

ROBERT HUBAL

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Education

Ph.D., Cognitive Psychology, 1996
Duke University

M.S., Computer Science, 1992
North Carolina State University

S.B., Computer Science & Engineering, 1987
Massachusetts Institute of Technology

Professional Experience

Founder and Principal, 2020-date
Intelligent Assessment, LLC

Research Scientist, 2021-2025
Renaissance Computing Institute

Research Associate Professor, 2016-2022
UNC Eshelman School of Pharmacy

Lead Scientist, 2012-2016
Soar Technology

Senior Research Psychologist, 1996-2012
RTI International

Senior Technical Consultant, 1987-1990
Andersen Consulting

Contributions to Science

Healthcare Simulation

Have developed a number of applications focuses specifically on medical and clinical settings. Approaches are to train clinicians on difficult content and skills, augment their practices by providing simulation environments to capture important diagnostic details, and improve patients' understanding of processes and procedures.

Technology Assisted Learning & Situated Assessment

Have extensive experience in developing situated training and assessment systems, always working with subject-matter experts to design the most appropriate and focused systems. Examples include evaluating the cost-effectiveness of simulation training systems; developing adaptive intelligent tutoring; developing intelligent virtual advisors; developing an information-processing model of experts' knowledge and skill; exploring augmented cognition and user-sensing technologies for simulation training systems.

Intelligent Virtual Humans

Have developed behavioral software that enables virtual humans to act and behave realistically in controlled learning contexts. Applications developed include assessing medical practitioners in history taking for both asthmatic and pediatric patients; training civilian police officers in how to handle mentally disturbed individuals; training telephone and field interview staff in obtaining respondent participation. Developed virtual vignettes to assess social functioning deficits in at-risk youth. Investigated models of cultural daily activities and patterns of life integrated into simulations of intelligent virtual humans.

Visual Analytics, Emotion, and Representation

Have investigated visual analytics, which allow for looking at data prospectively and visually. Have studied approaches to deriving mental models to ultimately develop training to encourage adaptive thinking about test, measurement, and diagnostic equipment, with the intent to develop an approach to modeling the structure and process of knowledge and skills and to determine an approach to identifying differences between experts' models and novices' models. Interested in modeling emotion in and extracting emotion from dialog. Developed a process model for alternative representations and investigated the interaction between expertise and representation.

Leadership and Change

Across many project have sought to define or change status quo. Have focused on novel approaches to inform training, education, and assessment, including simulated environments, extended reality, wearable systems, and AI techniques. Have influenced design and development of technical systems by studying, eliciting, and adopting end-users' perspectives. Have recently focused on core competencies needed by professional students and evolved educational methods to meet the needs for rapidly advancing work settings.

Selected Publications

Amdur, E., & HUBAL, R. (forthcoming). The good stranger: Managing crisis situations within social services environments. The RAN Network.

Marraccini, M.E., Anonick, R., Delgaty, L.E., Middleton, T.J., Toole, E.N., Ying, J., & HUBAL, R. (2024). Practice experiences for school reintegration: Endorsement for virtual reality with adolescents hospitalized for suicide-related crises. *Psychological Services*. DOI: 10.1037/ser0000874

Marraccini, M.E., HUBAL, R., Delgaty, L.E., Middleton, T.J., Anonick, R., Li, Y., & Heneghan, J. (2024). Development and testing of a virtual reality intervention with adolescents hospitalized for suicide-related crises. *Annual Review of CyberTherapy and Telemedicine*, 22, 150-155.

HUBAL, R. (2024). Rethinking some virtual human applications. *Annual Review of CyberTherapy and Telemedicine*, 22, 28-33.

Kiefer, A.W., Willoughby, D., MacPherson, R.P., HUBAL, R., & Eckel, S.F. (2024). Enhanced 2d hand pose estimation for gloved medical applications: A preliminary model. *Sensors*, 24(18), 6005. DOI: 10.3390/s24186005

Ahmad, A., Roupe, G., Samsa, L.A., Krishnamurthy, A., & HUBAL, R. (2024). Enhancing data accessibility in COVID research - A synthetic data generator for the RADx Data Hub. In Proceedings of the International Conference on Medicine, Health, and Care (pp. 39-43). IEEE. DOI: 10.1109/AIMHC59811.2024.00015

Cottrell, M., Tompkins, L., Khoei, A., Tropsha, A., Kapeljushnik, O., HUBAL, R., Dumond, J., & Kashuba, A. (2024). The HIV Pharmacology Data Repository (PDR): Setting a new standard for clinical and preclinical pharmacokinetic data sharing [abstract]. *British Journal of Clinical Pharmacology*, 90(51), 16. DOI: 10.1111/bcp.16300

Alexander, S.M., Friedman, V., Rerkpattanapipat, P.M., Hiatt, W.A., Heneghan, J.S., HUBAL, R., & Lee, Y.Z. (2024). Adapting novel augmented reality devices for patient simulations in medical education. *Cureus Journal of Medical Science*, 16(8), e66209. DOI: 10.7759/cureus.66209

Wilcox, B.C., McLaughlin, J.E., HUBAL, R., & Persky, A.M. (2023). Faculty process for reviewing and utilizing a school's course evaluation comments. *American Journal of Pharmaceutical Education*, 87(9), 100132. DOI: 10.1016/j.ajpe.2023.100132

Fuller, K., Lupton-Smith, C., HUBAL, R., & McLaughlin, J.E. (2023). Automated analysis of preceptor comments: A pilot study using sentiment analysis to identify potential student issues in experiential education. *American Journal of Pharmaceutical Education*, 87(9), 100132. DOI: 10.1016/j.ajpe.2023.100132

Tompkins, L.A.R., Kapeljushnik, O., HUBAL, R., Khoei, A., Dumond, J., Kashuba, A.D.M., Tropsha, A., & Cottrell, M.L. (2023). HIV pharmacology data repository (PDR): Setting the new information sharing standard for pharmacokinetic studies. *bioRxiv*, 2023.02.13.528350. DOI: 10.1101/2023.02.13.528350v1.full

Selected Publications, cont'd

HUBAL, R., & Cohen Hubal, E. (2023). Simulating patterns of life: More representative time-activity patterns that account for context. *Environment International*, 172, 107753. DOI: 10.1016/j.envint.2023.107753

Adams, K., Beaumont, K., Doyno, C., Dupree, L.H., Holle, L., HUBAL, R., McClaskey, D., Rhoney, D.H., & Sewell, K. (2023). MyDispense inpatient electronic medical record platform, an international collaboration [abstract]. *Journal of the American College of Clinical Pharmacy*, 6, 759-835. DOI: 10.1002/jac5.1833

Shah, P., Donovan, K., & HUBAL, R. (2022). Patient interaction involving older adults: Provider vs. caregiver expectations. *Geriatrics*, 7(5), 101. DOI: 10.3390/geriatrics7050101

Cathcart, A., Wiggins, M., Kelly, W., Doss, C., Ford, Y., HUBAL, R., & Rhinehardt, K. (2022). Recognition of culturally diverse cuisine in popular nutrition apps [abstract]. *Current Developments in Nutrition*, 6(S1), 872. DOI: 10.1093/cdn/nzac066.002

Kong, C.I., Welfare, J.G., Shenouda, H., Sanchez-Felix, O.R., Floyd, J., HUBAL, R.C., Heneghan, J.S., & Lawrence, D.S. (2022). Virtually bridging the safety gap between the lecture hall and the research laboratory. *Journal of Chemical Education*, 99(5), 1982-1989. DOI: 10.1021/acs.jchemed.2c00096

Williams, C.R., HUBAL, R., Wolcott, M.D., & Kruse, A. (2022). Interactive narrative simulation as a method for preceptor development. *Pharmacy*, 10(1), 5. DOI: 10.3390/pharmacy10010005

Powell, B., Oxley, M., Chen, K., Anksorus, H., HUBAL, R., Persky, A., & Harris, S. (2021). Concept mapping activity to enhance pharmacy student metacognition and comprehension of fundamental disease state knowledge. *American Journal of Pharmaceutical Education*, 85(5), 8266. DOI: 10.5688/ajpe8266

Rhoney, D.H., Singleton, S., Nelson, N.R., Anderson, S.M., & HUBAL, R. (2021). Forces driving change in pharmacy education: Opportunities to take ASTEP into the future. *Journal of American College of Clinical Pharmacy*, 4(5), 639-651. DOI: 10.1002/jac5.1407

HUBAL, R., & Heneghan, J. (2021). Comprehensive virtual human initiative for complex interaction skills training [abstract]. *Simulation in Healthcare*, 16(2), e8. DOI: 10.1097/SIH.0000000000000574

HUBAL, R., Bobbitt, L., Garfinkle, S., Harris, S.C., Powell, B.D., Oxley, M.S., Anksorus, H.N., & Chen, K.Y. (2020). Testing of a program to automatically analyze students' concept maps. *Pharmacy*, 8(4), 209. DOI: 10.3390/pharmacy8040209

Shah, P., Donovan, K., Rexrode, L., & HUBAL, R. (2020). Pediatric patient interaction: Provider vs. parent expectations. *Journal of Communication in Healthcare: Strategies, Media and Engagement in Global Health*, 13(4), 289-300. DOI: 10.1080/17538068.2020.1794765

Selected Publications, cont'd

McLaughlin, J.E., Lupton-Smith, C., Bell, E.L., HUBAL, R., & Persky, A. (2020). Automated analysis of course evaluation comments: The use of sentiment analysis to characterize classroom teaching [abstract]. *American Journal of Pharmaceutical Education*, 84(6), ajpe8220. DOI: 10.5688/ajpe8220

Fuller, K., Lupton-Smith, C., HUBAL, R., Hann, A., Kahandage, V., & McLaughlin, J.E. (2020). Automated analysis of preceptor comments: The use of sentiment analysis to characterize student issues [abstract]. *American Journal of Pharmaceutical Education*, 84(6), ajpe8220. DOI: 10.5688/ajpe8220

Zeeman, J., Kiser, S.N., Steeb, D.R., & HUBAL, R. (2020). Identifying priority student leadership and professionalism attributes among faculty, preceptors, and students via modified Delphi. *American Journal of Pharmaceutical Education*, 84(11), 8076. DOI: 10.5688/ajpe8076

Ma, C., HUBAL, R., & McLaughlin, J. (2020). Case element analysis for automated generation of cases in pharmacy education. *Education in the Health Professions*, 3(1), 22-26. DOI: 10.4103/EHP.EHP_3_20

Amdur, E., & HUBAL, R. (2019). *The accord agent: Managing intense, problematic social interactions within business environments*. Edgework Books.

Amdur, E., & HUBAL, R. (2019). *The coordinator: Managing high-risk high-consequence social interactions in an unfamiliar environment* · 2nd revised & expanded edition. Edgework Books.

Zeeman, J., HUBAL, R., Kiser, S.N., & Steeb, D.R. (2019). Identifying traits and building consensus on priority leadership and professionalism attributes in pharmacy education [abstract]. *Pharmacy Education*, 19(1), 346.

Bray, A., Webb, J.B., Enquobahrie, A., Vicory, J., Heneghan, J., HUBAL, R., TerMaath, S., Asare, P., & Clipp, R.B. (2019). Pulse physiology engine: An open source software platform for computational modeling of human medical simulation. *SN Comprehensive Clinical Medicine*, 1(5), 362-377. DOI: 10.1007/s42399-019-00053-w

Lam, H., & HUBAL, R. (2018). Approach to formalize psychological and behavioral characteristics in a virtual patient simulation: A literature review of pain management and opioid use [abstract]. *Journal of the American Pharmacists Association*, 58(3), e181. DOI: 10.1016/j.japh.2018.04.004

Kawatsu, C., HUBAL, R., & Marinier, R. (2018). Predicting students' decisions in a training simulation: A novel application of TrueSkill. *IEEE Transactions on Computational Intelligence and AI in Games*, 10(1), 97-100. DOI: 10.1109/TCIAIG.2017.2680843

HUBAL, R., & Parsons, T. (2017). Synthetic environments for skills training and practice. In L. Lin & J.M. Spector (Eds.), *The Sciences of Learning and Instructional Design: Constructive Articulation between Communities*. Oxford, UK: Routledge.

Selected Publications, cont'd

HUBAL, R., & Schmorow, D. (2016). Enabling effective training: Building for lifelong education [abstract]. *Aerospace Medicine and Human Performance*, 87(3), 303-304.

Hourani, L.L., Tueller, S.J., Kizakevich, P.N., Lewis, G., Strange, L.B., Weimer, B.J., Bryant, S.P., Bishop, E., HUBAL, R.C., & Spira, J.L. (2016). Toward preventing posttraumatic stress disorder: Development and testing of a stress inoculation program. *Military Medicine*, 181(9), 1151-1160. DOI: 10.7205/MILMED-D-15-00192

HUBAL, R. (2012). The imperative for social competency prediction. In S.J. Yang, A.M. Greenberg, & M. Endsley (Eds.), *Proceedings of the International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction* (pp. 188-195). Springer-Verlag. DOI: 10.1007/978-3-642-29047-3_23

Kizakevich, P.N., HUBAL, R., Brown, J., Lyden, J., Spira, J., Eckhoff, R., Zhang, Y., Bryant, S., & Munoz, G. (2012). PHIT for Duty, a mobile approach for psychological health intervention. *Studies in Health Technology and Informatics*, 181, 268-272. PMID: 22954869

HUBAL, R.C., Bonner, M.J., Hardy, K.K., FitzGerald, D.P., Willard, V.W., & Allen, T.M. (2011). Technical aspects and testing of a program to assess deficits in facial expression recognition in childhood cancer survivors. *Journal of CyberTherapy & Rehabilitation*, 4(3), 363-369.

Hourani, L.L., Kizakevich, P.N., HUBAL, R., Spira, J., Strange, L.B., Holiday, D.B., Bryant, S., & McLean, A.N. (2011). Predeployment stress inoculation training for primary prevention of combat-related stress disorders. *Journal of CyberTherapy & Rehabilitation*, 4(1), 101-116.

Hourani, L.L., Council, C.L., HUBAL, R.C., & Strange, L.B. (2011). Approaches to the primary prevention of posttraumatic stress disorder in the military: A review of the stress control literature. *Military Medicine*, 176(7), 721-730. DOI: 10.7205/milmed-d-09-00227

HUBAL, R., Mitroff, S.R., Cain, M.S., Scott, B., & DeWitt, R. (2010). Simulating a vigilance task: Extensible technology for baggage security assessment and training. In *Proceedings of the IEEE Conference on Technologies for Homeland Security* (pp. 543-548). IEEE. DOI: 10.1109/THS.2010.5654982

Fishbein, D.H., Sheppard, M.E., Hyde, C., HUBAL, R.C., Newlin, D.B., Serin, R., Chrousos, G., & Alesci, S. (2009). Deficits in behavioral inhibition predict treatment engagement in prison inmates. *Law and Human Behavior*, 33(5), 419-435. DOI: 10.1007/s10979-008-9163-7

HUBAL, R.C. (2009). Mental models for effective training: Comparing expert and novice maintainers' mental models. Research Report 1898. Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Selected Publications, cont'd

HUBAL, R.C., Fishbein, D.H., Sheppard, M.S, Paschall, M.J., Eldreth, D.L., & Hyde, C.T. (2008). How do varied populations interact with embodied conversational agents? Findings from inner-city adolescents and prisoners. *Computers in Human Behavior*, 24(3), 1104-1138. DOI: 10.1016/j.chb.2007.03.010

HUBAL, R.C., Evens, N.R., FitzGerald, D.P., Hardy, K.K., Willard, V.W., & Bonner, M.J. (2008). Implementation of FACS for synthetic characters for use in studying facial expression recognition by survivors of childhood cancer. *Annual Review of Cybertherapy and Telemedicine*, 6, 35-40.

Eriksson, E.J., Rodman, R.D., & HUBAL, R.C. (2007). Emotions in speech: Juristic implications. In C. Müller (Ed.), *Speaker Classification I: Fundamentals, Features, and Methods* (pp. 152-173). Springer-Verlag. DOI: 10.1007/978-3-540-74200-5_8

HUBAL, R., Kizakevich, P., & Furberg, R. (2007). Synthetic characters in health-related applications. *Studies in Computational Intelligence*, 65, 5-26. DOI: 10.1007/978-3-540-72375-2_2

Kizakevich, P.N., Furberg, R.D., Duncan, S., HUBAL, R., Stanley, J., Merino, K., & Holloway, J. (2006). Mass casualty triage simulation for emergency preparedness and response [abstract]. *Telemedicine Journal and e-Health*, 12(2), 165. DOI: 10.1089/tmj.2006.12.165

HUBAL, R.C., & Day, R.S. (2006). Informed consent procedures: An experimental test using a virtual character in a dialog systems training application. *Journal of Biomedical Informatics*, 39(5), 532-540. DOI: 10.1016/j.jbi.2005.12.006

Fishbein, D.H., Hyde, C., Eldreth, D., Paschall, M.J., HUBAL, R., Das, A., Tarter, R., Ialongo, N., Hubbard, S., & Yung, B. (2006). Neurocognitive skills moderate urban male adolescents' responses to preventive intervention materials. *Drug and Alcohol Dependence*, 82(1), 47-60. DOI: 10.1016/j.drugalcdep.2005.08.008

Fishbein, D.H., Herman-Stahl, M., Eldreth, D.L., Paschall, M.J., Hyde, C., HUBAL, R., Hubbard, S., Williams, J., & Ialongo, N. (2006). Mediators of the stress-substance use relationship in high-risk urban adolescents. *Prevention Science*, 7(2), 113-126. DOI: 10.1007/s11121-006-0027-4

Deterding, R., Milliron, C., & HUBAL, R. (2005). The virtual pediatric standardized patient application: Formative evaluation findings. *Studies in Health Technology and Informatics*, 111, 105-107. PMID: 15718709

Paschall, M.J., Fishbein, D.H., HUBAL, R.C., & Eldreth, D. (2005). Psychometric properties of virtual reality vignette performance measures: A novel approach for assessing adolescents' social competency skills. *Health Education Research: Theory and Practice*, 20(1), 61-70. DOI: 10.1093/her/cyg103

Selected Publications, cont'd

Guinn, C., & HUBAL, R. (2003). Extracting emotional information from the text of spoken dialog. In Proceedings of the Workshop on Assessing and Adapting to User Attitudes and Affect: Why, When and How? User Modeling, Inc. DOI: 10.1.1.119.5549

HUBAL, R.C., Frank, G.A., & Guinn, C.I. (2003). Lessons learned in modeling schizophrenic and depressed responsive virtual humans for training. In Proceedings of the Intelligent User Interface Conference (pp. 85-92). ACM Press. DOI: 10.1145/604045.604062

HUBAL, R.C., Deterding, R.R., Frank, G.A., Schwetzke, H.F., & Kizakevich, P.N. (2003). Lessons learned in modeling virtual pediatric patients. *Studies in Health Technology and Informatics*, 94, 127-130. PMID: 15455877

Kizakevich, P.N., HUBAL, R., Guinn, C., Starko, K., McCartney, M.L., & Magee, J.H. (2001). Virtual simulated patients for trauma and medical care [abstract]. *Telemedicine Journal and e-Health*, 7(2), 150. DOI: 10.1089/153056201750279629

HUBAL, R.C., Kizakevich, P.N., Guinn, C.I., Merino, K.D., & West, S.L. (2000). The virtual standardized patient-Simulated patient-practitioner dialogue for patient interview training. *Studies in Health Technology and Informatics*, 70, 133-138. PMID: 10977526

Sugarman, J., McCrory, D.C., & HUBAL, R.C. (1998). Getting meaningful informed consent from older adults: A structured literature review of empirical research. *Journal of the American Geriatrics Society*, 46(4), 517-524. DOI: 10.1111/j.1532-5415.1998.tb02477.x

HUBAL, R.C. (1996). Studies of alternative representations: Selective interference and experience. Doctoral Thesis. Duke University, Durham, NC.

HUBAL, R.C. (1992). Retro-adaptive testing and evaluation system. Master's Thesis. North Carolina State University, Raleigh, NC.

Selected Professional Service

Journal Reviews

American Journal of Pharmaceutical Education
Computers in Human Behavior
Currents in Pharmacy Teaching and Learning
IEEE Transactions on Learning Technologies
International Journal of Artificial Intelligence in Education
Journal of Biomedical Informatics
Journal of CyberTherapy & Rehabilitation
Journal of Exposure Science and Environmental Epidemiology
Nicotine & Tobacco Research
RTI Press

Conference Review Panels

ACM Conference on Human Factors in Computing Systems, 2025
Cross-Cultural Decision-Making Conference
Program Committee, 2015
Human Factors and Ergonomics Society
Annual Meeting, 2007, 2008, 2010, 2011, 2012, 2014, 2015, 2016, 2017, 2018,
2019, 2020, 2021, 2023
Healthcare Symposium, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025
International Conference on Augmented Cognition
Program Board, 2018, 2019, 2021
International Conference on Social Computing, Behavioral-Cultural Modeling &
Prediction and Behavior Representation in Modeling and Simulation
Program Committee, 2013, 2014, 2015, 2016, 2017, 2018, 2019
International Meeting for Simulation in Healthcare, 2020, 2021
International Symposium on Human Factors and Ergonomics in Health Care, 2020
Military Health System Research Symposium, 2015
Military Operational Medicine Joint Program Committee, 2013

Professional Memberships

American Association of Colleges of Pharmacy
Association for Psychological Science
Human Factors and Ergonomics Society
International Association of CyberPsychology, Training, and Rehabilitation
Society for Simulation in Healthcare

Selected Professional Service, cont'd

Panel Member & Lecturer

Army Learning and Training Effectiveness Symposium
Duke University Master of Engineering Management
Duke University Ph.D. Career Symposium
East Coast Game Conference
Human Factors and Ergonomics Society Serious Games Discussion
Institute for Homeland Security Solutions Research Summit
Military Operational Medicine Joint Program Committee
National Institute on Mental Health, proposal review (multiple)
National Science Foundation, proposal review (multiple)
U.S. Air Force Expertise Workshop

Patents

Eckel, S.F., [HUBAL](#), R.C., Kiefer, A.C., MacPherson, R.P., & Cabelka, C.T. (2025). Methods, systems, and computer readable media for automated assessment of aseptic technique of compounding in a compounding hood.

Selected Funding Support

As Principal or Co-Investigator

UNC & RENCI

Digital therapeutic skills and strategies: Co-designing a social media campaign with youth to promote mental health (UNC C. Felix Harvey Award to Advance Institutional Priorities), 2023

Collaborative research: Engaging adolescents through collaboration on simulated stem career scenarios and mathematics activities; National Science Foundation (DRL-2048993), 2021

Creation of a hands-on aseptic technique simulator; UNC Eshelman Institute for Innovation, 2019

Complex assessment of military performance (CAMP); U.S. Army Medical Research and Materiel Command (W81XWH-19-2-0046), 2019

NC counties preventing school violence program: CPSVP; U.S. Department of Justice Bureau of Justice Assistance (2019-YS-BX-0017), 2019

nXcomms: Intelligent patient simulation; U.S. Army Medical Research Acquisition Activity SBIR Phase I (W81XWH-19-C-0119), 2019

Virtual interactive environment for learning science: Prototype development and testing. UNC School of Education, 2019

Precision education for clinical decision making; UNC Eshelman Institute for Innovation, 2017

nXhuman virtual patient; UNC Eshelman Institute for Innovation, 2016

SoarTech

CRAFT: Cognitive resilience and flexibility training. Office of Naval Research SBIR Phase I (N00014-15-P-1135), 2015

Cultural urban synthetic characters and their patterns of life. U.S. Army PEO-STRI SBIR Phase I (W900KK-13-C-0053), 2013

AVANT: An avatar-based neuropsychological battery administrator. Telemedicine & Advanced Technology Research Center SBIR Phases I&II (W81XWH-14-C-0016), 2013

RTI

Testing and evaluation of a predeployment stress inoculation training program (PreSTINT); Defense Medical Research and Development Program Applied Research/Medical Technology Development Research Award, Department of Defense (W81XWH-12-2-0039 Log #11258001), 2012

Selected Funding Support, cont'd

As Principal or Co-Investigator, cont'd

RTI, cont'd

Methods for determining student patterns and building performance profiles; CTB/McGraw-Hill (04684-DC10-007), 2010

Individual differences in vigilance. Institute for Homeland Security Solutions (0211772.003.010.001), 2009

Combat stress casualty reduction: Development and testing of a predeployment stress inoculation training program; Office of Naval Research (N00014-08-C-0504; N00014-12-C-0383), 2008

Mental models for effective training: Comparing expert and novice maintainers' mental models; U.S. Army Research Institute (W74V8H-04-D-0044, SubPR-04-06), 2008

Deficits in facial expression recognition in childhood cancer survivors; National Cancer Institute (1-R03-CA128472-01), 2007

Collaborative systems involving synthetic characters and high-risk adolescents; National Science Foundation (IIS-0534211), 2006

Simulation environment for analysis of expert security analysts; Maryland Procurement Office (H98230-04-C-0501), 2004

Human subjects research enhancements program; National Institutes of Health (1-S07-RR18257-01), 2002

Responsive virtual human technology; National Science Foundation (EIA-0121211), 2001

Optimizing patients' comprehension through USP drug information leaflets; U.S. Pharmacopeia, 1998

As Research Lead

UNC & RENCI

HIV Pharmacology Data Repository; National Institute of Allergy and Infectious Diseases, 2024

Fabric integrating networked knowledge (FRINK); National Science Foundation, 2023

BioData catalyst data management core: Multimodal accelerated concierge hub (MACH) team; National Heart, Lung and Blood Institute, 2022

Gamifying an evidence-based parenting intervention to improve access for caregivers with addiction to reduce substance use outcomes in their children; Office of the National Drug Control Policy, 2021

Selected Funding Support, cont'd

As Research Lead, cont'd

UNC & RENCI, cont'd

Automated capture and assessment of aseptic technique; UNC Eshelman Institute for Innovation and QleanAir Scandinavia Inc., 2021

Digital representation of people (DROP); Naval Air Warfare Center SBIR Phase I (N6833520C0596), 2020

Trauma resiliency immersive adaptive gaming environment (TRIAGE); U.S. Army Medical Research Acquisition Activity (W81XWH-18-S-MSI1), 2019

Feasibility assessment of a suicide prevention program for community (retail) pharmacies; Canandaigua Veteran Affairs Medical Center, 2018

Utilizing machine learning and artificial intelligence for medical training needs (MACH learning); U.S. Army Medical Research and Materiel Command (W81XWH-18-C-0371), 2018

BioMojo virtual patient experience; National Institutes of Health SBIR Phase I (1-R43-GM130251-01), 2018

beFIT for adaptive physical training; Office of Naval Research SBIR Phase I (N68335-18-C-0024), 2017

SoarTech

Next-generation of maintenance skills training system; Office of Naval Research SBIR Phase I (N00014-15-P-1071), 2014

Aviator's intelligent assistant (AIA); U.S. Army Research, Development and Engineering Command SBIR Phase I (W911W6-10-C-0039), 2012

Strategic social interaction modules (SSIM); Defense Advanced Research Projects Agency (W911NF-11-C-0273), 2012

RTI

Integrated pediatric guideline for cardiovascular health and risk reduction implementation initiative; National Heart, Lung, and Blood Institute (HHSN268200900120U), 2011

Public understanding of the differences between imported drugs & FDA approved drugs imported through a FDA importation program, U.S. Food and Drug Administration (HHSF223201110673G), 2011

PHIT for Duty, a personal health intervention tool for psychological health and traumatic brain injury; Office of Naval Research (N00014-11-C-0129), 2011

Selected Funding Support, cont'd

As Research Lead, cont'd

PHIT for Duty, a personal health improvement tool for psychological health and traumatic brain injury; U.S. Army Medical Research and Materiel Command (W81XWH-11-2-0129), 2011

Violent intent modeling and simulation; Department of Homeland Security Science & Technology Directorate Human Factors/Behavioral Sciences Division (HSHQDC-08-C-00100), 2008

Personal monitoring for ambulatory PTSD assessment; Congressionally Directed Medical Research Programs PTSD Concept Award, Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (PT073688), 2008

Combat stress casualty reduction: Predeployment stress inoculation training; U.S. Army Medical Research and Materiel Command (W81XWH-08-1-0334), 2008

Advanced equipment maintenance training using revolutionary video game technology; Office of Naval Research SBIR Phase I M67854-07-C-6506), 2007

S6 Army managers training; U.S. Army Training and Doctrine Command (DABT60-00-D-004), 2005

Drunk driving simulator in support of the Brain Explorers Program; National Institute on Alcohol Abuse and Alcoholism, 2005

Medical simulation training for first response to chemical, biological, radiological, and nuclear events; U.S. Army Telemedicine and Advanced Technologies Research Center SBIR Phase I, 2005

Common driver trainer initial capabilities document and supporting analyses; U.S. Army Research Institute (W74V8H-04-D-0044), 2005

Neuropsychological and emotional deficits predict correctional treatment response; National Institute of Justice (2002-MU-BX-0013), 2002

Neurocognitive prerequisites for prevention of adolescent drug abuse; National Institute of Drug Abuse (5-R01-DA14813-02), 2001

JUST-TALK: Interactive computer-based training in assessing incidents using verbal dialogs; National Institute of Justice (2000-RD-CX-K002), 2000

Evaluation of live, virtual, and constructive training environments; U.S. Army Research Office (DAAH04-96-C-0086), 1997