# Gregory K. W. K. Chung, Ph.D.April 2016

**CONTACT INFORMATION**

National Center for Research on Evaluation, Standards, and Student Testing (CRESST)

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# EDUCATIONAL HISTORY

09/99 Ph.D., Educational Psychology, University of California, Los Angeles (UCLA)

 Specialization: Learning and Instruction

Chair: Aimée Dorr

12/89 M.S., Educational Computing, Pepperdine University, Los Angeles, CA

 Advisor: Linda Polin

05/87 B.S., Electrical Engineering, University of Hawaii—Manoa, Honolulu, HI

 Specializations: Software engineering, analog circuit design, semiconductor physics

 Advisor: Wilbur Davenport

# PROFESSIONAL HISTORY

09/12 – present Assistant Director for Research Innovation, CSE/CRESST, UCLA

 Supervise the conceptualization and execution of R&D. Manage schedule, budget, and personnel. Provide guidance for senior researchers on various project and proposal activities. Contribute to Center strategic planning and development, proposal writing activities, represent CRESST at professional functions, and establish professional relationships with potential partners and funders.

 Research activities. Supervise, carry out, and contribute to the design, development, and validation of computer-based assessments and tools, including telemetry design, learning and assessment design for games and online performance assessments. Conduct validation studies in laboratory and field settings (K-12 and university settings) using quasi-experimental, experimental, and correlational designs. Explore the use of advanced technologies (e.g., Bayesian inference networks, ontologies, constraint-based simulations, sensors) to support development of assessment and training systems. Prepare deliverables for funding agency, manage budget and schedule, and hire staff.

 Mentoring activities. Mentor professional staff in the conduct of educational research. Provide guidance and feedback on a range of research activities (e.g., assessment development, research study design, scientific writing, data collection, data analyses, and presentations and publications).

 Proposal writing activities. Contribute conceptually and technically to the development and writing of proposals to foundations, NSF, the Office of Naval Research, the Department of Defense, Defense Advanced Research Projects Agency, the U.S. Army, PBS KIDS, and the Department of Education. Listed as PI, co-PI, or senior personnel.

 Dissemination activities. Provide leadership on program design of the CRESST Conference, conduct media interviews, initiate and participate in partner outreach activities.

05/15 – present Instructor, USC Rossier School of Education

 Instructor for Assessment and Evaluation (EDUC 582) in the Master of Education in Learning Design and Technology program. Fully online format.

10/98 – 09/12 Senior Researcher, CSE/CRESST, UCLA

 Research and management activities. Supervise, carry out, and contribute to the design, development, and validation of novel computer-based performance assessments and tools, including assessments of domain knowledge, problem solving, teamwork, and psychomotor skills; formative assessments for diagnosis and remediation of knowledge gaps; and authoring systems for developing assessments. Conduct validation studies in laboratory and field settings (K-12 and university classrooms, military training bases) using quasi-experimental, experimental, and correlational designs. Explore the use of advanced technologies (e.g., Bayesian inference networks, ontologies, constraint-based simulations, sensors) to support development of assessment and training systems. Prepare deliverables for funding agency, manage budget and schedule, and hire staff. Supervise programmers in development of software. Co-PI on a $10M, 5-year, U.S. Department of Education funded National Research and Development Center on Instructional Technology: Center for Advanced Technology in Schools (CATS)

 Mentoring activities. Mentor professional staff (6), graduate students (9), and undergraduate students (6) in the conduct of educational research. Provide guidance, feedback, and supervision on a range of research activities (e.g., assessment development, research study design, scientific writing, data collection, data analyses, and presentations and publications). Provide individual and small-group training on the use of specialized software, equipment, and techniques to support data collection, data entry, and data processing. Co-authored publications with a total of 24 different staff and students (professional staff, graduate students, undergraduate students, and programmers).

 Proposal writing activities. Contribute conceptually and technically to the development and writing of proposals to foundations, NSF, the Office of Naval Research, the Department of Defense, Defense Advanced Research Projects Agency, PBS KIDS, and the Department of Education. Listed as senior personnel or co-PI. Serve on proposal review panels.

 Dissemination activities. Prepare research reports, present research findings at conferences and professional meetings, and prepare manuscripts for publication.

06/09 – 07/09 Instructor, UCLA Extension

 Co-taught Algebra Readiness for middle school students.

07/94 – 09/98 Graduate Student Researcher, CSE/CRESST (H. O’Neil), UCLA

 Research activities. Provided research support for the design, development, and validation of computer-based assessments. Assisted in the design of research studies, determined site requirements for computer-based data collections, conducted data collection and analyses, and developed software for computer-based assessments. Prepared research reports and presented research findings at conferences. Designed, configured, and maintained Web and database servers and demonstrated computer-based assessment products.

 Mentoring activities. Supervised undergraduate programmers and clerks. Trained undergraduate programmers on the design of Web-based systems for research purposes. Trained clerks on the use of spreadsheets for general data entry and data processing of clickstream and other computer-based data.

 Proposal writing activities. Contributed to literature review and writing of proposals to various foundations, NSF, and the Department of Education.

 Dissemination activities. Prepared research reports, presented research findings at conferences and professional meetings, and prepared manuscripts for publication.

02/96 – 07/98 Contract Programmer

 Developed software for research practicum, dissertation, and other graduate students. Developed software for GSE&IS to port a major library database from a mainframe to a PC. Also developed reporting and evaluation software for the Milken Educational Virtual Workspace 2 system.

02/95 – 05/95 Graduate Student Researcher, GSE&IS (Y. Kafai), UCLA

 Assisted 4th and 5th graders with Logo programming, observed classrooms, and reviewed play and construction-kit software.

01/93 – 12/93 Graduate Student Researcher, Educational Technology Unit (P. Kovaric), UCLA

 Provided one-on-one and small-group software and hardware training. Provided technical support for faculty, staff, and students. Diagnosed and fixed computer hardware and software problems.

06/89 – 08/90 Graduate Student Researcher, Pepperdine University (L. Polin), Los Angeles, CA

 Provided Logo programming support.

09/87 – 12/93 Member of the Technical Staff, TRW, Redondo Beach, CA

 Developed software for a database API, satellite testing system, real-time data acquisition and signal analyses, automated reporting systems, and automated test procedure system. Presented software designs in NASA and TRW management reviews.

06/87 – 08/87 Eighth-grade Pre-algebra Instructor, Saint Andrew’s Priory, Honolulu, HI

 Developed lesson plans, homework, exams, grading policy, and report cards for pre-algebra summer school class.

04/84 – 05/86 Teaching Assistant (8085 assembly language), Univ. of Hawaii, Honolulu, HI

 Developed and graded student projects, exams, and homework. Tutored students and conducted small-group help sessions.

**SELECTED RESEARCH ACTIVITIES WITH EXTRAMURAL SUPPORT**

2016 Bertolli, K. (PI). Initial Sentinel Prospective Validation Study. Senior Personnel and responsible for the writing of the validation study design and skill-decay study design. Under review ($750,000).

2016 Baker, E. L. (PI). *Investigating the design of digital assessments of creative problem solving*. White paper to the Army Research Institute. Co-PI responsible for conceptualization and preparation. Invited to submit full proposal.

2015 Baker, E. L. (PI). *ITS for robot assisted laparoscopic surgery*. Proposal to the Raytheon BBN Technologies. Senior Personnel and contributed to the study design and scope of work. Under review ($30,000).

2015 Baker, E. L. (PI). *Integration of intelligent tutoring for electronics.* Proposal to University of Memphis. Senior Personnel and contributed to the study design and scope of work. Under review ($496,000).

2015 Baker, E. L. (PI). *Assessing the implementation and impact of the National Math and Science Initiative College Readiness program*. Proposal to the National Math and Science Institute. Co-PI and responsible for writing the fidelity of implementation section. Funded ($2.9M).

2015 Chung, G. K. W. K. (PI). *Advancing children's learning through sequenced media experiences and community engagement*. Proposal to the PBS KIDS. Responsible for conceptualization and defining the scope of work the proposal. Funded ($1.6M).

2015 Baker, E. L. (PI). *Advancing children's learning through sequenced media experiences and community engagement*. Proposal to the Education Development Corp, Center for Children and Technology (EDC/CCT). Senior Personnel and responsible for assembling assessment and evaluation pieces of the proposal. Funded ($600,000).

2015 Jha, R. (PI). *Personalized sensor-driven multimodal formative assessment games and authoring tools*. Proposal to the National Institute for Health. Co-PI and responsible for writing assessment and evaluation pieces of the proposal. Under review ($281,000).

2014 Baker, E. L. (PI). *Learning maps for personalized learning.* Proposal to the Bill and Melinda Gates Foundation. Senior Personnel and responsible for writing full proposal, including conceptualization and writing of the theoretical and technical approach. Funded ($75,000).

2014 Baker, E. L. (PI). *Proposal to provide validation technical assistance* Proposal to PBS KIDS. Senior Personnel and responsible for writing full proposal, including conceptualization and writing of the validation of the in-game assessments. Funded ($356,000).

2013 Baker, E. L. (PI). *Evaluation of motion-based measures of ultrasound competency*. Proposal to Pelagique. Senior Personnel and responsible for writing the full proposal, including issues related to sensor-based measurement of ultrasonography skill. Funded ($40,000).

2012 Baker, E. L. (PI). *Topic Area 1: Educational approach and assessment*. CRESST response to RFI: Full Spectrum Learning (FSL), DARPA-SN-13-04. Responsible for writing technical portions of the RFI.

2012 Baker, E. L. (PI). *Progress tracking reporting systems*. Proposal to PBS KIDS. Senior Personnel and responsible for writing the full proposal, including issues related to game-based learning, measurement, and reporting formats. Funding ($370,000).

2011 Baker, E. L. (PI). *Gamechanger: Using technology to improve young children’s STEM learning*. Proposal to DARPA. Co-PI and responsible for conceptualization and writing of the research plan, data strategies, and issues related to game-based learning. Funded ($2M).

2011 Williams, P. (PI). *Using* *game play to diagnose and remediate students’ misconceptions in solving equations*. Proposal to the Department of Defense Research and Educational Program for Historically Black Colleges and Universities and Minority-serving Institutions (HBCU/MI). Senior Personnel and responsible for writing the full proposal. Funded ($620,000 total; UCLA/CRESST: $126,000).

2007 Baker, E. L. (PI). *Center for advanced technology in schools*. Proposal to the Institute of Education Science (IES). Co-PI and responsible for conceptualization and writing of the learning, cognition, and assessment issues related to game-based learning. Funded ($10M).

2006 Berka, C. (PI). *Interactive neuro-educational technology (I-NET): Increasing the pace and efficiency of marksmanship training*. Proposal to the Defense Advanced Research Projects Agency (DARPA). Senior Personnel and responsible for writing the UCLA component which included conceptualization of the use of physiological-based sensing measures to optimize combat marksmanship training. Funded ($1.2M total; UCLA/CRESST: $432,000).

2006 Baker, E. L. (PI). *Training models and tools for adaptive learning*. Proposal to the Office of Naval Research. Senior Personnel and responsible for conceptualization and writing of the technical approach for sensor-based performance assessment for use in diagnosis and remediation in distance learning contexts. Funded ($4.8M).

2004 Baker, E. L. (PI). *Human performance knowledge, models and tools for naval personnel development*. Proposal to the Office of Naval Research. Senior Personnel and responsible for conceptualization and writing of the technical approach for diagnosis and prescription methods, development of domain ontologies, and automated assessment task authoring and generation. Funded ($1.5M).

2003 Kaiser, W. J. (PI). *Individualized, scalable, and interactive assessment and instruction for engineering education*. Proposal to NSF. Senior Personnel and responsible for conceptualization and writing of CRESST’s assessment component. Funded ($100,000 total; CRESST: $50,000).

2001 Baker, E. L. (PI). *IERI: Assessments to support the transition to complex learning in science*. Proposal to NSF. Senior Personnel and responsible for writing portion of technology component. Funded ($4.7M).

2000 Baker, E. L. (PI). *Knowledge, models and tools to improve the effectiveness of naval distance learning*. Proposal to the Office of Naval Research. Senior Personnel and responsible for conceptualization and writing of distance/distributed learning literature review. Funded ($5.3M).

1999 Srivastava, M. (PI). *ITR: Technologies for sensor-based wireless networks of toys for smart developmental problem-solving environments*. Proposal to NSF. Senior Personnel and responsible for writing CRESST’s component, which included conceptualization of technology-based assessment component. Funded ($1.9M total; CRESST: $380,000).

1997 Baker, E. L. (PI). *Assessing problem solving with model-based simulations*. Proposal to the Center for Digital Innovation, UCLA. Responsible for writing proposal. Funded ($20,000).

**SCHOLARLY PUBLICATIONS AND CREATIVE WORK**

**Refereed Research Articles and Book Chapters**

1. Madni, A., Chung, G. K. W. K., Baker, E. L., & Griffin, N. C. (2016). Using crowdsourcing as a formative evaluation technique for game icons (pp. 83–98). In H. F. O’Neil, E. L. Baker, & R. S. Perez (Eds.), *Using games and simulations for teaching and assessment: Key issues*. New York, NY: Routledge.
2. Roberts, J. D., Chung, G. K. W. K., & Parks, C. B. (2016). Supporting children’s progress through the PBS KIDS learning analytics platform. *Journal of Children and Media, 10*, 257–266.
3. Chung, G. K. W. K. (2015). Guidelines for the design, implementation, and analysis of game telemetry (pp. 59–79). In C. S. Loh, Y. Sheng, & D. Ifenthaler (Eds.), *Serious Games Analytics: Methodologies for performance measurement, assessment, and improvement*. New York: Springer.
4. Chung, G. K. W. K. (2014). Toward the relational management of educational measurement data. *Teachers College Record, 116*(110309).
5. O’Neil, H. F., Chung, G. K. W. K., Kerr, D., Vendlinski, T. P., Buschang, R. E., & Mayer, R. E. (2014). Adding self-explanation prompts to an educational computer game. *Computers in Human Behavior*, 30, 23–28.
6. Chung, G. K. W. K., & Delacruz, G. C. (2014). Cognitive readiness for solving equations. In H. F. O’Neil, R. S. Perez, & E. L. Baker (Eds.), *Teaching and measuring cognitive readiness* (pp. 135–148). New York, NY: Springer.
7. Chung, G. K. W. K. (2013). *Toward the relational management of educational measurement data*. Invited chapter for ETS Gordon Commission on the Future of Testing.
8. Chung, G. K. W. K., Gyllenhammer, R. G., Baker, E. L., & Savitsky, E. (2013). The effects of practicing with a virtual ultrasound trainer on FAST window identification, acquisition, and diagnosis. *Military Medicine*, 178(10S), 87–97.
9. Kerr, D., & Chung, G. K.W.K. (2012). Identifying key features of student performance in educational video games and simulations through cluster analysis. *Journal of Educational Data Mining, 4*, 144–182.
10. Baker, E. L., Chung, G. K. W. K., & Delacruz, G. C. (2012). The best and future uses of assessment in games. In M. Mayrath, J. Clarke-Midura, D. H. Robinson, & G. Schraw (Eds.). *Technology-based assessments for 21st Century skills:  Theoretical and practical implications from modern research* (pp. 229–248). Charlotte, NC:  Information Age Publishing.
11. Buschang , R. E., Chung, G. K. W. K., Delacruz, G. C., & Baker, E. L. (2012). Validating measures of algebra teacher subject matter knowledge and pedagogical content knowledge. *Educational Assessment, 17*, 1–21. doi: 10.1080/10627197.2012.697847/
12. Encarnacao, A., Espinosa, P. D., Au, L., Chung, G. K. W. K., Johnson, L., & Kaiser, W. J. (2011). Individualized, interactive instruction (3I): An online formative assessment and instructional tool. *Computers in Education Journal, 11*(1), 45–60.
13. Delacruz, G. C., Chung, G. K. W. K., & Baker, E. L. (2009). Finding its place: Developments of location-based mobile gaming in learning and assessment environments. In A. A. de Souza e Silva & D. M. Sutko (Eds.), *Digital cityscapes: Merging digital and urban playspaces* (pp. 251–268)*.* Bern, Switzerland: Peter Lang Publishing.
14. Bewley, W. L., Chung, G. K. W. K., Delacruz, G. C., & Baker, E. L. (2009). Assessment models and tools for virtual environment training. In D. Schmorrow, J. Cohn, & D. Nicholson (Eds.), ***The PSI handbook of virtual environments for training and education: Developments for the military and beyond*** (pp. 300–313). Westport, CT: Praeger Security International.
15. Raphael, G., Berka, C., Popovic, D., Chung, G. K. W. K., Nagashima, S. O., Behneman, A., Davis, G., & Johnson, R. (2009). *Peak Performance Trainer (PPTTM): Interactive neuro-educational technology to increase the pace and efficiency of rifle marksmanship training* (pp. 630–639). Springer-Verlag, Berlin Heidelberg.
16. Baker, E. L., Chung, G. K. W. K., & Delacruz, G. C. (2008). Design and validation of technology-based performance assessments. In J. M. Spector, M. D. Merrill, J. J. G. van Merriёnboer, & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology* (3rd ed., pp. 595–604). Mahwah, NJ: Erlbaum.
17. Chung, G. K. W. K., O’Neil, H. F., Bewley, W. L., & Baker, E. L. (2008). Computer-based assessments to support distance learning.In E. Klieme, J. Hartig, & A. Jurecka (Eds.), *Assessment of competencies in educational contexts* (pp. 253–276). Göttingen, Germany: Hogrefe & Huber.
18. Chung, G. K. W. K., Baker, E. L., Delacruz, G. C., Bewley, W. L., Elmore, J., & Seely, B. (2008). A computational approach to authoring problem-solving assessments. In E. L. Baker, J. Dickieson, W. Wulfeck, & H. F. O’Neil (Eds.), *Assessment of problem solving using simulations* (pp. 289–307).New York: Routledge.
19. Baker, E. L., Niemi, D., & Chung, G. K. W. K. (2008). Simulations and the transfer of problem solving knowledge and skills. In E. L. Baker, J. Dickieson, W. Wulfeck, & H. F. O’Neil (Eds.), *Assessment of problem solving using simulations* (pp. 1–17). New York: Routledge.
20. Chung, G. K. W. K., Shel, T. C., & Kaiser, W. J. (2006). An exploratory study of a novel online formative assessment and instructional tool to promote students’ circuit problem solving. *Journal of Technology, Learning, and Assessment, 5*(6)*.* Available from http://jtla.org
21. Chung, G. K. W. K., Delacruz, G. C., de Vries, L. F., Bewley, W. L., & Baker, E. L. (2006). New directions in rifle marksmanship research. *Military Psychology, 18*, 161–179.
22. Chung, G. K. W. K., O’Neil, H. F., Delacruz, G. C., & Bewley, W. L. (2005). The role of affect on novices’ rifle marksmanship performance. *Educational Assessment*, *10*, 257–275.
23. Chung, G. K. W. K., Delacruz, G. C., & Bewley, W. L. (2004). Performance assessment models and tools for complex tasks. *International Test and Evaluation Association (ITEA) Journal, 25*(1), 47–52.
24. Chung, G. K. W. K., & Baker, E. L. (2003). An exploratory study to examine the feasibility of measuring problem-solving processes using a click-through interface. *Journal of Technology, Learning, and Assessment, 2*(2). Available from http://jtla.org
25. O’Neil, H. F., Chuang, S., & Chung, G. K. W. K. (2003). Issues in the computer-based assessment of collaborative problem solving. *Assessment in Education, 10*, 361-373.
26. Chung, G. K. W. K., & Baker, E. L. (2003). Issues in the reliability and validity of automated scoring of constructed responses. In M. D. Shermis & J. E. Burstein (Eds.), *Automated essay grading: A cross-disciplinary approach* (pp. 23–40).Mahwah, NJ: Erlbaum.
27. Chung, G. K. W. K., de Vries, L. F., Cheak, A. M., Stevens, R. H., & Bewley, W. L. (2002). Cognitive process validation of an online problem solving assessment. *Computers in Human Behavior*, *18*, 669–684.
28. Harmon, T. C., Burks, G. A., Giron, J. J., Wong, W., Chung, G. K. W. K., & Baker, E. L. (2002). An interactive database supporting virtual fieldwork in an environmental engineering design project. *Journal of Engineering Education*, *92*, 167–176.
29. Chung, G. K. W. K., Harmon, T. C., & Baker, E. L. (2001). The impact of a simulation-based learning design project on student learning. *IEEE Transactions on Education*, *44*, 390–398.
30. O’Neil, H. F., Wang, S.-L., Chung, G. K. W. K., & Herl, H. E. (2000). Assessment of teamwork skills using computer-based teamwork simulations. In H. F. O’Neil & D. H. Andrews (Eds.), *Aircrew training and assessment* (pp. 245–276).Mahwah, NJ: Erlbaum.
31. Chung, G. K. W. K., O’Neil, H. F., & Herl, H. E. (1999). The use of computer-based collaborative knowledge mapping to measure team processes and team outcomes. *Computers in Human Behavior*, *15*, 463–494.
32. Herl, H. E., O’Neil, H. F., Chung, G. K. W. K., & Schacter, J. (1999). Reliability and validity of a computer-based knowledge mapping system to measure content understanding. *Computers in Human Behavior*, *15*, 315–334.
33. Schacter, J., Herl, H. E., Chung, G. K. W. K., Dennis, R. A., & O’Neil, H. F. (1999). Computer-based performance assessments: A solution to the narrow measurement and reporting of problem-solving. *Computers in Human Behavior*, *15*, 403–418.
34. Schacter, J., Chung, G. K. W. K., & Dorr, A. (1998). Children’s Internet searching on complex problems: Performance and process analyses. *Journal of the American Society for Information Science, 49*, 840–849.
35. O’Neil, H. F., Jr., Chung, G. K. W. K., & Brown, R. (1997). Use of networked simulations as a context to measure team competencies. In H. F. O’Neil Jr., (Ed.), *Workforce readiness: Competencies and assessment* (pp. 411–452)*.* Mahwah, NJ: Erlbaum.

# Refereed Conference Proceedings

1. Chung, G. K. W. K., Parks, C., & Roberts, J. (2016, October). An exploratory study of game features that can support measurement of knowledge and skills. *Proceedings of the Annual Convention of the AECT*, Las Vegas, NV: AECT.
2. Kumar, R., Chung, G. K. W. K., Madni, A., & Roberts, B. (2015, June). First evaluation of the physics instantiation of a problem-solving based online learning platform. In C. Conati, N. Hefferman, A. Mitrovic, & M. F. Verdejo (Eds.), *Lecture Notes in Computer Science: Vol. 9112. Artificial Intelligence in Education* (pp. 686–689). Cham, Switzerland: Springer.
3. Kerr, D., & Chung, G. K. W. K. (2013). Identifying learning trajectories in an educational video game. In R. Almond & O. Mengshoel (Eds.), *Proceedings of the 2013 UAI Application Workshops: Big Data Meet Complex Models and Models for Spatial, Temporal and Network Data* (pp.20-28). Retrieved from <http://ceur-ws.org/Vol-1024/>
4. Borgstrom, P. H., Kaiser, W. J., Chung, G. K. W. K., Nelson, Z., Paul, M., Mr. Stoytchev, S. M., & Ding, J. T. K. (2012). Science and engineering active learning (SEAL) system: A novel approach to controls laboratories. *Proceedings of the Annual Meeting of the American Society of Engineering Education (Session T623·Outstanding Contributions to Student Learning through Laboratory Experiences: One of Four Best Papers for the Division of Experimentation and Laboratory Oriented Studies)*, San Antonio, TX.
5. Kerr, D. & Chung, G. K. W. K. (2011). The mediation effect of in-game performance between prior knowledge and posttest score. In J. Matuga (Eds.), *Proceedings of the IASTED International Conference on Technology for Education (TE 2011)* (pp. 122-128). Anaheim, CA: ACTA Press. doi: 10.2316/P.2011.754-046
6. Chung, G. K. W. K., & Vendlinski, T. P. (2011, September). *National Center for Research on Evaluation, Standards, and Student Testing (CRESST),* *Center for Advanced Technology in Schools (CATS): Technology applications to advance assessment and evaluation practice* (University Lab Showcase). Poster presentation at the 55th Annual Human Factors and Ergonomics Society, Las Vegas, NV.
7. Delacruz, G. C., Chung, G. W. K., & Baker, E. L. (2010, July). Validity evidence for games as assessment environments. In K. Gomez, K., L. Lyons, & J. Radinsky (Eds.), *Learning in the Disciplines: Proceedings of the 9th International Conference of the Learning Sciences (ICLS 2010) - Volume 2, Short Papers, Symposia, and Selected Abstracts*, Chicago IL.
8. Nagashima, S. O., Chung, G. K. W. K., Espinosa, P. D., & Berka, C. (2009). Sensor-based assessment of basic rifle marksmanship. *Proceedings of the I/ITSEC*, Orlando, FL.
9. Nagashima, S. O., Chung, G. K. W. K., Espinosa, P. D., & Berka, C. (2009). Validity evidence for a model of rifle marksmanship skill performance using sensor-based measures. *Proceedings of the 53rd Annual Meeting of the Human Factors and Ergonomics Society*, San Antonio, TX.
10. **Berka, C., Behneman, A., Johnson, R., Pojman, N., Raphael, G., Chung, G. K. W. K., & Nagashima, S. O. (2009). Using interactive neuro-educational technology to increase the pace and efficiency of rifle marksmanship training.** *Proceedings of the Annual Meeting of the Society of Neuroscience,* Chicago, IL.
11. **Raphael, G., Berka, C., Popovic, D., Chung, G. K. W. K., Nagashima, S. O., Behneman, A., Davis, G., & Johnson, R. (2009). I-NET: Interactive neuro-educational technology to accelerate skill learning.** *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society,* Minneapolis, MN.
12. **Raphael, G., Berka, C., Popovic, D., Chung, G. K. W. K., Nagashima, S. O., Behneman, A., Davis, G., & Johnson, R. (2009). Adaptive Performance Trainer (APT): Interactive neuro-educational technology to increase the pace and efficiency of rifle marksmanship training.** *Proceedings of the 5th International Conference on Foundations of Augmented Cognition: Neuroergonomics and Operational Neuroscience* (Held as Part of HCI International 2009), San Diego, CA.
13. **Pojman, N., Behneman, A., Kintz, N., Johnson, R., Chung, G. K. W. K., Nagashima, S. O., Espinosa, P., & Berka, C. (2009). Characterizing the psychophysiological profile of expert and novice marksmen.** *Proceedings of the 5th International Conference on Foundations of Augmented Cognition: Neuroergonomics and Operational Neuroscience* (Held as Part of HCI International 2009), San Diego, CA.
14. Encarnacao, A., Espinosa, P. D., Au, L., Chung, G. K. W. K., Johnson, L., & Kaiser, W. J. (2008). Individualized, interactive instruction (3I): An online formative assessment and instructional tool. *Proceedings of the Annual Meeting of the American Society of Engineering Education (Session AC 2007-1524)*, Honolulu, HI.
15. Baker, E. L., & Chung, G. K. W. K. (2006). Turning an accountability policy into a learning system. In B. Wilkerson & J. O’Reilly (Eds.), *Beyond NCLB: From measuring status to informing improvement*. Proceedings of the National Association of Test Director’s 2006 Symposium.
16. Bewley, W. L., Chung, G. K. W. K., Kim, J.-O., Lee, J. J., & Saadat, F. (2004). A distance learning testbed. *Proceedings of the I/ITSEC*, Orlando, FL.
17. Vendlinski, T. P. J. F., Munro, A., Pizzini, Q. A., Bewley, W. L., Chung, G. K. W. K., Stuart, G., & Delacruz, G. C. (2004). Learning complex cognitive skills with an interactive job aid. *Proceedings of the I/ITSEC*, *26*, 761–772.
18. Chung, G. K. W. K., Baker, E. L., Brill, D. G., Sinha, R., Saadat, F., & Bewley, W. L. (2003). Automated assessment of domain knowledge with online knowledge mapping. *Proceedings of the I/ITSEC*, *25*, 1168–1179.
19. Chung, G. K. W. K., Delacruz, G. C., Dionne, G. B., & Bewley, W. L. (2003). Linking assessment and instruction using ontologies. *Proceedings of the I/ITSEC*, *25*, 1811–1822.
20. Delacruz, G. C., Chung, G. K. W. K., & Bewley, W. L. (2003). Identifying learning phases using the human performance knowledge mapping tool (HPKMT) and microgenetic analysis. *Proceedings of the I/ITSEC*, *25*, 1802–1810.
21. Chung, G. K. W. K., de Vries, L. F., Cheak, A. M., Stevens, R. H., & Bewley, W. L. (2002, June). Computer-based assessment with IMMEX: Linking cognitive and on-line problem solving processes. *Proceedings of the Annual Meeting of the American Society of Engineering Education*, Montreal, Canada.
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# CRESST Technical Reports and Deliverables

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# Software Developed

1. Chung, G. K. W. K., Buschang, R. E., & Madni, A. (2013). *Game concept prototype testbed to teach exponents and roots*. [Computer software (.NET Visual Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
2. Chung, G. K. W. K. (2012). *Windows-based efficacy game log file integrity checker*. [Computer software (.NET Visual Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
3. Chung, G. K. W. K. (2011). *Windows-based Save Patch log file integrity check*. [Computer software (.NET Visual Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
4. Chung, G. K. W. K. (2010). *Save Patch instructional media overlay application* [Computer software (.NET Visual Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
5. Chung, G. K. W. K. (2008). *Instructional parcel delivery of rifle marksmanship video-based instruction* [Computer software (Visual Basic for Applications)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
6. Chung, G. K. W. K. (2007). *Netmedia BX-24 Microcontroller-based sensor data acquisition software*. [Computer software (Netmedia Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
7. Chung, G. K. W. K. (2007). *Windows-based sensor data acquisition and display software*. [Computer software (.NET Visual Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
8. Chung, G. K. W. K., Delacruz, G. C., & Dionne, G. B. D. (2006). *Pre-algebra video-based instructional parcel tool* [Computer software]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
9. Chung, G. K. W. K., Munro, A., & Bewley, W. L. (2006). *Link architecture simulation-based assessment and instructional tool* [Computer software (iRides simulation language)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
10. Baker, E. L., Bewley, W. L., Chung, G. K. W. K., Delacruz, G. C., Sinha, R., de Souza e Silva, A. A., et al. (2004). *Rifle Marksmanship Coaches Toolset: Evaluation of Shooter Positions* [Computer software]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
11. Baker, E. L., Bewley, W. L., Chung, G. K. W. K., Delacruz, G. C., Walker, J., Brill, D., de Souza e Silva, A. A., Michiuye, J. K., Briggs, C., Pizzini, Q. A., Johnson, M. C., Darling, D., Munro, A., & Surmon, D. (2005). *Rifle Marksmanship Coaches Toolset: Marksmanship Inventory Knowledge Assessment* [Computer software]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
12. Baker, E. L., Bewley, W. L., Chung, G. K. W. K., Delacruz, G. C., Sterne, J. R., Casey, L., de Souza e Silva, A. A., Elmore, J. J., Brill, D., Michiuye, J. K., & Briggs, C. (2005). *Rifle Marksmanship Coaches Toolset: Marksmanship Knowledge Mapper and Scoring Tool* [Computer software]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
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14. Chung, G. K. W. K. (2005). *Wobble sensor data acquisition* [Computer software (.NET Visual Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
15. Chung, G. K. W. K. (2005). *Trigger sensor data acquisition software* [Computer software (.NET Visual Basic)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
16. Chung, G. K. W. K., Dionne, G. B. D., & Delacruz, G. C. (2003). *Individualized instruction of rifle marksmanship concepts* [Computer software]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
17. Chung, G. K. W. K. (2000). *HTML parser for IMMEX simulation* [Computer software (Visual Basic for Applications)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
18. Chung, G. K. W. K. (2000). *An Excel-based automated data entry tool for coding think-aloud protocols* [Computer software (Visual Basic for Applications)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
19. Chung, G. K. W. K. (2000). *A tool to mix think-aloud utterances and audio timestamps* [Computer hardware]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
20. Chung, G. K. W. K. (1999). *An online math test to measure students’ reading times on linguistically modified math items* [Computer software (Toolbook)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
21. Chung, G. K. W. K. (1999). *An online glossary accommodation for English and Spanish LEP students using IMMEX (Interactive Multimedia Exercises)* [Computer software (Toolbook)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
22. Chung, G. K. W. K., & Probst, J. (1999). *An instrumented bicycle pump simulator to measure problem solving strategies* [Computer software (iRides simulation language)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
23. Chung, G. K. W. K. (1998). *Real-time reporting of knowledge map scores* [Computer software (Tcl)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
24. Chung, G. K. W. K., & Schacter, J. (1998). *Real-time usage reports of the Milken Educational Virtual Workspace 2 system* [Computer software (Tcl)]. Los Angeles: Author.
25. Chung, G. K. W. K., & Schacter, J. (1998). *Collaborative quotient for the Milken Educational Virtual Workspace 2 system* [Computer software (Tcl)]. Los Angeles: Author.
26. Chung, G. K. W. K., & Mancuso, A. C. (1998). *A system to measure picture-selection reaction time (for use in measuring race schematicity)* [Computer software (HyperCard)]. Los Angeles: Author.
27. Chung, G. K. W. K. (1997). *A prototype text processing system to score essays using latent semantic analysis* [Computer software (FORTRAN 90)]. Los Angeles: Author.
28. Tang, M. T., Schacter, J., Herl, H. E., & Chung, G. K. W. K. (1997). *Java-based individual concept mapper* [Computer software (Java)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
29. Chung, G. K. W. K. (1997). *A conceptual model builder for weather* [Computer software (SuperCard)]. Los Angeles: Author.
30. Chung, G. K. W. K. (1997). *Computer-based verbal protocol coder* [Computer software (SuperCard)]. Los Angeles: Author.
31. Chung, G. K. W. K. (1997). *ORION/USMARC to ASCII file translator* [Computer software (FORTRAN 90)]. Los Angeles: UCLA Graduate School of Education & Information Studies.
32. Chung, G. K. W. K., Herl, H. E., & O’Neil, H. F., Jr. (1996). *Collaborative concept mapper* [Computer software (HyperCard)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
33. Chung, G. K. W. K., & Schacter, J. (1996). *Netscape URL tracker and data logger* [Computer software (HyperCard)]. Los Angeles: Author.
34. Chung, G. K. W. K., O’Neil, H. F., Jr., & Brown, R. S. (1995). *Networked union-management simulation* [Computer software (HyperCard)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
35. Huang, K. L., Herl, H. E., Dennis, R. A., & Chung, G. K. W. K. (1996). *Java-based individual concept mapper* [Computer software (Java)]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
36. Chung, G. K. W. K. (1994). *A hypertext program to study the effects of link precision and elaboration* [Computer software (HyperCard)]. Los Angeles: Author.
37. Chung, G. K. W. K., & Zabala, R. (1992). *Automated summary data logger* [Computer software (FoxBase)]. Redondo Beach, CA: TRW.
38. Chung, G. K. W. K. (1990). *Project 8482 computerized test procedure reporting* [Computer software (PowerBuilder)]. Redondo Beach, CA: TRW.
39. Chung, G. K. W. K. (1989). *Database application programming interface (API) for the Tracking and Data Relay Satellite payload automated testing system* [Computer software (FORTRAN 77)]. Redondo Beach, CA: TRW.
40. Zabala, R., & Chung, G. K. W. K. (1989). *Automated spurious signal measurement software* [Computer software (FORTRAN 77)]. Redondo Beach, CA: TRW.
41. Reif, S., Bainbridge, J., & Chung, G. K. W. K. (1988). *Automated payload test and measurement system upgrade* [Computer software (HP BASIC)]. Redondo Beach, CA: TRW.
42. Chung, G. K. W. K. (1986). *Spares inventory database system* [Computer software (dBASE)]. Honolulu, HI: GTE.

# Hardware Developed

1. Parks, D., & Chung, G. K. W. K. (2008). *Wireless sensor data acquisition unit for measuring rifle marksmanship skill (wobble, trigger, breathing)* [Computer hardware]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
2. Chung, G. K. W. K. (2007). *Wireless sensor data acquisition prototype unit for measuring rifle marksmanship skill (wobble, trigger, breathing)* [Computer hardware]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
3. Chung, G. K. W. K. (2005). *Trigger sensor signal conditioning unit* [Electronic hardware]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
4. Chung, G. K. W. K. (2005). *Trigger signal RS232 relay unit* [Electronic hardware]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
5. Chung, G. K. W. K. (2005). *Wipple test apparatus with RS232 interface* [Electronic hardware]. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.

# CONFERENCE PRESENTATIONS

# Refereed Presentations

1. Chung, G. K. W. K. (2016, April). *Perspectives from a full-time researcher at a university-affiliated research center.* Presentation at the Division C Graduate Student Seminar at the annual meeting of the American Educational Research Association, Washington, DC.
2. Chung, G. K. W. K. (Chair). (2016, April). *Game design issues for learning and assessment.* Symposium conducted at the annual meeting of the American Educational Research Association, Washington, DC.
3. Chung, G. K. W. K. (2016, March). *Assessment and technology: Issues and examples.* Guest lecture in EDUC 715 (K. Hirabayashi) Rossier School of Education, Los Angeles, CA.
4. Chung, G. K. W. K. (2015, November). *Guidelines for the design and implementation for game telemetry for serious games analytics*. Presentation at the annual meeting of the Association for Educational Communications and Technology, Indianapolis, IN.
5. Chung, G. K. W. K. (Discussant). (2015, April). *Comments on issues in game-based assessments.* In A. Oranje (Chair), *Two approaches to game based assessments: Mods and originals*. Symposium conducted at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
6. Chung, G. K. W. K. (Chair). (2015, April). *Design issues regarding the use of games and simulations for learning and assessment*. Symposium conducted at the annual meeting of the American Educational Research Association, Chicago, IL.
7. Chung, G. K. W. K. (2014, September). *The CRESST learning video game design process*. Presentation at the 2nd annual Mobility and Modern Web Conference, Los Angeles, CA.
8. Chung, G. K. W. K. (2014, September). *Guidelines for the design, implementation, and analysis of game telemetry*. Presentation at the 2nd annual Mobility and Modern Web Conference, Los Angeles, CA.
9. Chung, G. K. W. K. (2014, April). *Game development and design: Blood, sweat, and tears*. Presentation at the 2014 Center for Advanced Technology in Schools (CATS) conference. Redondo Beach, CA.
10. Buschang, R. E., Chung, G. K. W. K., & Kim, J. (2014, April). *An exploratory study of the relationship between collaboration and mathematics and game outcomes.* Presentation at the 2014 Center for Advanced Technology in Schools (CATS) conference. Redondo Beach, CA.
11. Chung, G. K. W. K., Buschang, R. E., Michiuye, J., Delacruz, G. C. D., & Kerr, D. S. (2014, April). *Center for Advanced Technology in Schools (CATS) Games (DEMO).* Presentation at the 2014 Center for Advanced Technology in Schools (CATS) conference. Redondo Beach, CA.
12. Baker, E. L., Chung, G. K. W. K., Delacruz, G. C., Madni, A., & Griffin, N. C. (2013, August). *Effective design methods for children’s STEM learning games*. Paper presentation at the annual meeting of the American Psychological Association, session 4172, E. Quellmalz (Chair) “Innovations in Simulation and Game Design—Learning and Assessment,” Honolulu, HI.
13. Chung, G. K. W. K., Buschang, R. E., Kerr, D., & Parks, D. (2013, April). *An introduction to the measurement and analysis of video game interaction data*. Training session at the annual conference of the National Council on Measurement in Education, San Francisco, CA.
14. Kerr, D. & Chung, G. K. W. K. (2013, April). *Using analysis of student strategies to improve educational video game design*. Presentation at the annual conference of the American Educational Research Association, San Francisco, CA.
15. Chung, G. K. W. K. (2013, March). Lessons learned from a large-scale testing of game effectiveness. In S. Pasnik (Chair), *How to Play: Models for Game-Based Learning*. Panel session at the annual meeting of the SXSWedu Conference, Austin, TX.
16. Baker, E. L., Chung, G., Delacruz, G., Iseli, M., Madni, A., Parks, D., Cai, L., Griffin, N., & Abedi, A. (2012, December). *Integrating science and social and emotional learning in videogames: Supplementing formal and informal education*. Presentation at the World Education Research Association 2012 Focal Meeting Program, Session A120 “New Directions in Improvement of Education Quality,” at the Australian Association for Research in Education, Asia Pacific Educational Research Association Joint International Conference, Sydney, New South Wales, Australia.
17. Kerr, D. & Chung, G. K. W. K. (2012, November). *Identifying the denominator: Lessons from Save Patch*. Presentation at the annual conference of the California Educational Research Association, Monterey, CA.
18. Buschang, R. E., Kerr, D., Chung, G. K. W. K. (2012, April). *Examining feedback in an instructional video game using process data and error analysis.* Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC, Canada.
19. Kerr, D. & Chung, G. K. W. K. (2012, April). Using in-game performance to assess content knowledge. In invited session on *Embedded Assessments in Digital Learning Environments*. Paper presented at the annual meeting of the National Council on Measurement in Education, Vancouver, BC, Canada.
20. Kerr, D. & Chung, G. K. W. K (2012, April). The effect of in-game errors on learning outcomes. In session on *Understanding the Cognitive Processes Tapped by Complex Assessments*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC, Canada.
21. Vendlinski, T. P., Chung, G. K. W. K., Buschang, R. E. (2012, April). *Teaching rational number addition with video games: is within-game instruction and feedback a good thing?* Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC, Canada.
22. Vendlinski, T. P., & Chung, G. K. W. K. (2012, February). *Transitioning to the new assessments–Making it happen through research*. Poster presented at the Assessment and Accountability Comprehensive Center Conference, Los Angeles, CA.
23. Vendlinski, T. P., Quach, D., & Chung, G. K. W. K. (2011, November). *CATS research opportunities*. Exhibitor booth at the annual meeting of California Mathematics Conference, Palm Springs, CA.
24. Chung, G. K. W. K. (2011, September). *National Center for Research on Evaluation, Standards, and Student Testing (CRESST),* *Center for Advanced Technology in Schools (CATS)* (University Lab Showcase). Poster presentation at the 55th Annual Human Factors and Ergonomics Society, Las Vegas, NV.
25. Buschang, R. E., Chung, G. K. W. K., & Kim, J-O. (2011, August). *An exploratory study of the effects of collaboration during video gameplay on math and game outcomes*. Poster presented at the 2011 American Psychological Association Annual Meeting, Washington, D.C.
26. Bittick, S. J., & Chung, G. K. W. K. (2011, April). *The use of narrative: Gender differences and implications for motivation and learning in a game*. Poster presented at the meeting of the American Educational Research Association Conference, AERA, New Orleans, LA.
27. Bittick, S. J., Parks, D., & Chung, G. K. W. K. (2011, April). *The impact of player control and student difference on persistence in a math game*. Paper to presented at the 2011 American Educational Research Association Annual Meeting, New Orleans, LA.
28. O’Neil, H. F., & Chung, G. K. W. K. (2011, April). *Use of knowledge mapping in computer-based assessment*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
29. Buschang, R. E., Delacruz, G. C., Chung, G. K. W. K., & Vendlinski, T. P. (2010, November). *Designing video games to instruct and assess conceptual understanding of fractions*. Presentation at the annual meeting of the California Educational Research Association, San Diego, CA.
30. Vendlinski, T. P., Chung, G. K. W. K., Delacruz, G. C., & Buschang, R. E. (2010, November). *High quality practices for a digital age: Designing games for math learning*. Presentation at the annual meeting of the California Educational Research Association, San Diego, CA.
31. Baker, E. L., Chung, G. K. W. K., & Griffin, N. (2010, June). *Center for Advanced Technology in Schools (CATS): Mission, specific goals, and progress*. Poster presentation at the Fifth Annual IES Research Conference, Institute of Education Sciences, U.S. Department of Education, Washington, DC.
32. Vendlinski, T. P., Chung, G. K. W. K., Delacruz, G. C., Buschang, R. E., & Baker, E. L. (2010, June). *From theory to action: Developing integrated assessments, instruction, and educational games of high quality*. Poster presentation at the Fifth Annual IES Research Conference, Institute of Education Sciences, U.S. Department of Education, Washington, DC.
33. Baker, E. L., & Chung, G. K. W. K. (2010, June). *Modern measures and metrics: Assessing health workforce training and education.* Presentation at the Global Health Council’s 37th Annual Conference “Dateline 2010: Global Health Goals & Metrics,” Washington, DC.
34. Baker, E. L., & Chung, G. K. W. K. (2010, April). Organizational learning and large-scale assessment reform. In C. Wong (Chair), *Building 21st-Century Assessments for 21st-Century Skills*. Symposium presented at the annual meeting of the American Educational Research Association, Denver, CO.
35. Chung, G. K. W. K., Baker, E. L., Vendlinski, T. P., Buschang, R. E., Delacruz, G. C., Michiuye, J. K., Wainess, R., & Bittick, S. J. (2010, April). Testing instructional design variations in a prototype math game. In R. Atkinson (Chair), *Current perspectives from three national R&D centers focused on game-based learning: Issues in learning, instruction, assessment, and game design*. Structured poster session at the annual meeting of the American Educational Research Association, Denver, CO.
36. Griffin, N. C., Vendlinski, T. P., Buschang, R. E., Delacruz, G. C., & Chung, G. K. W. K. (2010, April). Evidence of students’ and teachers’ game preferences, and game effectiveness. In R. Atkinson (Chair), *Current perspectives from three national R&D centers focused on game-based learning: Issues in learning, instruction, assessment, and game design*. Structured poster session at the annual meeting of the American Educational Research Association, Denver, CO.
37. Baker, E. L., Delacruz, G. C., Chung, G. K. W. K., Griffin, N., Koenig, A., & Wainess, R. (2009, June). *Transfer and adaptive learning in games: Theoretical and practical approaches*. Poster presentation at the Fourth Annual IES Research Conference, Institute of Education Sciences, U.S. Department of Education, Washington, DC.
38. Chung, G. K. W. K., Iseli, M. R., Buschang, R.E., Delacruz, G. C., & Bewley, W. L. (2009, June). *Developing domain ontologies to support assessment and instruction: Initial work on pre-algebra*. Poster presentation at the Fourth Annual IES Research Conference, Institute of Education Sciences, U.S. Department of Education, Washington, DC.
39. Chung, G. K. W. K. (2009, April). Using knowledge engineering techniques for assessment and instruction. In E. L. Baker (Chair), *What are 21st Century skills and technology measurement methods?* Symposium presented at the annual meeting of the American Educational Research Association, San Diego, CA.
40. Chung, G. K. W. K., & Baker, E. L. (2008, December). *A review of the use of knowledge mapping for assessment purposes*. Presentation at the annual meeting of the California Educational Research Association, Rancho Mirage, CA.
41. Min, H., Chung, G. K. W. K., Buschang, R., Johnson, L., & Kaiser, W. J. (2008, December). *The influence of the use of an open-ended classroom response system on student outcomes*. Presentation at the annual meeting of the California Educational Research Association, Rancho Mirage, CA.
42. Buschang, R., Chung, G. K. W. K., Wall, W., & Espinosa, P. (2008, December). *Classroom response systems and formative assessment: Lessons learned*. Presentation at the annual meeting of the California Educational Research Association, Rancho Mirage, CA.
43. Buschang, R., Chung, G. K. W. K., Delacruz, G. C., & Baker, E. L. (2008, December). *Validating measures of math teacher knowledge*. Presentation at the annual meeting of the California Educational Research Association, Rancho Mirage, CA.
44. Chung, G. K. W. K. (2008, March). Using technology to increase student engagement: Examples of Xtreme instruction and assessment. In E. L. Baker (Chair), *Innovations in learning, assessment and technology: An international convergence.* Symposium presented at the annual meeting of the American Educational Research Association, New York, NY.
45. Berka, C., Chung, G. K. W. K., Nagashima, S. O., Musacchia, A., Davis, G., Johnson, R., & Popovic, D. (2008, March). *Using interactive neuro-educational technology to increase the pace and efficiency of rifle marksmanship training*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
46. Chung, G. K. W. K., Delacruz, G. C., Dionne, G. B., Baker, E. L., Lee, J. J., & Osmundson, E. (2007, April). Towards individualized instruction with technology-enabled tools and methods. In R. Perez (Chair), *Rebooting the past: Leveraging advances in assessment, instruction, and technology to individualize instruction and learning.* Symposium presented at the annual meeting of the American Educational Research Association, Chicago, IL.
47. Delacruz, G. C., Chung, G. K. W. K., Heritage, M., Vendlinski, T., Bailey, A., & Kim, J.-O. (2007, April). *Validating knowledge elicitation techniques: Examining the relation between measures of content knowledge and knowledge of teaching algebra*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
48. Bewley, W. L., Lee, J., Munro, A., & Chung, G. K. W. K. (2007, April). The use of formative assessments to guide instruction in a military training system. In R. Perez (Chair), *Rebooting the past: Leveraging advances in assessment, instruction, and technology to individualize instruction and learning.* Symposium presented at the annual meeting of the American Educational Research Association, Chicago, IL.
49. Chung, G. K. W. K. (Discussant). (2007, April). *Comments on papers in session “Technology research: Using technology to promote learning, engagement, and interaction in higher education contexts*.” Comments presented at the annual meeting of the American Educational Research Association, Chicago, IL.
50. Chung, G. K. W. K. (Discussant). (2006, April). *Comments on reverse engineering with PADI.* In J. Earle (Chair), *Reverse-engineering scientific inquiry assessments using PADI*. Symposium conducted at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.
51. Chung, G. K. W. K., Dionne, G. B., & Kaiser, W. J. (2006, April). *An exploratory study examining the feasibility of using Bayesian networks to predict circuit analysis understanding.* Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.
52. Chung, G. K. W. K., Shel, T. C., & Kaiser, W. J. (2006, April). *An exploratory study of a novel online formative assessment tool to promote students’ circuit problem solving.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
53. Bewley, W. L., Chung, G. K. W. K., Munro, A., & Delacruz, G. C. (2006, April). Simulation-based assessment of air defense planning*.* In R. Perez (Chair), *Using simulations for assessment*. Symposium conducted at the annual meeting of the American Educational Research Association, San Francisco, CA.
54. Chung, G. K. W. K. (2005, July). *Technology-enabled assessment to support education and training*. Presentation at the Syllabus 2005 Conference, Los Angeles, CA.
55. Chung, G. K. W. K. (2005, April). *Why are techies so hyped up? Examples of just how technology-enabled measurement may make a difference*. Presentation at the annual meeting of the American Educational Research Association, Montreal, Canada.
56. Baker, E. L., & Chung, G. K. W. K. (2004, August). *Comparative approaches to process measurement in computer simulations*. Presentation at the American Psychological Association conference, Honolulu, HI.
57. Vendlinski, T., Chung, G. K. W. K., Munro, A., Bewley, W. L., Stuart, G., & Michiuye, J. (2004, April). *Tests that teach teachers: Understanding the effects of performance assessments.* Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
58. Kim, J.-O., Chung, G. K. W. K., & Delacruz, G. C. (2004, April).Examining the sensitivity of knowledge maps using repeated measures: A growth modeling approach*.* In G. K. W. K. Chung (Chair), *Current issues in knowledge mapping in assessment and instruction*. Symposium conducted at the annual meeting of the American Educational Research Association, San Diego, CA.
59. Bewley, W. L., Chung, G. K. W. K., & Vendlinski, T. (2004, January). *Computer-based assessment of problem-solving: Two examples*. Presentation at Second Annual Hawaii International Conference on Education, Honolulu, HI.
60. Chung, G. K. W. K., Niemi, D., & Bewley, W. L. (2003, April). *Assessment applications of ontologies.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
61. Niemi, D., Chung, G. K. W. K., & Bewley, W. L. (2003, April). *Assessment design using ontologies: Linking assessment, content, and cognitive demands.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
62. Baker, E. L., O’Neil, H. F., Perez, R., & Chung, G. K. W. K. (2003). *Knowledge, models and tools to support Web-based learning designers and students*. Invited symposium paper presentation at the International Congress for School Effectiveness and Improvement, Sydney, Australia.
63. Delacruz, G. C., Chung, G. K. W. K., de Vries, L. F., Kim, J.-O., Bewley, W. L., Sylvester, R., & Kersting, N. B. (2002, April). *Examining the relationship between knowledge-based assessments and rifle shooting performance*. Poster session presented at the annual meeting of the American Educational Research Association, Chicago, IL.
64. Cheak, A. M., Chung, G. K. W. K., Baker, E. L., Phan, C. H., & de Vries, L. F. (2002, April). *Validating link categories for automated classification of concept map links*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
65. Chung, G. K. W. K., de Vries, L. F., Cheak, A. M., Stevens, R. H., & Bewley, W. L. (2002, April). *Computer-based assessment with IMMEX: Linking cognitive and on-line problem solving processes.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
66. Chung, G. K. W. K., Klein, D. C. D., Christie, T. C., Zimmermann, R., & Stevens, R. H. (2000). *Evaluating the impact of the Interactive Multimedia Exercises (IMMEX) program: Measuring the long-term impact of problem solving assessment software*. Paper presentation at the annual meeting of the American Educational Research Association, New Orleans, LA.
67. Chung, G. K. W. K. (2000, March). *Linking assessment and instruction with online knowledge mapping: An example of a computer-based performance assessment*. Presentation at the TechEd 2000 conference, Palm Springs, CA.
68. Chung, G. K. W. K. (1999, April). *Learners’ moment-to-moment cognitive processing with visual conceptual models*. Poster session presented at the annual meeting of the American Educational Research Association, Montreal, Canada.
69. Chung, G. K. W. K., Herl, H. E., Klein, D. C. D., & Osmundson, E. (1999, April). *Linking assessment and instruction with computer-based knowledge maps*. Demonstration presentation at the annual meeting of the American Educational Research Association, Montreal, Canada.
70. Herl, H. E., & Chung, G. K. W. K. (1999, April). Reliability of a knowledge mapping scoring system for assessment of problem solving of U.S. temporary workers. In M. Binkley (Chair), *Technology-based assessment of complex problem solving.* Symposium conducted at the annual meeting of the American Educational Research Association, Montreal, Canada.
71. Klein, D. C. D., Osmundson, E., Chung, G. K. W. K., Herl, H. E., & O'Neil, H. F. (1999, April). *What does concept mapping really measure? Examining the validity of elementary students’ concept maps in hearing and vision*. Poster session presented at the annual meeting of the American Educational Research Association, Montreal, Canada.
72. O’Neil, H. F., Brown, R. S., & Chung, G. K. W. K. (1999, April). *Measurement issues in assessment of collaboration*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada.
73. O’Neil, H. F., Brown, R. S., Chung, G. K. W. K., & Ing, M. (1999, April). *Using dichotomous factor analysis to measure teamwork skills*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada.
74. Osmundson, E., Chung, G. K. W. K., Herl, H. E., & Klein, D. C. D. (1999, April). *Concept mapping in the classroom: A tool for examining the development of students’ conceptual understanding*. Paper presentation at the annual meeting of the American Educational Research Association, Montreal, Canada.
75. Chung, G. K. W. K., O’Neil, H. F., Jr., Herl, H. E., & Dennis, R. A. (1997, March). Use of networked collaborative concept mapping to measure team processes and team outcomes. In H. F. O’Neil Jr. (Chair), *An integrated simulation approach to assessment*. Symposium conducted at the annual meeting of the American Educational Research Association, Chicago, IL.
76. Herl, H. E., O’Neil, H. F., Jr., Chung, G. K. W. K., Dennis, R. A., & Lee, J. J. (1997, March). Feasibility of an on-line concept mapping construction and scoring system. In H. F. O’Neil Jr. (Chair), *An integrated simulation approach to assessment*. Symposium conducted at the annual meeting of the American Educational Research Association, Chicago, IL.
77. Schacter, J., Herl, H. E., Chung, G. K. W. K., O’Neil, H. F., Jr., Dennis, R. A., & Lee, J. J. (1997, March). Feasibility of a Web-based assessment of problem solving. In H. F. O’Neil Jr. (Chair), *An integrated simulation approach to assessment*. Symposium conducted at the annual meeting of the American Educational Research Association, Chicago, IL.
78. Baker, E. L., Chung, G. K. W. K., Dennis, R., Herl, H. E., & Schacter, J. (1996, April). *CRESST on-line performance assessment system*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
79. Chung, G. K. W. K., Baker, E. L., Dennis, R. A., Herl, H. E., Huang, K. L., Klein, D. C. D., Lee, J. J., O’Neil, H. F., Jr., & Schacter, J. (1996, November). *An Internet-based on-line assessment system*. Presentation at the annual meeting of the California Educational Research Association, Marina del Rey, CA.
80. O’Neil, H. F., Jr., Brown, R. S., & Chung, G. K. W. K. (1996, April). *Using dichotomous factor analysis to measure teamwork skills*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
81. O’Neil, H. F., Chung, G. K. W. K., & Brown, R. S. (1995, March). *Use of networked computer simulation to measure teamwork processes and team outcomes*. Paper presented at annual meeting of the American Educational Research Association, San Francisco, CA.

# Invited Presentations

1. Chung, G. K. W. K. (2016, February). *Analytics*. Presentation at the Ready To Learn Kick-off Meeting: Engagement, Washington, DC.
2. Chung, G. K. W. K., & Baker, E. L. (2015, October). *Innovative evaluation methods used for testing the effectiveness of an ITS for AP Physics 1 (electric circuits)*. Presentation at the Office of Naval Research Cognitive Science of Learning Program Review, Santa Barbara, CA.
3. Roberts, B., Kumar, R., Baker, E. L., & Chung, G. K. W. K. (2015, February). *Extensible adaptive system for STEM learning*. Presentation at the Office of Naval Research Cognitive Science of Learning Program Review, Arlington, VA.
4. VanLehn, K., Wetzel, J., Baker, E. L., & Chung, G. K. W. K. (2015, February). *An* *ITS authoring system for scientific and engineering modeling*. Presentation at the Office of Naval Research Cognitive Science of Learning Program Review, Arlington, VA.
5. Chung, G. K. W. K. (2015, February). *Learning maps and ontologies: Toward personalized learning*. Presentation at the Learning Maps Cohort Meeting, Bill and Melinda Gates Foundation, Seattle, Washington.
6. Chung, G. K. W. K. (2015, January). *Updates on final wave of content/outreach: Part II: Learner modeling*. Presentation at the 2015 Ready to Learn Advisors and Partners Meeting. Washington, DC.
7. Baker, E. L., Delacruz, G. C., Chung, G. K. W. K., Griffin, N., Madni, A., O’Neil, H., & Jha, R. (2014, November). *CRESST Engage update*. Presentation at the DARPA Program Officer: Daniel Ragsdale, Los Angeles, CA.
8. Chung, G. K. W. K. (2014, October). *Developing and testing math games for learning: Best practices, lessons learned, and results from a large-scale randomized controlled trial.* Presentation at the Global 3D Technology Forum, Seoul, Republic of Korea.
9. Chung, G. K. W. K. (2014, September). *Center for Advanced Technology in Schools (CATS*. Laptop poster presentation at the IES PI meeting, Washington, DC.
10. Chung, G. K. W. K., Baker, E. L., Buschang, R. E., & Madni, A. (2014, June). *ONR Grand Challenge formative evaluation*. Presentation at the ONR Grand Challenge Program Review, Honlulu, HI.
11. Chung, G. K. W. K. (2014, April). *Game development and design: Blood, sweat, and tears*. Presentation at the 2014 Center for Advanced Technology in Schools (CATS) conference, Redondo Beach, CA.
12. Cai, L., Choi, K.C., Chung, G. K. W. K., & Baker, E. L. (2014, April). *On the importance of integrated psychometrics and multilevel impact estimation in multi-site RCTs: Lessons Learned from CATS*. Presentation at the 2014 Center for Advanced Technology in Schools (CATS) conference, Redondo Beach, CA.
13. Baker, E. L., Choi, K.C., Chung, G. K. W. K., Jha, R., Lee, J., Madni, A., O’Neil, H., & Stripling, R. (2014, March). *DARPA Site Visit*. Presentation at the DARPA Program Officer: Daniel Ragsdale, Los Angeles, CA.
14. Buschang, R. E., & Chung, G. K. W. K. (2014, February). *PFITS Fall 2013 pilot test postmortem*. Presentation to Arizona State University PFITS project team. Los Angeles, CA.
15. Baker, E. L., Chung, G. K. W. K., Delacruz, G. C., Griffin, N., & Madni, A. (2013, December). *ENGAGE: CRESST Update*. Presentation at the ENGAGE PI Meeting, Los Angeles, CA.
16. Chung, G. K. W. K. (2013, September). *Center for Advanced Technology in Schools (CATS*. Laptop poster presentation at the IES PI meeting, Washington, DC.
17. Chung, G. K. W. K. (2013, September). *Center for Advanced Technology:
Findings and lessons-learned from developing and evaluating math games for learning*. Presentation to the Smarter Balanced Assessment Consortium, Los Angeles, CA.
18. O’Neil, H. F., Chung, G. K. W. K., & Williams, P. (2013, August). *The effects of game-based instructional feedback on developmental math progress in a Hispanic-serving institution*. Presentation at the Office of Naval Research Cognitive Science of Learning Program Review, Arlington, VA.
19. Baker, E. L., Chung, G. K. W. K., Delacruz, G. C., & Madni, A. (2013, March). *DARPA ENGAGE program review: CRESST – TA2*. Presentation at the ENGAGE PI Meeting (Phase II Review): Defense Advanced Research Projects Agency: Russell Shilling, Program Manager, Arlington, VA.
20. Chung, G. K. W. K. (2012, November). *Design considerations for efficacy trial 2*. Presentation at the CATS Seminar for Research on Games and Learning, Los Angeles, CA.
21. Chung, G. K. W. K. (2012, November). *Developing and testing math games for learning: Best practices, lessons learned, and results from a randomized controlled trial*. Presentation to San José State University Games for Learning Working Group, San Jose, CA.
22. Chung, G. K. W. K. (2012, November). *Developing and testing math games for learning: Best practices, lessons learned, and results from a randomized controlled trial*. Presentation to SRI, Menlo Park, CA.
23. Chung, G. K. W. K. (2012, November). *Game development and design: Best practices and lessons learned*. Presentation at the CATS Seminar for Research on Games and Learning, Los Angeles, CA.
24. Delacruz, G. C., Baker, E. L., & Chung, G. K. W. K.. (2012, October). *Playing to learn: Using games for academic achievement*. Presentation to the Beijing National Day School, Los Angeles, CA.
25. Baker, E. L., & Cai, L., with Phelan, J., Chung, G. K. W. K., & Stripling, R. (2012, October). *Our welcome to CRESST: A beginning tour*. Presentation to Marcelo Suárez-Orozco, Dean of the Graduate School of Education & Information Studies, Los Angeles.
26. Baker, E. L., & Chung, G. (2012, August). *DARPA ENGAGE program review: CRESST – TA2*. Presentation at the ENGAGE PI Meeting (Phase I Review): Defense Advanced Research Projects Agency: Russell Shilling, Program Manager, Arlington, VA.
27. Vendlinski, T. P., & Chung, G. K. W. K. (2012, February). *Transitioning to the new assessments–Making it happen through research*. Poster presented at the Assessment and Accountability Comprehensive Center Conference, Los Angeles, CA.
28. Chung, G. K. W. K. (2012, February). *A testbed approach to game development, testing, and validation*. Poster presented at the DARPA Engage PI Summit Meeting, Los Angeles, CA.
29. Chung, G. K. W. K. (2011, June). *Assessing learning in games: The good, the bad, the ugly.* Invited presentation at the Tracking Engagement and Learning in Transmedia Workshop: The Challenge of Designing Analytics for Complex Educational Media Properties, New York, NY.
30. Chung, G. K. W. K. (2011, January). *Designing math games for learning: Lessons learned*. Presentation at the CATS Seminar for Research on Games and Learning, Los Angeles, CA.
31. Chung, G. K. W. K. (2010, May). *Instrumenting games for assessment: What can online processes tell us about what students know and don’t know?* Invited presentation at the annual Games for Change (G4C) Conference, New York, NY.
32. Chung, G. K. W. K. (2010, January). *Designing games for learning: Update on R&D progress*. Presentation at the CATS Seminar for Research on Games and Learning, Los Angeles, CA.
33. Chung, G. K. W. K. (2009, January). *Math prerequisites for cognitive readiness*. Invited presentation at the Office of Naval Research conference on Teaching and Measuring Cognitive Readiness, Redondo Beach, CA.
34. Chung, G. K. W. K. (2008, June). *Towards individualized instruction with technology-enabled tools and methods*. Invited presentation at the UCLA Graduate School of Education and Information Studies Applied Human Development colloquium, Los Angeles, CA.
35. Chung, G. K. W. K. (2008, May). *Knowledge mapping for assessment*. Invited presentation for the Asian-Pacific Economic Cooperation Lecture, Institute of APEC Cyber Education, Los Angeles, CA.
36. Chung, G. K. W. K. (2007, January). *Towards individualized instruction using technology*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
37. Chung, G. K. W. K. (2005, September). *Technology-enabled measurement: Looking back to move ahead.* Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
38. Baker, E. L., Chung, G. K. W. K., Delacruz, G. C., & Bewley, W. L. (2005, July). *Design, learning, and metrics for problem solving in simulations*. Invited presentation at the Office of Naval Research conference on Metrics for Evaluating Performance in Simulations, Redondo Beach, CA.
39. Chung, G. K. W. K. (2004, September). *Online assessment for individualized distributed learning applications.* Invited presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
40. Ainsworth, E., Chung, G. K. W. K., & Kaiser, W. J. (2003, November). *Interactive, individualized instruction (3I) in core EE courses*. Invited presentation at the HP Engineering Retention Symposium, Westminster, CO.
41. Chung, G. K. W. K., Delacruz, G. C., de Vries, L. F., Phan, C. H., Srivastava, M. B., & Alarcon, R. (2002, September). *Fusing wireless sensor data to measure small-group collaborative processes in real-time*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
42. Chung, G. K. W. K. (2001, November). *Beyond bells and whistles: The promise of online assessment*. Invited presentation at Improving America’s Schools, Reno, NV.
43. Chung, G. K. W. K. (2000, November). *Implementation issues in on-line assessment systems.* Invited presentation at On-Line Student Assessment: The Future of State Testing Conference, Washington, DC.
44. Chung, G. K. W. K., & Srivastava, M. B. (2000, September). *Fusing physical and cognitive spaces: Using wireless networked sensors to assess the who, what, where, when, and how of student learning.* Poster session presented at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
45. O’Neil, H. F., Hsieh, G., & Chung, G. K. W. K. (2000, September). *Computer-based collaborative assessment of problem solving.* Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
46. Chung, G. K. W. K., & Klein, D. C. D. (1999, October). *Online performance assessment technologies: Lessons learned from the CRESST technology program*. Invited presentation at the annual project directors’ meeting of the Fund for the Improvement of Postsecondary Education (FIPSE), Washington, DC.
47. Klein, D. C. D., & Chung, G. K. W. K. (1999, October). *Evaluating technology-rich environments: Changing the question*. Invited presentation at the annual project directors’ meeting of the Fund for the Improvement of Postsecondary Education (FIPSE), Washington, DC.
48. Klein, D. C. D., Yarnall, L., Glaubke, C., & Chung, G. K. W. K. (1999, September). *Using technology to assess students’ Web expertise*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
49. Chung, G. K. W. K., Klein, D. C. D., & Zimmermann, R. S. (1999, September). *Characteristics of teachers who overcome barriers to technology adoption*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
50. Herl, H. E., O’Neil, H. F., & Chung, G. K. W. K. (1998, September). *Measurement of problem solving skills using knowledge mapping and problem solving strategy tasks*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
51. Klein, D. C. D., Chung, G. K. W. K., Osmundson, E., Herl, H. E., & O’Neil, H. F. (1998, September). *Investigating the validity of computer-based concept mapping*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
52. Osmundson, E., Chung, G. K. W. K., Herl, H. E., & Klein, D. C. D. (1998, September). *Concept mapping in the classroom: A tool for examining conceptual development*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
53. Chung, G. K. W. K., Osmundson, E., Klein, D. C. D., & Dennis, R. A. (1998, July). *Linking assessment and instruction with computer-based knowledge mapping*. Invited presentation at Milken National Education Conference, Los Angeles, CA.
54. Klein, D. C. D., Chung, G. K. W. K., & Dennis, R. A. (1998, July). *Alternative and performance assessments*. Invited presentation at Milken National Education Conference, Los Angeles, CA.
55. Chung, G. K. W. K. (1997, September). *Design of computer-based performance assessments: Lessons learned*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.
56. Chung, G. K. W. K., O’Neil, H. F., & Brown, R. S. (1995, September). *Group processes within a networked union-management negotiation simulation*. Presentation at the annual meeting of the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA.

# White Papers, Interviews, and Online Discussions

1. Chung, G. K. W. K. (2016, March 10). Learning analytics. (Vauhini Vara for Backchannel, https://backchannel.com/)
2. Chung, G. K. W. K. (2012). *Engage OurSpace game instrumentation: Data logging to support data analyses* (DARPA Engage Technical Working Paper No. 2). Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
3. Roberts, J., Chung, G. K. W. K., & Baker, E. L. (2012, January). *Using game-based data for performance monitoring*. Joint PBS KIDS / UCLA/CRESST white paper prepared for the Office of Science and Technology Policy (White House).
4. Chung, G. K. W. K. (2011). *Data issues in support of pedagogical research and development* (DARPA Engage Technical Working Paper No. 1). Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
5. Chung, G. K. W. K. (2005, December 14). Education Week Web Q&A on technology.
6. Miller, D. (2005, May 10). Innovative instruction: Professor invents software that lets students give feedback in class. *UCLA Daily Bruin*. Retrieved March 20, 2016, from http://dailybruin.com/2005/05/09/innovative-instruction/
7. Mignot, C. (2003, July 27). Experiment to outfit classroom with sensors. *UCLA Daily Bruin*. Retrieved March 20, 2016, from http://dailybruin.com/2003/07/27/experiment-to-outfit-classroom/
8. Sutton, C. (2003, June 11). Wired classroom gives educators insight into child learning. *UCLA Henry Samueli School of Engineering and Applied Science E-Bulletin*. Retrieved September 16, 2005, from http://www.engineer.ucla.edu/ebulletin/past/june\_03.html

**PROFESSIONAL AND SERVICE ACTIVITIES**

**Manuscript Reviewer**

07/2000 – current *Educational Assessment*

09/2000 – current *American Educational Research Association (AERA) Annual Conference*

06/2001 – current *­IEEE Education*

06/2002 Book Reviewer for Lawrence Erlbaum Associates

01/2006 – current *American Association of Engineering Education (ASEE) Annual Conference*

09/2006 – current *Military Psychology*

**American Educational Research Association (AERA)**

2004 Multiple presentation symposium organizer, *Current Issues in Knowledge Mapping in Assessment and Instruction*

2004 Multiple presentation symposium organizer, *Beyond Web Pages: Advanced Distributed/Distance Learning for Complex Training Environments*

2006 2007 AERA Conference section chair, Division C (Learning and Instruction), Section 7 (Technology Research)

2007 Multiple presentation symposium organizer, *Rebooting the past: Leveraging advances in assessment, instruction, and technology to individualize instruction and learning*

2009 Multiple presentation structured poster organizer, *Current Perspectives From Three National R&D Centers Focused on Game-Based Learning: Issues in Learning, Instruction, Assessment, and Game Design*

2016 Mentor and panelist for the Division C Graduate Student Seminar

**National Council on Measurement in Education (NCME)**

2013 Training session organizer, *An Introduction to the Measurement and Analysis of Video Game Interaction Data*

**Intel International Science and Engineering Fair**

04/2011 Judge, American Psychological Association, Behavioral and Social Sciences category

**International Encyclopedia of Education, 3rd Edition (2010)**

07/2010­ Co-section Editor, *Education of Professionals*

**National Science Foundation (NSF)**

07/2006 Advanced Learning Technology (ALT) Review Panel

**TechEd 2000**

2000 Conference Program Committee

**UCLA Graduate School of Education & Information Studies**

10/2003 – 10/2004 Dean’s Advisory Committee on GSE&IS Technology

11/2016 – 03/2016 Social Research Methods Advanced Quantitative candidate search committee

**U. S. Department of Education**

08/2002 SBIR Proposal Reviewer

**Professional Memberships**

American Educational Research Association (AERA)

Division C – Learning and Instruction

SIG – Technology, Instruction, Cognition, and Learning (119)

American Psychological Association (APA)

Division 15 – Educational Psychology

Division 19 – Military

American Society of Engineering Education (ASEE)

Division – Educational Research and Methods

Division – Experimentation and Lab-Oriented Studies

Human Factors and Ergonomics Society (HFES)

Technical Group – Cognitive Engineering and Decision Making

Technical Group – Education

Technical Group – Training

Institute for Electrical and Electronic Engineers (IEEE)

Society – Education

National Council on Measurement in Education (NCME)

National Society for the Study of Education (NSSE)

Association for Educational Communications and Technology (AECT)