MINI PROFESSIONAL DEVELOPMENT COURSE DESCRIPTIONS

PDC14 Advanced Topics in Propensity Score Methods
Instructors: Haiyan Bai, University of Central Florida; Wei Pan, Duke University; Xing Liu, Eastern Connecticut State University
Date: Saturday, April 18, 2020
Time: 8:00 a.m. - 12:00 p.m.
Fee: $115
This course will introduce advanced topics in propensity score methods (PSMs) related to their applications to empirical data with available software packages in R. The course will integrate problem-based instructions, demonstrations with real data, and hands-on activities to facilitate learning. Objectives of the course are for participants to be able to (1) check assumptions of PSMs; (2) select covariates for propensity score models; (3) apply PSMs to data with multiple treatments; (4) implement PSMs with complex data such as clustered, longitudinal, and survey data; (5) conduct outcome analysis with PSMs; and (6) conduct sensitivity analysis after applying PSMs. This course is appropriate for faculty members, graduate students, and researchers with basic knowledge of PSMs. Prior to this course, participates are expected to review the basic concept of PSMs, such as propensity score matching. Required materials and data sets for class demonstration and practices will be provided through a course website specifically created by the course instructors. The instructions for how to download R and related packages will be provided before the course through email and the course website.

PDC15 Intermediate Winsteps Techniques: Rasch Analyses for the Social and Behavioral Sciences

Instructors: Stefanie A. Wind, The University of Alabama - Tuscaloosa

Date: Saturday, April 18, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $115

This course provides experience using the Winsteps program to conduct a variety of Rasch measurement theory analyses. The course content includes (1) overview of Rasch models and review of basic Winsteps techniques; (2) recoding responses (e.g., reverse-coding, collapsing categories); (3) analyzing mixed-format responses; (4) anchored designs (e.g., equating); (5) differential item functioning; (6) batch mode (e.g., for simulations); and (7) questions and answers and assistance with participants' projects.The course includes theoretical discussions related to each topic to guide participants toward sound decision-making and meaningful interpretation of results. Through lecture and hands-on exercises participants will (1) describe major characteristics and uses for Rasch models; (2) make informed decisions for conducting Rasch analyses; (3) use Winsteps to conduct basic and intermediate Rasch analyses; and (4) interpret the results from basic and intermediate Rasch analyses. Participants should have a basic familiarity with Rasch models and their uses (sophisticated mathematical understanding not required) and a basic familiarity with the Winsteps software (e.g., ability to run a Winsteps program using an example). Participants will use instructor-provided data or their own data to practice running analyses. Required material and software: (1) laptop computer able to run Windows, and (2) free or full version of Winsteps software.

PDC16 Introduction to Infographics and Data Visualization

Instructors: Dino Sossi, Teachers College, Columbia University; NYU; Columbia SIPA

Date: Saturday, April 18, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $75

Introduction to Infographics and Data Visualization is an applied course that introduces participants to design principles and techniques for effective visualization focusing on qualitative data. Visualizations graphically depict information to foster communication, improve comprehension, and enhance decision making. This introductory course will help students who are new to the infographics field learn to create their own visualizations to communicate complex educational/social issues. It will also give them the opportunity to begin to learn how to teach design techniques to their own classes. Students will begin to understand how visual representations can improve data comprehension, learn techniques to facilitate the creation of infographics, and use widely available online software. This is a course for beginners. It may be of interest to graduate students, early career scholars, early-level researchers, and others who are interested in infographics or data visualization regardless of their area of expertise. A laptop computer with internet connection and a current browser (e.g., Chrome) is required. This course is a combination of interactive lecture and hands-on analog and digital (e.g., computer-based) exercises. Students will be directed to create their own infographic during the course.

PDC17 Non-commercial IRT-based Simulation Software: WinGen3, SimulCAT, MSTGen, and IRTEQ

Instructors: Hanwook (Henry) Yoo, Educational Testing Service; Chris Han, Graduate Management Admission Council; Hyeonjoo J. Oh, ETS

Date: Saturday, April 18, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $115

This course introduces four item response theory (IRT)–based simulation computer programs: (1) WinGen3 for generating IRT parameters and item responses; (2) SimulCAT for simulating computer-adaptive testing administrations; (3) MSTGen for simulating multistage testing administrations; and (4) IRTEQ for implementing IRT equating. These software tools support various IRT models and comprehensive features with an intuitive, user-friendly interface, Participants will gain an understanding of the importance of IRT-based simulation as well as of the practical constraints and challenges of simulation-based research. The course delivers essential psychometric knowledge and professional simulation skills, as well as passing down practical tips for writing well-defined and impactful research questions for the simulation study. The course is intended for junior-level practitioners and graduate students who need to conduct comprehensive data simulations in educational research. It is recommended for participants to have some background knowledge in modern test theory (a.k.a., IRT), including differential item functioning, scaling and equating, and computerized adaptive testing and multistage testing issues, but these are not required. Demonstrations and hands-on practice will be conducted with proposed noncommercial (free) software programs. Attendees should bring their own laptops and the most recent version of four programs installed (www.hantest.net). Instructors will send electronic training materials via email at least two weeks before the Annual Meeting so that pre-registered participants can practice the basic steps of simulating work in advance.

PDC18 Sharing Your Research with the World

Instructors: Jenny Grant Rankin, University of Cambridge

Date: Saturday, April 18, 2020

Time: 1:00 p.m. - 5:00 p.m.

Fee: $75

This course focuses on how to communicate research to large, diverse audiences. It is appropriate for participants who have researched (or are currently researching) any topic within the education field and who want their findings to reach as many people as possible in order to help as many students as possible. Participants will learn about a variety of opportunities, how to land those opportunities, and strategies to maximize the opportunities to share their work with varied audiences. The course is split into three sections: laying the groundwork (branding, websites, social media, etc.); speaking (TED talks, conferences, media interviews, NPR/radio, etc.); and writing (book deals, journals, magazines, etc.). Sections involve audience participation, interaction, and hands-on activities to apply concepts to participants' circumstances. Attendees will also learn about resources available to women and traditionally underrepresented groups so more diverse perspectives are represented in field dialogue. In addressing significant professional development issues (e.g., writing and speaking strategies), this course will encourage more dynamic, memorable research presentations and accessible, widespread communication of education research findings.

PDC19 Using R Software for Item Response Theory (IRT) Model Calibrations

Instructors: Ki Matlock Cole, Oklahoma State University; Insu Paek, Florida State University; Sohee Kim, Oklahoma State University

Date: Saturday, April 18, 2020

Time: 1:00 p.m. - 5:00 p.m.

Fee: $115

This interactive course will introduce the concepts of unidimensional IRT models and provide instruction, demonstration, and hands-on opportunities using the free R software to estimate commonly used IRT models. Participants will receive a copy of Using R for Item Response Theory Model Applications, written by the course instructors. Concepts of commonly used unidimensional IRT models will be taught (e.g., Rasch, 1PL, 2PL, 3PL, GR, and GPC), with little focus on statistical theory. Participants will receive detailed training on how to correctly execute the R IRT packages and interpret the results, with ample opportunities for hands-on analysis. Example data sets will be provided for practical applications. The target audience for this course includes graduate students, practitioners, and researchers interested in advancing their knowledge of IRT and enhancing their skills using R to do IRT analysis. A basic understanding of IRT is highly recommended. Prior knowledge of R is not required. Familiarity with writing syntax may also be helpful for using R but is not essential. Participants should bring their own laptop with the free R software and packages installed. Participants may also bring their own data set for more hands-on assistance.

PDC20 Using School-Level Data from the Stanford Education Data Archive

Instructors: Sean F. Reardon, Stanford University; Benjamin R. Shear, University of Colorado - Boulder; Erin Michelle Fahle, St. John's University; Andrew Ho, Harvard University

Date: Saturday, April 18, 2020

Time: 1:00 p.m. - 5:00 p.m.

Fee: $115

The Stanford Education Data Archive (SEDA) is a growing, publicly available database of academic achievement and educational contexts. The nationally comparable achievement data are based on roughly 330 million standardized test scores for students in nearly every U.S. public school in third through eighth grade from the 2008–09 through 2015–16 school years. This course is intended to introduce researchers of all levels, practitioners, and policy makers to the SEDA data for use in their work. The instructors will provide a description of SEDA's contents and construction, focusing on the newly added school-level test score estimates and covariate data. The course will include conceptual overviews of the construction of SEDA along with hands-on activities designed to help users engage directly with the school-level data. All attendees should bring a laptop in order to engage in the activities. Attendees who are interested in using the data for research purposes should have statistical software (e.g., R or Stata) installed on their computers. The data and associated publications are publicly available at http://seda.stanford.edu.

PDC21 Adapting Critical Pedagogy to Online Teacher Education

Instructors: Chelda Smith Kondo, Georgia Southern University; Katie Brkich, Georgia Southern University; Calvin Walton, Georgia Southern University

Date: Sunday, April 19, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $75

This course addresses professional development issues related to preparing preservice teachers to create and maintain caring, academically rigorous, and culturally and linguistically inclusive classrooms where learners feel safe, valued, educated, and empowered, specifically in instances of online instruction and supervision. The course includes a strong emphasis on developing knowledge about program development, curriculum, admissions, policies, faculty development, field experiences, and persisting challenges. Participants will engage in cooperative and experiential learning, peer teaching, case-based learning, and group instruction. They will appraise one example of an online social justice oriented Masters of Teaching degree program and construct resource drafts to replicate or improve a similar program at their home institution. This course is designed for teacher educators or department or college administrators interested in preparing culturally sustaining teachers through online education. Ideally, participants will have experience preparing preservice teachers in initial certification programs. Additionally, an understanding and appreciation for critical pedagogy is needed. We will design a curriculum that addresses the fundamental elements in teacher preparation through a critical lens; develop applicant selection criteria; design a retreat for faculty development and program alignment; draft program-specific policies that are unique to the online platform; plan an orientation for newly admitted students; and experience/simulate various social justice and pedagogy-oriented activities. Participants will need laptops, knowledge of state policies on graduate programs for initial certification, and knowledge of state requirements for certification assessments.

PDC22 Co-Decolonizing Research Methods: Toward Research Sustaining Indigenous and 'Other' Community Engaged Ways of Knowing

Instructors: Lorri Many Rivers Johnson Santamaría, Mixteco Indígena Community Organizing Project (MICOP); Cristina Corrine Santamaria Graff, Indiana University - Purdue University at Indianapolis

Date: Sunday, April 19, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $75

For those interested or engaged in research produced by or serving Indigenous peoples or people of Color in the United States directly or indirectly impacted by colonization, this course provides a way forward toward authentic collaboration with stakeholders and interested parties. An interactive course, it features lecture, group-work, and direct interactions with Mixteco/Indígena community members who are active researchers serving their community as part of an authentic collaboration with state and county funding partners. Latinx and Black/African American parents of children with dis/abilities in Indiana will also share university/community-based co-created research efforts serving their communities. The course aims to increase participants' opportunities to co-plan, re-envision, and co-create collaborative research opportunities with community stakeholders and organizations representative of multilingual, migrant, Indigenous, Latinx, Black/African American, and dis/ability perspectives considered. Participants will leave the course able to (1) reframe notions of traditional research; (2) understand the importance of sacred space and "being" with communities pre-inquiry; (3) support communities' identification of community-serving research needs, questions, and approaches; (4) co-create thought forms by sharing traditional research methods—allowing for adaptation, change, or innovation; and (5) facilitate community-engaged research methods and efforts. The ideal audience for this course includes graduate students, active researchers, and community members such as women and underrepresented minoritized people interested in shifting power differentials in collaborative research. There are no prerequisite skills or knowledge required. Potential assignments include three readings made available by email to registrants prior to the course.

PDC23 Multimodal Analysis and Social Semiotics for Qualitative Analysis in Educational Research

Instructors: Mary B. McVee, University at Buffalo - SUNY; Lynn Shanahan, University at Buffalo - SUNY; Ryan M. Rish, University at Buffalo - SUNY

Date: Sunday, April 19, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $75

A recent development in qualitative research has been increasing analysis of multimodality. This course introduces scholars to multimodal analysis through the lens of social semiotics using diverse perspectives from multimodal interactional analysis, multimodal narrative analysis, and multimodality and nexus analysis. The target audience includes graduate students, early career scholars, and advanced researchers who may have limited knowledge of multimodality and social semiotics and who wish to learn about the theories and analytic techniques related to multimodality. This course is structured around brief lectures related to an overview of theory and analytic techniques or approaches, followed by course-style interactions and analysis of data or examples provided by the instructors. Before the course, participants are encouraged to read "New London Group (1996), A Pedagogy of Multiliteracies: Designing Social Futures," Harvard Educational Review, 66(1), 60–92. However, the course will also be suitable for those who already have some foundation in social semiotics and multimodality due to the nature of the hands-on analysis.

PDC24 Using Factor Analysis for Survey Design and Validation

Instructors: Katherine Picho, Howard University; Marie Plaisime, Howard University

Date: Sunday, April 19, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $115

This course provides a primer on survey development and the use of factor analysis to validate surveys. It is intended for educators (including administrators) and researchers at all levels, from novice to more experienced, who are either developing, implementing, or contemplating the use of questionnaires for research, program evaluation, or educational purposes. This course expounds on exploratory factor analysis as a crucial tool in the instrument validation process. It includes interactive presentations, small-group activities to practice skills, useful resource materials, and time for discussion with the instructor. Attendees will require a laptop with SPSS or Stata.

PDC25 Assessment Development Practice within Automatic Item Generation Framework

Instructors: Jaehwa Choi, The George Washington University

Date: Monday, April 20, 2020

Time: 1:00 p.m. - 5:00 p.m.

Fee: $115

Automatic Item Generation (AIG) is an emerging research and innovative assessment development approach where cognitive and psychometric theories are integrated into a comprehensive assessment development framework for the purpose of generating massive and/or high-quality assessments via various digital technologies. This course is intended as both a theoretical and practical introduction to AIG. It is specifically designed for in-service or in-training psychometricians who wish to learn the background, benefits, innovations, and practical applications of AIG. Psychometricians and other research professionals directly involved in developing test items and managing tests may find this course useful for expanding their present understanding of item and test development with AIG, especially with technologically enhanced and innovative item types. The course specifically integrates a demonstration and item modeling practice with the Computer Adaptive Formative Assessment AIG System to gain practical experience with the process. Participants should have a sound understanding of basic concepts of educational or psychological measurement, such as reliability, validity, test security, and the item development and/or item validation process.

PDC26 Federal Education Policy as a Driver of Assessment Design and Practice (1960 to present)

Instructors: Daniel Lewis, ACT; Wes Bruce, Self-Employed

Date: Monday, April 20, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $115

This course provides early career education researchers with a historical understanding of assessment design and practice in light of decades of federal education accountability policy. The instructors trace national educational policy and initiatives, and the associated effects on assessment design and practice, beginning just prior to President Johnson's original enactment of the Elementary and Secondary Education Act (ESEA), which established accountability requirements that have persisted through each presidential administration, to the current Trump administration's educational policies accompanying its implementation of the Every Student Succeeds Act (ESSA). This course will highlight the key federal policies of each presidential administration that resulted in the push for desegregation, equity and equal access to quality education, world-class standards and states' mandated adoption of academic content standards, the notion of Adequate Yearly Progress in accountability systems, the rise of criterion-referenced assessments, testing of all students on the same content standards, growth models, widespread use of interim and formative assessments, the adoption of common standards, adaptive testing, innovative item types, balanced assessment systems, the changing role of the federal government in national and state education policy, and many other topics.

PDC27 Introduction to Latent Transition Analysis

Instructors: Karen L. Nylund-Gibson, University of California - Santa Barbara

Date: Monday, April 20, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $115

This course will provide an introduction to Latent Transition Analysis (LTA), the longitudinal extension of the latent class analysis model. It will begin with a brief overview of the latent class analysis model and the process of class enumeration, and then will focus mainly on the specification and estimation of the latent transition analysis model. The course will be focused on the five basic model-building steps for the LTA model, including selecting a measurement model, exploring for measurement invariance and higher order effects, and then the inclusion of covariates and distal outcomes. An applied example will be used throughout the course to highlight modeling ideas. Specification and estimation of all models in the Mplus version 8.1 will be demonstrated throughout, and participants will be given electronic access to all course materials. This course will be lecture-style and will be geared toward graduate students, early career scholars, and advanced researchers familiar with latent variable modeling. Ideally, participants will have prior knowledge of Mplus and will have a laptop to follow along with provided lecture notes and Mplus code (though having Mplus is not necessary).

PDC28 Planning and Delivering Presentations that Move Organizational Stakeholders

Instructors: Norman Eng, The City College of New York

Date: Monday, April 20, 2020

Time: 8:00 a.m. - 12:00 p.m.

Fee: $75

Part of engaging organizational stakeholders is presenting our work to them. What is the most effective way to do this? One idea is to apply "best practices" in teaching. This course allows emerging scholars to identify and apply some of the best practices in teaching, such as understanding students' needs and making content relatable, in presentations to organizational stakeholders. This course aims to help early- and mid-career scholars move audiences—particularly educational stakeholders—to act. Through hands-on exercises, course participants will (1) develop a "profile" of their target audience, which helps them better understand who they are communicating with; (2) take a topic they might present and boil it down into its essentials, so stakeholders know exactly what to focus on and why it matters; (3) revamp the traditional presentation outline (i.e., framework, hypotheses, methodology, results, implications) so that it captures interest from beginning to end; and (4) use technology to engage full audience participation. Participants should come prepared with a topic they might discuss in an oral or written presentation.

PDC29 Validity Studies using Differential Item Functioning

Instructors: Youn-Jeng Choi, The University of Alabama

Date: Monday, April 20, 2020

Time: 1:00 p.m. - 5:00 p.m.

Fee: $115

This course is designed to provide the measurement methods for validity studies. Differential item functioning was introduced as a new tool to evaluate evidence based on internal structure. The goals of the course are to learn the fundamental concepts and methods of validity using differential item functioning, so that participants can critically evaluate the uses of tests and other educational and psychological assessment procedures. The target audience is graduate students and early career scholars. Knowledge about basic concepts of IRT (e.g., item parameters, item parameter invariance, and ICC), chi-square tests, and logistic regression are preferred but not required. The SAS and IRTLRDIF programs will be used during the computer lab session.

PDC30 Writing an Application for an IES Research Grant

Instructors: Allen Ruby, Institute of Education Sciences; Erin Higgins, Institute of Education Sciences

Date: Monday, April 20, 2020

Time: 1:00 p.m. - 5:00 p.m.

Fee: By appointment

This course will provide instruction on writing successful grant applications to the Institute of Education Sciences (IES) Education Research Grants Program (84.305A) and Special Education Research Grants Program (84.324A). The course will focus on (1) the topics, (2) the project types, and (3) the four sections of the Research Narrative (Significance, Research Plan, Personnel, and Resources) that comprise the most important part of the IES grant application. Course leaders will introduce specific concepts and examples of strategies for writing key sections of the Project Narrative (e.g., introduction to the proposal, intervention description, theory of change, research design, analysis, and personnel), as well as examples of common errors and how to avoid them. Participants will be asked to submit initial drafts of some of these key sections and will work in small groups to revise them based on course leader and participant feedback. Participants should be early career (e.g., postdocs, new faculty, early career researchers) or more senior researchers who have not received an IES grant or served as a co-PI on an IES grant. Participation in this course is by application only. Application details are available **online**.