

Frank E. Ritter

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Research interests

I am interested in using cognitive modeling within unified theories of cognition to improve human-computer interaction and to test theories of learning, interaction, and behavior moderators. These models are also useful for studying networks and helping users in a variety of systems including medical, consumer, and governmental applications including tutors and games. I have built several models that help explain how people learn and transfer learning, and sets of tools to make model building, protocol analysis, and statistical analysis easier. I am also interested in developing stochastic learning and optimization algorithms to model behavior and to improve other analyses. We are currently applying many of these techniques to build tutors for medicine and maintenance, an iPhone app to help users moderate their caffeine use, and a long-term attempt to study and model the effects of stress on cognition.

During the pandemic, I moved some of my research toward public health. These contributions are noted below, and include an online tutor and book (covered with press releases and TV coverage), a journal article, and board membership of a society working in the area (Society for Disaster Medicine and Public Health) and related activities (helping run conferences and workshops for them).

Education

PhD, Carnegie-Mellon University, 1992 (AI & psychology program)
MS, Carnegie-Mellon University, 1989 (Psychology)
Part-time graduate course work, Brandeis University, 1986 (Computer Science)
Graduate course work, Yale University, 1983 to 1984 (Computer Science)
BSEE (cum laude), University of Illinois/Urbana, 1983 (Electrical Engineering)

Honors and awards

[PSU] Graduate Teacher of the Year, April 2022
College of IST nominee for [PSU] University Graduate Teaching Award, October 2021
Best paper award, *AsianCHI 21*. (Cai, Chen, Huang, & Ritter, 2021)
[College of IST] Senior Faculty Excellence in Research Award, March 2021
Spotted Lanternfly Permit Training from Penn State Extension, March 2021
Best Poster Award, *MathPsych/ICCM 2019*, with Farnaz Tehranchi
Lifetime achievement award, Behavior Representation in Modeling and Simulation (BRIMS) Society, July 2018
College of IST nominee for [PSU] President's Award for Student Engagement, October 2017

Excellence in Outreach and Engagement Scholarship Award, College of IST, May 2017
 College of IST nominee for the [PSU] Howard B. Palmer Faculty Mentoring Award,
 September 2015
 September 2016
 Faculty Marshall (student selected),
 Fall graduation 2014, College of Information Sciences and Technology
 Fall graduation 2002, School of Information Sciences and Technology
 CaffeineZone (iPhone app) nominated, 2013 PA Tech Award
 Best Paper Award and Best Student Paper Award, *Behavior Representation in Modeling and Simulation (BRIMS) 2012 Conference* (Dancy, Ritter, & Berry, 2012)
 Recommended Read, *Behavior Representation in Modeling and Simulation (BRIMS) 2012 Conference* (Zhao, Kaulakis, Morgan, Hiam, Ritter, & Morgan, 2012)
 Sarah Palin Shameless Self-promotion of a Book Award, *Human-Computer Interaction Consortium Workshop*, Spring 2010; Spring 2011; Summer, 2015
 Evertsz, Ritter, Russell, & Shephardson (2007). Best Paper award, at the *16th Conference on Behavior Representation in Modeling and Simulation (BRIMS)*
 Fulbright Senior Scholar, Autumn 2005, Institute of Psychology, Technical University - Chemnitz, Germany
 Who's Who Among America's Teachers, 2004-2005
 St. Amant & Ritter (2004) selected as "Siegel-Wolf Award for Best Applied Modeling Paper" at the *International Conference on Cognitive Modeling*
 "Large Passenger Van", 100% score, 11 June 2003
 (PSU sponsored, obligatory accreditation to drive PSU large passenger vans)
 Avraamides & Ritter (2002) selected by the Conference Program Committee for the "Recommended Reading List" at the *11th Conference on Computer-Generated Forces and Behavior Representation*
 European Science Foundation Research Programme "Learning in Humans and Machines", Junior Scientist Fellowship, 1995 to 1997
 ACM Doctoral Dissertation Award Nominee, 1993 competition
 Sigma Xi, inducted at Carnegie-Mellon University, 1991
 US Air Force Laboratory Fellowship, Fall 1988 to Spring 1992
 Department Fellowship, Carnegie-Mellon University, Fall 1987 to Summer 1988
 BBN Unendowed couch in the AI Labs, 1987
 National Science Foundation Fellowship Honorable Mention, 1983
 Eastman Kodak Employee Suggestion Plan, Monetary Award, 1983
 Eta Kappa Nu (electrical engineering honorary), University of Illinois
 Outstanding Senior, 1983
 Shorter Board (leadership honorary), University of Illinois, 1983
 Tau Beta Pi (engineering honorary), University of Illinois, 1982
 James Scholar (Honors program), University of Illinois, Fall 1979 to Spring 1983
 Kodak Scholar (and intern), Fall 1980 to Spring 1983

Experience

At Penn State

Professor of Information Sciences and Technology, of Psychology, and of Computer Science and Engineering, since July 2009.

Associate Professor of Information Sciences and Technology (Founding), College of Information Sciences and Technology, the Pennsylvania State University, October 1999 to June 2009. (Tenured July 1999 in IST.)

Engineering Systems Affiliate, College of Engineering, since October 2016.

Affiliate Faculty in the Department of Industrial and Manufacturing Engineering, May 2009-2012.

Member of the faculty in the Neuroscience Option in the Integrative Biosciences Graduate Program, Huck Institute, since August 2003.

Graduate Faculty, Social Data Analytics.

C-SoDA Faculty Affiliate.

Associate Professor of Computer Science & Engineering, December 2001 to June 2009.

Member of Computer Science and Engineering Graduate Faculty, since May 2000.

Associate Professor of Psychology, October 1999 to June 2009.

Visitor, Charles River Analytics, Fall 2012 to Spring 2013; Fall 2021 to Spring 2022.

ISCAS Visiting Scholar, Pen-based & Multimodal User Interface Research Group, Intelligence Engineering Lab, Institute of Software, Chinese Academy of Sciences (ISCAS), Beijing, 5-14 August, 2012.

Visitor, Computer Science Department, Tufts University, Spring 2006.

Visiting Professor, Institute of Psychology, Technical University - Chemnitz, Autumn 2005.

At the University of Nottingham

Lecturer (approximately equivalent to US assistant professor) Dept. of Psychology, U. of Nottingham, January 1993 to September 1999. Completed probationary period and new lecturers induction course (approximately equivalent to tenure in the US), Summer 1995.

Associate Lecturer (approximately equivalent to affiliated tenured US assistant professor), School of Computer Science and Information Technology, U. of Nottingham, June 1995 to September 1999.

Visiting distinguished professor, Psychology Department, U. of Chemnitz (Germany), Fall 1998.

Industry and Consulting Experience

Charles River Analytics, June 2009 to 2021.

Leidos for NSMRL, since June 2018.

Agent Oriented Software, since September 2012.

US Soccer Federation / FIFA Soccer referee (level 8), 2002-2015.

Smart Information Flow Technologies (SIFT), July 2013 to March 2014.

Bryant & Cantorna, consultant on legal case, 2011-2012.

Applied Systems Intelligence, Inc., June 2009.

RPI Sequential analysis DTO project, July 2007 to December 2007.

CMU DARPA BICA project, 2005-2006.

Soar Technology, 2000-2001.

BBN Labs, 1987.

Staff scientist, BBN Laboratories, Cambridge, MA, 1984 to 1987.

Created first SIMNET graphic display, created TRIO tutoring cognitive architecture.

Digital interface engineer, Kodak Research Labs, Rochester, NY (Summer 1981, 1983) and Harrow, England (Summer 1982).

Professional Activities

External committee work (selected)

Government service

Chair, Cognitive Human Factors Research Advisory Group, Linac Coherent Light Source (LCLS), SLAC National Accelerator Laboratory at Stanford, Scientific User Facility, DoE National Lab, February, 2021 to October 2022.

Invited attendee, NSF Convergence Accelerator Program, Cognitive Science Workshop on Standardized Description Format for Models in Cognitive Science, Neuroscience, Machine Learning and Beyond, Model Exchange and Convergence Initiative, November 2020. Princeton.

Associate Investigator (IPA), Naval Submarine Medical Research Lab, Groton, CT, February 2012 to January 2013; April 2013 to March 2014; and July 2015 to June 2017.

Reviewer, Fiscal Year 2016 (FY16) Joint Program Committee 1 (JPC-1) Medical Simulation and Information Sciences (MSIS) Medical Decision Aids Research Program (DoD).

Attendee, FDA Public Workshop - Robotically-Assisted Surgical Devices: Challenges and Opportunities, July 27-28, 2015.

Named and funded "Team Mentor", HRED Lab's proposal (PI: Cassenti) to Cybernetics Investigation of Human-Technology Collaboration, Army Research Lab. June 2015.

Panel member, Crew Health Peer Review Panel, Human Research Program, NASA, March 2015.

German Aerospace Center (DLR), Institute of Flight Guidance, advisory board to A-PiMod Project, December 2013 to December 2016.

ARL HRED pre-IRB technical review, January 2009.

Committee on Human-System Design Support for Changing Technology, National Academy of Sciences' National Research Council (NRC). May 2005 to May 2007.

US/UK OOS Programme Agreement Workshop, 11/12 April 2006, participant.

Army Research Laboratory Technical Assessment Board (ARLTAB) at the National Academy of Sciences' National Research Council (NRC). Soldier Systems Panel, April 2004 to December 2006.

Participant, NSF Workshop on Human-Centered Computing, September 2006.

Participant, Air Force Investments in Computational Cognitive Process Modeling Working Group, Human Effectiveness Directorate, February 2005.

Member, NSF IGERT Analytic Meeting Panel, 2-3 June 2003.

Visiting reviewer, "Computational Analysis of Social and Organizational Systems (CASOS) Integrative Graduate Education and Research Traineeship (IGERT) NSF program at CMU, Spring 2003.

Editorial and leadership board memberships

Series editor, *Oxford Series on Cognitive Models and Architectures*, Oxford University Press, since June 2003 (also noted below).

Associate editor:

Human Factors, since January 2015.

IEEE Transactions on Human-Machine Systems,

January 2013 to March 2018

IEEE Transactions on Systems, Man, and Cybernetics,

Part A: Systems and Humans, January 2012 to December 2012.

CCF Transactions on Pervasive Computing and Interaction, since April 2018.

Action editor: *Cognitive Systems Research*, 2010 to 2014.

Advising editor: *Disaster Medicine and Public Health Preparedness*, since August 2021.

Editorial boards: *Journal of Interaction Science*, June 2012 to September 2021.

Human Factors, September 2000 to December 2013.

Journal of Educational Psychology, April 2008 to October 2011.

AI and Simulation of Behaviour Quarterly, January 2003 to March 2009.

AI and Simulation of Behaviour Journal, February 2004 to January 2008.

Board member, Society for Disaster Medicine and Public Health, since January 2021.

Central Pennsylvania Chapter of the American Civil Liberties Union of Pennsylvania, board member September 2000 to December 2019. Leadership group member, since January 2020.

Governing board representative from Penn State, Human-Computer Interaction Consortium, August 2009 to June 2012; March 2014 to December 2014; January 2016 to February 2016 (acting).

Alumni Advisory Committee, Electrical and Computer Engineering Alumni Association University of Illinois, May 1984 to June 2004.

Governing board, Society for the Study of Artificial Intelligence and Simulation of Behaviour, February 1998 to November 2003.

Member, Alumni Board of Directors, Electrical and Computer Engineering Alumni Association University of Illinois, Fall 1982 to Spring 1983.

External reviewer

Human Factors journal annual publication prize judge, 2019.

External examiner for the MSc in Knowledge Management Systems (KMS), RMCS, Cranfield University (UK). September 2002 to September 2005, extended to 2006.

External examiner for the BSc in Cognitive Science, U. of Hertfordshire, January 1997 to June 1999, extended to 2000.

University College London, HCI Unit review, 1999.

Proposal reviewer

Air Force Office of Scientific Research

Austrian National Science Foundation

Belgian Federal Public Planning Service

British Academy

Center for Socially Responsible Artificial Intelligence (CSRAI) Seed Funding for 2022-23 seed grants

Defense Threat Reduction Agency

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

National Science Foundation
Netherlands Organisation for Scientific Research
UK Economic and Social Research Council
UK Engineering and Physical Sciences Research Council
UK Joint Research Council's Human-Computer Interaction / Cognitive Science Initiative
Vienna Science and Technology Fund (WWTF)

Conference organizer

Co-organizer, The cognitive science of learning, ONR program review, 2020, 2021.
Co-chair, 14th International Conference on Cognitive Modeling, 2016.
Technical program co-chair, Human-Computer Interaction Consortium Workshop, 2011.
Technical program co-chair, Conference on Behavior Representation in Modeling and Simulation, 2009, 2010, 2011.
Founding co-chair, tutorial program, Cognitive Science Conference 1999. Co-chair, 2001, 2002, 2003, 2004.
Tutorial Chair, International Conference on Cognitive Modeling, 2004, 2006, 2007, 2009, 2010, 2012, 2013.
Co-chair, 2nd European Conference on Cognitive Modeling, 1998.
Chair, EuroSoar 7 Workshop, U. of Nottingham, 1993.

Program committees

Program Board of the MobiTAS 2023 Conference
The Society for Disaster Medicine and Public Health Mini-Conference Series—2022
The Intersection of Disaster Medicine and Public Health with Climate and Health, December 2021
19th International Conference on Cognitive Modeling, 2021. (Toronto/Online)
18th International Conference on Cognitive Modeling, 2020 (Toronto/Online)
17th International Conference on Cognitive Modeling, 2019 Montreal
16th International Conference on Cognitive Modeling, 2018
Cognitive Science, 2017
FIERCES ON BICA 2016, First International Early Research Career Enhancement School on Biologically Inspired Cognitive Architectures, April 2016
Biologically Inspired Cognitive Architectures, 2015, 2017
15th International Conference on Cognitive Modeling, 2017
13th International Conference on Cognitive Modeling, 2015
Program Committee Member for the Special Track on Cognitive Systems
at the Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI-15)
at the Twenty-Sixth AAAI Conference on Artificial Intelligence (AAAI-12)
Organizing committee, Integrated Cognition symposium, Fall 2013 AAAI Symposium AAAI, 2011
Biologically Inspired Cognitive Architectures (BICA), 2010, 2021
12th International Conference on Cognitive Modeling, 2013 Ottawa
11th International Conference on Cognitive Modeling, 2012 Berlin
Tenth International Cognitive Modeling Conference, 2010 Phili
Ninth International Cognitive Modeling Conference, 2009 Manchester

Executive Committee, Conference on Behavior Representation in Modeling and Simulation, 2008, 2009, 2010, 2011, 2012
Brain Informatics—BI 2010
Associate Chair, CHI Notes, 2007
Tutorial Program, Cognitive Science Conference, 2005, 2007, 2009
Cognitive Science 1999, 2001, 2002, 2003, 2004, 2005
IJCAI Modeling Natural Action Selection Workshop, July 2005
6th German Workshop on Artificial Life, April 2004
Information Resources Management Association 2004 Conference (reviewer)
Tutorials committee member for European Cognitive Science Conference, 2003
Eighth International Cognitive Modeling Conference, 2007 Michigan
Seventh International Conference on Cognitive Modeling 2006 Italy
Sixth International Conference on Cognitive Modeling, 2004 CMU
Fifth International Cognitive Modeling Conference, 2003 Bamberg
Fourth International Conference on Cognitive Modeling, July 2001 George Mason
Simulating Human Agents, AAAI Fall Symposium Series, 2000
Third International Conference on Cognitive Modelling, 2000 Gronigen
Postgraduate Workshop, AISB Convention 1999
Human learning meets machine learning, Workshop at 10th European Conference on Machine Learning, 1998
1st European Workshop on Cognitive Modeling, November 1996 Nottingham
Interact'95
CHI '94 Research Symposium

Occasional editorial reviewer (books and journals)

Cambridge University Press
Jones and Bartlett
Lawrence Erlbaum
Morgan & Claypool
Oxford University Press (non-cognitive modeling books, trade books, book series, etc.)
Sage
Springer
Editorial Board for "Reviews in Human Factors & Ergonomics - Volume 9, "Human Performance in Teleoperations and Beyond. HFES/Sage, 2013.

Occasional editorial reviewer (journals and conferences)

ACM Transactions on Computer-Human Interaction
Adaptive Behavior
Advances in Cognitive Psychology
Advances in Cognitive Systems
AI and Simulation of Behaviour Journal
Behavior Representation in Modeling and Simulation Conference 2003, 2004, 2007, 2008, 2015.
Behavior Research Methods, Instruments, and Computers
Biologically Inspired Cognitive Architectures
CHI conferences 1996 to 2001, 2003 to 2006, 2008, 2012, 2016.

Cognitive Science Conference 1995 to 1997, 1999 to 2002, 2004.
Consultant to the Awards committee, 2017.
Cognitive Science
Cognitive Systems Research
Computational and Mathematical Organization Theory
Computers and Education
Computing Surveys
Current Psychology of Cognition
DIS'19
Encyclopedia of Information Science and Technology, Idea Group Publishing
European Journal of Cognitive Psychology
Human-Computer Interaction
Human Factors
Human Factors and Ergonomics Society Annual Conference, 2008.
IEEE Expert Special Track on Applications of Machine Learning
IEEE Intelligent Systems
IEEE Systems, Man, and Cybernetics: Part A, Systems and Humans
IEEE Transactions on Human-Machine Systems
IEEE Transactions on Learning Technologies
International Conference on Information Systems, 2009.
Interacting with Computers
International Joint Conference on AI (IJCAI), 2011.
International Journal of Artificial Intelligence in Education
International Journal of Human-Computer Studies
International Journal of Human Factors Modelling and Simulation (IJHFMS)
Journal of Artificial General Intelligence (JAGI)
Journal of Behavioral Decision Making Journal of Cognitive Psychology
Journal of Experimental Child Psychology
Journal of Experimental Psychology: Learning, Memory and Cognition
Journal of Experimental Psychology: Human Perception and Performance
Journal of Virtual Culture
Learning & Instruction
Neural Computing & Applications
Psychological Research
Software: Practice and Experience Transportation Research Part F: Traffic Psychology and Behavior
Topics in Cognitive Science
User Modeling and User Adaptive Interfaces
Work & Stress

Other service (selected)

Doctoral Consortium commentator, *BRIMS*, 2020.
 Mentor-mentee lunch commentator, *BRIMS* 2018.
 Doctoral Consortium commentator, *International Conference on Cognitive Modeling*, 2003.

Tutor, *AI & Simulation of Behaviour Post-Graduate Workshop*, Spring 1994, 1995, 1996.
Invited participant, *DRA Workshop on Integrated Performance Modelling*, November 1995.

Committee work at Penn State University (selected)

Chair, Faculty Annual Review Committee, HCDD (human-centered design and development) Area,
December 2019 to May 2021.

Chair, Evaluation of IST 331, The user (now: Foundations for user-centered design), since Fall 2002.

Member, Evaluation of IST 413, Usability Engineering, since Fall 2014.

Member, Qualifying exam committee, May 2020, May, 2019, May, 2018.

Graduate Council Subcommittee on New and Revise Programs and Courses, Fall 2017 to Spring 2018.
Fall 2019 to Spring 2020.

Member, IST Graduate Advisory Committee, Fall 2007 to Spring 2009, Fall 2013 to Spring 2019.
(elected)

Chair and member of a qualifying exam committee, Spring 2019.

Member, IST Promotion and Tenure Committee, Spring 2018 to Spring 2019 (appointed). Spring 2015
to Spring 2017 (elected). Spring 2023 to Spring 2024 (appointed).

Graduate Council Joint Curricular Committee at the Graduate School, Fall 2017 to Spring 2018.

Member, Academic Integrity Committee, ad hoc member, Fall 2016.

Member, Developmental committee of IST 505, Research Methods for the IST, since Fall 2015.

Member, Academic Integrity Committee, ad hoc member, Spring 2016.

Member, IST Research Seed Grant Review committee, Fall 2015, Fall 2016.

Member, University Graduate Council, Fall 2013 to Spring 2015. (elected)

Member, Graduate Council Committee on Programs and Courses, Fall 2013 to Spring 2015.

Member, Academic Integrity Committee, Fall 2013 to Spring 2014.

Member, Assessment Planning Committee, Spring 2012.

Chair (elected), Cognitive and Networked Intelligent Systems Scholarly Interest Group, March 2011 to
June 2012.

June 2013 through June 2014.

Chair, Academic Integrity Committee, Fall 2011 to Spring 2012.

Judge, Human Factors Student Research Forum, 2011.

Member, Internal advisory committee for the Survey Research Center, a unit within the Social Science
Research Institute, Penn State, Fall 2010 to Spring 2012.

Chair, Promotion and tenure committee, Fall 2010 to Spring 2011 (elected).

Member, IST Classroom Software Committee, Fall 2006 to Spring 2012.

Member, Graduate Council Committee on Academic Standards, Fall 2007 to May 2011.

Member, University Graduate Council, Fall 2007 to May 2011. (elected)

Chair, Faculty Search Committee, Fall 2009.

Member, Graduate Recruiting Committee, Fall 2007 to Spring 2009. (elected)

Member, University Hearing Board, January 2003 to August 2005, and August 2006 to August 2008.

Member, Select ad hoc Committee to Review Endowed Chairs Review Processes, Spring 2007.

Member, PhD Comprehensive Exam Committee, Spring 2007.

Member, Dean's review of John Bagby Committee (similar to HR40, post-tenure review), Spring 2007.

Member, Committee to evaluate IST web site and presence, Fall 2006 to Spring 2007.

Developer and chair, IST Classroom Software Committee, April 2004 to August 2005.
Member, Undergraduate Advisory Committee, September 2004 to August 2005. (elected)
Member, Publications Committee, Computer Science and Engineering, Fall 2002 to August 2005, and Fall 2006 to Spring 2010.
Member, Committee to develop Professional MSc IST, Spring 2000 to Spring 2004.
Director, IST Summer Undergraduate Research Fellowship Program, Summer 2000 to Summer 2004.
Co-chair, HCI Institute development committee, Fall 2000 to Spring 2003.
Member, Evaluation of IST 230, Discrete math, Fall 2002 to Spring 2004.
Solutions Institute Fellow, Spring 2001 to Spring 2002.
Member, Committee to evaluate IST web site and presence, Spring 2000 to Spring 2002.
Member, Faculty Advisory Evaluation Committee to the Dean, Spring 2002.
Symposium organizer: "At the Intersection of Arts & Technology", College of Arts and Architecture and School of Information Sciences and Technology, Fall 2001.
Chair, HCI faculty search, September 2001 to May 2002.
Co-chair, Detailed Design of IST Graduate Courses, 521, HCI topics, Spring 2001 to Spring 2002.
Member, Committee to develop MSc and Phd in IST, Spring 2000 to Spring 2002.
Member, IST Faculty Chair committee, Fall 2000 to Spring 2002.
Member and occasional chair, Promotion and tenure committee, Spring 2000 to Spring 2002.
Advisor, Dean's Student Advisory Committee, Spring 2000 to Spring 2001.
Chair, Committee to develop IST 331, The user, Fall 2000 to Spring 2001.
Member, IST Faculty search committee, Fall 1999, Spring 2000, Spring 2001.
Member, IST Minor Committee, Spring 2001.
Chair, Committee to develop IST 521, Theories of users in human-computer interaction, Fall 2000.
Member, Committee to develop IST 531, Human Information Behavior: Information and the User, Fall 2000.
Chair, Committee to develop IST 230, Logic, language, and discrete math for information science, 2000.
Founding Chair, Promotion and Tenure committee in IST (appointed), Spring 2000.

Committee work at the U. of Nottingham (selected)

Director of Studies, Masters in Intelligent Systems, February, 1999 to September 1999.
Web foreman, School of Psychology, January 1999 to September 1999.
Director, Institute for Applied Cognitive Science, August 1998 to September 1999.
HCI Studies Director for Psychology, IT MSc degree, ICL Institute of IT, U. of Nottingham, 1997 to 1999.
International Admissions Tutor, Dept. of Psychology, Spring 1994 to September 1999.
Occasional Student Examinations Officer, Spring 1995 to Spring 1999. (Equivalent to Director of studies for visiting and part-time students.)
Department Computing Sub-committee, Spring 1994 to September 1999.
Internal examiner, Diploma in Applied Psychology, Autumn, 1994 to September 1999.
Department representative, Cripps Computing Centre Users Advisory Committee, Spring 1995 to Spring 1999.

Professional and honorary society memberships (previous and current)

Association for Computing Machinery, 1990-2005.

Special interest group on computer-human interaction (SIGCHI)

American Association for Artificial Intelligence (AAAI)

Association for Psychological Science, 1992-2005.

Brain and Behavioral Sciences, Associate, since October, 2004.

British Psychological Society

Chartered Psychologist, since 1997.

Cognitive Science Society

Human Factors and Ergonomics Society

Institute of Electrical and Electronics Engineers, 1982-2005.

Computer Society

Systems, Man, and Cybernetics Society

League for Programming Freedom

Society of the Study of Artificial Intelligence and Simulation of Behavior (AISB)

Society for Disaster Medicine and Public Health (since 2020)

Eta Kappa Nu (electrical engineering)

Phi Kappa Phi (scholastic)

Shorter Board (leadership)

Sigma Xi (research)

Tau Beta Pi (engineering)

Teaching and Advising

Primary modules taught, co-taught, or convened (organized). * indicates new courses developed.

At Penn State

IST 230*: Language, logic, and discrete math

IST 110: Introduction to information sciences and technology

IST 331*: Organization and design of information systems: User and system principles (The User)

IST 402*: Emerging Technologies: Models of human behavior

IST 402*: Emerging Technologies: Computer tutors

IST 413: Usability engineering

IST 497*: Readings in Cognitive Science

IST 497*: Skills to Obstruct Pandemics

IST 521*: Human-Computer Interaction (graduate methods)

IST 590*: Research Colloquium (Professional seminar version)

IST 594*: Symposium on Cognitive Modeling

IST 597*: Simulating human behavior

IST 597G*: Quantitative and Qualitative statistical methods for HCI and Cognitive Science

IST 597D: HCI models and theories (Guest lecture)

PSY 524: Cognitive Pro-seminar (one week or one half week of semester course, biannually)

At the University of Nottingham

(C8 is Psychology, undergraduate and graduate;
G5 undergraduate computer science, and G6 graduate computer science)

C8 D OEO: Issues in ergonomics
C8 1 HBP*: Introduction to British psychology
C8 C XCE: People and computers in the workplace
C8 C DPC*: Programming cognitive models
C8 D EAI*: Exploring architectures for AI
G5 B UID: User interface design
G6 D IHF: Introduction to human factors
G6 D COG: Introduction to cognitive psychology
C8 C XAR: Cognitive architectures
C8 3 TUB*: Cognitive modelling
C8 C XES: Expert systems
C8 2 COG: Cognitive psychology
G6 D FAI: Foundations of AI
C8 1 IA A&B: Introduction to AI
C8 3 XPL: Lisp & cognitive modeling
Problem solving and visual cognition*, Second year tutorial
C8 2 MH A&B*: The keystroke level model

At CMU

Chairman and founder, *Interfacing the Science and the Profession* seminar series, Department of Psychology, CMU, 1991.

Current students

Sarah Ricupero (Huck PhD, expected 2024)
Shan Wang (IST PhD, expected 2024)
Marc Burns (IST MS, expected 2023)

Previous students

Supervised PhD students

Jacob Oury (IST PhD, 2022)
Farnaz Tehrani (CSE PhD 2020, co-supervised with Becky Passonneau in CSE)
Fredrick Ryans (IST PhD February 2020 to October 2020, co-advised with Lynette Yarger)
David Schwartz (IST PhD, on leave)
Ryan Kaulakis (IST PhD 2020, co-advised with John Yen)
Changkun Zhao (IST PhD, March 2016)
Chris Dancy (IST PhD, May 2014, co-advised with Mike McNeese)
Bill Stevenson (IST PhD, on leave to Apple)
Jaehyon Paik (IE PhD, August 2011, co-advised with David Nembhard)
Mark Cohen (IST PhD, December 2008)
Sue Kase (IST PhD, December 2008)
Jong Kim (Industrial Engineering PhD, co-advised with Richard Koubek, August 2008)

Roman Belavkin (CS PhD July 2003, co-supervised with David Elliman at Nottingham)
Gordon Baxter (Psy PhD December 2000, co-supervised by Fernand Gobet at Nottingham)
David Golightly (Psy PhD 1999, co-supervised by David Gilmore at Nottingham)
Gary Jones (Psy PhD 1998, co-supervised by David Wood at Nottingham)

Externally examined PhD students

Chad Peters (Carleton University, external examiner, Cognitive Science PhD exam, 2021)
Korey MacDougall (Carleton University, external examiner, Cognitive Science PhD exam, 2016)
Kam-Hung Kwok (Carleton University, external examiner, Cognitive Science PhD exam, 2015)
Arindam Das (York University, external examiner, Computer Science PhD exam, 2014)
Matthew Rutledge-Taylor (Carleton University, external examiner, Cognitive Science PhD, 2010)
Duncan Brumby (University of Wales/Cardiff, external examiner, HCI PhD, 2005)
Tossapon Boongeon (Cranfield University, external examiner, Intelligent Systems, PhD 2004)
Dan Allsopp (Cranfield University, external examiner, Intelligent Systems, PhD 2003)
Ed Butler (Nottingham University, internal examiner for Psychology, PhD May 1999 and June 2000)

Supervised MS and MSc students

Raphael Rodriguez (IST MS, August 2020)
Pooyan Doozandeh Masooleh (September 2018 to December 2019)
Luke Metaxas (IST, IUG MS May 2018)
Jui-Te Tseng (CSE MS May 2014)
Razvan Orendovici (CSE MS, December 2011)
Robert Stark (IST MS, May 2010, co-supervised with John Yen)
Maik Friedrich (U. of Bamberg, CS MS May 2008, co-supervised with Prof. Dr. Ute Schmidt)
Urmila Kukreja (CSE MS, December 2004)
Kevin Tor (CSE MS, May 2004)
Doug Hogan (CSE MEng. May 2004, co-supervised with John Hannan)
Andrew Freed (CSE BS/MS Honors May 2003)
Atin Bansal (CSE MS, December 2002)
Peter Lonsdale (MSc in Intelligent Knowledge-Based Systems, 1999)
Rajinder Singh Rajoo (MSc in IKBS, 1997)
Jalal Rassouli (MSc in IKBS, 1995)
Roberto Ong (MSc in Intelligent Knowledge-Based Systems, 1994)

Visiting scholars and post-docs

Prof. Serhii Serdiuk (since November 2022, from National University "Zaporizhzhia Polytechnic" (NUZP), Ukraine)
Prof. Solvita Zarina (April 2019, from Latvia)
Prof. Ģirts Karnītis (April 2019, from Latvia)
Shota Matsubayashi (May 2019 to July 2019, Nagoya University)
Dr. Chung-II (Chad) Che (February 2018 to September 2019)
Dr. Mathieu Brener (March 2018 to May 2020)

Dr. Korey MacDougall (November 2016 to August 2018)
Dr. Miki Matsumuro (March, 2017, Nagoya University)
Sangeun Han (visiting information sciences student from Sungkyunkwan University, Korea, August 2016 to February 2017)
Dr. Dirk van Rooy (January 2016, fellowship from the Australian government)
Dr. Junya Morita, PhD (visiting professor from Japan Advanced Institute of Science and Technology, August 2010 to December 2010)
Dr. Jong Kim (August 2008 to August 2009)
Dr. Olivier Georgeon (March 2008 to July 2010)
Maik Friedrich (visiting CS student from the University of Bamberg, May 2007 to December 2007)
Dr. Lucio Inguscio (visiting scholar from Psychology, The University of Rome "La Sapienza", January to June 2004)
Dr. Dirk van Rooy (March 2001 to October 2002)
Emma Norling (visiting CS student from the University of Melbourne, March to June 2004)
Ellen Bass (visiting IE student from Georgia Tech., October 1994 to June 1995)

Previous MS and PhD committees

Jennifer Farnum (IST MS scholarly paper, December 2021)
Charon Chen (IST MS committee, July 2020)
Anita Chen (IST MS paper committee, December 2019)
Jeremy Cole (IST PhD, November 2018)
Moojan Ghafurian (IST PhD, December 2017)
Kiseok Sung (IE, PhD, August 2017)
Zach Beard (IST MS August 2016)
Dan Guzek (IST MS May 2015)
Kelly Sprehn (IE PhD committee, May 2014)
Vivek Kaushal (CSE MS committee, December 2013)
Jeonghwan Jin (IE PhD committee, May 2012)
Jennifer Bittner (Psychology PhD committee, awarded May 2011)
Maria Velazquez (IE PhD committee, awarded May 2011)
Shabnam Sodagari (EE PhD committee, September 2010)
Joshua Gross (IST PhD committee, May 2009)
Christina Kokini (Industrial Engineering, MS external reader, April 2009)
Georgios Christou (Tufts Computer Science, PhD committee, May 2007)
Damodar Bhandarkar (Industrial Engineering, PhD, August 2008)
Theodore Kinney (Psychology, PhD, March 2007)
Boyan Brodaric (GIS PhD Comprehensive exam committee, 2000-2004)
Dan Cassenti (Psy PhD committee member, PhD 2004)
Steve Jax (Psy Master's committee, MS 2001)
Marios Avraamides (Psy PhD committee, May 2002)

Undergraduate theses

Deja Workman (senior Millennium Scholar, 2022)

Brian Higgins (senior IST thesis work, May 2019)
Daniel Servich (senior IST thesis, December 2016)
Peter Gregory Plumb (senior IST thesis, December 2010)
Alex Wood (senior IST thesis May 2003)
Jason Cornwell (Psy BS honors thesis 2001)
Several IST BS internships, since 2005, often co-supervised with Glantz
5 Diplomas in Applied Psychology, 1994 to 1999.
3 Practicum visiting scholars from German CS Departments, 1994 to 1999

Undergraduate internships

Grace Good (Summer to Fall 2022)
David Estfanous (Summer 2022)
Clare Robson (Spring, 2021)
Fatoumata Cissé (Summer 2020 to Spring 2021)
Ethan Alderman (Fall 2020 to Summer 2021)
Mathew Norris (Spring, 2020)
Mallory Dixon (Fall, 2019)
Nick Novacek (Summer-Fall, 2018)

Other teaching activities

Pro-SEM workshop (academic achievements, CV preparation, conference attending), TU/Chemnitz, May 2022.
Vitamins D2P tutor used in Nursing 405B Advanced Medical Surgical Nursing Part 2, since Spring 2020.
Mentor, Women in Science and Engineering Research program, Spring 2000 to Spring 2012; since Spring 2015.
Mentor, Minority Undergraduate Research Experience, Spring 2000 to Spring 2012; since Spring 2015.
Guest lecture, IST 445 - 001H Globalization Trends and World Issues, “Working in other countries”. 6 November 2018.
Guest lecture, IST 331 (2 sections), “The Kegworth air disaster”, Spring 2018.
Guest lecture, IST 501 Interdisciplinary Research Methods for Information Sciences and Technology, Penn State, Fall 2016.
Guest lecture, ART405 Graphic Design Studio, Lock Haven University, Fall, 2016.
Seminars on Scientific writing and on HCI at TU/Chemnitz, Fall 2005.
Several lectures of “Introduction to Cognitive and Brain Science”, and a graduate seminar on cognitive science in Computer Science, Tufts University, Spring 2006.

From reaction times to model testing: *21st International Summer School in Cognitive Science*. Sophia, Bulgaria. July 2014.

Practical aspects of experiments with human participants (conference tutorial, with Jon Morgan, Jong Kim, and Richard Carlson, some are noted below where there are publications):
Cognitive Science Conference 2020 (with Morgan and Ricupero). *MathPsych/ICCM2017*,
Cognitive Science 2014, *BRIMS 2012*, *Cognitive Science 2012*, Institute for Software, Chinese

Academy of Sciences, 2012. Allgemeine Psychologie und Arbeitspsychologie [General and Industrial Psychology group], TU-Chemnitz, July 2013.

The Psychological Soar Tutorial (with Richard M. Young): EuroSoar 7, 8, 9 Workshops, 1993 to 1995; AISB Spring Symposium Series, 1994, 1996; 1997; HCI '94; HCI International 1995; European Workshop on Cognitive Modeling, 1st (1996) and 2nd (1998); Cognitive Science Conference, 1999. Given as staff development, U. of Hertfordshire, 1998. Used by others to teach cognitive modelling in Australia, Japan, Scotland, and Bulgaria.
(with Tony Kalus and Richard Young) Fifth International Conference on Cognitive Modeling, 2003.

The Herbal High Level Behavior Representation Language Tutorial (with Mark Cohen and others): Behavior Representation in Modeling and Simulation Conference 2005.
Dstl, Farnborough, June 2006. (including an introduction to ACT-R)

A summary of *Human-System Integration in the System Development Process*: (conference tutorial) ICCM 2009.

Artificial Intelligence: The wave of the future. Four lectures at the Institute for Learning in Retirement, Bradley University. (October 2002).

Presentations for Scholarship And Research Integrity (SARI) graduate program at Penn State

Ritter, F. E. (2022). Levels of performance on key tasks for research: Where are you in your career? including “Steps in publishing a paper”. 3 October 2022.

Ritter, F. E. (2018). “The Care and Feeding of Papers, and an Academic Scorecard”. SARI talk provided to Computer Science and Engineering graduate students, 14 November 2018.

Ritter, F. E. (2012). Some thoughts on steps in academia. Presentation, part of the SARI: Scholarship And Research Integrity training provided to Computer Science and Engineering graduate students, April 2012.

Ritter, F. E. (2011). Ethics and the publication process. Presentation, part of the SARI: Scholarship And Research Integrity training provided to Computer Science and Engineering graduate students, April, 2011, November 2011.

Ritter, F. E. (2010). A brief overview of some of the issues when running studies with people. Presentation, part of the SARI: Scholarship And Research Integrity training provided to Computer Science and Engineering graduate students, March 2010, October 2010.

Research Grants, Contracts, and Agreements

Lifetime total of over \$12.3 M as PI.

- Department of Energy through InnoSys (Aug 2022 to July 2024). Coal miners to grid operators. Ritter (PI), Tehranchi & Stager (Co-PIs). \$175k.
- DARPA through and with Charles River Analytics (May 2022 to November 2023, with possible extensions). Ph 1 Probabilistic Engine for Representing and Computing Enhanced Presentation Techniques for SA (PERCEPTS). Ritter (PI), Yeh (Co-PI). \$350k.
- Centers for Disease Control and Prevention, CDC IMS 2019 NCOV Response Program (October 2020 to September 2022). Skills to Obstruct Pandemics (StOPv2): Tutoring nurses to teach practical health skills for infectious disease transmission reduction. Ritter (PI), Garrison, Glantz, & Yeh (Co-PIs). Approved but not (yet) funded, \$733k
- Agent Oriented Software (since October 2013). Licenses to 20 commercial copies of JACK and CoJACK, \$400k.
- Office of Naval Research (April 2015 to June 2022). Maintenance training under uncertainty: Expanding a smart tutoring system to support acquisition and retention of skills. Ritter (PI), Yeh (Co-PI), with Charles River Analytics, \$3.4M.
- Office of Naval Research SBIR through Charles River Analytics (July 2018 to December 2021). Simulating training results to understanding differing effects of fidelity on learning (STRUDEL). \$226k.
- Office of Naval Research STTR with Charles River Analytics (May 2015 to October 2015; 2017 to May 2020). CRAM-LESS: Exploring strategy learning in a diagnostic reasoning task. Ritter (PI), Stager (Co-PI), & Yeh (Co-PI), \$226k (phase 2) + 87k (option 1). N15A-013-0008
- Defense Health Program (JPC1) with Charles River Analytics (September 2017 to June 2020). Virtual Intelligent Tutor for the Andragogy of Military Medicine Integrated Skills (VITAMMINS). At PSU Ritter (PI), Garrison (Co-I), \$490k. W81XWH-17-C-0002
- US Army Natick Soldier Research, Development and Engineering Center (June 2016 to May 2020). DREEMS, behavioral modeling (with CRA), Army SBIR phase 2. ~\$167k + 30k to PSU through CRA.
- Harris Corporation, (January 2018 to August 2019). Critical human-machine interaction in op centers: Optimizing for crisis assessment, operator performance and stress effects. Corporate contract. \$200k of \$354k, Terminated early due to corporate merger with L3.
- Naval Air Systems Command STTR phase 1 through Charles River Analytics (April 2017 to October 2017). Support for SAVE-IT: A System for Analyzing and Visualizing Evaluations of Instruction Techniques. \$40k to PSU.
- Air Force Research Lab SBIR phase 2 through Charles River Analytics (October 2015 to January 2018). Building trauma triage tutors for Air Force nurses and extending learning theory (STAT). At PSU Ritter (PI), Yeh (Co-PI), \$200k. FA8650-16-C-6680
- Office of Naval Research STTR Phase 1 through Charles River Analytics (May 2015 to October 2015; 2017 to 2019). Active Transfer Learning for Intelligent Tutoring. Ritter (PI), Yeh (Co-PI), \$30k (base) + \$25k (option, awarded May 2016).
- Naval Submarine Medical Research Lab (February 2012 to January 2013; April 2013 to March 2014; July 2015 to June 2017). Interagency personal agreement. \$10k; \$30k; \$10k.
- Air Force Research Lab through L3 (October 2014 to May 2015). Extending ACT-R/Phi to look at vigilance. Ritter (PI). \$35k.

Office of Naval Research to Charles River Analytics (March 2010 to June 2014). EasyCog SBIR Phase II. Ritter, PI, Haynes, Co-PI. \$320k awarded, with \$100k extension and \$80k extension.

DTRA (August 2009 to December 2012). Pathway-based integration of relational networks and textual information for detecting motivation and intent of WMD-related threats. Ritter, PI, Liu, Haynes, Horgan, Kreager, Mitra, Ivanova, Shemanski, & Hall, Co-PIs. \$1,047k.

Office of Naval Research. (October 2010 to September 2012). Expanding a smart tutoring system supporting acquisition and retention of skills. Ritter (PI). \$598k (\$40k+\$240k increments).

Charles River Analytics, Inc. (June 2011 to December 2011). STTR: Support for high-level tools for faster tutoring. Ritter (PI). Haynes and Yeh (Co-PIs). \$49.7k.

Office of Naval Research. (March 2010 to December 2010). A smart tutoring system supporting acquisition and retention of skills. Ritter (PI), Kim (named researcher). \$115k + 35k (\$150k total)

Office of Naval Research (January 2008 to September 2010). Linking UK Content Expertise with Computer-Based Analysis for Prediction of Individual and Group-Related Activities. Weiss, PI. Ritter (Subcontractor-CoPI). Approximately \$100k out of \$500k.

Office of Naval Research (August 2009 to July 2010). Interacting with a Massively Multiplayer Online Games (MMOGs) Environment using Herbal and SegMan. Ritter, PI. St. Amant (Subcontractor-CoPI). Approximately \$307k. (reduced to \$20k based on funding cuts)

Office of Naval Research. (June 2007 to December 2009). Establishing a novel training paradigm by investigating learning and forgetting of procedural skills. Ritter (PI), Koubek (Co-PI), Kim (named researcher). \$168k + 16k + 32k (\$216k)

Office of Naval Research. (October 2005 to August 2009). Real world behavioral modeling with the Herbal high-level language. Ritter (PI), Haynes (Co-PI). \$769k.

Office of Naval Research. (October 2005 to September 2008). Model and study of threatening tasks and fatigue. Ritter (PI), Klein (Co-PI). \$380k.

UK MoD. (May 2003 to March 2008). Improving the representation of human variability within computer generated forces. PI: Agent Oriented Software Limited. Initial 2 year total to PSU of \$59k, plus \$2.5k + \$40k + \$250k extensions.

DMSO. (2004). Human performance in modeling and simulation. PI: Agent Oriented Software. \$46k.

Office of Naval Research. (January 2003 to December 2005). Integrated explanation and visualization for intelligent synthetic forces. Jones, R. M., & Taylor, G. (PIs), with Ritter and Haynes (sub-contract). \$667k, with \$181k to PSU.

Office of Naval Research. (January 2003 to September 2005). Designing, building, and testing behavioral moderators with the ACT-R cognitive architecture. Ritter (PI), Klein (Co-PI). \$541k.

Naval Air Warfare Center (2002). Dynamic task allocation. Dr. J. Wise (PI for ARL), Ritter (Co-PI). Naval Air Warfare Center Aircraft Division. \$25k.

Lucent Foundation Funding (2002). Niche search engine for mobile search. Giles (PI), Ritter (Co-PI). \$50k.

Office of Naval Research. (November 2001 to May 2005). An architectural overlay: Modifying an architecture to help cognitive models understand and explain themselves. Ritter (PI), Haynes (Co-PI). \$228k.

DARPA. (May 2001 to September 2002). Using cognitive models to examine human-robot interfaces: An exploratory study. Ritter (PI). \$198k.

Office of Naval Research. (March 2001 to September 2001). Designing behavioral moderators for cognitive architectures. Ritter (PI), Quigley, McNeese, and Klein (Co-PIs). \$74.9k.

Office of Naval Research (January 2001 to September 2001). Testing an interface to explain cognitive models to experts. Ritter (PI). \$32k.

DERA. (April 2000 to September 2000). Tasks toward supporting realistic synthetic forces behaviour representation. Ritter (PI). £11.5k.

DERA. Techniques for modelling human performance in synthetic environments accepted as: A detailed review of approaches that might be used to model human behaviour predominantly, although not exclusively, in a military context. (1999). Ritter (PI) with Shadbolt, Elliman, Young, and Gobet (Co-PIs). £19.9k.

DRA. Computer support for rapid decision making using Soar. (June 1994 to June 1997). Gilmore and Ritter (joint-PIs). £176k.

JCI Diagrammatic reasoning grant (January 1993 to June 1994). Ritter and Bibby (joint PIs). Approximately £200k.

US Air Force Laboratory Fellowship, Fall 1988 to Spring 1992. US\$ 129k.

Other Support (selected)

College of IST internal seed grant (July to December 2022). Translating three tutors into Ukrainian using two interns. \$6k. Ritter.

College of IST internal seed grant (March to June 2020). Creating a tutor for COVID-19 mitigation. \$3k. Ritter and Glantz.

PSU internal (seed) funds from the College of IST (2018). Creating a disaster tutor. \$7.2k+\$1k. Ritter & Glantz.

PSU internal funds from the Huck Institute of Life Science, the Engineering Design Program, the College of IST, the Applied Cognitive Science Lab (Spring 2016). [Designing and building a biosafety device]. \$15.5k. Ritter, Bilen, Miller, & Kirimanjeswara. This also used/augmented student projects in IST 413 and EDSGN 548.

National Science Foundation (2016). Reitter, D., (PI) & Ritter, F. E. Support for *ICCM 2016 International Conference on Cognitive Modeling*. \$15.5k.

U. of Nebraska Medical Center (September 2013 to May 2014). Optimal Training Model for Skills Learning and Retention in Telemedicine (NASA NSBRI stage I, NASA Nebraska Space Grant). \$0k (advisor/consultant). Joseph Siu (UNMC), PI.

Schreyer Institute, Penn State. (August 2012 to May 2013). Development of an active learning workbook for teaching user experience design. \$9k. Erika Poole (PI), Frank Ritter (Co-PI).

NSF Teragrid. (2008). Visualizing the parameter space of a serial subtraction cognitive model. 30,000 units of supercomputer time. Sue Kase, Co-PI. (estimate \$1/unit) NSF Teragrid. (2007). Optimizing the fitting of a serial subtraction cognitive model. 10,000 units of supercomputer time. Extended to 30,000 units. Sue Kase, Co-PI. (estimate \$1/unit)

ARL (May 2003 to May 2005). Optimizing the fit of cognitive models using genetic algorithms. CRADA for 2,500 hours of supercomputer time. (estimate \$10/unit)

The Office of Undergraduate Education, Summer Session Enhancement Fund. (Summer 2002). Support for two students in Summer Undergraduate Research Fellowship program. \$3k.

ONR travel grant. (January 2002). To attend ONR Contractors meeting on Cognitive Architectures. Orlando, FL. \$1.1k.

US Air Force Warfighter Research Lab travel grant. (January 2002). To attend ACT-R Workshop. Mesa, AZ. \$1.1k.

DARPA/NSF travel grant. (September 2001). To attend DARPA/NSF Study on Human-Robot Interaction, San Luis Obispo, CA. \$1.1k.

Penn State Fund for Excellence in Learning and Teaching (FELT). (July 2001 to July 2002). Java-based teaching of mathematics in information sciences and technology. \$3.2k.

DARPA. (December 2000). To attend DARPA Workshop on Human-Robot Interaction, Washington, DC. \$1.1k.

Lockheed/Martin. (2000). with Joe Lambert. Research in advanced human-computer interaction: Future applications of cognitive models. \$7k.

KPN Research (NL). (June to September 2000). Building a Sim-eye and Sim-hand in Visual Basic. \$5.6k.

Soar Technology. (March 2000). Human-computer interface issues. \$3.1k.

President's fund for Undergraduate Research (Penn State). (January 2000). with Amanda Spink. How people search the web. \$2k.

Lockheed/Martin. (1999). with Joe Lambert. Research in advanced human-computer interaction: Future applications of cognitive models. \$5k.

Defence Science and Technology Organisation (DSTO, Australia). (January 1999). with Prof. Shadbolt. Cognitive modelling requirements for operational research simulations. \$AUS 10k.

Engineering and Physical Science Research Council (EPSRC); US Army Research, Development, and Standardization Group (UK); and US Air Force European Office of Aerospace Research and Development. (March 1993). with Prof. Young, to support the 2nd European Conference on Cognitive Modelling. \$7.3k.

Enterprise in Higher Education grant to develop the Soar Tutorial (April 1995 to April 1997). £2k.

US Office of Naval Research/Europe (1996) with Gary Jones for Jones to travel to cognitive modelling sites in the US and attend summer schools on cognitive modelling. US \$1.1k.

Social and Economic Research Council. (1993). Support for the EuroSoar7 workshop. £800.

Royal Society travel grant, (1993). £200.

Publications

Drafts of most papers are available at acs.ist.psu.edu/papers/ and acs.ist.psu.edu/papers/ritter-papers.html

Book series

Series editor, *Oxford Series on Cognitive Models and Architectures*, Oxford University Press, since June 2003. 14 books published (Reichle, Thagard 3-book treatise, Tani, Sun, Gratch & Marcella, Conte, Eliasmith, Salvucci & Taatgen, Bach, Anderson, Ritter et al., Gray), 0 book(s) in press, 3 book(s) under contract, and 1 book(s) under review or in process.

Series editor, *Proceedings of the International Conference on Cognitive Modeling*, since 2016. The ACS Lab at Penn State publishes the books by helping with proceedings layout and distribution and by applying ISBN numbers from ACS stock to the proceedings. (2016, 2017, 2018, 2019, 2020, 2021).

Books

- B11 Ritter, F. E. (accepted July 2022). *Design patterns for cognitive simulations and HCI*. Oxford University Press.
- B10 Ricupero, S., & Ritter, F. E. (in press). *Running Behavioral Studies with Human Participants: Online*. SRM Doing Research Online. [case study]
- B9 Oury, J. D., & Ritter, F. E. (2021). *Building better interfaces for remote autonomous systems: An introduction for systems engineers*. In the series: SpringerBriefs in Human-Computer Interaction. Cham, Switzerland: Springer Nature Switzerland AG. 125 pages. <https://link.springer.com/book/10.1007/978-3-030-47775-2>
- B8 Ritter, F. E., Clase, A. C., Harvill, S. L., Yeh, M. K.-C., Joseph, R. E., Oury, J. J., Oury, J. D., Glantz, E. J., Fenstermacher, A., Brener, M., James, J. J. (2020). *Skills to Obstruct Pandemics*:

- How to protect yourself and your community from COVID-19 and similar infections* (pp. 202). Mechanicsburg, PA: Sunbury Press. 202 pages. 978-1-62-006437-5.
- B7 Reitter, D., & Ritter, F. E. (eds.) (2016). *Proceedings of ICCM 2016, 14th International Conference on Cognitive Modeling (ICCM 2016)*. 284 pages. University Park, PA: Penn State. <http://acs.ist.psu.edu/iccm2016/proc/>
- B6 Ritter, F. E., Baxter, G. D., & Churchill, E. F. (2014). *Foundations for designing user-centered systems: What system designers need to know about people*. 442 + xxx pages. London: Springer-Verlag. Foreword by Barry Boehm. 978-1-4471-5133-3
- B6b Published in Chinese by researchers at the Chinese Academy of Sciences, Dr. Feng Tian, and Prof. Xiaolong Zhang, head translators, as 以用户为中心的系统设计 (2017), 287 + xxxiii pages. Beijing: China Machine Press. Foreword by Prof. Guozhong Dai. ISBN 978-7-111-57939-7
- B5 Ritter, F. E., Kim, J. W., Morgan, J. H., & Carlson, R. A. (2013). *Running behavioral studies with human participants: A practical guide*. Thousands Oaks, CA: SAGE.
- B4 Ritter, F. E., Nerb, J., O'Shea, T., & Lehtinen, E. (Eds.) (2007). *In order to learn: How the sequence of topics influence learning*. New York, NY: Oxford University Press.
- B3 Ritter, F. E. [member], Committee on Human-System Design Support for Changing Technology. (2007). *Human-system integration in the system development process: A new look*. Richard W. Pew and Anne S. Mavor (eds.). National Research Council, National Academy Press. Washington, DC.
- B2 Ritter, F. E., Shadbolt, N. R., Elliman, D., Young, R., Gobet, F., & Baxter, G. D. (2003). Techniques for modeling human performance in synthetic environments: A supplementary review. Wright-Patterson Air Force Base, OH: Human Systems Information Analysis Center.
- B1 Ritter, F. E., & Young, R. M. (Eds.). (1998). *Proceedings of the Second European Conference on Cognitive Modelling*. Thrumpton (UK): Nottingham University Press.

Special issues

- SI6 Cassenti, D. N., Veksler, V. D, Ritter, F. E. (2022). Editor's Review and Introduction: Cognition inspired artificial intelligence. *Topics in Cognitive Science*. 14. 652-664.
- SI5 Reitter, D., & Ritter, F. E. (2017). Introduction to the issue on Computational Models of Memory: Selected papers from the International Conference on Cognitive Modeling. *Topics in Cognitive Science*. 9(1). 48-50.
- SI4 Ritter, F. E., Kennedy, W. G., Best, B. J. (2013). The best papers from BRIMS 2011: models [sic] of users and teams interacting. *Computational and Mathematical Organization Theory*. 19(3). 283-287.
- SI3 Kennedy, W. G., Ritter, F. E., Best, B. J. (2011). Behavioral representation in modeling and simulation: Introduction to CMOT special issue—BRiMS 2010. *Computational and Mathematical Organization Theory*. 17, 225-228.
- SI2 Kennedy, W. G., Ritter, F. E., Best, B. J. (2010). The best papers from BRIMS 2009: Cultural and group models. *Computational and Mathematical Organization Theory*. 16(3). 217-219.
- SI1 Ritter, F. E., & Young, R. M. (2001). Embodied models as simulated users: Introduction to this special issue on using cognitive models to improve interface design. *International Journal of Human-Computer Studies*, 55, 1-14.

Refereed journal and scholarly articles

- J57 Ritter, F. E., Yeh, M. K.-C., Stager, S., McDermott, A. F., & Weyhrauch, P. W. (in press). The effect of task fidelity on learning curves, a synthetic analysis. *International Journal of Human-Computer Interaction*.
- J56 Ritter, F. E. (in press). When you are not a stakeholder: Why unusable systems can be successes. *Ergonomics in Design*.
- J55 Ritter, F. E., Qin, M., MacDougall, K., Chae, C. (in press). Lessons from surveying tutoring tools: It's a big world out there. *Interactive Learning Environments*.
- J54 Oury, J. D., Ritter, F. E., & Cissé, F. B. (2022). Counting pandemic statistics remotely using webcams. *Disaster Medicine and Public Health Preparedness*, 16, 1817–1821.
- J53 Garrison, C. M., Ritter, F. E., Bauchwitz, B. R., Niehaus, J., Weyhrauch, P. W. (2021). A computer-based tutor to teach nursing trauma care that works as an adjunct to high fidelity simulation. *Computers, Informatics, Nursing*. 39(2). 63-68.
[A “highlight article” for the quarter.]
- J52 Ritter, F. E., Tehranchi, F., Dancy, C. L., & Kase, S. E. (2020). Some futures for cognitive modeling and architectures: Design patterns that you can too. Invited paper to *Computational and Mathematical Organization Theory*, 26, 278–306.
- J51 Morita, J., Miwa, K., Maehigasi, A., Terai, H., Kojima, K., & Ritter, F. E. (2020). Cognitive modeling of automation adaptation in a time critical task. *Frontiers of Psychology*, 11, Paper 2149.
- J50 Ritter, F. E., Yeh, M. K.-C., Yan, Y., Siu, K.-C., Oleynikov, D. (2020). Effects of varied surgical simulation training schedules on motor-skill acquisition, *Surgical Innovation*. 27(1). 68-80.
<https://doi.org/10.1177/1553350619881591>
- J49 Ghafurian, M., Reitter, D., Ritter, F. E. (2020). Countdown timer speed: A trade-off between delay duration perception and recall. *ACM Transactions on Computer-Human Interaction*. 27(2). Article 11.
- J48 Friedrich, M., & Ritter, F. E. (2020). Understanding strategy differences in a fault-finding task. *Cognitive Systems Research*. 59. 133-150.
- J47 Ritter, F. E., Tehranchi, F., & Oury, J. D. (2019). ACT-R: A cognitive architecture for modeling cognition. *Wiley Interdisciplinary Reviews: Cognitive Science*. 10(3). Paper e1488.
- J46 Bolkhovsky, J., Ritter, F. E., Chon, K. H., & Qin, M. (2018). Performance trends during sleep deprivation on a tilt-based control task. *Aerospace Medicine and Human Performance*, 89(7), 626-633.
- J45 Kase, S., Ritter, F. E., Bennett, J. M., Klein, L. C., & Schoelles, M. (2017). Fitting a model to behavior reveals what changes cognitively when under stress and with caffeine. *Biologically Inspired Cognitive Architectures*. 22. 1-9.
- J44 Dancy, C. L., & Ritter, F. E. (2017). IGT-Open: An open source, computerized version of the Iowa Gambling Task, *Behavioral Research Methods*. 49(3). 972-978.
- J43 Paik, J., & Ritter, F. E. (2016). Evaluating a range of learning schedules: Hybrid training schedules may be as good or better than distributed practice for some tasks. *Ergonomics*. 59(2). 276-290.
- J42 Siu, K., Best, B. J., Kim, J. W., Oleynikov, D., & Ritter, F. E. (2016). Adaptive virtual reality training to optimize military medical skills acquisition and sustainment. *Military Medicine*. 181(5), 214-220.
- J41 Dancy, C. L., Ritter, F. E., Berry, K., & Klein, L. C. (2015). Using a cognitive architecture with a physiological substrate to represent effects of psychological stress on cognition. *Computational and Mathematical Organization Theory*. 21(1), 90-114.

- J40 Paik, J., Kim, J. W., Ritter, F. E., Reitter, D. (2015). Predicting user performance and learning in human-computer interaction with the Herbal compiler. *ACM Transactions on Computer-Human Interaction*. 22(5). Article No. 25.
- J39 Zhao, C., Kaulakis, R., Morgan, J. H., Hiam, J. W., Ritter, F. E., Sanford, J., & Morgan, G. P. (2015). Building social networks out of cognitive blocks: Factors of interest in agent-based socio-cognitive simulations. *Computational and Mathematical Organization Theory*, 21(2), 115-149.
- J38 Kim, J. W., & Ritter, F. E. (2015). Learning, forgetting, and relearning for keystroke- and mouse-driven tasks: Relearning is important. *Human-Computer Interaction*. 30(1). 1-33.
- J37 Klein, L. C., Whetzel, C. A., Bennett, J. M., Ritter, F. E., Nater, U., & Schoelles, M. (2014). Caffeine administration does not alter salivary alpha-amylase activity in young male daily caffeine consumers. *BMC Research Notes*. 7:30 (13 January 2014) [6 pages].
- J36 Zhao, C., Morgan, J. H., & Ritter, F. E. (2013). Understanding human high-level spatial memory: An ACT-R model to integrate multi-level spatial cues and strategies. *Biologically Inspired Cognitive Architectures*, 3, 1-5.
- J35 Morgan, J. H., Cheng, C.-Y., Pike, C., & Ritter, F. E. (2013). A design, tests, and considerations for improving keystroke and mouse loggers. *Interacting with Computers*. 25(3), 242-258.
- J34 Kim, J. W., Ritter, F. E., & Koubek, R. J. (2013). An integrated theory for improved skill acquisition and retention in the three stages of learning. *Theoretical Issues in Ergonomics Science*. 14(1), 22-37.
- J33 Cohen, M. A., Ritter, F. E., & Haynes, S. R. (2012). Discovering and analyzing usability dimensions of concern. *ACM Transactions on Computer-Human Interaction*. 19(2). Article 9. 18 pages.
- J32 Ritter, F. E., Bittner, J. L., Kase, S. E., Evertsz, R., Pedrotti, M., & Busetta, P. (2012). CoJACK: A high-level cognitive architecture with demonstrations of moderators, variability, and implications for situation awareness. *Biologically Inspired Cognitive Architectures*. 1(1). 2-13.
- J31 Georgeon, O. L., & Ritter, F. E. (2012). Intrinsically-motivated schema mechanism to model and simulate emergent cognition. *Cognitive Systems Research*. 15-16(May-June), 73-92.
- J30 Georgeon, O. L., Mille, A., Bellet, T., Mathern, B., Ritter, F. E. (2012). Supporting activity modeling from activity traces. *Expert Systems*. 29(3). 261-275.
- J29 Christou, G., Ritter, F. E., & Jacob, R. J. K. (2012). CODEIN—A new notation for GOMS to handle evaluations of reality based interaction style interfaces. *International Journal of Human-Computer Interaction*. 28(3). 189-201.
- J28 Qiu, B., Ivanova, K., Yen, J., Liu, P., & Ritter, F. E. (2011). Event-driven modeling of social networks. *International Journal of Social Computing and Cyber-Physical Systems*. 1(1). 13-32.
- J27 Baumann, M., Krems, J. F., Ritter, F. E. (2010). Learning from examples does not prevent order effects in belief updating. *Thinking & Reasoning*. 16(2). 98-130.
- J26 Morgan, J. H., Morgan, G. P., & Ritter, F. E. (2010). A preliminary model of participation for small groups. *Computational and Mathematical Organizational Theory*. 16: 246-270.
- J25 Klein, L. C., Bennett, J. M., Whetzel, C. A., Granger, D. A., & Ritter, F. E. (2010). Caffeine and stress alter salivary α -Amylase levels in young men. *Human Psychopharmacology: Clinical and Experimental*. 25, 359-367.
- J24 Yeh, K.-C., Gregory, J. P., & Ritter, F. E. (2010). One Laptop per Child: Polishing up the XO Laptop user experience. *Ergonomics in Design*. 18(3). 8-13.
- J23 Cohen, M. A., Ritter, F. E., & Haynes, S. R. (2010). Applying software engineering to agent development. *AI Magazine*, 31(2), 25-44.
- J22 Ritter, F. E. (2009). Two cognitive modeling frontiers: Emotions and usability. *Journal of Japanese AI Research*. 24(2). 241-249.

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[also citable as: Kase, S. E., Ritter, F. E., Schoelles, M. (2008). Using HPC and PGAs to optimize noisy computational models of cognition. In K. Elleithy (Ed.), *Innovations and Advanced Techniques in Systems, Computing Sciences and Software Engineering* (pp. 477-482): Springer.]
- C52 Bernard, M. L., Forsythe, J. C., Allender, L., Cohn, J., Radvansky, G., Ritter, F. E. (2007). The next generation of cognitive modeling tools: Opportunities, challenges and basic needs. In *Proceedings of the Human Factors and Ergonomics Society*. 799-801. Santa Monica, CA: Human Factors and Ergonomics Society.
- C51 Cohen, M. A., Ritter, F. E., & Haynes, S. R. (2007). Using reflective learning to master opponent strategy in a competitive environment. In *Proceedings of the 8th International Conference on Cognitive Modeling*. 157-162. Oxford, UK: Taylor & Francis/Psychology Press.
- C50 Ritter, F. E., Schoelles, M., Klein, L. C., & Kase, S. E. (2007). Modeling the range of performance on the serial subtraction task. In *Proceedings of the 8th International Conference on Cognitive Modeling*. 299-304. Oxford, UK: Taylor & Francis/Psychology Press.
- C49 Kim, J. W., Koubek, R. J., & Ritter, F. E. (2007). Investigation of procedural skills degradation from different modalities. In *Proceedings of the 8th International Conference on Cognitive Modeling*. 255-260. Oxford, UK: Taylor & Francis/Psychology Press.
- C48 Ritter, F. E., Kase, S., Bhandarkar, D., Lewis, B., Cohen, M. (2007). dTank updated: Steps towards exploring moderator-influenced behavior in a small synthetic environment. *Proceedings of the 16th Conference on Behavior Representation in Modeling and Simulation*. 51-60. Orlando, FL: U. of Central Florida. 07-BRIMS-014.
- C47 Evertsz, R., Ritter, F. E., Russell, S. & Shepherdson, D. (2007). Modeling rules of engagement in computer-generated forces. *Proceedings of the 16th Conference on Behavior Representation in Modeling and Simulation*. 123-134. Orlando, FL: U. of Central Florida. 07-BRIMS-021
- C46 St. Amant, R., McBride, S. P., Ritter, F. E. (2006). AI support for building cognitive models. *Proceedings of the Twenty-First National Conference on Artificial Intelligence (AAAI-06)*. 1663-1666. Menlo Park, CA: AAAI Press.
- C45 Gluck, K. A., Gunzelmann, G., Gratch, J., Hudlicka, E., & Ritter, F. E. (2006). Modeling the impact of cognitive moderators on human cognition and performance. In *Proceedings of the 2006 Conference of the Cognitive Science Society*. 2658. Mahwah, NJ: Erlbaum.
- C44 Ritter, F. E., Haynes, S. R., Cohen, M., Howes, A., John, B., Best, B., Lebiere, C., Jones, R. M., Crossman, J., Lewis, R. L., St. Amant, R., McBride, S. P., Urbas, L., Leuchter, S., & Vera, A. (2006). High-level behavior representation languages revisited. In D. Fum, F. del Missier & A. Stocco (Eds.), *Proceedings of ICCM - 2006- Seventh International Conference on Cognitive Modeling*. 404-407. Trieste, Italy: Edizioni Goliardiche.
- C43 Bennett, J. M., Whetzel, C. A., Ritter, F. E., Reifers, A., & Klein, L. C. (2006). Effects of caffeine and stress on cortisol and serial subtraction performance in young healthy men. *Psychosomatic Medicine* 68(1). A-62. [abstract of poster presented at the annual meeting of the American Psychosomatic Society, Denver, CO.]
- C42 Klein, L. C., Whetzel, C. A., Bennett, J. M., Ritter, F. E., & Granger, D. A. (2006). Effects of caffeine and stress on salivary alpha-amylase in young men: A salivary biomarker of

sympathetic activity. *Psychosomatic Medicine* 68(1). A-4. [abstract of talk presented at the annual meeting of the American Psychosomatic Society, Denver, CO.]

<http://www.psychosomaticmedicine.org/misc/AbstractsForJournal062-9final.pdf>

- C41 Whetzel, C. A., Ritter, F. E., & Klein, L. C. (2006). DHEA-S and cortisol responses to stress and caffeine in healthy young men: Is DHEA-S a reliable marker for stress? *Psychosomatic Medicine* 68(1). A-77. [abstract of poster presented at the annual meeting of the American Psychosomatic Society, Denver, CO.]
- C40 St. Amant, R., Riedel, M. O., Ritter, F. E., & Reifers, A. (2005). Image processing in cognitive models with SegMan. In *Proceedings of HCI International '05*. (Invited.) Volume 4 – Theories, Models and Processes in HCI. Paper # 1869.
- C39 Morgan, G. P., Ritter, F. E., Stevenson, W. E., Schenck, I. N., & Cohen, M. A. (2005). dTank: An environment for architectural comparisons of competitive agents. In L. Allender & T. Kelley (Eds.), *Proceedings of the 14th Conference on Behavior Representation in Modeling and Simulation*. 133-140. 05-BRIMS-043. Orlando, FL: U. of Central Florida.
- C38 Cohen, M. A., Ritter, F. E., & Haynes, S. R. (2005). Herbal: A high-level language and development environment for developing cognitive models in Soar. In *Proceedings of the 14th Conference on Behavior Representation in Modeling and Simulation*. 177-182. 05-BRIMS-044. Orlando, FL: U. of Central Florida.
- C37 Ritter, F. E., Cohen, M. A., Morgan, G. P., & Stevenson, W. (2005). Herbal: A high-level language and development environment for developing cognitive models in Soar. 05-BRIMS-041. A tutorial presented and in *The proceedings of the 14th Conference on Behavior Representation in Modeling and Simulation*. xxix-xxxi. 05-BRIMS-041. Orlando, FL: U. of Central Florida.
- C36 Morgan, G. P., Haynes, S., Ritter, F. E., & Cohen, M. (2005). Increasing efficiency of the development of user models. In *Proceedings of the 2005 Systems and Information Engineering Design Symposium*. Ellen J. Bass, (ed). IEEE and Department of Systems and Information Engineering, University of Virginia: Charlottesville, VA.
- C35 Ritter, F. E., Reifers, A., Klein, L. C., Quigley, K., & Schoelles, M. (2004). Using cognitive modeling to study behavior moderators: Pre-task appraisal and anxiety. In *Proceedings of the Human Factors and Ergonomics Society*. 2121-2125. Santa Monica, CA: Human Factors and Ergonomics Society.
- C34 Norling, E., & Ritter, F. E., (2004). Towards supporting psychologically plausible variability in agent-based human modelling, In *The Third International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS04)*. 758-765. New York, NY: ACM.
- C33 Tor, K., & Ritter, F. E. (2004). Using a genetic algorithm to optimize the fit of cognitive models. In *Proceedings of the Sixth International Conference on Cognitive Modeling*. 308-313. Mahwah, NJ: Erlbaum.
- C32 Tor, K., Haynes, S. R., Ritter, F. E., & Cohen, M. A. (2004). Categorical data displays generated from three cognitive architectures illustrate their behavior. In *Proceedings of the International Conference on Cognitive Modeling*. 302-307. Mahwah, NJ: Erlbaum.
- C31 Belavkin, R. V., & Ritter, F. E. (2004). OPTIMIST: A new conflict resolution algorithm for ACT-R. In *Proceedings of the Sixth International Conference on Cognitive Modeling*. 40-45. Mahwah, NJ: Erlbaum.
- C30 St. Amant, R., & Ritter, F. E. (2004). Automated GOMS to ACT-R model generation. In *Proceedings of the International Conference on Cognitive Modeling*. 26-31. Mahwah, NJ: Erlbaum. [Outstanding applied paper award]
- C29 Tor, K., Ritter, F. E., Haynes, S. R., & Cohen, M. A. (2004). CaDaDis: A tool for displaying the behavior of cognitive models and agents. In *Proceedings of the 13th Conference on Behavior*

- Representation in Modeling and Simulation*. 04-BRIMS-032. 192-200. Orlando, FL: U. of Central Florida.
- C28 St. Amant, R., Horton, T. E., & Ritter, F. E. (2004). Model-based evaluation of cell phone menu interaction. In *Proceedings of the CHI'04 Conference on Human Factors in Computer Systems*. 343-350. New York, NY: ACM.
- C27 Shah, K., Rajyaguru, S., St. Amant, R., & Ritter, F. E. (2003). Connecting a cognitive model to dynamic gaming environments: Architectural and image processing issues. In F. Detje, D. Doerner, & H. Schaub (Eds.), *Proceedings of the Fifth International Conference on Cognitive Modeling*. 189-194. Bamberg, Germany: Universitats-Verlag Bamberg.
- C26 Councill, I. G., Haynes, S. R., & Ritter, F. E. (2003). Explaining Soar: Analysis of existing tools and user information requirements. In F. Detje, D. Doerner, & H. Schaub (Eds.), *Proceedings of the Fifth International Conference on Cognitive Modeling*. 63-68. Bamberg, Germany: Universitats-Verlag Bamberg.
- C25 Belavkin, R. V., & Ritter, F. E. (2003). The use of entropy for analysis and control of cognitive models. In F. Detje, D. Doerner, & H. Schaub (Eds.), *Proceedings of the Fifth International Conference on Cognitive Modeling*. 21-26. Bamberg, Germany: Universitats-Verlag Bamberg.
- C24 Ritter, F. E., Avraamides, M., & Councill, I. G. (2002). An approach for accurately modeling the effects of behavior moderators. In *Proceedings of the 11th Computer Generated Forces Conference*. 29-40, 02-CGF-002. Orlando, FL: U. of Central Florida.
- C23 Avraamides, M., & Ritter, F. E. (2002). Using multidisciplinary expert evaluations to test and improve cognitive model interfaces. In *Proceedings of the 11th Computer Generated Forces Conference*. 553-562, 02-CGF-100. Orlando, FL: U. of Central Florida.
 One of only seven papers selected by the Conference Program Committee for the Recommended Reading List from the 11th Conference on Computer-Generated Forces and Behavior Representation.
www.sisostds.org/conference/View_Public_Reading.cfm?Phase_ID=2
- C22 Ritter, F. E., Van Rooy, D., & St. Amant, R. (2002). A user modeling design tool based on a cognitive architecture for comparing interfaces. In C. Kolski & J. Vanderdonck (Eds.), *Computer-Aided Design of User Interfaces III, Proceedings of the 4th International Conference on Computer-Aided Design of User Interfaces CADUI'2002*. 111-118. Kluwer Academics Publisher, Dordrecht.
- C21 Norling, E., & Ritter, F. E. (2001). Embodying the JACK agent architecture. In M. Stumptner, D. Corbett, & M. Brooks (Eds.), *AI 2001: Advances in Artificial Intelligence. Proceedings of the 14th Australian Joint Conference on Artificial Intelligence*. 368-377. Berlin: Springer.
- C20 Ritter, F. E., & Bibby, P. (2001). Modeling how and when learning happens in a simple fault-finding task. In *Proceedings of ICCM - 2001 - Fourth International Conference on Cognitive Modeling*. 187-192. Mahwah, NJ: Erlbaum.
- C19 Ritter, F. E., & Lonsdale, P. (2000). Extending Tcl/Tk to provide a functional eye and hand for the Soar cognitive modelling architecture. To have appeared in *Proceedings of the Fifth Biennial Australasian Cognitive Science Conference*.
- C18 Lonsdale, P. R., & Ritter, F. E. (2000). Soar/Tcl-PM: Extending the Soar architecture to include a widely applicable virtual eye and hand. In N. Taatgen & J. Aasman (Eds.), *Proceedings of the 3rd International Conference on Cognitive Modelling*. 202-209. Veenendaal (NL): Universal Press.
- C17 Gobet, F., & Ritter, F. E. (2000). Individual Data Analysis and Unified Theories of Cognition: A methodological proposal. In N. Taatgen & J. Aasman (Eds.), *Proceedings of the 3rd International Conference on Cognitive Modelling*. 150-157. Veenendaal (NL): Universal Press.

- C16 Byrne, M., Chong, R., Freed, M., Ritter, F. E., & Gray, W. (1999). Symposium on integrated models of perception, cognition, and action. In *Proceedings of the 1999 Conference of the Cognitive Science Society*. 1. Mahwah, NJ: Erlbaum.
- C15 Golightly, D., Hone, K. S., & Ritter, F. E. (1999). Speech interaction can support problem solving. In M. A. Sasse & C. Johnson (Eds.), *Human-Computer Interaction -- Interact '99*. 149-155. IOS Press.
- C14 Baxter, G. D., & Ritter, F. E. (1999). Towards a classification of state misinterpretation. In D. Harris (Ed.), *The 2nd International Conference on Engineering Psychology and Cognitive Ergonomics*. 35-42. Oxford: Ashgate.
- C13 Jones, G., & Ritter, F. E. (1998). Simulating development by modifying architectures. In *Proceedings of the Cognitive Science Society*. 543-548. Madison, WI: Lawrence Erlbaum.
- C12 Jones, G., & Ritter, F. E. (1998). Initial explorations of modifying architectures to simulate cognitive and perceptual development. In *Proceedings of the Second European Conference on Cognitive Modelling*. 44-51. Thrumpton, UK: Nottingham University Press.
- C11 Baxter, G. D., & Ritter, F. E. (1997). Model-computer interaction: Implementing the action-perception loop for cognitive models. In D. Harris (Ed.), *The 1st International Conference on Engineering Psychology and Cognitive Ergonomics*. vol. 2 215-223. October 1996, Stratford-upon-Avon: Ashgate.
- C10 Jones, G., & Ritter, F. E. (1997). Modelling transitions in childrens' development by starting with adults. In *European Conference on Cognitive Science*, 62-67. Manchester, UK.
- C9 Ritter, F. E., & Baxter, G. D. (1996). Able, III: Learning in a more visibly principled way. In U. Schmid, J. Krems, & F. Wysotzki (Eds.), *Proceedings of the First European Workshop on Cognitive Modeling*. 22-30. Berlin: Forschungsberichte des Fachbereichs Informatik, Technische Universität Berlin.
- C8 Nichols, S., & Ritter, F. E. (1995). Theoretically motivated tool for automatically generating command aliases. *Proceedings of CHI '95*. 393-400.
- C7 Ong, R., & Ritter, F. E. (1995). Mechanisms for routinely tying cognitive models to interactive simulations. In *HCI International '95*. Osaka, Japan: July 1995.
- C6 Ritter, F. E., Lochun, S., Bibby, P. A., & Marshall, S. (1994). Dismal: A free spreadsheet for sequential data analysis and HCI experimentation. In A. Trapp & N. Hammond (Eds.), *Computers in Psychology '94*, 62-63. York (UK): CTI Centre for Psychology, U. of York. Reprinted in *Psychology Software News*, 5(2) (November 1994), Computers in Teaching Initiative Centre for Psychology, U. of York. pp. 57-58.
- C5 Nerb, J., Krems, J., & Ritter, F. E. (1993). Rule learning and the powerlaw: A computational model and empirical results. In *Proceedings of the Fifteenth Annual Conference of the Cognitive Science Society* 765-770. Hillsdale, NJ: Erlbaum.
- C4 Ritter, F. E. (1993) Using a cognitive architecture to add to protocol theory. Abstract included in the *Proceedings of the III European Congress of Psychology*, Tampere, Finland, July 1993. Also presented as colloquia at Queen Mary and Westfield College (U. of London), and the U. of Regensburg, Germany, July 1993.
- C3 Ritter, F. E. (1993) Creating a prototype environment for testing process models with protocol data. In the *Proceedings of the InterCHI Research Symposium*, Amsterdam, April 1993.
- C2 Ritter, F. E. (1991). Towards fair comparisons of connectionist algorithms through automatically generated parameter sets. In *Proceedings of the Thirteenth Annual Conference of the Cognitive Science Society*. 877-881. Hillsdale, NJ: Erlbaum
- C1 Davis, L. W., & Ritter, F. (1987). Schedule optimization with probabilistic search. *Proceedings of the Third Conference on Artificial Intelligence Applications*. IEEE Computer Society. 231-236.

Invited talks and keynote presentations

- K22 Schwartz, D., Tehranchi, F., Ritter, F. E. (2020). Extending ACT-R with JSegMan to perform a long task: Implications for perception, motor output, fatigue, and motivation. *Virtual International Symposium on Cognitive Architecture (VISCA-2020)*.
- K21 Ritter, F. E. (2018). Some futures for cognitive modeling and architectures. *SBP-BRIMS Conference*, July 2018, Washington, DC.
- K20 Ritter, F. E. (2016). An overview of cognitive modeling. *First International Early Research Career Enhancement School on Biologically Inspired Cognitive Architectures (FIERCES on BICA)*.
- K19 Ritter, F. E. (2015). The need for high level compilers for generating low level behaviors. In *Biologically Inspired Cognitive Architectures*. IOS Press: Amsterdam. [one of nine invited talks]
- K18 Ritter, F. E. (2013). State of the art in cognitive modeling. Presentation at the NSF Workshop on Cognitive Science. *International Joint Conference on Neural Networks*. Dallas, TX.
- K15 Ritter, F. E. (2012). Overview of the 2007 NRC Study on Human-System Integration (HIS) in the systems engineering development process, and some resources, recent extensions, and tools. Invited talk (other invited talk was David Woods from OSU). *Human Systems Division Workshop, NDIA Human Systems Division*. National Defense Industry Association. 11 September 2012.
- Also given in the Wright Patterson AFB, Human Effectiveness Directorate, 711 HPW Chief Scientist's Office Guest Lecture Series, 7 December 2012.
- Also given as a keynote talk at the Northrop Grumman Information Systems' Modeling & Simulation Community of Practice event, 7 November 2013.
- K14 Ritter, F. E. (2012). Using behavior representation models in risk-driven design. Plenary talk. *Behavior Representation in Modeling and Simulation Conference*. 12-BRIMS-002, 4-5.
- K13 Ritter, F. E. (2011). Diversions and Resources, Tri-service Cognitive Modeling Challenge Project meeting, keynote presentation, Aberdeen Proving Ground, 5 December 2011.
- K12 Ritter, F. E., Dancy, C., & Berry, K. (2011). The case for including physiology in cognitive modeling. In *Biologically Inspired Cognitive Architectures*, 303. IOS Press: Amsterdam. [one of seven invited talks]
- K11 Ritter, F. E., Paik, J., & Kim, J. W. (2010). A learning model of a long, non-iterative spreadsheet task. Cognitive Science Distinguished Lecture. Carleton University, 1 October 2010. (the other distinguished lecturer that year was Chomsky.)
- K10 Ritter, F. E. (2010). Behavioral Models for Serious Games: State of the Art and Challenges. Effective risk communication for the IED threat. Human Factors/Behavioral Sciences Division, Science & Technology Directorate, Department of Homeland Security.
- K9 Ritter, F. E., Kase, S. E., Klein, L. C., Bennett, J., & Schoelles, M. (2009). Fitting a model to behavior tells us what changes cognitively when under stress and with caffeine. In *Proceedings of the Biologically Inspired Cognitive Architectures Symposium at the AAAI Fall Symposium*. Keynote presentation, Technical Report FS-09-01. 109-115. AAAI Press: Menlo Park, CA.
- K8 Ritter, F. E., & Bibby, P. (2004). Modeling how and when learning happens in a diagrammatic reasoning task. ONR / NSF / DARPA Symposium on Reasoning and Learning in Cognitive Systems, CSLI, Stanford, March 20-21, 2004. (invited)
- K7 Ritter, F. E. (2002). An introduction to cognitive modeling and knowledge management. Royal Military College of Science, U. of Cranfield, November, 2002 (Inaugural lecture for the Knowledge Management Systems degree programme).

- K6 Ritter, F. E., Avraamides, M. N., Councill, I., Rooy, D. V., Quigley, K. S., Klein, L. C., McNeese, M. D., Stine, M. M., & Rodrigues, I. M. (2002). Pre-task appraisal and caffeine: An architectural overlay for ACT-R. *Air Force Workshop on ACT-R Models of Human-System Interaction*, Mesa, AZ, January 2002. www.dtic.mil/AFRL/afri.html
ONR Cognitive Architectures Workshop, January 2002.
- K5 Ritter, F. E. (1999). Frontiers of cognitive modelling: Emotions! Symposium Cognitive Modelling, Department of Cognitive Science and Engineering, in collaboration with the Centre for Behavioral and Cognitive Neurosciences, University of Groningen (The Netherlands). 25 June 1999.
- K4 Ritter, F. E., & Young, R. M. (1997). Invited lectures and practicals on Soar, German Autumn School in Cognitive Science, 18-22 September 1997.
- K3 Ritter, F. E. (1997). An approach for routinely including interaction in cognitive architectures. Invited presenter, ONR Hybrid Architectures Meeting, Corvallis, OR, August 12-13, 1997.
- K2 Ritter, F. E. (1995). Empirical constraints and cognitive modelling. Invited talk presented at "The Turing-Hypothesis revisited: New perspectives on Architectures of Cognition" Symposium at the Zentrum fuer Kognitive Studien, U. of Potsdam and the Einstein-Forum.
- K1 Ritter, F. E. (1985). ICAI Systems: TRIO and Quest at BBN. Invited presentation to the New England Computer Institute.

Published reviews and reports (selected)

- R24 Doozandeh, P., & Ritter, F. E. (2019). Some tips for academic writing and using Microsoft Word. *XRDS* 26(1). 10-11.
- R23 MacDougall, K. & Ritter, F. E. (2018). Generative models as a third paradigm for decision making: A response to Markman. *Journal of Applied Research in Memory and Cognition*. 7. 26-28.
- R22 Ritter, F. E., & Reitter, D. (2016). Introduction to ICCM 2016. In *Proceedings of ICCM, 14th International Conference on Cognitive Modeling (ICCM 2016)*. ix. University Park, PA: Penn State.
- R21 Baxter, G., Churchill, E. F., & Ritter, F. E. (2014). Addressing the fundamental error of design using the ABCS. *AIS SIGHCI Newsletter*, 13(1), 9-10.
- R20 Ritter, F. E., & Nerb, J. (2008). #836. In Order to Learn: How the Sequences of Topics Affect Learning. *Tomorrow's Professor eMail Newsletter*. January 14, 2008.
- R19 Stevenson, W., & Ritter, F. (2006). Review of "BBN's earliest days: founding a culture of engineering creativity, Beranek L. *IEEE Annals of the History of Computing* 27(2): 6-14, 2005." *ACM Computing Reviews*, 48(4). 227. #:CR132842
- R19 Inguscio, L., & Ritter, F. E. (2005). Applied Cognitive Science Laboratory at the Pennsylvania State University (Laboratory Notes). *Cognitive Processing: International Quarterly of Cognitive Science*. 6(2). 142-146. [refereed].
- R18 Ritter, F. E. (2005). Review of "Boyd: The fighter pilot who changed the art of war". *The Military Psychologist, The Official Newsletter of Division 19 of the APA*. 21(2). 21.
- R16 Ritter, F. E., & Councill, I. G. (2002). A review of the Twenty-Second Soar Workshop. *AI Magazine*, 23(3), 107-109.
- R15 Mudgett, D. R., Freed, A. R., & Ritter, F. E. (2002). Web-based resources for teaching discrete mathematics to students of information sciences and technology. *IEEE Learning Technology*, 4(3). 9-10. lthf.ieee.org/learn_tech/issues/july2002/index.html#3
- R14 Baxter, G. D., & Ritter, F. E. (2002). A review of "A multidisciplinary approach to human-machine systems development: Cognitive engineering in the aviation domain" edited by Nadine

- B. Sarter and Rene Amalberti. *Contemporary Psychology: APA Review of Books*, 47(4), 362-364. (invited)
- R13 Ritter, F. E. (2001). Review of the Third International Cognitive Modelling Conference. *Cognitive Systems Research*, 1(4), 251-252.
- R11 Ritter, F. E. (2000). Review of the Third International Cognitive Modelling Conference. *AI and Simulation of Behaviour Quarterly*. 104. p. 8
- R10 Ritter, F. E., & Young, R. M. (1999). Report on the AISB'99 Workshop on "Issues in Teaching Cognitive Science to Undergraduates". *AI and Simulation of Behaviour Quarterly*, 102, 7-8.
- R9 Young, R. M., & Ritter, F. E. (1999). Report on the Second European Conference on Cognitive Modelling. *AI and Simulation of Behaviour Quarterly*, 101, 10-11.
- R8 Ritter, F. (1997). WWW presentation of overheads & exercises. *CTI Psychology Software News*. 7(2). 46.
- R5 Arnold, M., Kuk, G., & Ritter, F. E. (1995). MacSHAPA review. *CTI Psychology Software News*, 6(1). 18-20.
- R4 Ritter, F. E. (1995). Review of "Soar: An architecture in perspective". *Philosophical Psychology*, 8(3), 301-305.
- R2 Reder, L. M., & Ritter, F. E. (1988). Feeling of knowing and strategy selection for solving arithmetic problems. *Bulletin of the Psychonomic Society*, 26(6), 495-496.
- R1 Ritter, F. E. (1987). Symbolics product review. *Technology and Learning*, 1(2). Invited product review [mispublished as a letter to the editor!].

Manuals, published software, and online resources (selected)

- M32 Ritter, F. E., & Donahue, D. (2022). What Faculty Members Must Know about COVID-19 Risks this Fall. ACADEME Blog, The blog of *Academe* magazine, <https://academeblog.org/2022/09/02/what-faculty-members-must-know-about-covid-19-risks-this-fall/>
- M31 Ritter, F. E., & Donahue, D. (2021). What instructors need to know about COVID-19 risks. ACADEME Blog, The blog of *Academe* magazine, <https://academeblog.org/2021/11/23/what-instructors-need-to-know-about-covid-19-risks/>
Also included in the *AAUP December 2021 Newsletter*.
- M30 Ritter, F. E., & Yeh, M. C.-K. (2020-2021). Timers for meetings in Zoom (Halloween, Thanksgiving, Christmas, Winter, Spring), acs.ist.psu.edu/timers
- M29 Invention disclosure form, January 2021, "All the URLs in one place".
- M28 StopTheSpread.health, a comprehensive tutor to teach Skill to Obstruct Pandemics (2020). Over 350 users. Developed with 10 co-authors and a panel of experts to check the content.
- M27 Chae, C.-I., Ritter, F. E., Tehranchi, F., McDermott, A., Norsworthy Jr., W., & Brener, M. (2019). KRK study Maintenance tutors (1-5). [website]
- M26 Ritter, F. E., Garrison, C., Guzek, D., Oury, J. D., & MacDougall, W. K. (2017, revised 2019, 2020). D2P/Vitammins Trauma Nursing Tutor. [website]. Used in research and to teach in the College of Nursing, April, 2020.
- M25 Tehranchi, F., Coutu, Y., Han, S., & Ritter, F. E. (2017). Navy ribbons tutor.
- M24 Ritter, F. E., Guzek, D., Garrison, C., & MacDougall, W. K. (2017). D2P/Stat Air Force Trauma Nurse Course Tutor. [website]
- M23 Ritter, F. E., Morgan, J. H., Coutu, Y., Han, S., & Yeh, M. (2013, revised 2019). D2P/Navy Rates and Ratings Tutor. [website]
- M22 Morgan, J. H., Hobbs, N., Guzek, D., & Ritter, F. E. (2013, revised 2019). Combat Lifesaving Tutor. [website]

- M21 Ritter, F. E., Morgan, J. H., Chae, C.-I., & Yeh, M. (2013, revised 2019). D2P/MTT Moving Target Tutor. [website]
- M20 Hiam, J. W., Ritter, F. E., & Morgan, J. H. (2012). Declarative to Procedural Manual. ACS Tech Report 2012-1.
- M19 Ritter, F. E., & Yeh, K.-C. (since 2010). CaffeineZone, an application for iPhone-like devices, available through the iTunes store. <http://itunes.apple.com/us/app/caffeine-zone-2/id484682583?ls=1&mt=8>, Paid and free versions. Revised since 2010. Over 102.38 k downloads through 2020, and extensive (more than 30) print, video, broadcast TV, and *Congressional Record* press.
- M18 Cohen, M. A. & Ritter, F. E. (2004). Herbal Tutorial. (Tech. Report No. 2004-2). Applied Cognitive Science Lab, School of Information Sciences and Technology, Penn State. acs.ist.psu.edu/reports/cohenR04.pdf.
- M17 Councill, I. G., Morgan, G. P., & Ritter, F. E. (2004). dTank: A competitive environment for distributed agents (Tech. Report No. 2004-1). Applied Cognitive Science Lab, School of Information Sciences and Technology, Penn State. acs.ist.psu.edu/acs-lab/reports/councillMR04.pdf.
- M16 Ritter, F. E. & Shiskowski, N. (2002). *The ACT-R FAQ*, acs.ist.psu.edu/act-r-faq. Updated since 2006-2015 with Jong Kim.
- M15 Ritter, F. E., Wood, A., et al. (2001). The Dismal Spreadsheet. Part of the GNU Emacs Distribution at www.gnu.org/software/dismal/ Also available from numerous archives.
- M13 Ritter, F. E. & Young, R. M. (1994, last revision March 2003 with Tony Kalus). Psychological Soar Tutorial. Computer programs and overheads. Available at acs.ist.psu.edu/nottingham/pst-ftp.html.
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Technical reports, notes, and videos (selected)

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- TR78 Ritter, F. E., Serduik, S., Esfanous, D., Good, G. E., Van Vactor, S., Yeh, M., et al. (2022). Lessons from and how we translated three tutors. (Tech. Report No. ACS 2022-2): Applied

Cognitive Science Lab, College of Information Sciences and Technology, The Pennsylvania State University.

- TR77 Ritter, F. E., Ricupero, S., Yeh, M. K., Workman, D., Oury, J. D., Stager, S. J., et al. (2022). Testing a learning and retention theory using a troubleshooting task. Technical Report No. ACS 2022-1: Applied Cognitive Science Lab, Penn State.
- TR76 Weyhrauch, P., Niehaus, J., McDermott, A. F., Gee, A., Manning, W., Norsworthy, W., Loyall, B., Ritter, F. E., Yeh, M. K. (2022). Simulating Training Results to Understand Differing Effects of Fidelity on Learning (STRUDEL II). Final report.
- TR75 Ritter, F. E. (2021). Factors affecting learning and retention: A unified list. ACS Tech. Note 2021-4. Applied Cognitive Science Lab, College of Information Sciences and Technology, Penn State. 3 page unpublished document.
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- TR73 Farnum, J., Stager, S. J., Ricupero, S., & Ritter, F. E. (2021). Zoom troubleshooting handbook. ACS Tech. Note 2021-3. Applied Cognitive Science Lab, College of Information Sciences and Technology, Penn State. 16 page unpublished document.
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- TR71 Ritter, F. E. (2020). How to be polite and helpful on phone conferences. ACS Tech. Note 2020-1. 6 page unpublished document.
- TR70 Schwartz, D. M., & Ritter, F. E. (2019). Lessons from connecting Skirmish Sim and ACT-R/ Φ . (Tech. Report No. ACS 2019-3). Applied Cognitive Science Lab, College of Information Sciences and Technology, Penn State.
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- TR67 Brener, M., Becerra, N., Pruett, D., Ritter, F. E., Dancy, C. L., & Webster, I. (2019). Manual for HumMod (Salt Version 3.0.4). (Tech. Report No. ACS 2019-1). Applied Cognitive Science Lab, College of Information Sciences and Technology.
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- TR65 Weyhrauch, P., Bauchwitz, B., Niehaus, J., Gee, A., Makivic, M., Manning, W., Norsworthy, W., Jenkins, M., Duggan, D., Ritter, F. E., Garrison, C., Fletcher, D., Lancette, P., & Broach, J. (4 October 2018). Extensible Field and Evacuation Care Training in a Virtual Environment (EFECTIVE), SBIR Phase I Final Report.
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- TR56 Yeh, K.-C., Ritter, F. E., & Voller, K. (2013). Notes on second test of the MTT (review of D2P/CLS Tutor-DEMO 12/17/2012). Technical Report No. ACS 2013-1.
- TR52 Ritter, F. E. (2013). Technical Review of the Declarative to Procedural Tutor for Combat Lifesaving (review of D2P/CLS Tutor-DEMO 12/17/2012): Technical Report No. ACS 2013-1. ACS Lab, College of IST, Penn State.
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- TR44 Hiam, J., Zhao, C., & Ritter, F. E. (2011). *VIPER: A text-based environment for intelligent agents*. Applied Cognitive Science Lab, College of Information Sciences and Technology, Penn State. acs.ist.psu.edu/reports/hiamZR11.pdf.
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- TR3 Ritter, F. (1987). OREO: Orienting electrical circuits for qualitative reasoning, (Tech. Rep.) #6560. BBN Laboratories.

Publications as a consultant

- Ritter, F. E. (2022). Usability method projects for improving studies at the Linac Coherent Light Source.
- Ritter, F. E., Brener, M., & Bolkhovsky, J. B. (2021). An initial description of capabilities and constraints for a computational auditory system (an artificial ear) for cognitive architectures. *Proceedings of the Ninth Annual Conference on Advances in Cognitive Systems*. ACS-21_paper_11, 13 pages.

Service talks (selected)

- Ritter, F. E., Glantz, E. J., Stager, S., & Bardzell, J. (2020). Discussion about going to graduate school, Fireside chat, 27 October 2020, College of IST.
- Ritter, F. E. (2020). Presentation on HCDD program, Parents weekend, 3oct20.
- Ritter, F. E. (2019). Discussion about going to graduate school, 20 November 2019, College of IST.
- Ritter, F. E., Glantz, E. J., & Stager, S. (2019). Resume workshop, 17 October 2019, College of IST.
- Ritter, F. E., Chae, C., Wang, S., & Fenstermacher, A. (2019). The use of cognitive science and HCI to build tutors for trauma nurses. Presentation for Parents Weekend. (included handout), College of IST.
- Ritter, F. E. (2019). Discussion about going to graduate school. 29 April 2019, College of IST.
- Ritter, F. E. (2018). Comments on resume preparation. Resume workshop, College of IST. 8 November 2018.
- Ritter, F. E. (2018). Overview of PhD programs. Graduate School Information Session, College of IST. 7 November 2018. 18 April 2018.
- Ritter, F. E. (2016). Overview of State College and graduate school, IST PhD Welcome Week, August 2016.
- Ritter, F. E. (2016). ACT-R tutorial, Mini-ACT-R workshop, ACS Lab and Linguistics, Penn State. 25 March 2016.

- Ritter, F. E. (May 2015). Commentator, Final project presentation, *CS598 Cognitive Engineering*, Computer Science, U. of Illinois at Urbana-Champaign.
- Ritter, F. E. (2010). Lessons from reading 400 CVs, presentation to IST 590: IST Professional seminar, April 2010.
- Ritter, F. E. (2010). A brief overview of some of the issues when running studies with people. Presentation part of the SARI: Scholarship And Research Integrity training provided to Computer Science and Engineering graduate students, March 2010, October 2010.
- Ritter, F. E. (2007). Academic CVs, research project relationships, and interdisciplinary research. Office of Sponsored Programs Staff development series.
- Ritter, F. E., & Kase, S. (2006). Gaming environments: How they get you to play and keep you playing. Talk presented to the “Gaming for girls: Digital storytelling and so much more” summer camp for middle school girls in Centre County.
Also, in 2007, to Action Potential Science Experience, Create Your Own Virtual Adventure. (a summer camp for middle school students at Penn State)
- Ritter, F. E. (2005). Cognitive models. Talk presented to Chi Psi, psychology honorary society.
- Ritter, F. E. (2005). Human error or system error?, talk presented to students at the Governor's School on Information Technology, July, 2000; July 2001; July 2003; July 2004; July 2005.
- Ritter, F. E. (2003). A new relationship between copyright, trade secrets, and freedom of speech on the Internet: The case of CyberPatrol. Presented to the Huntingdon, PA Rotary Club, 22 April 2003.
- Ritter, F. E., McNeese, M. D., van Rooy, D. (2001). Conducting a usability analysis. <Web2001> a conference for penn state web professionals. [sic]
- What does a scientist do? talks presented to six classes at Washington Grade School, Peoria, IL, March, 1994.

Published workshop papers, abstracts, and posters (selected)

- W92 Ritter, F. E., Stager, S. J., McDermott, A. F., & Poplavska, E. (2022). Achieving adoption through partnership: Lessons from translating three tutors into Ukrainian. Poster presented at *iFest 2022*.
- W91 Ritter, F. E., Workman, D & Wang, S. (2022, in press). Predicting learning in the troubleshooting task using a cognitive, architecture-based task analysis. In *Proceedings of the 20th International Conference on Cognitive Modeling (ICCM 2022)*. 2 pages.
- W90 Ricupero, S. L., Ritter, F. E., McDermott, A., Oury, J. D., Workman, D. (2022). Testing the KRK predictions: Testing knowledge too much leads to learning. Talk and abstract at *MathPsych/ICCM 2022*.
- W89 Ricupero, S. L., Oury, J. D., Yeh, M. K.-C., Tehranchi, F., McDermott, A. F., Norsworthy, W., Workman, D., Stager, S. J., Ritter, F. E. (2021). Learning and forgetting curves for a complex task with 3- to 14-day retention intervals: Implications for ACT-R. *Twenty-Eighth Annual ACT-R Workshop*.
- W88 Ricupero, S. L., Oury, J. D., Yeh, M. K.-C., Tehranchi, F., McDermott, A. F., Norsworthy, W., Workman, D., Ritter, F. E. (2021). Testing a learning and retention theory with a complex task with 3- to 14-day retention intervals. Presented at *Virtual MathPsych/ICCM 2021*.
- W87 Majumder, S., Ou, C., Ritter, F. E. (accepted, but conference not held). Musician centric music instrument design: A case study. *17th College of Engineering Research Symposium (CERS 2020)*.
- W86 Tehranchi, F., & Ritter, F. E. (2019). An eyes and hands model: Extending visual and motor modules for cognitive architectures. Grace Hopper Celebration (conference). [poster without publication]

- W85 Tehranchi, F., & Ritter, F. E. (2019). Extending JSegMan to interact with a biased coin task and a spreadsheet task. In *Proceedings of the 16th International Conference on Cognitive Modeling (ICCM 2019)*. 259-260. [Outstanding poster award.]
- W84 Ritter, F. E., Tehranchi, F., Brener, M., & Wang, S. (2019). Testing a complex training task. In *Proceedings of the 17th International Conference on Cognitive Modeling (ICCM 2019)*. 184-185.
- W83 Ritter, F.E., Tehranchi, F., Brener, M., & Wang, S. (2019). Testing the KRK Theory breaks ACT-R and pilot data to show it. Talk presented at the *Twenty-Sixth Annual ACT-R Workshop*.
- W82 Doozandeh, P., & Ritter, F. E. (2019). Does simulation fidelity affect training? A lesson from a brief review of literature. In Robert Thomson, Halil Bisgin, Christopher Dancy, Ayaz Hyder (eds.). *SBP-BRiMS: International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction and Behavior Representation in Modeling and Simulation*. Paper 50. 9 pages.
- W81 Oury, J. D., Tehranchi, F., & Ritter, F. E. (2018). Predicting learning and retention of a complex task. In *Proceedings of the 16th International Conference on Cognitive Modeling (ICCM 2018)*. 90-95.
- W80 Tehranchi, F., & Ritter, F. E. (2018). Using Java to provide cognitive models with a more universal way to interact with graphical user interfaces. *Proceedings of the International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction and Behavior Representation in Modeling and Simulation*. Paper LB_15.
- W78 Ritter, F. E., Bouyat, C., Ekdahl, K., & Guzek, D. (2016). An update on automatic transcription vs. manual transcription. In *Proceedings of ICCM, 14th International Conference on Cognitive Modeling (ICCM 2016)*. 268-269. University Park, PA: Penn State.
- W77 Tehranchi, F., & Ritter, F. E. (2016). Connecting cognitive models to interact with human-computer interfaces. In *Proceedings of ICCM, 14th International Conference on Cognitive Modeling (ICCM 2016)*. 266-267. University Park, PA: Penn State.
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- W75 Samsonovich, A. V., Lebiere, C., and Ritter, F. E. (2015). MAPPED repository: A comparative database of biologically inspired cognitive architectures (BICA). In: *2015 Neuroscience Meeting Planner, online*. Abstract Control Number: 11714. 23.21SA/CC69. Washington, DC: Society for Neuroscience.
- W74 Siu, K. C., Best, B. J., Kim, J. W., Oleynikov, D., & Ritter, F. E. (2015). Surgical skill learning in space using an adaptive virtual reality trainer. NASA Human Research Program Investigators' Workshop. Galveston, Texas, January 2015.
<https://custom.cvent.com/3ACE90F6CD0147CB94AC59B7C6F7E370/files/19d739f73e1b457ca75b15312d0caa40.pdf>
- W73 Dancy, C. L., & Ritter, F. E. (2014). Subliminal images affect males and females differently during the IGT: Effects of non-integral subliminal stimuli of complex decision-making. (abstract). Poster presented at the *First annual meeting of the Society for Affective Science*.
- W72 Ritter, F. E., (2014). “CaffeineZone: An iPhone app to help moderate and understand caffeine levels”, and “Textbook: *Foundations for Designing User-Centered Systems: What System Designers Need To Know About People*”, CMU HCI Institute 20th Anniversary Celebration: Poster and Demo Session.
- W71 Ritter, F. E. (2014). A satisfying way to teach HCI: Outreach through usability reports. In *CHI 2014 Workshop, Developing a Living Curriculum to Support Global HCI Education*. [online

proceedings, <http://www.sigchi.org/resources/education/chi-2014-education-workshop-position-papers-1>]

- W70 Siu, K. C., Best, B. J., Kim, J. W., Oleynikov, D., Ritter, F. E. (2014). Adaptive virtual reality training to optimize surgical skill learning in space. NASA Human Research Program Investigators' Workshop. Galveston, Texas, February 2014. 3244.pdf, <http://www.hou.usra.edu/meetings/hrp2014/pdf/3244.pdf>
- W69 Kaulakis, R., Zhao, C., Morgan, J. H., Hiam, J. W., Sanford, J. P., & Ritter, F. E. (2012). Defining factors of interest for large-scale socio-cognitive simulations. Poster presented at DTRA Program Review 2012, Washington DC.
- W68 Sanford, J. P., Oleynikov, O., Siu, K.-C., & Ritter, F. E. (2012). Effects of varied surgical simulation training schedules on motor-skill acquisition: Somewhat massed training may lead to faster skill learning. *Military Health System Research Symposium*, Ft. Lauderdale, Florida, 13-16 August, 2012.
- W67 Hobbs, J. N., Ritter, F. E., & Morgan, J. H. (2012). D2P/CLS: A Tutor for Combat Lifesavers. In *Proceedings of the 21st Conference on Behavior Representation in Modeling and Simulation*. 12-BRIMS-043. 226-227. BRIMS Society: Amelia Island, FL.
- W66 Zhao, C., Kaulakis, R. M., Hiam, J. W., Morgan, J. H., Kataria, S., Sanford, J. P., & Ritter, F. E. (2011). Modeling Heterogenous socio-cognitive networks. Poster presented at the 2011 DTRA Annual Program Review.
- W65 Morita, J., Miwa, K., Kojima, K., & Ritter, F. E. (2011). Modeling decision making on the use of automation. In *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*, 1971-1976. Cognitive Science Society: Austin, TX.
- W64 Ritter, F. E., & Yeh, K.-C. M. (2011). Modeling pharmacokinetics and pharmacodynamics on a mobile device to help caffeine users. In *Augmented Cognition International Conference 2011, FAC 2011, HCII 2011, LNAI 6780* (Operational neuroscience session), 528-535. Springer-Verlag: Berlin Heidelberg.
- W63 Park, S-H., Suh, I. H., Chien, J-H., Paik, J-H., Ritter, F. E., Oleynikov, D., Siu, K-C. (2011). Modeling surgical skill learning with cognitive simulation. In J.D. Westwood et al. (Eds.) *Medicine Meets Virtual Reality 18*. IOS Press. 428-432.
- W62 Georgeon, O. L., Morgan, J. H., & Ritter, F. E. (2010). An algorithm for self-motivated hierarchical sequence learning. In D. D. Salvucci & G. Gunzelmann (Eds.), *Proceedings of ICCM - 2010- Tenth International Conference on Cognitive Modeling* (pp. 73-78).
- W61 Paik, J., Kim, J. W., Ritter, F. E., Morgan, J. H., Haynes, S. R., & Cohen, M. A. (2010). Building large learning models with Herbal. In D. D. Salvucci & G. Gunzelmann (Eds.), *Proceedings of ICCM - 2010- Tenth International Conference on Cognitive Modeling* (pp. 187-191).
- W59 Kase, S. E., Ritter, F. E., Schoelles, M. (2009). Caffeine's effect on appraisal and mental arithmetic performance: A cognitive modeling approach tells us more. In *Proceedings of ICCM - 2009- Ninth International Conference on Cognitive Modeling*. 174-179. Manchester, England.
- W58 Paik, J., Kim, J. W., & Ritter, F. E. (2009). A preliminary ACT-R compiler in Herbal. In *Proceedings of ICCM - 2009- Ninth International Conference on Cognitive Modeling*. 466-467. Manchester, England.
- W56 Ritter, F. E. (2009). Tutorial: A summary of Human-System Integration in the System Development Process. In *Proceedings of ICCM - 2009- Ninth International Conference on Cognitive Modeling*. 6-7. Manchester, England.
- W55 Christou, G., Ritter, F. E. & Jacob, R. J. K. (2009). Knowledge-based usability evaluation for reality-based interaction. Georgios Christou, Effie Lai-Chong Law, William Green, & Kasper Hornbaek (eds.) *Challenges in the evaluation of usability and user experience in reality-based*

- interaction* (workshop proceedings). 36-39. IIRIT Press, Toulouse, France. At *CHI 2009 Conference on Human Factors in Computing Systems*, Boston, MA, 2009.
- W54 Ritter, F. E. (2008). High-level behavior representation languages and moderators of behavior. *The USMA Network Science Workshop*, 15-17 October, 2008, West Point, NY.
- W50 Kim, J., & Ritter, F. E. (2007). Automatically recording keystrokes in public clusters with RUI: Issues and sample answers. In *Proceedings of the 29th Annual Conference of the Cognitive Science Society*. 1787. Austin, TX: Cognitive Science Society.
- W49 Girouard, A., Smith, N. W., & Ritter, F. E. (2006). Lessons from decompiling an embodied cognitive model. *Cognitio 2006 Workshop*.
<http://cognitio.uqam.ca/2006/index.php?section=posters&lng=en>
- W48 St. Amant, R., McBride, S. P., & Ritter, F. E. (2006). An AI planning perspective on abstraction in ACT-R modeling: Toward a HLBR language manifesto. In *Proceedings of the 13th ACT-R Workshop*. 72-76. Pittsburgh, PA: ACT-R Group, CMU.
- W46 Kim, J., Ritter, F. E., Koubek, R. J. (2006). ESEGMAN: A substrate for ACT-R architecture and an Emacs Lisp application. In *Proceedings of ICCM - 2006- Seventh International Conference on Cognitive Modeling*. 375. Trieste, Italy: Edizioni Goliardiche.
- W44 Reifers, A., Schenck, I., Ritter, F. E., & Inguscio, L. (2005). Using ACT-R to progress theories of pre-attentive visual search. In *Proceedings of the 12th ACT-R Workshop*. Universita degli Studi di Trieste, Italy.
- W43 Ritter, F. E., Reifers, A., Klein, L. C., Whetzel, C., Schoelles, M., Quigley, K. (2005). The effects of pre-task appraisal and caffeine on cognition: Data and models. In *Proceedings of the 12th ACT-R Workshop*. Universita degli Studi di Trieste, Italy.
ABCS Research Group, Max Planck, Berlin (November, 2005).
- W42 Reifers, A., Ritter, F., Klein, L., Whetzel, C. (2005). Modeling the effects of caffeine on visual signal detection (VSD) in a cognitive architecture. Poster presented at "Attention: From Theory to Practice" (A festschrift for Chris Wickens).
- W38 Inguscio, L., Marucci, F. S., Ritter, F. E. (2004). Il sistema di produzione ACT-R/PM: Un modello simulativo dei processi percettivo-motori. [The ACT-R production system: A model for simulating perceptual-motor processing.] *Congresso Nazionale della Sezione di Psicologia Sperimentale*. www.unipa.it/fragax/documenti/in_o_06_inguscio.pdf [abstract, in Italian]
- W37 Haynes, S. R., Councill, I. G., & Ritter, F. E. (2004). Responsibility-driven explanation engineering for cognitive models. In R. Jones (Ed.), *AAAI Workshop on intelligent agent architectures: Combining the strengths of software engineering and cognitive systems*. 46-52. Menlo Park, CA: AAAI Press.
- W35 Sun, S., Councill, I., Fan, X., Ritter, F. E., & Yen, J. (2004). Comparing teamwork modeling in an empirical approach. In *Proceedings of the Sixth International Conference on Cognitive Modeling*. 388-389. Mahwah, NJ: Erlbaum.
- W32 Ritter, F. E. (2003). Comments on Grant and Roberts & Pashler, social processes in validation, as part of a Symposium on Model fitting and parameter estimation, notes included in the *Proceedings of the ACT-R Workshop*. 129-130.
- W23 Jones, G., & Ritter, F. E. (2000). Over-estimating cognition time: The benefits of using a task simulation. In *Simulating Human Agents, American Association for Artificial Intelligence Fall 2000 Symposium Series*. 67-74. Menlo Park, CA: AAAI Press.
- W21 Ritter, F. E. (2000). A role for cognitive architectures: Guiding user interface design, contribution to the Applications of Cognitive Architectures panel, slides included in the *Proceedings of the Seventh Annual ACT-R Workshop*, p. 85-91. Department of Psychology, Carnegie-Mellon University.

- W16 Ritter, F. E., & Young, R. M. (1999). Moving the Psychological Soar Tutorial to HTML: An example of using the Web to assist learning. In D. Peterson, R. J. Stevenson, & R. M. Young (Eds.), *Proceedings of the AISB '99 Workshop on Issues in Teaching Cognitive Science to Undergraduates*. 23-24. The Society of the study of Artificial Intelligence and Simulation of Behaviour.
- W14 Ritter, F. E., & Wallach, D. P. (1998). Models of two-person games in ACT-R and Soar. In *Proceedings of the Second European Conference on Cognitive Modelling*. 202-203. Thrumpton: Nottingham University Press.
- W8 Ritter, F. E. (1993). Three types of emotional effects that will occur in cognitive architectures. Workshop on architectures underlying motivation and emotion, The University of Birmingham 11-12 August. Also presented as a colloquium at the MRC-APU in Cambridge, October, 1993.
- W7 Ritter, F. E. (May, 1992). Theoretically guided semi-automatic routine protocol analysis. Talk presented at the CHI '92 Doctoral Consortium. Abstract included in the proceedings.
This talk was also presented as colloquium at the U. of York, the U. of Nottingham, and Queen Mary and Westfield College in April 1992.
- W2 Reder, L. M., & Ritter, F. E. (1988). Feeling of Knowing and Strategy Selection for Solving Arithmetic Problems. *Proceedings of the Thirty-First Annual Meeting of the Psychonomics Society*. Psychonomic Society.

Seminars and presentations (selected)

- S167 Ritter, F. E. (2022). MITRE College Lecture Series: Some futures for cognitive modeling and architectures. Mitre/Bedford, MA, 3 August 2022.
- S166 Ritter, F. E. (2022). Overview of design patterns for cognitive modeling and HCI. Psychology, TU/Chemnitz, May 2022.
- S165 Ritter, F. E. (2022). Testing a learning and retention theory using a troubleshooting task. CRC Program, TU/Chemnitz, May 2022.
- S164 McDermott, A., Weyhrauch, P., Ritter, F. E. (2021). Simulating Training Results to Understand Differing Effects of Fidelity on Learning (STRUDEL), Final Outbrief, 16 December 2021.
- S163 Ritter, F. E., Yeh, M., Stager, S. J., Weyhrauch, P., & McDermott, A. F. (2021). Maintenance training under uncertainty: Expanding smart tutoring to support skill learning and retention. 2021 ONR Cognitive Science of Learning Program Review.
- S162 Ritter, F. E., Yeh, M., Stager, S., Weyhrauch, P., Niehaus, J., & McDermott, A. F. (2020). Maintenance training under uncertainty: Expanding smart tutoring to support skill learning and retention. ONR Cognitive Science of Learning Program Review.
- S161 Weyhrauch, P., & Ritter, F. E. (2020). Simulating Training Results to Understand Differing Effects of Fidelity on Learning (STRUDEL). ONR Cognitive Science of Learning Program Review.
- S158 Ritter, F. E., Stager, S., Brener, M., Chae, C., Weyhrauch, P., Niehaus, J., & McDermott, A. (2019). Maintenance training under uncertainty: Expanding smart tutoring to support skill learning and retention. ONR Cognitive Science of Learning Program Review.
- S157 Weyhrauch, P., & Ritter, F. E. (2019). Simulating Training Results to Understand Differing Effects of Fidelity on Learning (STRUDEL). ONR Cognitive Science of Learning Program Review.
- S156 Eusebi, L., Niehaus, J., Guarino, S., Ritter, F., Stager, S., Jacobs, R. (February 24, 2019). Crowdsourced Acquisition of Models of Learning Transfer Strategies (CRAM-LESS) Phase II STTR, Prepared for: MyNavyLearning Kickoff Meeting.

- S155 Weyhrauch, P., Niehaus, J., Ritter, F. E., Stager, S., & Irwin, J. (2019). Simulating Training Results to Understand Differing Effects of Fidelity on Learning (STRUDEL), Phase 2 Kick-off Briefing at ONR. 22 January 2019.
- S154 Weyhrauch, P., Niehaus, J., McDermott, A., Ritter, F. E., & Stager, S. (2018). Simulating Training Results to Understand Differing Effects of Fidelity on Learning (STRUDEL). ONR Cognitive Science of Learning Program Review.
- S153 Ritter, F. E., MacDougall, K., Yeh, M., Stager, S., Weyhrauch, P., McDermott, A., & Niehaus, J. (2018). Maintenance training under uncertainty: Expanding smart tutoring to support skill learning and retention. ONR Cognitive Science of Learning Program Review.
- S152 Ritter, F. E., Oury, J., & Tehranchi, F. (2018). Testing the KRK theory. Presented at the ACT-R workshop, July 2018.
- S151 Niehaus, J., Eusebi, L, Guarino, S., Ritter, F., Stager, S., Jacobs, R. (2018). Crowdsourced Acquisition of Models of Learning Transfer Strategies (CRAM-LESS): Phase II STTR Interim Briefing, Code 342, Office of Naval Research.
- S150 Weyhrauch, P., Lynn, S., Middleton, V., Ritter, F., Dancy, C. (2018). Dynamic Representation for Evaluating the Effect of Moderators of Stress on Performance (DREEMS) interim meeting (Phase II), U.S. Army Natick Soldier Research, Development and Engineering Center. 14jun18
- S149 Ritter, F. E. (2018). Learning and User Modeling projects. Presentation to Army Research Lab/Orlando.
- S148 Ritter, F. E. (2018). Lunch and Learn: HCI, SE, and User Modeling. Presentation to Harris Corporation, Space and Intelligence Systems Segment.
- S147 Weyhrauch, P. W., Bauchwitz B., Niehaus J., Ritter F., & Garrison, C. (2018). System for Trauma Assessment Training (STAT) Phase II Final Briefing.
- S146 Tehranchi, F., & Ritter, F. E. (2017). Eye tracking to learn about learning in tutoring systems. Poster presentation in *Connecting Language, Interaction and Education in Digital Environments (CLIEDE)*. University Park, PA: Penn State.
- S145 Weyhrauch P. W., Niehaus, J., Bauchwitz, B., Broach J., Lancette, P., Ritter F. E. (2017). Virtual patient simulation with objective metrics for primary and secondary trauma assessment. Presented at: *Military Health System Research Symposium*. 2017 Aug 27-30; Kissimmee, FL.
- S144 Weyhrauch, P., Niehaus, J., & Ritter, F. E. (2017). Simulating training results to understanding differing effects of fidelity on learning (STRUDEL). Presentation at the 2017 ONR Cognitive Science of Learning Program Review.
- S143 Ritter, F. E., Yeh, M., MacDougall, K., Weyhrauch, P., Niehaus, J., McDermott, A. (2017). Maintenance training under uncertainty: Expanding smart tutoring to support skill learning and retention. Presentation at the 2017 ONR Cognitive Science of Learning Program Review.
- S142 Weyhrauch, P., Danczyk, D., Ritter, F. E., Dancy, C., Middleton, V. (2016). Dynamic Representation for Evaluating the Effect of Moderators and Stress on Performance (DREEMS), Pre-Phase II Briefing, 17 Nov 2016. Prepared for: Edan Lev-Ari, Robert Auer, & Dean Sutherland (NSRDEC).
- S141 Ritter, F. E., Yeh, M., Weyhrauch, P., Niehaus, J. (16 September 2016). Maintenance training under uncertainty: Expanding smart tutoring to support skill learning and retention. Presentation at the 2016 ONR Cognitive Science of Learning Program Review.
- S139 Ritter, F. E. (2016). Modeling novice to expert performance with a modeling compiler. ACT-R Post-Graduate Summer School, 8 August 16
- S138 Ritter, F. E. (2016). “A way to slice emotions, (u)affect, moderators” and Session chair for Emotions, Affects, and Behavior Moderators, ACT-R Post-Graduate Summer School, 8 August 16

- S137 Ritter, F. E., & Kennedy, W. (co-chairs) (2016). Symposium: Modeling Conferences. At the *International Conference on Cognitive Modeling*.
- S135 Ritter, F. E. (2016). Simon and Newell as grad mentors: Lessons from grad school and recent work on tutors. CMU Psychology 100th Founding Symposium and Reunion. May 2016.
- S134 Presented at *CHI 2016* as part of their invited program, with assistance from Bonnie John, Anthony Hornoff, & Marilyn Mantei-Tremain:
Paik, J., Kim, J. W., Ritter, F. E., & Reitter, D. (2015). Predicting user performance and learning in human-computer interaction with the Herbal compiler. *ACM Transactions on Computer-Human Interaction*, 22(5), Article No.: 25.
- S132 Ritter, F. E. (2016). Behavioral Modeling with the Herbal High-Level Language. Dept. of Industrial Engineering, U. of Buffalo. Feb. 2016.
- S131 Niehaus, J., Guarino, S., Ritter, F. E., & Yeh, M. (2016). Crowdsourced acquisition of models of learning transfer strategies (CRAM-LESS) Phase I STTR Final Briefing.
- S130 Weyhrauch, P., Niehaus, J., & Ritter, F. E. (2015). STAT 2 Kickoff presentation: Building trauma triage tutors for Air Force nurses and extending learning theory.
- S129 Weyhrauch, P., Danczyk, J., Ritter, F., & Middleton, V. (2015). Dynamic representation for evaluating the effect of moderators and stress on performance (DREEMS) [kick-off meeting briefing]
- S128 Ritter, F. E., Yeh, M., Weyhrauch, P. Niehaus, J. (2015). Maintenance training under uncertainty: Expanding smart tutoring to support skill learning and retention. 2015 ONR Cognitive Science of Learning Program Review.
- S127 Ritter, F. E. (2015). The application of a learning theory to two HCI applications: Tutoring and modeling novice to expert transitions. Cognitive Science Department, Carleton University.
- S126 Ritter, F. E., Yeh, M., Weyhrauch, P., Niehaus, J., Kim, J. W. (2015). Maintenance training under uncertainty: Expanding a smart tutoring system to support acquisition and retention of skills. ONR Neuro-Biology of Learning Program Review.
- S125 Ritter, F. E. (2015). Comments on documenting models based on documenting an ACT-R compiler. ACT-R 2015 Workshop. (1 page paper + slides).
- S124 Ritter, F. E., & Baxter, G. D. (2015). Reflections on Risk-Driven Design and Instruction. HCI Consortium Workshop, 3 page paper included. July 2015, Pajaro Dunes, CA.
- S123 Ritter, F. E. (2015). The application of a learning theory to two HCI applications: Tutoring and modeling novice to expert transitions. HCI Group, Computer Science, U. of Illinois at Urbana-Champaign.
- S121 Ritter, F. E., & Dancy, C. L. (2014). An update on tying cognitive architectures to physiological architectures. Invited talk, abstract in Samsonovich, A.V. and Robertson, P. (eds.). *Proceedings of Biologically Inspired Cognitive Architectures, BICA-2014*. 447.
- S120 Ritter, F. E. (2014). Declarative to Procedural Tutors: A family of cognitive architecture-based tutors. Naval Submarine Medical Research Laboratory, 7 February 2014.
- S119 Ritter, F. E. (2013). Discussant, “Motivations and goals in developing integrative models of human cognition” Symposium. Cognitive Science Society Annual Meeting.
- S118 Ritter, F. E. (2013). Using behavior representation models in risk-driven design. Allgemeine Psychologie und Arbeitspsychologie [General and Industrial Psychology group], TU-Chemnitz, 30 July 2013
HCI Group, Computer Science Department, U. of Hamberg, 24 July 2013.
- S116 Ritter, F. E. (2013). A learning model of a long, non-iterative spreadsheet task. Human Factors Research Group, U. of Nottingham.

Institute of Flight Guidance, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR) [German Aerospace Center].

Allgemeine Psychologie und Arbeitspsychologie [General and Industrial Psychology group], TU-Chemnitz, 30 July 2013

- S113 Ritter, F. E. (2013). Two inadvertent resources for teaching cognitive science. Presentation in a panel discussion: Teaching cognitive science and computational intelligence. *International Joint Conference on Neural Networks*.
- S111 Ritter, F. E. (2013). What matters in social networks: Defining factors of interest for agent-based socio-cognitive simulations. Cognitive Science Seminar, Tufts University. 4 March 2013.
- S110 Ritter, F. E. (2013). Cognitive architectures: What they are and future problems and perspectives. Guest lecture in CS 4100/5100 Foundations of Artificial Intelligence at Northeastern University. 27 February 2013.
- S109 Ritter, F. E. (2013). *An overview of the ABCS of HCI: What psychology do system designers need to know*. Charles River Analytics. 15 February 2013.
- S108 Ritter, F. E. (2013). Pathway-based integration of relational networks and textual information for detecting motivation and intent of WMD-related threats. Charles River Analytics. 30 January 2013.
- S107 Ritter, F. E. (2012). Overview of 2007 NRC Study on HSI in the systems engineering development process, and some resources, recent extensions, and tools. Charles River Analytics. 29 November 2012.
- S106 Ritter, F. E. (2012). A tutor for Shooting Moving Targets, and a general architecture for moving declarative knowledge to procedural knowledge. Human Research and Engineering Lab, Aberdeen Proving Ground.
- S105 Ritter, F. E. (2012). Modeling strategies and individual differences in learning a diagrammatic reasoning task. Chinese Academy of Sciences
- S104 Ritter, F. E., & Kim, J. (2012). Practical advice on how to run human behavioral studies. In N. Miyake, D. Peebles, & R. P. Cooper (Eds.), *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. 28-29. Austin, TX: Cognitive Science Society. [tutorial]
- S102 Ritter, F. E., Morgan, J. H., & Kim, J. W. (2012). Practical aspects of running experiments with human participants. [Tutorial] In *Proceedings of the 21st Conference on Behavior Representation in Modeling and Simulation*. BRIMS Society: Amelia Island, FL. 12-BRIMS-046. 234-240.
- S98 Ritter, F. E., the ACS Lab, and St. Amant, R. (2011). Architecture as software. Presented at the ACT-R Post-Graduate Summer School July 16-19, 2011.
- S97 Ritter, F. E. (2011). Risk-driven design. HCI Consortium Workshop, June 2011, Monterey, CA.
- S96 Ritter, F. E. (2011). A smart tutoring system supporting acquisition and retention of skills: Moving Target Tutor (Investigating how to decrease skill decay). ONR Div. 30 Expertise Development External Review.
- S95 Ritter, F. E., Paik, J., & Kim, J. W. (2011). A learning model of a long, non-iterative spreadsheet task. Seminar. Naval Submarine Medical Research Laboratory, 10 March 2011.
- S94 Ritter, F. E., Paik, J., & Kim, J. W. (2010). A learning model of a long, non-iterative spreadsheet task. Seminar. Center for Advanced Surgical Technique, University of Nebraska Medical Center, 10 December 2010.
- S93 Ritter, F. E. (2010). A smart tutoring system supporting acquisition and retention of skills. Presentation at the ONR Human Performance, Training and Education Program Review Meeting, November 2010.
- S92 Ritter, F. E. (2010). We need success stories for BICA! Panel leader at the *Biologically Inspired Cognitive Architectures, the First Annual Meeting of the BICA Society*. November 2010.

- S91 Ritter, F. E. (2010). Annual review report on “Pathway-based Integration of Relational Networks and Textual Information for Detecting Motivation and Intent of WMD-related Threats” to the Defense Threat Reduction Agency Network Science Initiative. August 2010.
- S90 Ritter, F. E., Kim, J. W., Paik, J. (2010). A learning model of a long, non-iterative spreadsheet task. Presented at the ACT-R Workshop at the International Conference on Cognitive modeling.
- S89 Weyhrauch, P., Niehaus, J., & Ritter, F. (2010). EasyCog: A high-level cognitive language, compiler, and development environment for affordable, scalable, and robust development and maintenance of cognitive models for multiple cognitive architectures, SBIR Phase II Kickoff Briefing, ONR.
- S82 Ritter, F. E. (2009). Modeling strategies and individual differences in learning a diagrammatic reasoning task. Cognitive Science Distinguished Lecture. Carleton University, 5 March 2009.
- S77 Ritter, F. E. (2008). Task analyses, automated user models, and risk-driven design. Guest lecture in PL475 Human-Computer Interaction. USMA, 16 October, 2008, West Point, NY.
- S76 Ritter, F. E., Haynes, S. R., & Cohen, M. A. (2008). Herbal: Improved modeling through using a High-level behavior representation language to support reuse and maintenance. Presented at the AFOSR Joint Cog Sci/Software Engineering Workshop, July 2008.
- S75 Ritter, F. E., Evertsz, R., Busetta, P., Pedrotti, M., Bittner, J. L., & Kase, S. (2008). Agent-based approaches to macrocognition I: Extending a BDI architecture to create a cognitive architecture: Design, creation, validation, and lessons (CoJACK, a less hairy reasoner). Presented at: ARL Workshop on Developing and Understanding Computational Models of Macrocognition.
- S72 Ritter, F. E., Evertsz, R., Busetta, P., Pedrotti, M., & Bittner, J. L. (2008). CoJACK: Achieving Principled Behaviour Variation in a Moderated Cognitive Architecture. Joint Systems and Analysis Group, Modeling and Simulation Technical Panel, Computer Generated Forces Workshop. The Technical Cooperation Program (TTCP).
- S71 Ritter, F. E. (2008). *Human-System Integration in the System Development Process*, presented at QinetiQ Malvern. March 19, 2008.
- S70 Ritter, F. E., & Bittner, J. (2008). *IHBR Science Demo: Tests of Moderators in CoJACK*, presented at IHBR review at Warminster, UK.
- S64 Cohen, M. A., Ritter F. E., Haynes, S. R. (2007). Using a high-level behavior representation language and graphical development environment to teach cognitive modeling and agent programming. Presented at the 2007 Annual Meeting of the Pennsylvania Association of Computer Information Science Educators, Lock Haven University.
- S59 Ritter, F. E. (2006). Some stress theories: Terms, tasks, models, theories, and overlays. ACT-R DARPA BICA 2006 Workshop, 10-11 Feb 2006. Charles River Analytics, March 2006. Bolt Beranek and Newman, March 2006.
- S58 Ritter, F. E. (2006). Some new components for an automatic user for testing human-computer interfaces. Computer Science Department Colloquium Series, Tufts University. Middlesex University, November 2006.
- S53 Ritter, F. E., Haynes, S. R., Cohen, M. A. (2005). Making Soar more articulate and modeling more affordable through explanation, interaction, & environment. ONR Affordable Human Behavior Modeling Workshop, 2 June 2005.
- S46 Ritter, F. E. (August, 2004). Projects modeling architectural changes. Human Research and Engineering Directorate, Army Research Lab, Aberdeen Proving Ground.
- S45 Ritter, F. E., Klein, L. C., Reifers, A., & Ceballos, R. (2004). The effects of pre-task appraisals and caffeine on cognition: Data and models. Presentation and abstract at ONR Neural Computation 2004 Annual Investigator Conference, U. of Nevada at Reno, August 20 to August 22. (invited from another program.)

- S43 Ritter, F. E., Freed, A., & Haskett, O. (2004). User information needs: The case of university department web sites. Seminar presented to the Department of Information Science, U. of Melbourne.
Also to Allgemeine Psychologie und Arbeitspsychologie [General and Industrial Psychology group], TU-Chemnitz, 8 November 2005.
- S40 Ritter, F. E., Klein, L. C., Quigley, K. S., Council, I. G., Avraamides, M. N., Reifers, A. L., Whetzel, C. A., Simpson, K., Stine, M. M., Ceballos, R. M., Morgan, G. P., & Ghandi, M. (2003). Using cognitive modeling to study behavior moderators: Pre-task appraisal, anxiety, and caffeine. ONR Cognitive and Computational Models of Cortex Workshop, November 2003. (invited)
also presented at RPI's series on "Issues in Cognitive Science", January 2004.
- S39 Ritter, F. E. (2003). Embodied models as simulated users, eyes, hands, and hearts. Computer Science Colloquium, North Carolina State University. 27 May 2003
- S36 Ritter, F. E. (2002). A simple, reusable, validated model of pre-task appraisal and anxiety. ONR Cognitive and Computational Models of Cortex Workshop, September, 2002. (invited)
- S34 Ritter, F. E. (2002). Capabilities in Applied Cognitive Science at Penn State. Talk presented at the Institute for Defense Analysis, Alexandria, VA.
- S33 Ritter, F. E., Mudgett, D. R., & Freed, A. R. (May 2002). Developing and finding Java and HTML resources for teaching discrete math. Penn State Teaching and Learning Colloquy 2002.
- S23 Ritter, F. E. (1998). Extending user interface management systems to support cognitive models as users. Colloquia presented at Department of Informatik [Computer Science], Technische Universität Chemnitz. Also presented at: Department of Computer and Information Science, The Ohio State University. School of Information Sciences and Technology, Pennsylvania State University. Department of EECS, U. of Illinois at Chicago. ESRC Centre for Research in Development, Instruction, and Training, U. of Nottingham. Applied Psychology Program, George Mason University. DSTO. (Australia), HCI Institute, Swinburne Inst. of Technology. IPO, Technical University of Eindhoven. Department of Computer Science and Engineering, Penn State.
- S22 Ritter, F. E. (1998). Discussant, Panel on procedural vs. declarative memory, *Fifth Annual ACT-R Workshop*, Carnegie-Mellon University.
- S20 Ritter, F. E. (October, 1997). Overview of methodologies for studying order effects. Plenary meeting, European Science Foundation's Programme on Learning in Humans and Machines. Mannheim, Germany.
- S16 Ritter, F. E. (1995). What cognitive architectures can provide HCI. Colloquium presented at Ergonomics Unit, University College/London.
- S15 Ritter, F. E. (1994). Using process models as summaries of HCI data, colloquium presented at the Department of Psychology, U. of York, LRDC (U. of Pittsburgh), and Armstrong Lab, Brooks AFB.
- S5 Ritter, F. E. (September, 1988). "ITS and Modeling the Seibel Task in Soar". Invited presentation at the Air Force Human Resources Lab, Cognitive Skills Assessment Branch, Brooks AFB.
- S3 Ritter, F. E. (1985). "Simulated Annealing as a Function Minimization Technique" and "Simulated Annealing as a Planning Technique". Presented as seminars in a series on "Genetic and Other Probabilistic Algorithms" at BBN, and as a guest lectures to CS 113: Artificial Intelligence (graduate level course) at Brandeis University, October-November 1985.

Interesting documents, newspaper pieces, and unpublished papers

Ritter, F. E. (2022). Online public health tutor and public service announcements in schools to counter pandemics. Dear colleague letter for NSF Converge 2022 program.

- Ritter, F., & Donahue, D. (2022). Hyperbole not helpful in COVID discussion. *Centre Daily Times*. 132(305). 13 January 2022. 4B. <https://www.centredaily.com/opinion/letters-to-the-editor/article257242967.html>
- Society for Disaster Medicine and Public Health Staff (Debbie Kim, DonDonahue, & Frank E. Ritter) (2021). Stories from a contact tracer: The unwelcome gift. *Centre Daily Times*. 132(305). 10 February 2021, 4B.
- Donahue, D. A., & Ritter, F. E. (2020). Vaccines are coming, but hospital systems in US at risk in meantime. *Centre Daily Times*, 4B, 132(228). Wednesday November 25.
- Schoelles, M., & Ritter, F. E. (2003). Hands on tutorial for ACT-R (HOT4 ACT-R). Applied Cognitive Science Lab, Summer 2003.
- Ritter, F. E. (2001). Guide to living in State College. Unpublished 18 p. document. Updated yearly www.frankritter.com/guide/guide2SC.1.html
- Ritter, F. E., Reber, R., Ritter, S., Reber, P., Ritter, C., Reder, L. M., Ritter, J. M., Bodenhausen, U., & Etal, E. (1996). The effect of price on gustatory perception of fermented malt beverages. *J. of Irreproducible Results*, 41(3), 18-20.
- Ritter, F. E. (1992). How to attend a conference. Presented as colloquia at CMU Psychology "The science meets the profession" colloquium series, and at the Postgraduate workshop at the AISB 1994, 1995, 1996 Spring meetings. Unpublished 4 p. document. conference-rules.txt

References

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