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**Graduate Research Assistant Handbook
for
The University of Kansas
Center for Educational Testing and Evaluation**

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The Center for Educational Testing and Evaluation (CETE) is a department at the University of Kansas, housed within the School of Education. In 1983, CETE was authorized by the Kansas Board of Regents to function as a research and evaluation unit under the Office of the Vice Chancellor for Research, Graduate Studies, and Public Service at the University of Kansas. CETE was founded by Dr. Douglas Glasnapp and Dr. John Poggio who stepped down as co-directors on June 30, 2009 at which time Dr. Neal Kingston assumed the role of director.

CETE Mission

CETE's mission is to improve the state of student assessment by

- carrying out our research agenda in support of testing programs that facilitate student learning;
- supporting the state of Kansas in the development and administration of tests, reporting of results, and related professional development; and
- providing graduate students with operational and research experiences vital to their professional development.

Location

CETE is located on the 7th floor of Joseph R. Pearson Hall at 1122 West Campus Drive, Lawrence, KS.



Kansas Assessment Program

We work on many components of the Kansas Assessment Program including the following.

- General, Modified, and Alternate summative assessments in Mathematics, Reading, Science, and History & Government
- Formative assessments in Mathematics, Reading, Science, and History & Government
- Interim assessments in Mathematics and Reading (under development for fall 2010)
- The Kansas English Language Proficiency Assessment

This operational work includes:

- item and test development;
- test administration;
- reporting;
- item and test analysis using classical, generalizability theory, and item response theory approaches;
- differential item functioning;
- equating;
- standard setting;
- validity studies;
- growth modeling; and
- analysis of test consequences.

One highlight of working at CETE is the opportunity to observe and sometimes participate in meetings of the Kansas State Department of Education's Technical Advisory Committee (TAC). This committee meets twice a year, and members are luminaries in the field of educational measurement. Current TAC members are Paul Holland, Michael Kolen, Robert Linn, Jim Pellegrino, Jim Popham, and Martha Thurlow.

Some Recent Research Studies

Project		Principal Investigator
1	Alternate Assessment Alignment Study	Shaftel
2	Alternative Assessment Portfolio Analysis	Cho
3	Bias in Stratified Alpha	Kingston
4	Comparison of the appropriateness of item level adaptive tests in the face of curricular differences	Kingston McKinley
5	Computer or human voice reading the general assessment	Irwin
6	Consequences of the Science Assessments	Peyton
7	Discrete Option Multiple-Choice items	Kingston
8	Efficacy of a Testlet Adaptive approach for an interim assessment system	McKinley Kingston
9	Efficacy of Curriculum-Based Mastery Testing meta-analysis	Kingston
10	Feasibility of using IRT as the psychometric basis of the Kansas General Assessments in Reading and Mathematics	McKinley Kingston
11	History Item Ordering	Irwin Kingston
12	Human grading	Kingston
13	Instructional Sensitivity of History Items	Kingston Popham
14	KAA Reviewer Comments Study	Shaftel
15	KAMM Characteristics Study	Shaftel
16	KAMM DIF Study	Shaftel
17	KAMM/KCA Accommodations Descriptive Study	Shaftel
18	KELPA Construct validity	Peyton
19	Key factors in formative definitions	Kingston
20	Logistic Form of IRT	Kingston
21	Read-aloud Accommodation Confirmation Study	Irwin Shaftel
22	Score report survey	Kingston
23	Simulation to determine how to combine independent and dependent t-tests in a meta-analysis	Kingston
24	Tests and Time	Irwin Kingston
25	Time to Test	Wolkowitz Templin Kingston

CETE Staff

- Neal Kingston, Director:
- Hyun-jeong Cho, Ph.D.: Post Doctoral Researcher, Hyun-jeong Cho is a post doctoral research associate whose current interests include research, and evaluation of the Kansas Alternate Assessment and Kansas Assessment of Modified Measures.
- Ronda Consolver, Assistant to the Director: Ronda serves as the office manager and main CETE contract when the Director is unavailable and manages the Director's calendar and scheduling of appointments. She also processes all payroll documents for CETE staff and is the Personnel Related Staff Member for HR issues.
- Rebecca Finney, Programmer II – Perl: Rebecca maintains the PERL programs that make the CETE website go. She creates data sets for research and deals with the really crazy phone calls from school districts.
- Mark Hoffman, System Administrator: Mark is the System Administrator of the CETE production, development, and QA computer systems and networks. He also supports the CETE office workstations and printers.
- Patrick Irwin, Psychometrician II – General Assessment: Pat's primary responsibilities include the development and coordination in support of the Kansas assessment program, serving as the general assessment project manager for the Reading, Mathematics, Science, and Social Studies assessments. Duties include item selection and test form construction, analyzing data, performing validation (reliability/validity) studies, score reporting and results dissemination, writing technical reports, state and federal reporting, as well as developing performance standards and implementing standard-setting (cut score) studies.
- Nora McAfee, Program Assistant: Nora's duties include answering phone and email questions regarding state assessment issues and CETE website usage. Nora also orders supplies, processes payments for goods and services necessary for the successful completion of CETE's research goals and initiatives; identifies and submits work orders for facility repairs and maintenance, posts online advertisements for open positions, and other miscellaneous duties as they arise.
- Lisa McBride, Editor: As the technical editor for CETE, Lisa provides both copyediting and comprehensive editing for a variety of documents including assessments, manuals, research articles, website content, and correspondence. Additionally, she has edited materials for the BAIP (Blending Assessment with Instruction Program). Lisa also handles copyright permissions for the Kansas Assessments.
- Robert McKinley, Psychometrician IV – Interim Assessment: Robert is a senior research associate with CETE. His primary responsibility is development and implementation of the new Interim Assessment program. In addition, Rob serves as a resource to the other center staff and as a mentor to graduate students.
- Karthick Palaniswamy, Director of Technology for Research and Development
- Vicki Peyton, Psychometrician I – KELPA: Vicki is a Research Associate in the Center for Educational Testing and Evaluation and an Assistant Professor in the Psychology and Research in Education Department. She specializes in applied statistics and measurement, confirmatory factor analysis and educational and psychological item analyses. Her primary duties with CETE are working with the Kansas English Language Proficiency Assessment.

- Mahesh Rajannan, Programmer I – Java: Mahesh maintains and updates KCA, TDE and Test Builder. He also manages the job assignments and duties of the technology GRAs and handles issues concerning the production database and web server.
- Julia Shaftel, Ph.D., Research Associate – KAMM, Alternate Assessment: Julia is a former special education teacher with expertise in mild to moderate disabilities. A licensed school psychologist, she has taught in PRE’s School Psychology program for the last ten years. At CETE she coordinates the development and implementation of the Kansas Alternate Assessment, the Kansas Assessment of Modified Measures, and the use of testing accommodations on these and the general assessments. Research interests include testing and classroom accommodations for diverse student populations, assessment of K-12 classroom behavior, development and measurement of cross-cultural attitudes and skills, and the correspondence between self and observer ratings of high-inference characteristics.
- Nicholas Studt, Programmer I – Perl: Nick’s main focus is to facilitate the smooth operation of reporting by maintaining existing applications and developing new applications for use by teachers and state, district, and school administrators. In addition, Nick maintains several of the internal web services used by staff to further our core mission and serve as a backup system administrator when necessary.
- Amy Tackett, Technical Liaison: Amy manages issues dealing with the Test Builder website and is the liaison between the programming/website staff and the KCA/test engine technical staff. She also serves as the resource person for school districts and questions regarding formative testing.
- Sylvia Tidwell Scheuring – Senior Research Associate (Interim Assessment)

CETE GRAs

Up to four strong incoming doctoral students in the **Research, Evaluation, Measurement, and Statistics** (REMS) track of the Educational Psychology and Research will be offered a research assistantship each fall. Research assistants will normally work 20 hours a week in exchange for tuition, fees, and attendance at one national conference each year to be covered. Assistantships are renewable based on satisfactory progress toward degree and performance at CETE.

In most years, CETE will support up to four doctoral students in the **Curriculum and Teaching** department who have experience and expertise in Mathematics, Reading, Science, or History & Government. These students will focus on item and test development. These positions require superlative writing and editing skills. Student’s minoring in REMS will receive preference. Assistantships are renewable based on satisfactory progress toward degree and performance at CETE.

CETE also supports two to four GRAs with expertise and experience in software development. These students are often from programs in **Educational Technology, Computer Science, Computer Engineering, or Information Technology** but may be from any program if they have the appropriate skills. Preference will be given to doctoral students. Assistantships are renewable based on satisfactory progress toward degree and performance at CETE.



Back Row: Kristin Hines (in green), Linette McJunkin, Dana Atwood-Blaine, Gretchen Anderson, Fei Zhao
Middle Row: Wenhao Wang, Rose Zheng, Jihyun Song, Angela Broaddus; Diane Coffman, Minjung Kim, Jorge Carvajal-Espinoza
Front row: Jie Chen, Pui Chi Chu, Liming Li

Previous CE TE GRAs – Where are they Now?

Jeffrey Kelly, Ph.D. – Director of Psychometrics, ATI – Assessment Technology Institute

William Moore, Ph.D. - Director, Institute for Research and Reform in Education, Kansas Cty, Missouri.

Roger Peckover, Ph.D. - Professor, St. Mary's University, Winona, Minnesota

Cheryl Randall, Ph.D. – Assessment Coordinator, Kansas State Department of Education

Julia Shaftel, Ph.D. – Research Associate, Center for Educational Testing and Evaluation

Xiangdong Yang, Ph.D. - Associate Professor, East China Normal University, Shanghai, China

GRA Training and Expectations

Graduate Training and Expectations

Graduate students will work under the direction of a faculty member of the research team on all projects. However, more experienced graduate students will often take the lead on various projects which will involve guiding and organizing less experienced students in project-related activities and goals.

Specific activities and tasks designated to students will depend on the students' individual background, experience, and interests. At some point, all students will learn about and assist with the Kansas State Assessment system and the quality control process associated with maintaining the operational functioning of the General Kansas State Assessments, Kansas Assessments of Modified Measures (KAMM), Kansas Alternate Assessments (KAA), Formative Assessments, Interim Assessments, and the Kansas English Language Proficiency Assessments (KELPA). Students can expect to be involved in various research-based projects which help students develop the skills necessary to become independent researchers. Research projects may be based on faculty members' ongoing research agenda; however, students are encouraged to develop and propose their own research ideas for potential projects. As students progress in their coursework towards their desired degree, their level of involvement and expectations for a given project may change to coincide with the developing skills and abilities of the student.

Examples of Student Activities and Tasks:

- Collecting and maintaining annual state assessment psychometric data
- Assisting with standard setting activities, technical advisory meetings, and educational workshops
- Research activities related to the efficacy of, features, or utility of different types of assessments, test development, accommodations, as well as quality and measurement issues
- Coding and interpreting research materials
- Writing literature reviews
- Developing presentation materials

CETE Policies

Working in an environment without clear rules can be difficult, inefficient, and anxiety provoking. To avoid such problems, CETE strives to for clear policies. In cases where a lack of clarity is identified, we will modify the this manual to address such issues.

Data Ownership. All state assessment and related data, and all CETE materials are the property of CETE, and the director, staff, and graduate students have no independent right to these data. Furthermore, any data that is collected as part of a research activity within CETE is also considered to be property of the Center.

Data may be requested for research purposes outside of CETE, but a description of the purpose and planned use of the data should be provided, and permission must be granted by the director of CETE prior to obtaining such data. Such permission will usually be granted as long as it does not require confidential information (such as student or school identification). Using CETE data for non-CETE purposes without explicit permission is grounds for dismissal.

Authorship of Research Projects. Opportunities for authorship are very important for both staff and graduate assistants. Determining authorship for studies involving a team of researchers can be complex. In general, identification of which persons made significant contributions related to the following criteria will be weighed to determine first and subsequent authorship.

- Defined the research question
- Created the research design
- Made decisions in carrying out the research design
- Made decisions in the carrying out of data analyses (as opposed to carrying out data analyses strictly according to someone else's plan)
- Wrote sections of the final paper (with the discussion section getting somewhat more weight than other sections)
- Intellectual contribution by way of guidance, advice, and direction should be recognized through authorship when such a contribution was significant to the success of the project.

Various factors in and of themselves do not count toward authorship. Such non-contributory factors include the following.

- Position as director or senior staff in the center
- Collector or recorder of data
- Carrying out data analysis under explicit direction
- Editing or formatting

These are guidelines. Ultimately it is the responsibility of the primary investigator to determine authorship. Issues of authorship should be discussed at the initial stages of a project so as to avoid miscommunication or conflict in the final stages. An appeal of an authorship decision should be made to the director of CETE who will serve as arbitrator. Should the director be the principal investigator whose decision is being appealed, then a mutually acceptable senior faculty member outside of CETE will be identified to serve as arbitrator. Questioning authorship decisions should not be viewed as out of the ordinary and will be handled in a non-confrontational manner.

It is expected that any student completing a dissertation will provide the bulk of the intellectual contribution for that piece of research (even if the research is part of a larger project) and thus will be first author of any articles arising from the dissertation.

Patents. Any inventions created as part of staff or student work at CETE will be the property of the Kansas University Center for Research (KUCR). It would be unusual (though not

impossible) for a research assistant to provide the necessary contribution to be listed as a co-inventor. The University of Kansas is often willing to license inventions for commercial purposes, in which case the inventors would share in royalties.

Confidentiality. All state assessment materials and related data are confidential. Student names and information associated with any of the data are not to be disclosed and should not be used in any context outside of CETE. Similarly, assessment materials are not to be, under any circumstance, dispersed or shared with anyone outside of CETE and materials are to remain within the secured premises of CETE at all times. All staff and research assistants will be required to sign a confidentiality statement in which they promise to protect the confidentiality of student test results and testing materials.

Human Subjects. Any research conducted at CETE must adhere to the APA Guidelines for the Ethical Treatment of Human Participants in Research and must have prior approval from the KU Institutional Review Board and the Human Subjects Committee for the Lawrence Campus (HSCL), prior to the conduct of any data collection or contact with prospective participants. To this end, incoming graduate students must complete the University of Kansas Human Subjects Protection tutorial prior to beginning work at CETE.

Compliance. Failure to comply with the Confidentiality and Human Subjects clauses put the laboratory, the department, and the institution at severe risk. Individuals who fail to comply are subject to immediate dismissal from CETE, possible litigation, charges of academic misconduct, and possibly disbarment from the conduct of future research.

Printing. The printers at CETE are to be used for work-related purposes. Students may print materials for class but not in excess (e.g., documents over 75 pages, jobs that require a lot of color ink, notes for classmates, etc.). Printers are not to be used for personal use outside of work or class.

CETE Offices. The CETE office space includes a kitchen area. A coffee pot, microwave, full size refrigerator and water cooler are available for GRA usage. Since the CETE wing is a high security area we do not make use of the university janitorial services, so each employee is responsible for cleaning the kitchen area after use, disposing of old items in the refrigerator and emptying their trash into a common trash receptacle.

Use of 745A Library. The collection of books, journals, and other materials located in Room 745A are available for student use. Materials should not be removed from CETE. All materials are property of CETE and should be properly cared for and returned undamaged and unaltered. Resources include a collection of textbooks on Educational and Psychological Measurement and Research, Statistics, and Data Analysis topics as well as many journals such as *Applied Measurement in Education*, *Applied Psychological Measurement*, *Journal of Educational Measurement*, and *Psychometrika*.

Conference Attendance. The National Council of Measurement in Education (NCME) along with the American Educational Research Association (AERA) holds their conferences together every spring in a designated location. This is the largest and usually most pertinent conference

for CETE measurement and curriculum focused GRAs. Dates and locations of future meetings follow.

April 29 - May 3, 2010	Denver, Colorado
April 7 – 11, 2011	New Orleans, Louisiana
April 12 – 16, 2012	Vancouver, British Columbia

CETE recommends that GRAs interested in educational measurement or other areas of educational research attend this joint conference every year and will cover the cost of conference fee, reasonable transportation, shared hotel room (two students or more per room), and meals.

Students are encouraged to present papers at other national conferences focused on large-scale assessment and, on a case-by-case basis, will consider covering the cost of those conferences. Following are organizations that sponsor possibly pertinent conferences with their websites.

American Educational Research Association	www.aera.net
American Psychological Association	www.ncme.org
Association for Psychological Science	www.psychologicalscience.org/
Council of Chief State School Officers	www.ccsso.org/
Psychometric Society	www.psychometrika.org/

International Students. In conjunction with the University's educational environment, international students are encouraged to refine their English language skills by speaking English while at the Center. Below are a couple of resources that students may find helpful in working on these skills.

English Club ESL: www.ku.edu/students/orgs/English_9442.html

- **Purpose:** Facilitate English fluency for speakers of English as a second language, with a focus on KU students & families, through classes and activities.
- **Contact:** Lanny Maddux (lannym@ku.edu) - Mr. Maddux can help find conversation partners.

Students Tutoring for Literacy: groups.ku.edu/~cco

- **Purpose:** Help native or non-native English-speaking youth and adults obtain their GED, learn English as a second language, read their first book, or fill out a job application.
- **Contact:** stl@ku.edu or cco@ku.edu

Work Schedule. While it is not necessary for students to have a regimented work schedule, an approximate schedule of days and times students will be in the Center may be requested. This information will be helpful for faculty, project coordinators, and GRAs who may be collaborating on research projects, as well as for the assignment of regular work tasks.

CETE will be closed on the following national holidays: January 1st, Martin Luther King Day, Memorial Day, July 4th, Labor Day, Thanksgiving, the day after Thanksgiving and December 25th. CETE is NOT closed during University breaks (i.e., fall, winter, and spring breaks). As such, students are expected to work their regular hours during these breaks unless prior arrangements are made.

GRA Appointment. Graduate research assistants are assigned an appointment which is described as a percentage of time that the student is expected to work on CETE projects each week. Typically, 50% appointments (20 hours per week) are designated; however, appointments can be adjusted to fit students' particular needs and availability. Tuition reimbursement coincides with the designated appointment. Below is a table of possible GRA appointments and the corresponding work hours and percentage of tuition reimbursement.

Appointment	Hours per week	Tuition Reimbursement
50%	20	100%
45%	18	90%
40%	16	80%
35%	14	70%
30%	12	60%
25%	10	50%

Tips for Success

There are several ways to ensure that your experience at CETE is both academically and personally rewarding.

Shared Interests. When your academic and/or research interests match the work activities that take place at the Center, you and the faculty you work with will both profit. You will develop job-related skills and grow as an independent researcher. Your advisor will take satisfaction in your success and will continue making progress in the field.

Personal Interests. Similarly, when graduate students develop a sense of ownership over their experience at CETE, it can afford many benefits. For instance, you are encouraged to develop your own research interests, ideas, and goals while working at CETE. Student research ideas often lead to a project or paper that can be presented at conferences, published as a research article, or both.

Work Ethic. Graduate students who display a strong work ethic will benefit from a greater potential to develop and learn through experience and advancement toward a leadership role on research projects, as well as future research positions. Therefore, making the most of your experience at CETE will involve demonstrating a strong work ethic.

Involvement. Furthermore, you will want to stay involved in CETE activities and strive to learn as much as you can throughout your work experience. This will involve attending GRA

meetings, sharing with others the work that you have been doing as well as finding out what others are doing, volunteering to assist and lead research projects, and taking on projects and tasks that are difficult and/or arduous.

Collaboration. Finally, collaborate with your fellow students both professionally and academically. Fellow students can be a great resource for questions and concerns about work-related issues as well as student-related issues. While you have an obligation to complete your GRA tasks and activities, you are also encouraged to use CETE as a general workspace where students can work with one another on other academic activities.

New to Lawrence? Some Helpful Links

KU Website Links:

Graduate Studies: Student Resources

www.graduate.ku.edu/04-00_abt_stu_resources.shtml

- Includes links to academic information, campus resources such as the writing center, KU resources such as graduate student organizations and international student services (ISSS), housing and dependent care services, and many other community resources.

Center for Educational Testing and Evaluation (CETE)

www.cete.us/

Educational Psychology and Research Program

soe.ku.edu/epr/

Applying to the KU Educational Psychology and Research Program

soe.ku.edu/pre-admissions-information/

Community Website Links:

Lawrence Public Transit (The T)

www.lawrencetransit.org

News and Local Forums

www.larryville.com

Lawrence Public Schools

www.usd497.org

Weather in Lawrence Kansas

www.weather.com/weather/local/66045?lsw=66045&lwsa=WeatherLocalUndeclared&from=whatwhere

Lawrence Newspaper

www2.ljworld.com/

Community Events

www.visitlawrence.com/

Downtown Lawrence

downtownlawrence.xportcms8.com/SiteResources/Data/Templates/t1.asp?docid=514&DocName=Home

Parks and Recreation

www.lawrenceks.org/lprd/index.php

Lied Center at KU

www.lied.ku.edu/

Facebook Page

www.facebook.com/pages/Lawrence-KS/Lawrence-KS/57192293338

Wikipedia Entry

[en.wikipedia.org/wiki/Lawrence, Kansas](http://en.wikipedia.org/wiki/Lawrence,_Kansas)