Bozdogan, H. (2010). *Unifying exploratory and confirmatory factor analysis using information complexity and the genetic algorithm*. Paper presented at the 75th annual meeting of the Psychometric Society, Athens, GA.
40. **Yang, H.**, Deniz, E., & Bozdogan, H. (2010). *Assessing multiple overall fit indices in confirmatory factor analysis*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Denver, CO.
41. **Yang, H.** (2009). *Using ICOMP in factor model selection*. Paper presented at the annual meeting of the Mid-South Educational Research Association (MSERA), Baton Rouge, LA.
42. **Yang, H.**, & Bozdogan, H. (2009). *A pilot study of applying the R language to regression model selection with ICOMP*. Paper presented at the annual meeting of the American Educational Research Association (AERA), San Diego, CA.
43. **Yang, H.** (2008, November). *A pilot study of using ICOMP in structural equation modeling*. Paper presented at the annual meeting of the Mid-south Educational Research Association (MSERA), Knoxville, TN.
44. **Yang, H.** (2007, June). *High-dimensional outlier detection in multivariate regression analysis using information criteria and genetic algorithm*. Poster session presented at the annual meeting of the Classification Society of North America (CSNA), Champaign, IL.
45. **Yang, H.**, & Ren, B. (2006, February). *A MATLAB graphical user interface (GUI) program for item analysis*. Poster session presented at the Conference on New Directions in Psychological Measurement with Model-Based Approaches, Atlanta, GA: Georgia Institute of Technology.

46. **Yang, H.** (2006, March). *A multiple regression approach to predicting UT freshmen's school performance*. Poster session presented at the annual graduate student colloquium of the College of Education, Health and Human Sciences, Knoxville, TN: The University of Tennessee.
47. **Yang, H.** (2006, February). *Should traditional tests be replaced by authentic assessments?*. Paper presented at the annual meeting of Southeastern Association of Educational Studies (SEAES), Knoxville, TN.

#### MANUSCRIPT IN PROGRESS

1. Howarth, A., **Yang, H.**, Hansen, S., Harrell, L. & Thatcher, C. (in progress). Understanding the human animal bond within a homeless population: A Rasch modeling analysis of one-health initiative data. *TBD*.
2. Coon, D., **Yang, H.**, & Lin, I. (in progress). *Proposaing a bifactor model for the Valuation of Life instrument*. Manuscript under preparation.
3. Coon, D., **Yang, H.**, & Lin, I. (in progress). *A hierarhical regression approach to understanding valuation of life among the oldest-old*. Manuscript under preparation.
4. **Yang, H.**, Bozdogan, H., & Bollen, K. (in progress). *Information complexity and several other information theoretic criteria in the selection of structural equation models*. Manuscript under preparation.

#### TECHNICAL REPORTS

1. Woodson, S. E., Quiroga, S. Z., Underiner, T., & **Yang, H.** (2017). *Assessing the impact of thetre-making on individual behavioral change: Applied theatre and health eating*. Report submitted to the National Endowment for the Arts (NEA).
2. Song, H., & **Yang, H.** (2015). *Automated test assembly for COMLEX-USA under Common Block Design: An implementation in SAS Operations Research (SAS/OR) software*. Chicago, IL: National Board of Osteopathic Medical Examiners (NBOME).
3. **Yang, H.**, Kalinowski, K., & Song, H. (2015). *Automated test assembly for COMLEX-USA Level 3 2016: An interface between SAS, LINGO and R*. Chicago, IL: National Board of Osteopathic Medical Examiners (NBOME).

#### TEACHING AND STUDENT ADVISING

##### **COURSES (both face-to-face and online delivery through Canvas, Zoom and Webex)**

- 1.. EDF 8935 (UWF): Doctoral Seminar : Dissertation Inquiry (Preproposal Seminar)
- 2.. EDF 7489 (UWF): Mixed Methods Research Design
- 3.. EDF 8937 (UWF): Research Applications
- 4.. EDF 7404 (UWF): Quantitative Methods and Educational Statistics I
- 5.. EDF 7407 (UWF): Quantitative Methods and Educational Statistics II

##### **COURSES (face-to-face delivery only)**

- 1.. EPE/EDP 558 (UKY): Gathering, Analyzing, and Using Educational Data II
- 2.. EDP 656 (UKY): Methodology of Educational Research
- 3.. EPE/EDP 660 (UKY): Research Design and Analysis in Education (Face-to-face and online (online delivery paperwork officially approved by the University Senate for spring 2015))
- 4.. EDP 707 (UKY): Multivariate Analysis in Educational Research

- 5.. EPE/EDP 711 (UKY): Applied Structural Equation Modeling: With an application in latent growth curve modeling and Bayesian SEM
- 6.. EPE/EDP 711 (UKY): Categorical Data Analysis in Education: With an introduction of data analysis using the SAS program

## STUDENTS ADVISING ON COMPREHENSIVE EXAMINATION AND DISSERTATION COMMITTEES

### 1.. **Traci McCabe**

- Role: member, comprehensive examination and doctoral dissertation committees
- Graduation/Expected Graduation Semester:
- Dissertation Title: *Examining the Relationship Between Prior Knowledge on Vocabulary and Findings from Studies Designed to Teach Reading Skills to Students: A Meta-Analysis Study*

### 2.. **Kristopher Bracewell**

- Role: Chair, comprehensive examination and doctoral dissertation committees
- Graduation/Expected Graduation Semester:
- Dissertation Title: *A Quantitative Study of Suspension Rate Reduction and Its Impact on the Academic Achievement Gap*

### 3.. **Lynn Tierney**

- Role: Chair, comprehensive examination and doctoral dissertation committees
- Graduation/Expected Graduation Semester:
- Dissertation Title: *Disruptive Behavior and Efficacy of Inclusive Learning Environments: A Mixed Methods Approach*

### 4.. **Ann Strickland**

- Role: Committee member, doctoral dissertation committee
- Graduation/Expected Graduation Semester:
- Dissertation Title: *Continuous Training Needs and Development of Community College Solutions: A Program Evaluation*

### 5.. **Timothy Hinchman**

- Role: member, doctoral dissertation committee
- Graduation/Expected Graduation Semester: Fall, 2019
- Dissertation Title: *Comparing Designed Constraints Impact on the Caption Creativity of Midwestern Teacher Candidates*

### 6.. **Alexandria Banks**

- Role: chair, doctoral dissertation committee
- Graduation/Expected Graduation Semester:
- Dissertation Title: *Teacher Quality: The Relationship Between Teacher Effectiveness and Student Achievement*

### 7.. **Geni Wright**

- Role: Chair, doctoral dissertation committee
- Graduation/Expected Graduation Semester: Spring, 2020
- Dissertation Title: *An Investigation of Perceived Organizational Support Among Online Contingent Faculty - Strengths and Weaknesses*

### 8.. **Sandra Ayivor**

- Role: member, doctoral dissertation committee

- Graduation/Expected Graduation Semester: Spring, 2020
- Dissertation Title: *Postgraduation Residency Plans of Doctoral Students from Sub-Saharan Africa*

9.. **Lana Mett**

- Role: member, doctoral dissertation committee
- Graduation/Expected Graduation Semester: Spring, 2020
- Dissertation Title: *An Information-Motivation-Behavioral (IMB) Skills Model Approach to Investigating the Dietary Behaviors of Pre-Nursing Students*

10.. **Jason Jack**

- Role: member, doctoral dissertation committee
- Graduation/Expected Graduation Semester:
- Dissertation Title: *TBD*

11.. **Joanne Mallary**

- Role: member, doctoral dissertation committee
- Graduation/Expected Graduation Semester:
- Dissertation Title: *TBD*

## PROFESSIONAL ACTIVITIES

### OFF-CAMPUS

1. Grant proposal panelist/reviewer, National Endowment for the Arts (NEA) - December 2018 to February 2019
2. Ad hoc reviewer, *Methodology* - July 2019
3. Ad hoc reviewer, *Methodology* - January 2019
4. Ad hoc reviewer, *Journal of Modern Applied Statistical Methods* - October 2018
5. Ad hoc reviewer, *International Journal of Assessment Tools in Education* - May 2018
6. Ad hoc reviewer, *Methodology* - March 2018
7. Ad hoc reviewer, *Methodology* - January 2018
8. Ad hoc reviewer, *International Journal of Aging and Human Development* - December 2017
9. Ad hoc reviewer, *Journal of Education in Science, Environment and Health* - October 2016
10. Ad hoc reviewer, *Psychology of Women Quarterly* - September 2015
11. Ad hoc reviewer, *International Journal of Science Education* - May 2015
12. Textbook reviewer, *Psychology Press/Routledge* - October 2013
13. Ad hoc reviewer, *Journal of Educational and Behavioral Statistics* - July 2012

**ON-CAMPUS**

1. Member, *UWF ERA Ed.D./Ed.S. Self-Study for Academic Program Review Committee* - Fall 2019
2. Department Representative, *UWF Peer Review Meeting* - Fall 2019
3. Department Representative, *UWF Peer Review Meeting* - Fall 2018
4. Member, *ASU CONHI Faculty Evaluation Committee* - Fall 2017 to Summer 2018
5. Member, *ASU CONHI Research Associate Professor Search Committee* - Fall 2016 to Spring 2017
6. Faculty affiliate, *University of Kentucky Asia Center* - January 2009 to Summer 2015
7. Member, *UK Quantitative Initiative for Policy and Social Research (QIPSR) Advisory Board* - Fall 2013 to Summer 2015
8. Discussant, *UK Quantitative Initiative for Policy and Social Research (QIPSR) Mini Conference on Structural Equation Modeling* - May 2014
9. Panel member, *A Prequel to Structural Equation Models: Understanding SEM with Examples from Three Disciplines* by UK Quantitative Initiative for Policy and Social Research (QIPSR) - March 2014
10. Statistician, *UK College of Education Evaluation Center* - Fall 2013 to Summer 2015
11. Member, *UK College of Education Technology Committee* - Fall 2013 to Summer 2015
12. Member, *UK College of Education Research Advisory Committee* - Spring 2013
13. Member, *UK College of Education Taskforce on Diversity* - Fall 2012 to Spring 2013
14. Member, *UK Department of Educational Policy Studies & Evaluation Graduate Admissions Committee* - Spring 2011 to Summer 2015