

# Michael C. Dorneich, Ph.D.

3028 Black Engineering Building; Ames, IA 50011

Phone: 515-294-8018; Fax: 515-294-3524; Email: dorneich@iastate.edu

## OBJECTIVE

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To advance human factors research in the process of creating usable, reliable, and context-aware adaptive systems that assist human performance in complex operational domains.

## EDUCATION

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Ph.D., Industrial Engineering, University of Illinois at Urbana-Champaign, 1999

Dissertation: *System Design Framework for a Learning Collaboratory*

M.S., Electrical Engineering, University of Illinois at Urbana-Champaign, 1995

Thesis: *Application of the Dyadic Integral Equation Method to the Characterization of Lossy Conductors*

B. S., Electrical Engineering, University of Illinois at Urbana-Champaign, 1990

with an International Minor in Germanic Studies

## RESEARCH FOCUS

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Dr. Dorneich's research interests focus on creating joint human-machine systems that enable people to be effective in the complex and often stressful environments found in aviation, military, robotic, and space applications. He specializes in adaptive systems which can provide assistance tailored to the user's current cognitive state, situation and environment. Adaptive systems are becoming more necessary as intelligent assistants are spreading into every aspect of work, education, and home life. His recent work explores the dual costs and benefits of adaptive systems, and develops approaches to mitigate shortcomings, leverage human strengths, and augment human performance when human capacity falls short of the demands of complex operational environments. Specific research and application areas include human factors, cognitive engineering, adaptive automation and adaptive interfaces, distributed systems, interactive learning environments, and decision-support systems. Prior to joining the faculty of IMSE, he worked at Honeywell Laboratories for 13 years researching adaptive system design and human factors in a variety of domains. He holds 28 US and international patents. He has authored over 200 professional, peer-reviewed papers, and is currently an Associate Editor for the *Journal of IEEE Transactions of Human-Machine Systems* and an Editorial Board member of the *Journal of Cognitive Engineering and Decision Making*.

## ACADEMIC AND INDUSTRY EXPERIENCE

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Associate Professor, Industrial and Manufacturing Systems Engineering, Iowa State University, 2012-present (Earned tenure 2018).

Associate Professor, Aerospace Engineering (by courtesy), Iowa State University, 2012-present

Associate Professor, Human-Computer Interaction Graduate Program Faculty, Iowa State University, 2012-present

Faculty Affiliate, Virtual Reality Applications Center, Iowa State University, 2012-present

Principal Research Scientist, Honeywell Laboratories, 2011-2012

Senior Research Scientist IV, Honeywell Laboratories, 2003-2011

Visiting Scientist, Human Factors Research & Technology Division, NASA Ames Research Center, 2004

Senior Research Scientist III, Honeywell Laboratories, 2000-2003

Research Associate, Honeywell Technology Center, 1999-2000

Research Assistant, University of Illinois, Industrial Engineering Department, 1995-1999

Research Assistant, University of Illinois, Electrical Engineering Department, 1990-1995

## **TEACHING EXPERIENCE**

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### **Iowa State University**

IE 361 Statistical Quality Assurance (2013F, 2014F, 2015S, 2015F, 2016F, 2017F, 2019S, 2020S, 2021S).

IE 490 VIP Research in Human-Autonomy Teaming (2019F, 2020S)

IE 501/ 601 MS/PhD Research Basics and Communications (2014F)

IE 502/ 602 MS/PhD Research Conduct (2015S)

IE 572 Design and Evaluation of Human-Computer Interaction (2013S, 2015S, 2016S, 2017S, 2018S, 2019S, 2020S).

IE 576 Human Factors in Product Design (2014S, 2015F, 2017F, 2019F)

IE 671 Research Practicum in Ergonomics (2014S, 2016S)

IE 672X Human Factors in Automation Design (2018F, 2020F)

### **University of Illinois at Urbana-Champaign**

EE 342 Introduction to Circuit Analysis, (1992-1993), Teaching Assistant, Electrical Engineering Department

## **GRADUATE STUDENTS AS MAJOR ADVISOR**

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\* Indicates Co-Major Professor; \*\*MS HCI students complete creative component instead of thesis

### **Graduated**

<b>Name</b>	<b>Degree</b>	<b>Graduation Date</b>
Kalvelage, Kelly	PhD, HCI	Fall 2021
Tokadli, Güliz	PhD, IMSE, HCI	Fall 2021
Tor Finseth (*Keren, Nir)	PhD, AeroE, HCI	Summer 2021
Mittal, Anuj (*Krejci, Caroline)	PhD, IMSE	Fall 2019
Du, Yu	PhD, IMSE	Spring 2019
Yang, Euijung	PhD, IMSE	Summer 2016
Annamalai, Ramanathan	MS, IMSE	Summer 2020
Ko, Andrew	MS, HCI **	Summer 2020
Volz, Katherine	MS, IMSE	Summer 2018
Huang, Wang (*Krejci, Caroline)	MS, IMSE	Spring 2018
Smith, Alicia	MS., IMSE	Summer 2017
Stonewall, Jacklin	MS, IMSE, HCI	Spring 2016

Li, Bena	MS, HCI **	Spring 2016
Bonner, Desmond	MS, IMSE, HCI	Fall 2015
Barnawal, Prashant (*Fernandez-Baca, David)	MS, HCI, CS	Fall 2015
Jacobson, Benjamin	MS, IMSE	Summer 2015
Dudley, Rachel (*Kelkar, Atul)	MS, HCI, ME	Fall 2014

## Current

Name	Degree
Bonner, Desmond	PhD, IE/HCI
Farad, Yvonne	PhD, IMSE
Meister, Philippe (*Kostelnik, Charles)	PhD, HCI/English
Stonewall, Jacklin	PhD, IMSE
Plewa, Mathew	MS, HCI
Francis, Richard	MS, HCI

Have served on committees of 16 PhD, 32 MS, and 7 MS-Capstone students.

Have supervised 41 undergraduate research assistants.

## PUBLICATIONS

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### Peer-Reviewed Journal Papers

\* Graduate student co-author; \*\* Undergraduate student co-author

43. \*Tokadli, G., **Dorneich, M.C.**, & Matessa, M. (Accepted). "Towards Human-Autonomy Teaming in Single Pilot Operations: Domain Analysis and Requirements," *AIAA Journal of Air Transportation*.
42. **Dorneich, M. C.**, O'Dwyer, B., Dolowitz, A., Styron, J., & Grogan, J. (2021). "Application Exercise Design for Team-Based Learning in Online Courses," *New Directions for Teaching and Learning*. Vol. 2021, pp. 41-52. <http://dx.doi.org/10.1002/tl.20435>
41. Thompson, J.R., Ganapathysubramanian, B., Chen, W., **Dorneich, M.**, Gassman, P., Krejci, C., Liebman, M.Z., Nair, A., Passe, U., Schwab, N., Rosentrater, K., Stone, T., Wang, Y., & Zhou, Y. (2021). "Iowa UrbanFEWS: Integrating Social and Biophysical Models for Exploration of Urban Food, Energy and Water Systems," *Frontiers in Big Data, Data-Driven Climate Sciences*. 4:662186, <http://dx.doi.org/10.3389/fdata.2021.662186>
40. \*Tokadli, G., **Dorneich, M.C.**, & Matessa, M. (2021). "Evaluation of a Playbook Delegation Approach in Human-Autonomy Teaming for Single Pilot Operations," *International Journal of Human-Computer Interactions*, Special Issues on HCI in the Modern Flight Deck. Vol. 37, pp. 703-716. <http://dx.doi.org/10.1080/10447318.2021.1890485>
39. \*Ouverson, K., \*Ostrander, A., \*Walton, J., \*Kohl, A., Gilbert, S.B., **Dorneich, M.C.**, Winer, E. & Sinatra, A. (2021). "Analysis of Communication, Team Situational Awareness, and Feedback in a Three-Person Intelligent Team Tutoring System," *Frontiers in Psychology*. Vol. 12, pp. 166. <http://dx.doi.org/10.3389/fpsyg.2021.553015>
38. \*Bonner, D., & **Dorneich, M.C.** (2021). "Developing Game-Based Learning Requirements to Increase Female Interest in STEM," *International Journal of Engineering Education*. Vol. 37, pp. 1-14. [ijee.ie/1atestissues/Vol37-1/10\\_ijee4014.pdf](http://ijee.ie/1atestissues/Vol37-1/10_ijee4014.pdf)

37. \*Volz, K.M. & **Dorneich, M.C.** (2020). "Evaluation of Cognitive Skill Degradation in Flight Planning," *Journal of Cognitive Engineering and Decision Making*. Vol. 14, pp. 263-287.  
<http://dx.doi.org/10.1177/1555343420962897>
36. \*Jasper, A., \*Cone, N., \*Curtis, M., \*Meusel, C., **Dorneich, M.C.**, & Gilbert, S. (2020). "Visually Induced Motion Sickness Susceptibility and Recovery Based on Four Mitigation Techniques," *Frontiers in Virtual Reality*, Special issue on Cybersickness in Virtual Reality Versus Augmented Reality. Vol. 1. <http://dx.doi.org/10.3389/frvir.2020.582108>
35. Passe, U., **Dorneich, M.C.**, Shenk, L., Krejci, C., Thompson, J., Zhou, Y., \*Stonewall, J., \*Marmur, B., & \*Malekpour, D. (2020). "An Urban Modelling Framework for Climate Resilience in Low-resource Neighbourhoods," *Building & Cities* (Special Issue: Climate Justice: The Role of the Built Environment Edition). Vol. 1, pp. 453-474. <http://dx.doi.org/10.5334/bc.17>
34. \*Abdelall, E.A., \*Eagle, Z., \*Finseth, T., \*Mumani, A.A., \*Wang, Z., **Dorneich, M.C.**, & Stone, R.T. (2020). "Evaluation of the Impact of Equipment Load and Social Conflict on Stress during a Simulated Traffic Stop," *Frontiers in Behavioral Neuroscience*. Vol. 14, <http://dx.doi.org/10.3389/fnbeh.2020.00063>
33. \*Stephenson, M.L., \*Ostrander, A.G., \*Norasi, H., & **Dorneich, M.C.** (2020). "Shoulder Muscular Fatigue Concurrently Reduces Cognitive Attentional Resources," *Human Factors*. Vol. 62, pp. 589-602. <http://dx.doi.org/10.1177/0018720819852509>
32. \*Ostrander, A., \*Bonner, D., \*Walton, J., \*Slavina, A., \*Ouverson, K., \*Kohl, A., Gilbert, S.B., **Dorneich, M.C.**, Sinatra, A., & Winer, E. (2020). "Evaluation of an Intelligent Team Tutoring System for a Collaborative Two-Person Problem: The Surveillance Team Tutor," *Computers in Human Behavior*, Special issues on Collaboration in the 21st Century: The Theory, Assessment, and Teaching of Collaborative Problem Solving. Vol. 104, pp. 105873.  
<http://dx.doi.org/10.1016/j.chb.2019.01.006>
31. \*Huang, W., Krejci, C., **Dorneich, M.C.**, Passe, U., Shenk, L., & \*Stonewall, J. (2019). "Analyzing Residential Weatherization Decisions using Hybrid Simulation Modeling," *Building Simulation*. Vol. 12, pp. 517-534. <http://dx.doi.org/10.1007/s12273-019-0518-4>
30. \*Mittal, A., Krejci, C. **Dorneich, M.C.**, & Fickes, D. (2019). "An Agent-Based Approach to Modeling Zero Energy Communities," *Solar Energy*. Vol. 191, pp. 193-204.  
<http://dx.doi.org/doi.org/10.1016/j.solener.2019.08.040>
29. \*Mittal, A., Krejci, C., & **Dorneich, M.** (2019). "An Agent-Based Approach to Designing Residential renewable Energy Systems," *Renewable & Sustainable Energy Reviews*. Vol. 112, pp. 1008-1020.  
<http://dx.doi.org/10.1016/j.rser.2019.06.034>
28. \*Du, Y., **Dorneich, M.C.**, & Steward, B. (2019). "Development of a Learning Capability In Virtual Operator Models," *SAE International Journal of Commercial Vehicles*. Vol. 12, No. 2, pp. 115-125.  
<http://dx.doi.org/10.4271/02-12-02-0009>
27. \*Finseth, T., Keren, N., Franke, W.D., **Dorneich, M.C.**, Anderson, C.C., & Shelly, M. (2018). "Evaluating the Effectiveness of Graduated Stress Exposure in Virtual Spaceflight Hazard Training," *Journal of Cognitive Engineering and Decision Making*. Vol. 12, No. 4, pp. 248-268.  
<http://dx.doi.org/10.1177/1555343418775561>
26. \*Jacobson, B., **Dorneich, M.C.**, & Potter, L. (2018). "Evaluation of the Learning Effectiveness of Team-Based Learning and lecture Video Acceleration in an Introductory Engineering Course," *International Journal of Engineering Education*. Vol. 34, No. 6, pp. 1863-1875.  
[ijee.ie/latestissues/Vol34-6/14\\_ijee3682.pdf](http://ijee.ie/latestissues/Vol34-6/14_ijee3682.pdf)
25. \*Yang, E. & **Dorneich, M.C.** (2018). "Affect-Aware Adaptive Tutoring Based on Human-Automation Etiquette Strategies," *Human Factors*. Vol. 60, No. 4, pp. 510-526.  
<http://dx.doi.org/10.1177/0018720818765266>

24. \*Tokadli, G. & **Dorneich, M.C.** (2018). "Development of Design Requirements for a Cognitive Assistant in Space Missions Beyond Low Earth Orbit," *Journal of Cognitive Engineering and Decision Making*. Vol. 12, No. 2, pp. 131-152. <http://dx.doi.org/10.1177/1555343417733159>
23. \*Kalvelage, K., **Dorneich, M.C.**, Seeger, C., Welk, G., Gilbert, S., Moon, J., Brown, P., & Jafir, I. (2018). "Assessing the Validity of Facilitated-Volunteered Geographic Information: Comparisons of Expert and Novice Ratings," *GeoJournal: Spatially Integrated Social Sciences and Humanities*. Vol. 83, No. 3, pp. 477-488. <http://dx.doi.org/10.1007/s10708-017-9781-z>
22. Gilbert, S.B., \*Slavina, A., **Dorneich, M.C.**, Sinatra, A.M., \*Bonner, D., Johnston, J., \*Holub, J., \*Macallister, A., & Winer, E. (2018). "Creating a Team Tutor using GIFT," *International Journal of Artificial Intelligence in Education*. Vol. 28, No. 2, pp. 286-313. <http://dx.doi.org/10.1007/s40593-017-0151-2>
21. \*Du, Y., **Dorneich, M.C.**, & Steward, B.L. (2018). "Modeling Human Adaptability in Virtual Operator Modeling," *Automation in Construction*. Vol. 90, pp. 223-234. <http://dx.doi.org/10.1016/j.autcon.2018.02.030>
20. \*Yang, E. & **Dorneich, M.C.** (2018). "Evaluating Human–Automation Etiquette Strategies to Mitigate User Frustration and Improve Learning in Affect-Aware Tutoring," *Applied Sciences* (Special Issue Socio-Cognitive and Affective Computing). Vol. 8, No. 6, pp. 895. <http://dx.doi.org/10.3390/app8060895>
19. **Dorneich, M.C.**, \*Dudley, R., Letsu-Dake, E., Rogers, W., Whitlow, S.D., Dillard, M., & Nelson, E. (2017). "Interaction of Automation Visibility and Information Quality in Flight Deck Information Automation," *IEEE Transactions on Human-Machine Systems*. Vol. 47, No. 6, pp. 915-926. <http://dx.doi.org/10.1109/THMS.2017.2717939>
18. \*Barnawal, P., **Dorneich, M.C.**, Frank, M., & Peters, F. (2017). "Evaluation of Design Feedback Modalities in Design for Manufacturability," *Journal of Mechanical Design*. Vol. 139, No. 9, 94503. <http://dx.doi.org/10.1115/1.4037109>
17. \*Yang, E. & **Dorneich, M.C.** (2017). "The Emotional, Cognitive, Physiological, and Performance Effects of Variable Time Delay in Human-Robot Interaction," *International Journal of Social Robotics*. Vol. 9, No. 4, pp. 491-508. <http://dx.doi.org/10.1007/s12369-017-0407-x>
16. **Dorneich, M.C.**, Passinger, B., Hamblin, C., Keinrath, C., Vašek, J., Whitlow, S.D., & \*Beekhuyzen, M. (2017). "Evaluation of the Display of Cognitive State Feedback to Drive Adaptive Task Sharing," *Frontiers in Neuroscience* (Special Issue: New Advances in Computational Neuroergonomics and Adaptive Human-Automation Systems). Vol. 11, No. 144, <http://dx.doi.org/10.3389/fnins.2017.00144>
15. Componation, P.J., **Dorneich, M.C.**, & Nicholls, G.M. (2017). "Team Member Perceptions of Alternative Decision Analysis Approaches," *Engineering Management Journal*. Vol. 29, No. 1, pp. 45-54. <http://dx.doi.org/10.1080/10429247.2016.1277887>
14. **Dorneich, M.C.**, Rogers, W., Whitlow, S.D., & DeMers, R. (2016). "Human Performance Risks and Benefits of Adaptive Systems on the Flight Deck," *International Journal of Aviation Psychology*. Vol. 26, No. 1-2, pp. 15-35.
13. \*Du, Y., **Dorneich, M.C.**, & Steward, B.L. (2016). "Virtual Operator Modeling Method for Excavator Trenching," *Automation in Construction*. Vol. 70, pp. 14-25. <http://dx.doi.org/10.1016/j.autcon.2016.06.013>
12. Krejci, C., Stone, R., **Dorneich, M.C.**, & Gilbert, S. (2016). "Analysis of Food Hub Commerce and Participation using Agent-Based Modeling: Integrating Financial and Social Drivers," *Human Factors* (Special Issue: Human Factors Prize on Sustainability). Vol. 58, No. 1, pp. 58-79. <http://dx.doi.org/10.1177/0018720815621173>

11. Krejci, C., **Dorneich, M.C.**, & Stone, R. (2015). "Assessing Values-Based Sourcing Strategies in Regional Food Supply Networks: An Agent-Based Approach," *Journal of Policy in Complex Systems*. 2(2), 21-48.
10. **Dorneich, M.C.**, Letsu-Dake, E., Singh, S., Scherer, S., Chamberlain, L., & Bergerman, M. (2015). "Mixed-Initiative Control of a Roadable Air Vehicle," *Journal of Human-Robot Interaction*. Vol. 4, No. 3, pp. 38-61. <http://dx.doi.org/10.5898/JHRI.4.3.Dorneich>
9. **Dorneich, M.C.**, Hamblin, C., Lancaster, J., & Olofinboba, O. (2014). "Perceptual Groupings Effects on Cursor Movement Expectations," *Human Factors*. Vol. 56, No. 3, pp. 535-552. <http://dx.doi.org/10.1177/0018720813500692>
8. Patel, J., **Dorneich, M.C.**, Mott, D., Bahrami, A., & Giammanco, C. (2013). "Improving Coalition Planning by Making Plans Alive," *IEEE Transactions on Intelligent Systems*. Vol. 28, No. 1, pp. 17-25. <http://dx.doi.org/10.1109/MIS.2012.88>
7. Feigh, K.M., **Dorneich, M.C.**, & Hayes, C.C. (2012). "Towards a Characterization of Adaptive Systems: a Framework for Researchers and System Designers," *Human Factors*. Vol. 54, No. 6, pp. 1008-1024. <http://dx.doi.org/10.1177/0018720812443983>
6. **Dorneich, M.C.**, Mathan, S., Ververs, P.M., Whitlow, S.D., & Hayes, C.C. (2012). "Considering Etiquette in the Design of Adaptive Systems," *Journal of Cognitive Engineering and Decision Making*. Vol. 6, No. 2, pp. 243-265. <http://dx.doi.org/10.1177/1555343412441001>
5. **Dorneich, M.C.**, Whitlow, S.D., Mathan, S., Ververs, P.M., Erdogmus, D., Adami, A., Pavel, M., & Lan, T. (2007). "Supporting Real-time Cognitive State Classification on a Mobile Participant," *Journal of Cognitive Engineering and Decision Making*. Vol. 1, No. 3, pp. 240-270. <http://dx.doi.org/10.1518/155534307X255618>
4. **Dorneich, M.C.**, Whitlow, S.D., Miller, C.A., & Allen, J.A (2004). "A Superior Tool for Airline Operations," *Ergonomics in Design*. Vol. 12, No. 2, pp. 18-23. <http://dx.doi.org/10.1177/106480460401200205>
3. **Dorneich, M.C.** (2002). "A System Design Framework Driven Implementation of a Learning Collaboratory," *IEEE Transactions on Systems, Man, and Cybernetics, Part A*. Vol. 32, No. 2, pp. 200-213. <http://dx.doi.org/10.1109/TSMCA.2002.1021108>
2. **Dorneich, M.C.** & Jones, P.M. (2001). "The UIUC Virtual Spectrometer: A Java-Based Collaborative Learning Environment," *Journal of Engineering Education*. Vol. 90, No. 4, pp. 721-728. <http://dx.doi.org/10.1002/j.2168-9830.2001.tb00663.x>
1. **Dorneich, M.C.** & Sahinidis, N. (1995). "Global Optimization Algorithms for Chip Layout and Compaction," *Journal of Engineering Optimization*. Vol. 25, No. 2, pp. 131-154.

### Edited Volumes

1. **Dorneich, M.C.** & Clark, M.C., editors (2021). "Best Practices for Online Team-Based Learning: Taking Small Group Learning Online," *New Directions in Teaching and Learning*. Vol. 164. Hoboken, NJ: Wiley.

### Book Chapters

21. \*Stonewall, J., **Dorneich, M.C.**, Shenk, L., Krejci, C., & Passe, U. (2019). "Inclusive Decision-Making: Applying Human Factors Methods to Capture the Needs and Voices of Marginalized Populations," Chapter 2, *Advancing Diversity, Inclusion, and Social Justice through Human Systems Engineering* (R.D. Roscoe, E.K. Chiou, A.R. Wooldridge). Boca Raton, FL: CRC Press. pp. 11-29.
20. Gilbert, S.B., **Dorneich, M.C.**, \*Walton, J., & Winer, E. (2018). "Five Lenses on Team Tutor Challenges: A Multidisciplinary Approach," Chapter 11, *Building Intelligent Tutoring Systems for Teams: What Matters (Research on Managing Groups and Teams, Volume 19)* (J. Johnston, R. Sottolare, A. Sinatra, C. S. Burke, Eds). Bingley, UK: Emerald Publishing Limited. pp. 247-277.

19. Cai, Z., Graesser, A.C., Hu, X., Cockroft, J.L., Shaffer, D.W., Hampton, A.J., Sinatra, A.M., & **Dorneich, M.C.** (2018). "The Roles of Talking Agents in Online Collaborative Learning Environments," Chapter 16, *Design Recommendations for Intelligent Tutoring Systems: Volume 6 - Team Learning and Taskwork* (R. Sottolare, A. Graesser, X. Hu, & A. Sinatra, Eds). Orlando, FL: U.S. Army Research Laboratory. pp. 169-178.
18. Stevens, R., Gorman, J., Zachary, W., Johnston, J., **Dorneich, M.C.**, & Foltz, P. (2018). "How is this Team Doing, and Why?," Chapter 8, *Design Recommendations for Intelligent Tutoring Systems: Volume 6 -Team Learning and Taskwork* (R. Sottolare, A. Graesser, X. Hu, & A. Sinatra, Eds). Orlando, FL: U.S. Army Research Laboratory. pp. 77-92.
17. **Dorneich, M.C.**, Hamblin, C., Olofinboba, O., Sandor, A., Begault, D.R., Gohmert, D., Sgobba, T., Fodroci, M., Kramer, L., & Hamilton, D. (2017). " Human-system interfaces design," Chapter 9, *Space Safety and Human Performance* (T. Sgobba, B. Kanki, J-F. Clervoy, & G.M. Sandal, Eds.). Kinlington, UK: Elsevier. pp. 355-428.
16. Letsu-Dake, E., Rogers, W., **Dorneich, M.C.**, & DeMers, R. (2012). "Innovative Flight Deck Function Allocation Concepts for NextGen," *Advances in Human Aspects of Aviation* (S.J. Landry, Ed.). Boca Raton, FL: CRC Press. pp. 301-310.
15. Smith, P.J., Beatty, R., Hayes, C.C., Larson, A., Geddes, N.D., & **Dorneich, M.C.** (2012). "Human-Centered Design of Decision Support Systems," *The Human-Computer Interaction Handbook, 3rd Edition* (A. Sears & J. Jacko, Eds.). Boca Raton, FL: CRC Press. pp. 589-622.
14. **Dorneich, M.C.**, Mathan, S., Whitlow, S.D., Ververs, P.M, & Hayes, C.C. (2010). "Etiquette Considerations for Adaptive Systems that Interrupt: Cost and Benefits," *Human-Computer Etiquette: Understanding the Impact of Human Culture and Expectations on the Use and Effectiveness of Computers and Technology* (C.C. Hayes & C. Miller, Eds.). : Taylor & Francis.
13. Bainbridge, L. & **Dorneich, M.C.** (2010). "Processes Underlying Human Performance," *Handbook of Aviation Human Factors* (D.J. Garland, J.A. Wise, & V.D. Hopkin, Eds.). Mahwah, NJ: Lawrence Erlbaum Associates. pp. 7-1 – 7-68.
12. Keinrath, C., **Dorneich, M.C.** & Vašek, J. (2010). "Designing for the future: A Cognitive-Adaptive-Man-Machine-Interface," *Human Factors: A system view of human, technology and organization* (D. de Waard, A. Axelsson, M. Berglund, B. Peters, & C. Weikert, Eds.). Maastricht, Netherlands : Shaker Publishing. pp. 99-108.
11. **Dorneich, M.C.**, Mathan, S., Ververs, P.M, & Whitlow, S.D. (2008). "Cognitive State Estimation in Mobile Environments," *Augmented Cognition: A Practitioner's Guide* (D. Schmorow & K. Stanney, Eds.). Santa Monica, CA: HFES. pp. 75-111.
10. Mathan, S., Whitlow, S., **Dorneich, M.**, and Ververs, P., & Davis, G. (2007). "Neurophysiological Estimation of Interruptibility: Demonstrating Feasibility in a Field Context," *Foundations of Augmented Cognition, 4nd Edition* (D.D. Schmorow, D.M. Nicholson, J.M. Drexler, & L.M. Reeves, Eds.). Arlington, VA: Strategic Analysis. pp. 51-58.
9. **Dorneich, M.**, Whitlow, S., Ververs, P.M., & Mathan, S. (2007). "Iterative Experimental Design to Mature Cognitive State Classification Techniques from the Laboratory to Field Settings," *Foundations of Augmented Cognition, 4nd Edition* (D.D. Schmorow, D.M. Nicholson, J.M. Drexler, & L.M. Reeves, Eds.). Arlington, VA: Strategic Analysis. pp. 23-32.
8. Miller, C.A. & **Dorneich, M.C.** (2006). "From Associate Systems to Augmented Cognition: 25 Years of User Adaptation in High Criticality Systems," *Foundations Augmented Cognition, 2nd Edition* (D.D. Schmorow, K.M. Stanney, & L.M. Reeves, Eds.). Arlington, VA: Strategic Analysis. pp. 344-353.
7. Mathan, S., Ververs, P., **Dorneich, M.**, Whitlow, S., Carciofini, J., Erdogmus, D. Pavel, M., Huang, C., Lan, T., & Adami, A. (2006). "Neurotechnology for Image Analysis: Searching For Needles in

- Haystacks Efficiently," *Foundations Augmented Cognition, 2nd Edition* (D.D. Schmorow, K.M. Stanney, & L.M. Reeves, Eds.). Arlington, VA: Strategic Analysis. pp. 344-353.
6. Ververs, P. M., Whitlow, S.D., **Dorneich, M.C.**, & Sampson, J. (2005). "AugCogifying the Army's Future Warfighter," *Foundations of Augmented Cognition* (D.D. Schmorow, Ed.). Mahwah, NJ: Lawrence Erlbaum Associates. pp. 1097-1104.
  5. Mathan, S. & **Dorneich, M.** (2005). "Augmented Tutoring: Improving military training through model tracing and real-time neurophysiological sensing," *Foundations of Augmented Cognition* (D.D. Schmorow, Ed.). Mahwah, NJ: Lawrence Erlbaum Associates. pp. 964-973.
  4. **Dorneich, M.C.**, Mathan, S., Creaser, J.I., Whitlow, S.D., & Ververs (2005). "Enabling Improved Performance through a Closed-Loop Adaptive System Driven by Real-Time Assessment of Cognitive State," *Foundations of Augmented Cognition* (D.D. Schmorow, Ed.). Mahwah, NJ: Lawrence Erlbaum Associates. pp. 621-630.
  3. Mathan, S., **Dorneich, M.**, & Whitlow, S. (2005). "Automation Etiquette in the Augmented Cognition Context," *Foundations of Augmented Cognition* (D.D. Schmorow, Ed.). Mahwah, NJ: Lawrence Erlbaum Associates. pp. 560-569.
  2. Ververs, P. M., Whitlow, S.D., **Dorneich, M.C.**, & Mathan, S. (2005). "Building Honeywell's Adaptive System for the Augmented Cognition Program," *Foundations of Augmented Cognition* (D.D. Schmorow, Ed.). Mahwah, NJ: Lawrence Erlbaum Associates. pp. 460-468.
  1. **Dorneich, M.C.**, Whitlow, S.D., Mathan, S., Carciofini, J., and Ververs, P.M. (2005). "The Communications Scheduler: A Task Scheduling Mitigation For A Closed Loop Adaptive System," *Foundations of Augmented Cognition* (D.D. Schmorow, Ed.). Mahwah, NJ: Lawrence Erlbaum Associates. pp. 132-141.

## Peer-Reviewed Conference Papers

\* Graduate Student co-author; \*\* undergraduate co-author

142. \*Finseth T., **Dorneich, M.C.**, Keren, N., Franke, W., Vardeman, S., \*\*Segal, J., \*\*Deick, A., \*\*Cavanah, E., \*\*Thompson, K., (Accepted). "An Approach to Adaptive Training for Stress Inoculation," Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Baltimore, MD, October 4-8. .
141. \*Jasper, A., \*Doty, T., \*Sepich, N., **Dorneich, M.C.**, Gilbert, S., & Kelly, J. (Accepted). "The Relationship Between Personality, Recalled Cybersickness Severity, and Recalled Cybersickness Recovery Time," Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Baltimore, MD, October 4-8. .
140. \*Sepich, N., **Dorneich, M.C.**, & Gilbert, S. (Accepted). "Human-Agent Team Game Analysis Framework: Case Studies," Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Baltimore, MD, October 4-8. .
139. \*Meister, P., \* Miller, J., \* Wang, K., **Dorneich, M.C.**, Winer, E., Brown, L., & Whitehurst, G. (Accepted). "Using Three-Dimensional Augmented Reality to Enhance General Aviation Weather Training," Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Baltimore, MD, October 4-8. .
138. \*Meister, P., \*Wang, K., **Dorneich, M.C.**, Winer, E., Brown, L., & Whitehurst, G. (Accepted). "Applying Augmented Reality Capabilities to Enhance General Aviation Weather Training," AIAA Aviation Forum. [Virtual], August 2-6. .
137. \*Tokadli, G., & **Dorneich, M.C.** (Accepted). "Evaluating Human Perception of Autonomous System Teammate-likeness and Team Interdependency," IEEE/AIAA 40th Digital Avionics Systems Conference. San Antonio, TX, September 26, 20. .



136. \*Plewa, M., & **Dorneich, M.C.** (Accepted). "Validation of a Survey Instrument to Measure Display Compellingness," IEEE/AIAA 40th Digital Avionics Systems Conference. San Antonio, TX, September 26, 20. .
135. \*Wang, K., \*Meister, P., Winer, E., **Dorneich, M.C.**, Brown, L., & Whitehurst, G. (Accepted). "An Augmented Reality Thunderstorm Simulation to Improve Aviation Weather Pilot Training," Interservice/Industry Training, Simulation and Education Conference (I/ITSEC). Orlando, FL, November 29 - December 3. .
134. \*Finseth T., **Dorneich, M.C.**, Keren, N., Franke, W., & Vardeman, S. (Accepted). "Training for Stressful Operations using Adaptive Systems: Conceptual Approaches and Applications," Interservice/Industry Training, Simulation and Education Conference (I/ITSEC). Orlando, FL, November 29 - December 3. .
133. Gilbert, S. B., \*Jasper, A., \*Sepich, N. C., \*Doty, T., Kelly, J. W., & Dorneich, M. C. (2021). Individual Differences and Task Attention in Cybersickness: A Call for a Standardized Approach to Data Sharing. IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops: *Workshop on Immersive Sickness Prevention (WISP)*, Virtual.
132. \*Ouverson, K.M., \*Hoover, M., Gilbert, S.B., **Dorneich, M.C.**, & Winer, E. (2020). "Situational Awareness Methods in Virtual Reality Training: A Scoping Review," *Interservice/Industry Training, Simulation and Education Conference (I/ITSEC)*. Orlando, FL, 30 November - 4 December. .
131. \*Finseth, T., **Dorneich, M. C.**, Keren, N., Franke, W. D. & Vardeman, S. B. (2020). "Virtual Reality Graduated Stress Exposure for Training Spaceflight Emergency Procedures," *IEEE/AIAA 39<sup>th</sup> Digital Avionics Systems Conference*. Virtual, October 11-16, 2020.
130. \*Stonewall, J., **Dorneich, M.C.**, Passe, U., & Shenk, L. (2020). "Implications for Using Mobile Ecological Momentary Assessment to Collect Climate Data from Vulnerable Urban Populations," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Virtual, October 5-9, 2020. .
129. \*\*Cavanah, E., \*\*Ford, A., \*Jasper, A., \*Stonewall, J., Gilbert, S.B., & **Dorneich, M.C.** (2020). "Creating Metrics for Human-Agent Teams," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Virtual, October 5-9, 2020. .
128. \*Tokadli, G., **Dorneich, M.C.**, & Matessa, M. (2019). "Development Approach of Playbook Interface for Human-Autonomy Teaming in Single Pilot Operations," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Seattle, WA, October 28 – November 1.
127. \*Tokadli, G., **Dorneich, M.C.**, Matessa, M., & \*\*Eda, S. (2019). "The Evaluation of Playbook for Human-Autonomy Teaming in Single Pilot Operations," *IEEE/AIAA 38<sup>th</sup> Digital Avionics Systems Conference*. San Diego, CA, September 8-12.
126. \*Tokadli, G., & **Dorneich, M.C.** (2019). "Interaction Paradigms: from Human-Human Teaming to Human-Autonomy Teaming," *IEEE/AIAA 38<sup>th</sup> Digital Avionics Systems Conference*. San Diego, CA, September 8-12.
125. **Dorneich, M.**, Gilbert, S. B., Lum, H. C., Nadolny, L., & Abich, J., IV. (2019) Measuring the invisible: Inferring cognitive constructs from observable data. In S. D. Doherty (Chair), Learning with Gamification: Perspectives from Psychology, Education, and Engineering. *Symposium conducted at the meeting of the American Psychological Association*, Chicago, IL.
124. \*Ostrander, A., Gilbert, S, & **Dorneich, M.C.** (2019). "Enriched Team Data: The Representation You Need for Team Assessment," *Proceedings of the Approaches and Challenges in Team Tutoring Workshop* at the Artificial Intelligence in Education (AIED). Chicago, IL, June 25-29, 2019. (pp. 5-14): Springer.
123. \*Mittal, A., Krejci, C., & **Dorneich, M.C.** (2019). "An Agent-based Approach to Designing Residential Renewable Energy Models," *Energy Research & Social Science*. Tempe, AZ, May 28-31.

122. \*Annamalai, R., **Dorneich, M.C.**, & \*Tokadlı, G. (2019). "Assessing the Effect of Sensor Limitations in Enhanced Flight Vision Systems on Pilot Performance," *Human-Computer Interaction International 2019*. Orlando, FL, July 26-31.
121. \*Stonewall, J., Passe, U., **Dorneich, M.C.**, Shenk, L., Krejci, C., Thompson, J., Ganapathysubramanian, B., Sarkar, S., & Zhou, Y. (2018). "An Approach to Incorporating Human Behaviors, Building Occupancy Characteristics, and Near-Building Climates in Decision Making to Increase Resilience of Urban Neighborhoods," *Workshop: Social Justice and Equity in the Engineering of Smart and Connected Cities*, SCC-RCN MOHERE: Mobility, Health, and Resilience: Building Capacities and Expanding Impact. Seattle, WA, December 10-11.
120. \*Ouverson, K., \*Ostrander, A., \*Macallister, A., \*Kohl, A., \*Walton, J., Gilbert, S., **Dorneich, M.C.**, Winer, E., & Sinatra, A.M. (2018). "Team Training for Enemy Identification Using an Intelligent Tutoring System," *Interservice/Industry Training, Simulation and Education Conference (IITSEC)*. Orlando, FL, November 26-30, 2018.
119. \*Finseth, T., \*Barnett, N., Shirtcliff, B., **Dorneich, M.C.**, Keren, N. (2018). "Stress Inducing Demands in Virtual Environments," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Philadelphia, PA, October 1-5, 2018. (Vol. 62, No. 1, pp. 2066-2070). Sage CA: Los Angeles, CA: SAGE Publications.
118. \*Stonewall, J., \*Huang, W., **Dorneich, M.C.**, Krejci, C., Shenk, L., & Passe, U. (2018). "Energy Use and Weatherization Practices: Applications for Agent-Based Modeling to Support Vulnerable Populations," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Philadelphia, PA, October 1-5, 2018. (Vol. 62, No. 1, pp. 676-680). Sage CA: Los Angeles, CA: SAGE Publications.
117. \*Ouverson, K., Stonewall, J., Gilbert, S., & **Dorneich, M.** (2018). "Developing Strategic Training on Reading the Mind in the Eyes," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Philadelphia, PA, October 1-5, 2018. (Vol. 62, No. 1, pp. 1562-1566). Sage CA: Los Angeles, CA: SAGE Publications.
116. \*Tokadlı, G., \*Ouverson, K., Meusel, C., \*\*Garcia A., Gilbert, S., & **Dorneich, M.C.** (2018). "An Analysis of Video Games Using the Dimensions of Human-Agent Interaction," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Philadelphia, PA, October 1-5, 2018. (Vol. 62, No. 1, pp. 716-720). Sage CA: Los Angeles, CA: SAGE Publications.
115. \*Walton, J., \*Ostrander, A., \*Ouverson, K., Gilbert, S., **Dorneich, M.**, Winer, E., Sinatra, A. (2018). "Feedback Design Considerations for Intelligent Team Tutoring Systems," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Philadelphia, PA, October 1-5, 2018. (Vol. 62, No. 1, pp. 1977-1981). Sage CA: Los Angeles, CA: SAGE Publications.
114. Wooldridge, A.R., Nguyen, T., Valdez, R., Montague, E., Milner, M.N., **Dorneich, M.C.**, & Roscoe, R. (2018). "Human Factors and Ergonomics in Diversity, Inclusion and Social Justice Research," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Philadelphia, PA, October 1-5, 2018. (Vol. 62, No. 1, pp. 447-449). Sage CA: Los Angeles, CA: SAGE Publications.
113. \*Tokadlı, G., **Dorneich, M.C.**, & Gonzalez-Torres, T. (2018). "Human-Agent Team for Space Operations beyond Low-Earth Orbit," *IEEE/AIAA 37<sup>th</sup> Digital Avionics Systems Conference*. London, UK, September 23-27.
112. Sinatra, A. M., Gilbert, S., **Dorneich, M.**, Winer, E., \*Ostrander, A., \*Ouverson, K., Johnston, J., & Sottolare, R. (2018). "Considerations for Dealing with Real-Time Communications in an Intelligent Team Tutoring System Experiment," *Proceedings of Workshop on Assessment and Intervention during Team Tutoring at AIED 2018*. London, UK, June 27-30. (pp. 28-35).
111. \*Mittal, A., Krejci, C., & **Dorneich, M.C.** (2018). "An Agent-based Modeling Architecture for Residential Rooftop PV Adoption," 2018 IISE Annual Conference. Orlando, FL, May 19-22. .

110. \*Stonewall, J., **Dorneich, M.C.**, Rongerude, J. & Dorius, C. (2018). "A Review of Bias in Peer Assessment," *Collaborative Network for Engineering and Computing Diversity (CoNECD) Conference*. Crystal City, VA, April 29 – May 1, 2018.
109. \*Bonner, D., Gilbert, S., Winer, E., **Dorneich, M.C.**, \*Macallister, A., \*Kohl, A. \*Ouverson, K., \*Slavina, A., & Sinatra, A. (2017). "Military Team Training Utilizing GIFT," *Interservice/Industry Training, Simulation and Education Conference (IITSEC)*. Orlando, FL, November 27 - December 1.
108. \*Huang, W., Krejci, C.C., **Dorneich, M.C.**, & Passe, U. (2017). "Weatherization Adoption in A Multilayer Social Network: An Agent-based Approach," *Computational Social Science (CSS 2017)*. Santa Fe, NM, October 19 – 22. Finalist Best Paper.
107. \*Bonner, D., \*Ouverson, K., Gilbert, S., Sinatra, A.M., **Dorneich, M.C.**, Winer, E., \*Macallister, A., & \*Kohl, A. (2017). "Operationalizing the C's of Teamwork," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Austin, TX, October 9–13.
106. Ososky, S., **Dorneich, M.C.**, Gilbert, S.B., Goldberg, B.S., Johnson, C.I., & Sinatra, A.M. (2017). "The Future of Adaptive Tutoring: Wrangling Complexity Across Domains, Applications, and Platforms," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Austin, TX, October 9–13.
105. \*Tokadli, G. & **Dorneich, M.C.** (2017). "Development of a Functionality Matrix for a Cognitive Assistant on Long Distance Space Missions," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Austin, TX, October 9–13.
104. \*Stonewall, J., \*Fjelstad, K., **Dorneich, M.C.**, Shenk, L., Krejci, C., Cetin, K., & Passe, U. (2017). "Best Practices for Engaging Underserved Populations," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Austin, TX, October 9–13.
103. \*Tokadli, G. & **Dorneich, M.C.** (2017). "Envisioned Concept of Operations for Beyond Low-Earth Orbit: The Collaborative Decision Making Between Human and Cognitive Assistant," *American Institute of Aeronautics and Astronautics (AIAA) SPACE Conferences and Exposition*. Orlando, FL, September 12-14, 2017.
102. \*Du, Y., **Dorneich, M.C.**, & Steward, B. (2017). "Virtual Operator Models for Off-highway Machine Virtual Prototyping," *American Society of Agricultural and Biological Engineers 2017 (ASABE) Annual International Meeting*. Spokane, WA, Jul 16-19.
101. Hoefler, M., **Dorneich, M.**, & Frank, M., (2017). "Using geometric data mining to automate design for supply chain ," *Proceedings of Industrial and Systems Engineering Research Conference*. Pittsburgh, PA, May 20-23.
100. Gilbert, S., Sinatra, A. M., Macallister, A., Kohl, A., Winer, E., **Dorneich, M.**, Slavina, A., Bonner, D., & Ouverson, K. (2017). "Analyzing Team Training Data: Aspirations for a GIFT Data Analytics Engine," *Proceedings of 5th Annual GIFT Users Symposium (GIFTSym5)*. Orlando, FL, May 10-11.
99. \*Macallister, A., \*Kohl, A., Gilbert, S., Winer, E., **Dorneich, M.**, \*Bonner, D., & \*Slavina, A. (2017). "Analysis of Team Tutoring Training Data," *Modeling and Simulation in the Age of Data (MODSIM) 2017*. Virginia Beach, VA, April 25-27.
98. Krejci, C.C., **Dorneich, M.C.**, Passe, U., & \*Peters, N. (2016). "A Hybrid Simulation Model for Urban Weatherization Programs," *Proceedings of the 2016 Winter Simulation Conference*. Arlington, VA, December 11-14.
97. \*Finseth, T., Keren, N., Franke, W., **Dorneich, M.C.**, & Anderson, C.C. (2016). "Stress Inoculation Training for Spaceflight Hazards," *American Institute of Aeronautics and Astronautics (AIAA) SPACE Conferences and Exposition (AIAA 2016-5614)*. Long Beach, CA, September 13-16.

96. \*Bonner, D., \*Slavina, A., \*Macallister, A., \*Holub, J., Gilbert, S., Sinatra, A.M., **Dorneich, M.**, & Winer, E. (2016). "The Hidden Challenges of Team Tutor Development," *Fourth Annual GIFT Users Symposium*. Princeton, NJ, May 26.
95. Meyer, J., Miller, C., Hancock, P., de Visser, E.J., & **Dorneich, M.C.** (2016). "Is interacting with machines like interacting with people? Politeness in machine-human and human-human interaction," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23.
94. \*Du, Y., **Dorneich, M.C.**, Steward, B., & McKenzie, C. (2016). "Risk Analysis for Combine Operations in Harvesting," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23,
93. \*Bonner, D., & **Dorneich, M.C.** (2016). "Development of a Game-Based Learning Requirements to Increase Female Middle School Students Interest in Computer Science," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23.
92. \*Kalvelage, K., & **Dorneich, M.C.** (2016). "Using Human Factors to Establish Occupant Task Lists for Office Building Simulations," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23.
91. \*Stonewall, J., & **Dorneich, M.C.** (2016). "Gender and Professionalism of Web Design Elements," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23.
90. \*Bonner, D., Gilbert, S., **Dorneich, M.C.**, Sinatra, A., \*Slavina, A., \*Macallister, A., & Winer, E. (2016). "Building Intelligent Tutoring Systems for Teams," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23.
89. \*\*Volz, K., \*Yang, E., \*Dudley, R., \*\*Lynch, E., \*\*Dropps, M. & **Dorneich, M.C.** (2016). "An Evaluation of Cognitive Skill Degradation in Information Automation," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23.
88. \*Yang, E., & **Dorneich, M.C.** (2016). "Evaluation of Etiquette Strategies to Adapt Feedback in Affect-Aware Tutoring," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Washington DC, September 19–23.
87. \*Du, Y., Steward, B., & **Dorneich, M.** (2016). "Virtual Operator Modeling Approach for Combine Harvesting," *American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting*. Orlando, FL, Jul 17-20.
86. Passe, U., Anderson, N., deBrabanter, K., **Dorneich, M.C.**, & Poplin, A. (2016). "Methodologies for Studying Human-Microclimate Interactions for Resilient, Smart City Decision-Making," *Passive and Low Energy Architecture (PLEA) 2016 conference*. Los Angeles, CA, July 11-13.
85. \*Kalvelage, K., **Dorneich, M.C.**, & Passe, U. (2016). "Task-based approach to define occupant behavior in agent-based modeling," *Windsor Conference 2016: Making Comfort Relevant*. Windsor, England, April 7-10.
84. Krejci, C., Stone, R., **Dorneich, M.C.**, & Gilbert, S. (2015). "Evaluating Producer Selection Policies in Intermediated Regional Food Distribution Systems: An Agent-Based Approach," *2015 Computational Social Science Society of the Americas (CSSSA) conference*. Santa Fe, NM, October 29 - November 1.
83. \*Kalvelage, K., Passe, U., Krejci, C. & **Dorneich, M.C.**, (2015). "Incorporation of future building operating conditions into the modeling of building–microclimate interaction: a feasibility study," *The First International Symposium on Sustainable Human-Building Ecosystems*. Pittsburgh, PA, October 5-7.

82. \*Kalvelage, K., **Dorneich, M.C.**, & Passe, U. (2015). "Simulating the Future Microclimate to Identify Vulnerable Building Interior Conditions," *14th International Conference of the International Building Performance Simulation Association*. Hyderabad, India, December 7-9.
81. \*Walton, J., Gilbert, S., Winer, E., **Dorneich, M.**, & \*Bonner, D. (2015). "Evaluating Distributed Teams with the Team Multiple Errands Test," *Interservice/Industry Training, Simulation and Education Conference (I/ITSEC)*. Orlando, FL, November 30 - December 4.
80. \*Curtis, M.K., \*\*Dawson, K., \*\*Jackson, K., \*\*Litwin, L., \*Meusel, C., **Dorneich, M.C.**, Gilbert, S., Kelly, J., Stone, R., & Winer, E. (2015). "Mitigating Visually Induced Motion Sickness: A virtual hand-eye coordination task," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Los Angeles, CA, 26-30 October.
79. \*Meusel, C., \*Kelly, N., Gilbert, S., **Dorneich, M.**, Gilmore, B., & Newendorp, B. (2015). "Operator-Centered Task Analysis: A hybrid methodology for human-machine interaction observation in the field," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Los Angeles, CA, 26-30 October.
78. \*Barnawal, P., **Dorneich, M.C.**, Peters, F., & Frank, M. (2015). "Design and Evaluation of Designer Feedback System in Design for Manufacturability," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Los Angeles, CA, 26-30 October.
77. **Dorneich, M.C.**, \*Bickelhaupt, S., Dorius, C., Artz, G., Bender, H., Bestler, L., Bestler, L., Caissie, B., Gahn, S., Jacobs, K., Lamm, M.H., Orgler, L., Rongerude, J., Smiley-Oyen, A., & Stone, R.T. (2015). "Measuring the Effectiveness of Team-Based Learning Outcomes in a Human Factors Course," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Los Angeles, CA, 26-30 October.
76. \*Dudley, R., **Dorneich, M.C.**, Rogers, W., Letsu-Dake, E., Whitlow, S.D., Nelson, E., & Dillard, M. (2015). "Evaluation of Information Quality and Automation Visibility in Information Automation on the Flight Deck," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Los Angeles, CA, 26-30 October.
75. Yang, E. & **Dorneich, M.C.** (2015). "The Effect of Time Delay on Emotion, Arousal, and Satisfaction in Human-Robot Interaction," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Los Angeles, CA, 26-30 October.
74. Letsu-Dake, E., Rogers, W., Whitlow, S., Nelson, E., Dillard, M., **Dorneich, M.C.**, & \*Dudley, R. (2015). "Flight Deck Information Automation: A Human-In-The Loop In-Trail Procedure Simulation Study," *IEEE/AIAA 34th Digital Avionics Systems Conference*. Prague, Czech Republic, September 13-17.
73. \*Bonner, D., \*Walton, J., **Dorneich, M. C.**, Gilbert, S. B., Winer, E., & Sottolare, R. A. (2015). "The Development of a Testbed to Assess an Intelligent Tutoring System for Teams," *17th International Conference on Artificial Intelligence in Education (AIED 2015)*. Madrid, Spain, June 22-26.
72. Gilbert, S., Winer, E., Holub, J., Richardson, T., **Dorneich, M.**, & Hoffman, M. (2015). "Characteristics of a Multi User Tutoring Architecture," *3rd Annual Generalized Intelligent Framework for Tutoring (GIFT) Users Symposium (GIFTSym3)*. Orlando, FL: Army Research Laboratory, June 17-18.
71. Du, Y., **Dorneich, M.C.**, Steward, B.L., Anderson, E.R., Kane, L.F., & Gilmore, B. (2015). "Virtual Operator Modeling Approach for Construction Machinery," *2015 Conference on Autonomous and Robotic Construction of Infrastructure*. Ames, IA, June 2-3.
70. Componation, P.J., **Dorneich, M.C.**, & \*Hansen, J.L. (2015). "Comparing Systems Engineering and Project Success in Commercial-focused versus Government-focused Projects," *2015 Conference on Systems Engineering Research*. Hoboken, NJ, March 17-19.
69. \*Walton, J., \*Bonner, D., \*\*Walker, K., \*\*Mater, S., **Dorneich, M.**, Gilbert, S., & West, R. (2015). "The Team Multiple Errands Test: A Platform to Evaluate Distributed Teams," *8th ACM Conference*

on Computer-Supported Cooperative Work and Social Computing (CSCW). Vancouver, Canada, March 14-18.

68. \*Barnawal, P., **Dorneich, M.C.**, Peters, F., & Frank, M.C. (2014). "Evaluation of Designer Feedback Systems in Design for Manufacturability," *Steel Founders Society of America National Technical & Operating Conference*. Chicago, IL, December 11-13.
67. Lamm, M.H., **Dorneich, M.C.**, & Rover, D.T. (2014). "Team-Based Learning in Engineering Classrooms: Feedback Form and Content Adds Value to the Learning Experience," *ASEE North Midwest Section Conference*. Iowa City, IA, October 16-18.
66. \*Kalvelage, K., & **Dorneich, M.C.** (2014). "A User-Centered Approach to Building Controls," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Chicago, IL, October 27-31.
65. \*Dudley, R., **Dorneich, M.**, Letsu-Dake, E., Rogers, W., Whitlow, S.D., Dillard, M., & Nelson, E. (2014). "Characterization of Information Automation on the Flight Deck," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Chicago, IL, October 27-31.
64. \*Walton, J., Gilbert, S., **Dorneich, M.**, Winer, E., Ray, C., & \*Bonner, D. (2014). "Modality and Timing of Team Feedback: Implications for GIFT," *In Proceedings of the 2nd Annual Generalized Intelligent Framework for Tutoring (GIFT) Users Symposium*. Army Research Laboratory. Pittsburgh, PA, June 12-13.
63. \*Bonner, D., Gilbert, S., **Dorneich, M.**, Burke, S., \*Walton, J., Winer, E., & Ray, R. (2014). "Taxonomy of Teams, Teams Tasks, and Tutors," *In Proceedings of the 2nd Annual Generalized Intelligent Framework for Tutoring (GIFT) Users Symposium*. Army Research Laboratory. Pittsburgh, PA, June 12-13.
62. Compton, P.J., **Dorneich, M.C.**, Hu, G., Farrington, P.A., & \*Hansen, J.L. (2013). "Systems Engineering and Project Success in Government and Commercial Organizations," *American Society for Engineering Management*. Bloomington, MN, October 2-5.
61. **Dorneich, M.D.**, \*\*McGrath, K.A., \*Dudley, R.F., & Morris, M. (2013). "Analysis of the Characteristics of Adaptive Systems," *IEEE Systems, Man, & Cybernetics Conference*. Manchester, UK, October 13-16.
60. Stone, R., Gilbert, S., & **Dorneich, M.C.** (2013). "Human Differences in Navigational Approaches during Tele-Robotic Search," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. San Diego, CA, September 30-October 4.
59. Compton, P.J., Hu, G., & **Dorneich, M.C.** (2013). "Applying Alternative Decision-making Approaches to a Complex Supplier Selection Problem," *Proceedings of the 2013 Industrial and Systems Engineering Research Conference*. San Juan, Puerto Rico, May 18-22, 2013.
58. **Dorneich, M.C.**, Rogers, W., Whitlow, S.D., & DeMers, R. (2012). "Analysis of the Human Performance Risks and Benefits of Adaptive Systems on the Flight Deck," *Human Factors and Ergonomics Society Conference*, Boston, MA, Oct 22-26.
57. Letsu-Dake, E., Rogers, W., **Dorneich, M.C.**, & DeMers, R. (2012). "Innovative Flight Deck Function Allocation Concepts for NextGen," *4th International Conference on Applied Human Factors and Ergonomics*. San Francisco, CA, July 21-25.
56. **Dorneich, M.C.**, Mott, D., Bahrami, A., Allen, J.A., Patel, J., & Giammanco, C. (2012). "Lessons Learned from an Evaluation of a Shared Representation to Support Collaborative Planning," *The 7th Annual Conference of Knowledge Systems for Coalition Operations*. Pensacola, FL, February 15-17.
55. **Dorneich, M.C.**, Hamblin, C., DeMers, R., & Olofinboba, O. (2011). "A Task-Based Reach-Zone Analysis of the Orion Crew Exploration Vehicle Controls," *IEEE Systems, Man, & Cybernetics Conference*. Anchorage, AK, October 9-12.

54. **Dorneich, M.C.**, Mott, D., Bahrami, A., Patel, J., & Giammanco, C. (2011). "Evaluation of a Shared Representation to Support Collaborative, Distributed, Coalition, Multilevel Planning," *The 5th Annual Conference of the International Technology Alliance*. College Park, MD, September 27-28.
53. **Dorneich, M.C.**, Hamblin, C., Vašek, J., Keinrath, C., Passinger, B., Krupanský, P. & Whitlow, S.D. (2011). "An Adaptive Integrated Datalink System for the Future Flight Deck," *Modern Safety Technologies in Transportation International Scientific Conference*. Kosice, Slovakia, September 20-22.
52. Krupanský, P., Vašek, J., Keinrath, C., **Dorneich, M.C.**, & Ball, L. (2011). "Dual Operation Human-Machine Interface," *Modern Safety Technologies in Transportation International Scientific Conference*. Kosice, Slovakia, September 20-22.
51. **Dorneich, M.C.**, Passinger, B., \*Beekhuyzen, M., Hamblin, C., Keinrath, C., Whitlow, S., & Vašek, J. (2011). "The Crew Workload Manager: An Open-loop Adaptive System Design for Next Generation Flight Decks," *Human Factors and Ergonomics Society Conference*. Las Vegas, NV, September 19-23.
50. Mott, D., Giammanco, C., **Dorneich, M.C.**, & Patel, J. (2010). "Hybrid Rationale and Controlled Natural Language for Shared Understanding," *The 6th Annual Conference of Knowledge Systems for Coalition Operations*. Vancouver, Canada, September 21-23.
49. Patel, J., **Dorneich, M.C.**, Mott, D., & Bahrami, A. (2010). "Making Plans Alive," *The 6th Annual Conference of Knowledge Systems for Coalition Operations*. Vancouver, Canada, September 21-23.
48. Mott, D., Giammanco, C., **Dorneich, M.C.**, & Braines, D. (2010). "Hybrid Rationale for Shared Understanding," *The 4th Annual Conference of the International Technology Alliance*. London, England, September 13-17.
47. Patel, J., **Dorneich, M.C.**, Mott, D., & Bahrami, A. (2010). "A Conceptual Framework to Support a Multi-level Planning Capability," *The 4th Annual Conference of the International Technology Alliance*. London, England, September 13-17 .
46. Keinrath, C., Vašek, J., & **Dorneich, M.** (2010). "A Cognitive Adaptive Man-Machine Interface for future flight decks," *European Association for Aviation Psychology (EAAP) Conference*. Budapest, Hungary, September 20-24.
45. **Dorneich, M.C.**, Whitlow, S.D., Olson, E.G., Anhalt, D., & Monteith, T. (2010). "The Combat Causal Reasoner Approach to Robotic Control," *Proceedings of the Human Factors and Ergonomics Society Conference*. San Francisco, CA, September 27-October 1. [Best Paper Runner-up]
44. **Dorneich, M.C.**, Lancaster, J.A., Hamblin, C.J., DeMers, R.E., & Olofinboba, O.A. (2010). "Deriving Cursor Control Device Expectations for the Orion Crew Exploration Vehicle," *Proceedings of the Human Factors and Ergonomics Society Conference*. San Francisco, CA, September 27-October 2.
43. Keinrath, C., **Dorneich, M.C.** & Vašek, J. (2009). "Designing for the future: A Cognitive-Adaptive-Man-Machine-Interface," *Annual Meeting of Human Factors and Ergonomics Society Europe Chapter*. Linköping, Sweden, October 14-16.
42. **Dorneich, M.C.**, Mott, D., Bahrami, A., & Patel, J. (2009). "Improving Shared Understanding in Multilevel Planning," *The 3rd Annual Conference of the International Technology Alliance*. College Park, MD, September 23-24.
41. Mott, D. & **Dorneich, M.C.** (2009). "Visualising Rationale in the CPM," *The 3rd Annual Conference of the International Technology Alliance*. College Park, MD, September 23-24.
40. **Dorneich, M.C.**, Mott, D., Patel, J. & Gentle, E. (2009). "Using a Structured Plan Representation to Support Multi-level Planning," *Proceedings of the Knowledge Systems for Coalition Operations*. Southampton, England, March.

39. Olofinboba, O., Hamblin, C., **Dorneich, M.C.**, DeMers, R., and Wise, J. (2008). "The design of controls for NASA's Orion Crew Exploration Vehicle (CEV)," *Proceedings of the European Association for Aviation Psychology 2008 Conference*. Valencia, Spain, October 27-31.
38. Olofinboba, O., DeMers, R., **Dorneich, M.C.**, Hamblin, C., & Wise, J. (2008). "A Systematic Tool for Deriving Crew Console Layouts," *Proceedings of the Human Factors and Ergonomics Society's 52nd Conference*. New York, NY, September 22-26.
37. Mathan, S., Erdogmus, D., Huang, C., Pavel, Ververs, P., **Dorneich, M.**, Whitlow, S. (2008). "Rapid image analysis using neural signals," *Conference of the Computer-Human Interaction (CHI)*. Florence, Italy, April 5-10.
36. **Dorneich, M.C.**, Mathan, S., Ververs, P.M, and M.C., Whitlow, S.D. (2007). "An Evaluation of Real-time Cognitive State Classification in a Harsh Operational Environment," *Proceedings of the Human Factors and Ergonomics Society Conference*. Baltimore, MD, October 1-5.
35. **Dorneich, M.C.**, Ververs, P.M., Mathan, S., Whitlow, S.D., Carciofini, J., and Reusser, T. (2006). "Neuro-Physiologically-Driven Adaptive Automation to Improve Decision Making Under Stress," *Proceedings of the Human Factors and Ergonomics Society Conference*. San Francisco, CA, October 16-20. Santa Monica, CA: HFES, pp.410-415.
34. **Dorneich, M.C.**, Ververs, P.M., Mathan, S., and Whitlow, S.D. (2006). "Evaluation of a Tactile Navigation Cueing System Triggered by a Real-Time Assessment of Cognitive State," *Proceedings of the Human Factors and Ergonomics Society Conference*. San Francisco, CA, October 16-20
33. Mathan, S., Whitlow, S., Erdogmus, Pavel, M., **Dorneich, M.**, Ververs, P. (2006). "Neurophysiologically Driven Image Triage: A Pilot Study," *Conference on Human Factors in Computing Systems (CHI)*. Quebec, Canada, April 22-27.
32. **Dorneich, M.C.**, Ververs, P.M., Mathan, S., and Whitlow, S.D. (2005). "A Joint Human-Automation Cognitive System to Support Rapid Decision-Making in Hostile Environments," *Proc. of International Conference on Systems, Man and Cybernetics*. Waikoloa, HI, October 10-12. Vol. 3, pp. 2390-2395.
31. \*Mazaeva, N., **Dorneich, M.**, Whitlow S., Mathan, S., & Ververs, P.M. (2005). "Characterization of changes in electrophysiological activity in an operational environment," *Proceedings of the Human Factors and Ergonomics Society Conference*. Orlando, FL, September 26-30.
30. Erdogmus, D., Adami, A., Pavel, M., Lan, T., Mathan, S., Whitlow, S., **Dorneich, M.** (2005). "Cognitive State Estimation Based on EEG for Augmented Cognition," *2nd IEEE EMBS International Conference on Neural Engineering*. Arlington VA, March 16-19.
29. Olofinboba O., **Dorneich, M.**, and Williams, K. (2005). "Intelligent Astronaut Associate for Next Generation Space Systems," *Proceedings of the IEEE Aerospace Conference*. Big Sky, MT, March 5-12.
28. **Dorneich, M.**, Whitlow, S., Ververs, P.M., Carciofini, J., & Creaser, J. (2004). "Closing the Loop of an Adaptive System with Cognitive State," *Proceedings of the Human Factors and Ergonomics Society Conference*. New Orleans, LA, September 20-24., pp.590-594.
27. **Dorneich, M.C.**, Whitlow, S.D., Ververs, P.M., Rogers, W.H. (2003). "Mitigating Cognitive Bottlenecks via an Augmented Cognition Adaptive System," *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*. Washington DC, October 5-8. [Invited]
26. Ververs, P.M., and **Dorneich, M.C.** (2003). "Evolution of an Integrated Aircraft Alerting and Notification System for Conditions Outside the Aircraft," *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*. Washington DC, October 5-8.
25. **Dorneich, M.C.**, Olofinboba, O., Pratt, S., & Feyereisen, T. (2002). "Integration of Weather Information into the Dispatcher Pre-Flight Route Selection Process," *IEEE 21st Digital Avionics Systems Conference*. Irvine CA, October 27-31.



24. Miller, C.A., Funk, H.B., **Dorneich, M.C.**, & Whitlow, S. (2002). "A Playbook Interface for Mixed Initiative Control of Multiple Unmanned Vehicle Teams," *IEEE 21st Digital Avionics Systems Conference*. Irvine CA, October 27-31.
23. Ververs, P.M., **Dorneich, M.C.**, Good, M.D., & \*Downs, J.L. (2002). "Integrating critical information on flight deck displays," *The Proceedings of the 46th Annual Meeting of the Human Factors and Ergonomics Society*. Baltimore, MD, September 30-October 4.
22. **Dorneich, M.C.**, Whitlow, S.D., Miller, C.A., & Allen, J.A. (2002). "DOGMA: A Diversion Management Decision-Support System in Airline Operations," *The Proceedings of the 2002 IEEE International Conference on Systems, Man, and Cybernetics*. Hammamet, Tunisia, October 6-10. [Invited]
21. **Dorneich, M.C.**, Olofinboba, O., Pratt, S., Wilson, I., & Herbster, C. (2002). "An Experimental Evaluation of Weather Avoidance using Route Optimization as a Decision Aid," *The Proceedings of the 2002 IEEE International Conference on Systems, Man, and Cybernetics*. Hammamet, Tunisia, October 6-10. [Invited]
20. Whitlow, S.D., **Dorneich, M.C.**, Funk, H.B., Miller, C.A. (2002). "Providing Appropriate Situation Awareness within a Mixed-Initiative Control System," *The Proceedings of the 2002 IEEE International Conference on Systems, Man, and Cybernetics*. Hammamet, Tunisia, October 6-10. [Invited]
19. Glavaski, S., Elgersma, M., **Dorneich, M.C.**, & Lommel, P. (2002). "Active Failure Management for Aircraft Control Recovery," *Proceedings of AIAA Guidance, Navigation, and Control Conference*. Monterey, CA, August 5-8.
18. Glavaski, S., Elgersma, M., **Dorneich, M.C.**, & Lommel, P. (2002). "Failure Accommodating Aircraft Control," *Proceedings of American Control Conference*. Anchorage, AK, May 8-10.
17. **Dorneich, M.C.**, Ververs, P.M., & Good, M.D. (2001). "Design and Evaluation of an Integrated Avionics Alerting System," *IEEE 20th Digital Avionics Systems Conference*. Daytona Beach, FL, October 14-18.
16. **Dorneich, M.C.**, Whitlow, S.D., Miller, C.A., & Allen, J.A. (2001). "Policy as an Interaction Method for Decision Support Systems," *Proc. of the 45th Annual Meeting of the Human Factors and Ergonomics Society*. Minneapolis/St. Paul, MN, October 8-12.
15. Ververs, P.M., **Dorneich, M.C.**, & Good, M.D. (2001). "Achieving PANACEA: A Usability Evaluation of a System for Pilot Alerting and Notification of Adverse Conditions - Escape and Avoidance," *Proc. of the 45th Annual Meeting of the Human Factors and Ergonomics Society*. Minneapolis/St. Paul, MN, October 8-12.
14. Good, M., **Dorneich, M.C.**, Deaton, J.E., Glenn, F., Burke, C.S., and \*Downs, J. (2001). "Techniques for Interacting with Large Information Spaces on Small Displays," *Proc. of the 45th Annual Meeting of the Human Factors and Ergonomics Society*. Minneapolis/St. Paul, MN, October 8-12.
13. Deaton, J.E., Glenn, F., Burke, C.S., Good, M., **Dorneich, M.C.**, \*Downs, J. (2001). "Aircrew Performance During Emergency Conditions: A Comparison Between an Electronic and Traditional Paper NATOPS," *Proc. of the 45th Annual Meeting of the Human Factors and Ergonomics Society*. Minneapolis/St. Paul, MN, October 8-12.
12. **Dorneich, M.C.** & Jones, P.M. (2000). "The Systematic Application of the Apprenticeship Learning Pedagogy to Computer Tutorial Design," *2000 IEEE International Conference on Systems, Man, and Cybernetics*. Nashville, TN, October 8-11.
11. **Dorneich, M.C.** & Jones, P.M. (2000). "The Design and Implementation of a Learning Collaboratory," *2000 IEEE International Conference on Systems, Man, and Cybernetics*. Nashville, TN, October 8-11.

10. Jones, P.M., \*Schwemin, S., \***Dorneich, M.C.**, & Dunmire, C. (2000). "CLINT: A Prototype Logistics Collaboratory," *2000 IEEE International Conference on Systems, Man, and Cybernetics*. Nashville, TN, October 8-11 .
9. \***Dorneich, M.C.** & Jones, P.M. (1998). "The Apprenticeship Learning Object Toolkit: A Generalized Architecture for a Family of Computer Tutoring Systems," *1998 IEEE International Conference on Systems, Man, and Cybernetics*. San Diego CA, October 11-14.
8. \*Jacobs, J.L., \***Dorneich, M.C.**, & Jones, P.M. (1998). "Activity Representation and Management for Crisis Action Planning," *1998 IEEE International Conference on Systems, Man, and Cybernetics*. San Diego CA, October 11-14.
7. \***Dorneich, M.C.** & Jones, P.M. (1997). "The Virtual Spectrometer: A Java-based Implementation of a Learning Environment," *1997 IEEE International Conference on Systems, Man, and Cybernetics*. Orlando, FL, October 12-15.
6. \*Jacobs, J.L., \***Dorneich, M.C.**, Jones, P.M., O'Keefe, B., & Contractor, N. (1997). "SPOT: Using Collaborative Technologies for Developing Collaborative Technologies," *1997 IEEE International Conference on Systems, Man, and Cybernetics*. Orlando, FL, October 12-15.
5. Merkelo, H., \*Liaw, H.J., & \***Dorneich, M.** (1996). "Strategies for On-Chip Signal Integrity Design in a High-Density, High-Speed Environment," *1996 On-Chip System Design Conference, Design SuperCon*. Santa Clara, CA, February.
4. Merkelo, H., \*Liaw, H. J., \***Dorneich, M.**, and \*Hochberg, T., (1995) . "Fully Dynamic electromagnetic characterization of micrometallic environments in high performance microelectronic applications," *Proceedings of the 12th International Invitational Symposium on the Unification of Analytical, Computational and Experimental Methodologies*. Worcester MA, July 7.
3. Merkelo, H., \*Hochberg, T., \*Veatch, M., \*Quinn, D., \***Dorneich, M.**, & Grabbe, D. (1993). "Methods for electronic performance characterization of micromechanical components in high performance microelectronic applications," *Proceedings of the 1993 International Symposium on the Unification of Analytical, Computational and Experimental Solution Methodologies*. Denver, MA, August., pp.171-200.
2. Merkelo, H., \*McCredie, B., \*Veatch, M., \*Quinn, D., & \***Dorneich, M.C.** (1991). "Advances and issues of parallelism in modeling and simulation of high speed digital networks of high complexity," *Proceedings of the 10th International Invitational Symposium on the Analysis and Experimentation*, WPI. Worcester, MA, July 18-19.
1. Merkelo, H., \*McCredie, B., \*Veatch, M., \*Quinn, D., \***Dorneich, M.**, & Doi, Y. (1990). "Methods for Comparative Analysis of Waveform Degradation in Electrical and Optical High Performance Interconnections," Keynote Address at *SPIE-Optocon, Symposium on Microelectronic Interconnections*. Boston, MA, November 5-9. Vol. 1390, pp. 91-163.

### Peer-Reviewed Abstracts (Presentations & Posters)

23. \*Meister, P. & **Dorneich, M.** (2020). "Communicating with Augmented Reality in General Aviation Weather Training, CA, United States. ," *Association for Business Communication Annual Conference*. San Diego, CA, October 27-31, 2020.
22. **Dorneich, M.C.**, \*Finseth, T., Keren, N., Franke, W.D. & Vardeman, S.B. (2020). "Adaptive Stress Training for Hazardous Conditions," NASA Human Research Program Investigators' Workshop. Galveston, TX, January 27-30.
21. Ostrander, A., Gilbert, S., & **Dorneich, M.C.** (2019). "Evaluating Team Communication via Audio Segmentation and Interaction Identification," Technology, Mind and Society Conference. Washington, DC, October 3-5.

20. Linda Shenk, L., \*Stonewall, J., **Dorneich, M.**, & Malekpour Koupaie, D. (2019). "Comparative analysis for empirical data collection methods from engaged community action projects and traditional mail surveys for urban energy model integration," *Community Development Society Conference*. Columbia, MO, July 14-17.
19. \*Mittal, A., Krejci, C., **Dorneich, M.C.** (2019). "A Systems-based Approach to Design Residential Renewable Energy Models," *Institute of Industrial and Systems Engineers (IISE)*. Orlando, FL, May 18-21.
18. **Dorneich, M.C.**, \*Finseth, T., Keren, N., Franke, W.D. & Vardeman, S.B. (2019). "Adaptive Stress Training for Hazardous Conditions," *NASA Human Research Program Investigators' Workshop*. Galveston, TX, January 22-25.
17. \*Mittal, A., Krejci, C.C., **Dorneich, M.C.**, & \*Fickes, D. (2018). "An Agent-based Approach to Model Residential Renewable Energy Systems," *Computational Social Sciences Conference (CSS 2018)*. Santa Fe, NM, October 26-28.
16. \*\*Kulp, G., \*\*Green, V., \*\*Hanus, A.J. & **Dorneich, M.** (2018). "Indoor Climate Control Data Visualization Tool for Marginalized Individuals," *Oregon State Summer Undergraduate Research Symposium*. Corvallis, Oregon, September 13.
15. \*Ouverson, K., \*Iglesias Pena, M., \*Walton, J., Gilbert, S., & **Dorneich, M.** (2018). "Applying Human-Agent Team Concepts to the Design of Intelligent Team Tutoring Systems," *Intelligent Tutoring Systems 2018*. Montreal, Canada, June 11-15.
14. \*Ouverson, K., \*Iglesias Pena, M., Gilbert, S., \*Walton, J., & **Dorneich, M.** (2018). "What Intelligent Team Tutoring Systems Can Learn from Human-Agent Teams," *Technology, Mind, & Society Conference*. Washington DC, April 5-7.
13. \*Stonewall, J., **Dorneich, M.C.**, Passe, U., & Shenk, L. (2017). "Methods for Engaging Underserved Populations," *Midwest Big Data Hub All-hands Meeting*. Omaha, NE, October 3.
12. \*Huang, W., Krejci, C.C., **Dorneich, M.C.**, & Passe, U. (2017). "Development of a Hybrid Model for Weatherization Adoption in a Multilayer Social Network," *Midwest Big Data Hub All-hands Meeting*. Omaha, NE, October 3.
11. **Dorneich, M.**, & Winer, E. (2017). "Running a Team Tutoring Study: Technical Development and Data Analysis," *Army Research Lab Intelligent Tutoring System Expert Workshop: Team Learning and Team Taskwork*. Ames, IA, June 12-14.
10. Shenk, L., Krejci, C., **Dorneich, M.C.**, Passe, U., & \*Stonewall, J. (2017). "When the Humanities Partner with Engineering for Community Capacity-Building: Co-Designing a Community's Story of Weatherization Using Agent-Based Modeling," *Community Development Society Conference*. Big Sky, MT, June 11-14.
9. Cetin, K., Passe, U., Sarkar, S., **Dorneich, M.**, Krejci, C., & Shenk, L. (2017). "Innovations in Occupant-Dependent Modeling Methods for Diverse Residential Buildings and Climate Conditions," *RCN-SEES-SHBE: Predictive Modeling Network for Sustainable Human-Building Ecosystems – Workshop 7*. Ft. Lauderdale, FL, June 5-6.
8. Moon, J., Jafir, I., Brown, P., \*Kalvelage, K., **Dorneich, M.**, Seeger, C., Welk, G., & Gilbert, S. (2016). "Individual Contributions Combined with Public Data in Community Assessments," *Biomedical Engineering Society (BMES) Annual Meeting*. Minneapolis, MN, October 5-8.
7. \*Kalvelage, K., **Dorneich, M.C.**, Passe, U., & Krejci, C.C. (2016). "Interdisciplinary education and research into occupant-building-microclimate interaction," *RCN-SEES-SHBE: Interdisciplinary Education and Research – Workshop 6*. Knoxville, TN, September 30 - October 1.
6. Krejci, C., Passe, U., **Dorneich, M.**, & \*Peters, N. (2016). "Multi-Agent Simulation for Sustainable Urban Decision Making," *Spring Simulation Multi-Conference*. Pasadena, CA, April 3 - 6.

5. \*\*Iglesias, M., \*\*Montealegre, D.A., Yang, E., \*\*Zonner, J., & **Dorneich, M.** (2015). "Measuring the Effectiveness of Etiquette Strategies to Mitigate Negative Emotions," *Conference of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)*. Washington DC, October 29-31.
4. Orgler, L., Artz, G., Jacobs, K., \*Bickelhaupt, S., Bender, H., Bestler, L., Caissie, B., Dorius, C., **Dorneich, M.**, Gahn, S., Lamm, M., Rongerude, J., & Smiley-Oyen, A. (2015). "TeamBased Learning Outcomes in Agricultural Education: Developing a Survey Instrument to Evaluate Student Individual and Group Learning," *North American Colleges and Teachers of Agriculture Conference*. Athens, GA, June 16-20.
3. Smiley-Oyen, A., \*Bickelhaupt, S., Artz, G., Bender, H., Bestler, L., Caissie, B., Dorius, C., **Dorneich, M.**, Gahn, S., Jacobs, K., Lamm, M., Orgler, L., & Rongerude, J. (2015). "TeamBased Learning Outcomes: Developing a Survey Instrument to Evaluate Student Individual and Group Learning with a focus on Critical Thinking," *North American Society for the Psychology of Sport and Physical Activity Conference*. Portland, OR, June 4-7.
2. Dorius, C., \*Bickelhaupt, S., Artz, G., Bender, H., Bestler, L., Caissie, B., **Dorneich, M.**, Gahn, S., Jacobs, K., Lamm, M., Orgler, L., Rongerude, J., & Smiley-Oyen, A. (2015). "Team-Based Learning Outcomes: Developing a Survey Instrument to Evaluate Student Learning," *2015 Statewide Teaching and Learning Conference*. Waterloo, IA, April 8-10.
1. \*Bickelhaupt, S., Artz, G., Bender, H., Bestler, L., Caissie, B., Dorius, C., **Dorneich, M.**, Gahn, S., Jacobs, K., Lamm, M., Orgler, L., Rongerude, J., & Smiley-Oyen, A. (2015). "Team-Based Learning Outcomes: Developing a Survey Instrument to Evaluate Student Motivation and Beliefs about Learning," *14th Annual Conference on Team-Based Learning Collaborative*. St. Petersburg, FL, March 5-7.

### **Editor-Reviewed Special Issues, Other Academic and Outreach Publications**

6. Dorneich, M. C., & Clark, M.C. (2021). "Editors Notes." In Best Practices for Online Team-Based Learning: Taking Small Group Learning Online, *New Directions in Teaching and Learning*. Vol. 164. Wiley & Sons. <https://doi.org/10.1002/tl.20432>
5. Scudder, A.T., Welk, G.J., Spoth, R., Beecher, C.C., **Dorneich, M.C.**, Meyer, J.D., Phillips, L.A., & Weems, C.F. (2021) "Transdisciplinary Translational Science for Youth Health and Wellness: Introduction to a Special Issue," *Child & Youth Care Forum*, <https://doi.org/10.1007/s10566-020-09596-9>
4. Clark, M., Merrick, L., Styron, J., Dolowitz, A., Dorius, C., Madeka, K., Bender, H., Johnson, J., Chapman, J., Gillette, M., **Dorneich, M.**, O'Dwyer, B., Grogan, J., Brown, T., Leonard, B., Rongerude, J., & Winter, L. (2018). "Off to On: Best Practices for Online Team-Based Learning," *Team Based Learning Collaborative*, Available online: [http://www.teambasedlearning.org/wp-content/uploads/2018/08/Off-to-On\\_OnlineTBL\\_WhitePaper\\_ClarkEtal2018\\_V3.pdf](http://www.teambasedlearning.org/wp-content/uploads/2018/08/Off-to-On_OnlineTBL_WhitePaper_ClarkEtal2018_V3.pdf).
3. Letsu-Dake, E., & **Dorneich, M.C.** (2012). "Human Factors Evaluation of a Roadable Air Vehicle," *The Exponent*. Vol. 4, No. 4, pp. 75-85.
2. Whitlow, S.D., Gannon, A., & **Dorneich, M.C.** (2012). "Utilizing Human-in-the-Loop Evaluation Tools, Techniques, and Processes to Improve Design," *The Exponent*. Vol. 4, No. 2, pp. 29-35.
1. \***Dorneich, M.C.** & Hannon, B. (1992). "The Authentic Restoration of an 1878 Tower Clock," *NAWCC Bulletin*. Vol. 34, Dec., pp. 694-702.

## FUNDED PROPOSALS

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66 Funded Proposals (38 external agencies, 5 industry, 12 internal Honeywell R&D, 11 internal Iowa State University)

### Iowa State University

66. **Dorneich, M.** (2020). "Summative Evaluation of an Online Peer Evaluation Bias Mitigation Training in Team-Based Learning Classrooms ", Dean's Excellence in Teaching and Learning Grants, Iowa State University (\$15,000 for 12 months).
65. **Dorneich, M.C., & Gilbert, S.** (2020). "Analysis of Video Game Interfaces for Agent Control", Air Force Research Laboratory (\$100,000 for 12 months).
64. VanLoocke, A., **Dorneich, M.C., & Heaton, E.** (2020). "Bringing the human into precision agriculture: what farmers need from decision support systems to meet economic and water quality goals", Nutrient Research Center, Iowa State University (\$162,804 for 24 months).
63. Nadolny, L. & **Dorneich, M.C.** (2020). "Accelerating the future of work through the rapid prototyping and evaluation of serious games for STEM education", Presidential Initiative for Interdisciplinary Research In Data Driven Science, Iowa State University (\$600,000 for 36 months).
62. **Dorneich, M.C.** (2020). "Adaptive Stress Training for Hazardous Conditions: Follow-on", NASA Human Research Program Omnibus (\$45,953 for 8 months).
61. Thompson, J.R., Ganapathysubramanian, B., Liebman, M.Z., Terpstra-Schwab, N., Zho, Y., **Dorneich, M.C.,** Gussman, P.W., Krejci, C.C., Losch, M.E., Passe, U., & Ruxton, M.M., (2020). "INFEWS / T1: Social and biophysical models to integrate local food systems, climate dynamics, built forms, and environmental impacts in the urban FEWS nexus", National Science Foundation (NSF) INFEWS (\$2,500,000 for 48 months).
60. **Dorneich, M.** (2019). "Curriculum to Mitigate Peer Evaluation Bias in Team-Based Learning Classrooms", IMSE Exploratory Research Projects (\$16,500 for 5 months).
59. **Dorneich, M.C.,** Winer, E., & Brown. L. (2019). "Augmented Weather Interfaces", Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS) Federal Aviation Administration (FAA) Center of Excellence (COE) for General Aviation (\$474,999 for 24 months).
58. Ceylan, H., **Dorneich, M.C., & Yang, Z.** (2019). "Reevaluation of Effectiveness of Emergency Vehicle Colors in Safety and Identification", Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS) Federal Aviation Administration (FAA) Center of Excellence (COE) for General Aviation (\$30,000 for 6 months).
57. **Dorneich, M.C.,** Keren, N., Franke, W., & Vardeman, S. (2018). "Adaptive Stress Training for Hazardous Conditions", NASA Human Research Program Omnibus (\$100,000 for 12 months).
56. **Dorneich, M.C.** (2018). "Knowledge Representation Development for an Intelligent Cognitive Assistant", Iowa State University, IMSE Exploratory Research Projects (ERP) (\$7,533 for 3 months).
55. **Dorneich, M.C.** (2018). "Development of Playbook Interaction Framework for Reduced Crew Operations", Rockwell Collins (\$45,000 for 12 months).
54. Welk, G., Weems, C., Spoth, R., Cutrona, C., **Dorneich, M., & Togers, C.** (2017). "Enabling Sustainable Community Health through a Transdisciplinary Translational Research Network: Building Bridges between Science and Practice", Iowa State Presidential Interdisciplinary Research Initiative (\$750,000 for 34 months).
53. Sharma, A., Winer, E., Gilbert, S. **Dorneich, M.,** Claussen, J., & Zhao, M. (2017). "InterchangeSE: a Federated MultiModal Simulation Environment for Studying Interactions between Different Modes of Travel", *DOT Federal Highway Transportation Administration* (\$1,065,339 for 36 months).

52. Rongerude, J., & **Dorneich, M.C.** (2017). "CELT Scholarship of Teaching and Learning SoTL Scholars Program", *Center for the Excellence in Teaching and Learning*, Iowa State University (\$1,850 for 12 months).
51. Rongerude, J., Dorius, C., **Dorneich, M.**, Gahn, S., Orgler, L., Madeka, K., Bender, H., & Ogilvie, C. (2017). "A better peer assessment: Designing a peer assessment protocol to maximize fairness", *Miller Faculty Fellowship*, Iowa State University (\$15,000 for 12 months).
50. Gilbert, G., Sharma, A., Hong, M., Sarkar, S., Vaidya, U., **Dorneich, M.C.** (2016). "Transportation Stress Modeling to Design Innovative Controls and Information Dissemination in Partially Connected and Autonomous World", *Iowa State University Exploratory Research Projects (ERP)* (\$29,143 for 6 months).
49. Landry, S., **Dorneich, M.C.**, & Pritchett, A. (2016). "Pilot Performance Considerations for Sensor Technologies", Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS) *Federal Aviation Administration (FAA) Center of Excellence (COE) for General Aviation* (\$528,428 for 36 months).
48. Anderson, N., De Brabanter, K., **Dorneich, M.**, Krejci, C., Poplin, A., Shenk, L. Passe, U., Cetin, K., Ganapathysubramanian, B., Liebman, M., Sarkar, S., Seo, Y., Takle, E., Thompson, J., Wang, Y., Ylimaz, S., \* Zhou, Y. (2016). "Big Data for Sustainable Cities Decision Making", *Presidential Initiative for Interdisciplinary Research in Data Driven Science*, Iowa State University (\$375,000 for 36 months).
47. Carstens, D. (FIT), Ceylan, H., **Dorneich, M.C.**, Wei, P., & Young, S. (OSU) (2016). "Project Number 22 - Airport Safety Database & Analysis", Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS) *Federal Aviation Administration (FAA) Center of Excellence (COE) for General Aviation* (\$46,000 for 5 months).
46. Dorius, C., Bickelhaupt, S., **Dorneich, M.**, Gahn, S., Gillette, M., Lamm, M., Nation, J., Orgler, L., Rongerude, J., Smiley-Oyen, A., Rands, M., Bestler, L., Bender, H. (2016). "Team-Based Learning Outcomes: Developing an Instructor Survey to Measure the Key Principles of Team-Based Learning Instruction", *Miller Faculty Fellowship*, Iowa State University (\$15,000 for 12 months)."
45. Krejci, C., **Dorneich, M.**, & Stone, R. (2015). "Workflow optimization for Iowa regional food hubs", *Leopold Center for Sustainable Agriculture* (\$50,000 for 24 months).
44. Passe, U., Anderson, N., De Brabanter, K., **Dorneich, M.**, Goodwin, J., Krejci, C., Poplin, A., Shenk, L., Anderson, C., & Graham, L. (2015). "Big Data for Sustainable City Decision-Making", *Presidential Initiative for Interdisciplinary Research in Data Driven Science*, Iowa State University (\$60,000 for 12 months).
43. Frank, M.C., Peters, F.E., **Dorneich, M.C.**, Jackman, J.K., & Terpenney, J.P. (2014). "Adaptive Vehicle Make (AVM) Integrated Tool", *Digital Manufacturing and Design Innovation Institute (DMDII) Adaptive Vehicle Make (AVM) Program DOD DMDII-14-1* (\$508,212 for 12 months).
42. Compton, P., **Dorneich, M.** (2014). "The Role of Non-Technical Variables in NASA Research and Development Project Success", *Iowa NASA EPSCoR Research Infrastructure Development (RID) Program* (\$33,750 for 12 months).
41. Lichter, P., Kollman, D., Knuesel, R., **Dorneich, M.C.**, Plocher, Miller, Brotzman, & Corzalla (2014). "Inhaler Training Device for Asthma and COPD Patient Education", *NIH SBIR solicitation PA-13-234* (\$9,999 for 12 months).
40. Gilbert, S., & **Dorneich, M.** (2014). "Deep Operator: Understanding Harvest Preparation", *Deere & Company* (\$50,000 for months).
39. Moon, J., **Dorneich, M.C.**, Welk, G., Gilbert, S., & Seeger, C. (2014). "Integration of Self, Context and Objective Information Reported in Real Time for Research and Healthcare", *National Cancer Institute PHS 2014-1, Topic number 333* (\$63,000 for 8 months).

38. Orgler, L., Lamm, M., Artz, G., Smiley-Oyen, A., **Dorneich, M.**, Bender, H., Gahn, S., \*Bickelhaupt, S., Jacobs, K., & Dorius, C. (2014). "Team-Based Learning Outcomes: Developing a Survey Instrument to Evaluate Student Motivation and Beliefs about Learning", *Miller Faculty Fellowship, Iowa State University* (\$14,760 for 12 months).
37. Gilbert, S., West, R., **Dorneich, M.**, Stegemüller, E., Keren, N., & Jordan, Z. (2013). "Mobile EEG Laboratory (MEL): 32-Channel DryCap Electroencephalographic (EEG) System", *Institute for Physical Research and Technology, Iowa State University* (\$20,000).
36. Gilbert, S., Winer, E., & **Dorneich, M.** (2013). "Team Tutoring with GIFT", *U.S. Army Research Laboratory* (\$586,386 for 36 months).
35. Gilbert, S., & **Dorneich, M.** (2013). "Deep Operator Understanding: Operator Preparation", *John Deere* (\$39,871 for 7 months).
34. **Dorneich, M.C.**, & Steward, B. (2013). "Virtual Operator Model", *John Deere* (\$123,819 for 36 months).
33. Ryan, S., Terpenney, J., Componation, P., & **Dorneich, M.C.** (2013). "The Industrial Engineering Graduate Community (IE GradCom)", ISU Graduate College, Center for Excellence in Learning and Teaching (CELT), and the Center for Integration of Research, Teaching and Learning (CIRTL) (\$1,000 for 12 months).
32. Componation, P.J., Hu, G., & **Dorneich, M.C.** (2013). "Improving Decision Making Capabilities of Distributed Engineering Design Teams", NASA Marshall Space Flight Center (\$30,000 for 12 months).
31. **Dorneich, M.** (2013). "Characterization of Flight Deck Information Automation Issues", FAA Aviation Research Grants (\$136,518 for 18 months).

## Honeywell

30. **Dorneich, M.C.** (PM), Feyereisen, T. (PI), & Olofinboba, O. (2013). "Navigation and Strategic Planning (NASP) Pilot Interfaces", Honeywell Research and Development Grant (\$460,000 for 12 months).
29. Gannon, A.J., Lyle, E.A., & **Dorneich, M.C.** (2013). "Transition From Automated to Manual Flight: Avoiding The Surprise", Amendment #7 to the NASA Research Announcement: "Research Opportunities In Aeronautics –ROA-2011": NNH11ZEA001N (\$655,218 for 36 months).
29. Gannon, A.J., Lyle, E.A (Research Integrations), & Dorneich, M.C. (2012). "Transition From Automated to Manual Flight: Avoiding The Surprise", NASA ROA-2011: Amendment #7 NNH11ZEA001N (\$655,218 for 36 months).
28. Rogers, W., **Dorneich, M.C.**, Gannon, A., & Grothe, S. (2012). "Smart Pilot Flight Deck of the Future (Seedling)", Honeywell Research and Development Grant (\$125,000 for 4 months).
27. Rogers, W., **Dorneich, M.** (2012). "Flight Deck Information Automation: Analysis and Recommendations", FAA DTFWA-10-A-8003, Task 10 (\$599,789 for 21 months).
26. Whitlow, S.D., **Dorneich, M.C.**, Wilkinson, C., & Hamblin, C. (2012). "Assessing Verification and Validation Processes for Automation with Respect to Vulnerabilities to Loss of Airplane ", NASA FCSR Contract NNL06AA0?? (\$400,000 for 16 months).
25. **Dorneich, M.C.** (PM), Feyereisen, T. (PI) (2012). "Navigation and Strategic Planning (NASP) Pilot Interfaces ", Honeywell Research and Development Grant (\$415,000 for 12 months).
234. **Dorneich, M.C.** (PI) (2011). "Human Cognitive Modeling", Honeywell Research and Development Grant (\$10,000 for 4 months).
23. Rogers, W., **Dorneich, M.** (PI) (2010). "Analysis of Non-Deterministic Automation Effects", FAA project 05-02, Task Number 09-AJP61FGI-0114 (\$335,000 for 9 months).

22. **Dorneich, M.C. (PI)**, Letsu-Dake, E., & DeMers, R. (2010). "SafeTX: Situational Awareness, Collision Avoidance & Intuitive Control for Roadable Air Vehicles," Subcontract to Carnegie Mellon University for DARPA BAA 10-52, Task B Proposal (\$399,182 for 17 months).
21. **Dorneich, M.C. (PM)**, Feyereisen, T. (PI) (2011). "Navigation and Strategic Planning (NASP) Pilot Interfaces, Honeywell Research and Development Grant (\$427,000 for 12 months).
20. **Dorneich, M.C. (PM)**, Feyereisen, T. (PI) (2010). "Navigation and Strategic Planning (NASP) Pilot Interfaces, Honeywell Research and Development Grant (\$700,000 for 12 months).
19. Rogers, W. (PM), **Dorneich, M.C. (PI)**, Letsu-Dake, E., Leiphon, K.M. (2009). "NextDeck: Innovative Flight Deck Function Allocation Concept for NextGen, NASA RFP NNH09ZEA001N-IIFD-2.1, Robust Automation-Human Systems (\$499,840 for 18 months).
18. **Dorneich, M.C. (PI)** (2009). "Combat Causal Reasoner, Subcontract to SAIC for DARPA DSO program, (\$162,400 for 9 months).
17. **Dorneich, M.C. (PI)**, Mott, D., Bahrami, A. & Juan, Y. (2009). "Representation and Shared Understanding, International Technology Alliance BPP09, Project 12, Task 3 (\$280,000 for 24 months).
16. Rogers, W., Keinrath, C., **Dorneich, M.C.**, Khatwa, R. (2008). "Cognitive Adaptive Man-Machine Interface, Europe ARTEMIS Joint Undertaking, Human-centric design of Embedded Systems (SP-8), Reference designs and architectures (\$1,318,800 for 36 months).
15. Rogers, W., **Dorneich, M. (PI)** (2008). "Cognitive Adaptive Man-Machine Interface: US Support, Honeywell Research and Development Grant (\$634,288 for 36 months).
14. Rogers, W., **Dorneich, M. (PI)** (2008). "Cognitive Adaptive Man-Machine Interface Intellectual Property Capture, Honeywell Research and Development Grant (\$100,000 for 36 months).
13. Zachmeier-Ruh, M., **Dorneich, M.**, Oxenham, A., & Hayes, C.C. (2007). "Systematic STEM School Redesign, on behalf of the Twin Cities German Immersion School to the Minnesota Department of Education (\$38,318 for 18 months).
12. Ververs, P. (PM), Whitlow, S. (PI), **Dorneich, M.C. (Co-PI)**, Mathan, S. (Honeywell) & Davis, G. (ABM) (2007). "Augmented Cognition Transition", Army NATICK BAA 05-07, Topic Area 38 (\$408,998 for 10 months).
11. Ververs, P. (PM), Whitlow, S. (PI), **Dorneich, M.C. (Co-PI)**, Mathan, A. (Honeywell), Pavel, M. (Oregon Health and Sciences University), & Berka, C. (Advanced Brain Monitoring) (2006). "Joint Human-Automation Augmented Cognition System: Augmented Cognition Phase IV, DARPA (Dr. Amy Kruse, PM) and US Army Natick Soldier Systems (Henry Girolamo, PM) joint funding (\$1,600,000 for 12 months).
10. Ververs, P. (PM), Whitlow, S. (PI), **Dorneich, M.C. (Co-PI)**, (Honeywell), Pavel, M. (Oregon Health and Sciences University), Berka, C. (Advanced Brain Monitoring), Raj, A. (Institute for Human-Machine Cognition), & Oranal, B. (Drexel University) (2005). "Joint Human-Automation Augmented Cognition System: Augmented Cognition Phase III, DARPA (Cdr Dylan Schmorow, PM) and US Army Natick Soldier Systems (Henry Girolamo, PM) joint funding (\$1,600,000 for 12 months).
9. Whitlow, S. (PI) **Dorneich, Michael (Co-PI)**, Ververs, P. (PM) (Honeywell), DeRouseau, D. (Human Bionics), & Raj, A. (University of West Florida) (2003). "Joint Human-Automation Augmented Cognition System," DARPA Augmented Cognition Program Phase II, DARPA Augmented Cognition Program Phase II, Lcdr Dylan Schmorow (PM) (\$4,200,000 for 18 months).
8. Whitlow, S. (PI), **Dorneich, M.C. (Co-PI)**, & Ververs, P. (PM). (2003). "Augmented Cognition Initiatives Project, Honeywell Research and Development Grant (\$50,000 for 3 months).



7. Whitlow, S. (PI), **Dorneich, M.C. (Co-PI)** (2003). "Augmented Cognition Phase 1.5 Seedling Program: Honeywell Labs' Cognitive Optimizer Concept, DARPA , Lcdr Dylan Schmorrow (PM) (\$150,000 for 6 months).
6. Tierno, J. (PI), Jelinek, J., Musliner, D., **Dorneich, M.C. (HCS Lead)**, Goldman, R., Samad, T. (Honeywell Labs), Hespanha, J. (USC), Pappas, G. (UPenn), Crites, A. (SPARTA), Ferguson, L. (Fermac), Miller, C. (SIFT) (2002). "CRYSTAL: Control System for Teams of Autonomous Agents, DARPA BAA 01-29 MICA (Mixed Initiative Control of Automata) (\$1,300,000 for 48 months).
5. Ververs, P.M. (PI), **Dorneich, M.C. (Investigator)** (2002). "Alerting and Notification of Conditions Outside of the Aircraft, NASA Ames (\$450,000 for 36 months).
4. Olofinboba, O. (PI), **Dorneich, M.C. (Investigator)** (2001). "An Experimental Evaluation of the AWIN Decision Aide, NASA Langley (\$350,000 for 16 months).
3. **Dorneich, M.C. (PI)**, Whitlow, S.D. (Co-PI) (2002). "Augmented Cognition, Honeywell Research and Development Grant (\$10,000 for 6 months).
2. **Dorneich, M.C. (PI)** (2001). "Next Generation Flight Simulator Design, Honeywell Research and Development Grant (\$10,000 for 4 months).
1. **Dorneich, M.C. (PI)**, Reising, D.V., Carpenter, T., & Nelson, K. (2001). "Ubiquitous Computing Pathfinding, Honeywell Research and Development Grant (\$10,000 for 8 months).

## PATENTS

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*28 Patents (19 US and 9 international patents awarded)*

28. Whitlow, S., Dorneich, M.C., Rogers, W., Hamblin, C. & Keinrath, C. (2017). "Datalink message prioritization system and method". *European Patent No. EP2434727*.
27. Mathan, S., **Dorneich, M.C.**, Whitlow, S. & Ververs, P.M. (2017). "Augmented Tutoring". *U.S. Patent No. 9721480*. Washington, DC: U.S. Patent and Trademark Office.
26. Whitlow, S., **Dorneich, M.C.**, Rogers, W., Hamblin, C. & Keinrath, C. (2017). "Datalink Message Prioritization System and Method". *U.S. Patent No. 9558669*. Washington, DC: U.S. Patent and Trademark Office.
25. Whitlow, S., Keinrath, C. & **Dorneich, M.C.** (2017). "User Interface Device for Adaptive Systems". *U.S. Patent No. 9547929*. Washington, DC: U.S. Patent and Trademark Office.
24. **Dorneich, M.C.**, Whitlow, S.D. & Rogers, W. (2016). "Mixed-Initiative Transfer of Datalink-Based Information". U.S. Patent Application No. 13/005241. *U.S. Patent No. 9349295*. Washington, DC: U.S. Patent and Trademark Office.
23. Whitlow, S., **Dorneich, M.C.** (2015). "Multiple Two-State Classifier Output Fusion System and Method". *U.S. Patent No. 9037523*. Washington, DC: U.S. Patent and Trademark Office.
22. **Dorneich, M.C.**, Hamblin, C., Rogers, W., & Whitlow, S.D. (2015). "Situation Aftermath Manager System and Method". *U.S. Patent No. 9002543*. Washington, DC: U.S. Patent and Trademark Office.
21. **Dorneich, M.C.**, Whitlow, S., Rogers, W., Feigh, K. & DeMers, R. (2015). "Adaptive User Interface for Semi-Automatic Operation". *U.S. Patent No. 8977407*. Washington, DC: U.S. Patent and Trademark Office.
20. **Dorneich, M.C.**, Rogers, W., Whitlow, S., Hamblin, C. & Keinrath, C. (2015). "Workload Management System and Method". *U.S. Patent No. 8928498*. Washington, DC: U.S. Patent and Trademark Office.
19. **Dorneich, M.C.**, McCauley, S.G., Rye, J.M. & Ververs, P.M. (2014). "Multifunctional Avionic Display". *European Patent No. EP1875267*.

18. Rogers, W., **Dorneich, M.C.**, Hamblin, C., & Whitlow, S.D. (2014). "Display System and Method for Generating a Display". *U.S. Patent No. 8698653*. Washington, DC: U.S. Patent and Trademark Office.
17. Hamblin, C., Whitlow, S., **Dorneich, M.C.**, Rogers, W. (2013). "Aircraft Situational Awareness Improvement System and Method". *European Patent No. EP2434470*.
16. Kaufman, D. & **Dorneich, M.C.** (2013). "Cognitive Aircraft Hazard Advisory System (CAHAS)". *U.S. Patent No. 8548727*. Washington, DC: U.S. Patent and Trademark Office.
15. Mathan, S., **Dorneich, M.C.**, Ververs, P.M. & Whitlow, S. (2013). "Rapid Serial Visual Presentation Triage Prioritization Based On User State Assessment". *U.S. Patent No. 8374687*. Washington, DC: U.S. Patent and Trademark Office.
14. Hamblin, C., Whitlow, S., **Dorneich, M.C.**, Rogers, W. (2013). "Aircraft Situational Awareness Improvement System and Method". *European Patent No. EP2434470*.
13. **Dorneich, M.C.**, Whitlow, S., Rogers, W., Feigh, K. & DeMers, R. (2013). "Adaptive User Interface for Semi-Automatic Operation of a Remote-Controlled, Unmanned Vehicle". *European Patent No. EP2256571*.
12. Kaufman, D. & **Dorneich, M.C.** (2012). "Cognitive Aircraft Hazard Advisory Systems and Methods". *European Patent No. EP2113897*.
11. Mathan, S., Ververs, P.M., Whitlow, S.D. & **Dorneich, M.C.** (2011). "Target Specific Image Scaling for Effective Rapid Serial Visual Presentation". *U.S. Patent No. 7991195*. Washington, DC: U.S. Patent and Trademark Office.
10. **Dorneich, M.C.**, Whitlow, S. & Feigh, K. (2011). "Methods and Apparatus for Adaptively Streaming Video Data Based on a Triggering Event". *European Patent No. EP2196967*.
9. Mathan, S., **Dorneich, M.C.** & Whitlow, S. (2011). "Statistics Control for Self-Adaptive Visual Filter Stability". *China Patent No. CN1932796*.
8. **Dorneich, M.C.**, Whitlow, S., Ververs, P.M., Carciofini, J.C. & Creaser, J. (2010). "Communications System Based On Real-Time Neurophysiological Characterization". *U.S. Patent No. 7830249*. Washington, DC: U.S. Patent and Trademark Office.
7. Mathan, S., Ververs, P.M., **Dorneich, M.C.**, Carciofini, J.C. & Whitlow, S.D. (2010). "Neurophysiologically Driven High Speed Image Triage System And Method". *U.S. Patent No. 7835581*. Washington, DC: U.S. Patent and Trademark Office.
6. Mathan, S., **Dorneich, M.C.** & Whitlow, S. (2009). "Statistical Control of Adaptive Ocular Filter Stability". *U.S. Patent No. 7631028*. Washington, DC: U.S. Patent and Trademark Office.
5. **Dorneich, M.C.**, McCauley, S.G., Rye, J.M. & Ververs, P.M. (2009). "Multifunctional Avionic Display". *U.S. Patent No. 7515069*. Washington, DC: U.S. Patent and Trademark Office.
4. Mathan, S., **Dorneich, M.C.** & Whitlow, S. (2009). "EEG Adaptive Filter Algorithm Stability Control". UK Patent No. GB2433322.
3. Whitlow, S., Mathan, S., **Dorneich, M.C.** & Patricia Ververs (2008). "Hierarchical Monitoring for Subordinate Assessment". *U.S. Patent No. 7454313*. Washington, DC: U.S. Patent and Trademark Office.
2. Rye, J.R., **Dorneich, M.C.** & Gannon, A. (2008). "Multiple Miniature Avionic Displays". *U.S. Patent No. 7414543*. Washington, DC: U.S. Patent and Trademark Office.
1. Ververs, P.M., **Dorneich, M.C.**, & Good, M.D. (2004). "Alerting and Notification System". *U.S. Patent No. 6700482*. Washington, DC: U.S. Patent and Trademark Office.

## **FORMALLY INVITED LECTURES AND PRESENTATIONS**

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32. "Adaptive Systems in Intelligent Tutoring and Training Applications", University of Toronto (Toronto, CA; September 06, 2019).
31. "Can computers adapt to your emotions? Adaptive systems in intelligent training", Clemson University (Clemson, SC; November 08, 2019).
30. "Adapting intelligent training systems to mitigate frustration and manipulate stress", University of Iowa (Iowa City, IA; October 10, 2019).
29. "Harnessing Virtual Reality Technology for Training for Emergency Response in Highly Hazardous Occupations", High Containment Laboratory Network Preparedness (BSL4ZNet) F2F Technology Session (Canada; March 20, 2018).
28. "Running a Team Tutoring Study: Technical Development and Data Analysis," 2017 Army Research Lab Intelligent Tutoring System Expert Workshop: Team Learning and Team Taskwork (Ames, IA; June 14, 2017).
27. "Introduction to Human Factors in Aviation," Kwame Nkrumah University of Science and Technology (Kumasi, Ghana; March 15, 2017).
26. "Populating the Dynamic Assessment Module for Teams: Studying Intelligent Tutoring Systems for Teams," Army Research Lab Workshop on Building Intelligent Systems for Teams: What Matters (Orlando, FL; March 03, 2016).
25. "Unpacking the Pedagogical Model for Teams: Studying Intelligent Tutoring Systems for Teams," Army Research Lab Workshop on Building Intelligent Systems for Teams: What Matters (Orlando, FL; March 03, 2016).
24. "The Design and Evaluation of Adaptive Systems," 3M (St. Paul, MN; August 07, 2015).
23. "Neurotechnology-Driven Adaptive Systems," Obermann Center Working Group, University of Iowa (Iowa City, IA; March 28, 2013).
22. "Adaptive Systems: How can Automation be "Smart?" Ames IT Collaborative (Iowa State University Research Park, Ames, IA; September 12, 2013).
21. "Cognitive Adaptive Man Machine Interface," Federal Aviation Administration (FAA) Human Factors Research and Engineering Group (Phoenix, AZ; February 24, 2010).
20. "Neurotechnology Capabilities," Federal Aviation Administration (FAA) Human Factors Research and Engineering Group (Phoenix, AZ; February 24, 2010).
19. "Neurotechnology for Space Applications," National Aviation and Space Administration (NASA) Glenn Research Center (Cleveland, OH; October 01, 2009).
18. "Adaptive Systems: Current and Future Applications," British Petroleum (BP) CTO Workshop (Golden Valley, MN; December 01, 2008).
17. "Adaptive Systems: Current and Future Applications," National Aviation and Space Administration (NASA)/Industry Flight Deck Research Working group (Denver, CO; October 23, 2008).
16. "Human-Centered System Technologies for Human Effectiveness," Human Effectiveness Directorate, Air Force Research Lab (Mesa, AZ; September 10, 2007).
15. "Honeywell Technologies for UAV Command and Control," General Dynamics (Dayton, OH; June 06, 2007).
14. "Honeywell Technologies for Human Effectiveness," Human Effectiveness Directorate, Air Force Research Lab, Wright Patterson AFB (Dayton, OH; June 06, 2007).
13. "Honeywell Technologies for UAV Command and Control," Air Force Research Lab (Dayton, OH; February 20, 2007).

12. "Augmented Cognition: Enabling Closely-Coupled Adaptive Systems," Department of Mechanical and Industrial Engineering, University of Iowa (Iowa City, IA; March 30, 2006).
11. "Real-time Cognitive State Assessment of the Dismounted Warfighter," Science Applications International Corporation (SAIC) (Denver, CO; November 11, 2005).
10. "Adjustable Autonomy for Mixed Initiative Interaction," Science Applications International Corporation (SAIC) (Denver, CO; November 11, 2005).
9. "Utilizing Neuro-physiological Feedback in an Adaptive System to Manage Communications for Individual Soldiers," Human Factors Branch Symposia, National Aviation and Space Administration (NASA) (Moffet Field, CA; May 11, 2004).
8. "Aircraft Alerting and Notification System for Conditions Outside the Aircraft (ANCOA)," National Aviation and Space Administration (NASA) Ames Laboratory (Moffet Field, CA; May 04, 2004).
6. "DOGMA: A Diversion Management Decision Support System in Airline Operations: Policy as an Interaction Method for Decision Support Systems," Human Factors Branch Symposia, National Aviation and Space Administration (NASA) (Moffet Field, CA; April 21, 2004).
6. "Aircraft Alerting and Notification System for Conditions Outside the Aircraft (ANCOA)," Human Factors Branch Symposia, National Aviation and Space Administration (NASA) (Moffet Field, CA; April 13, 2004).
5. "Advanced Vision Systems," Boeing C130 AMP CAAP Advanced Concept Group (Long Beach, CA; January 22, 2003).
4. "Alerting and Notification for Conditions Outside the Aircraft," The Boeing Company (Everitt, WA; May 22, 2002).
3. "Human-Centered Design," Engineering of Complex System Program: Discussion of Topics Workshop, National Aviation and Space Administration (NASA) (Moffett Field, CA; October 01, 2001).
2. "Integrated Flight Operations Diversion Manager Briefing," America West Airlines (Phoenix, AZ; July 09, 2001).
1. "Collaborative Software Design for a Learning Collaboratory," University of St. Thomas (St. Paul, MN; October 07, 1999).

## **PROFESSIONAL SERVICE**

---

Editorial Board, *Cognitive Engineering and Decision Making* (2020-present)

Associate Editor, *IEEE Transactions on Human-Machine Systems* (2013-present)

Associate Editor, *IEEE Transactions on Systems, Man, and Cybernetics* (2005-2013)

General Conference Chair, Digital Avionics Systems Conference (2021)

Technical Program Chair, Digital Avionics Systems Conference (2020)

Track Chair, Digital Avionics Systems Conference, Human Factors Track (2018, 2019).

Program Chair, Cognitive Engineering and Decision Making technical Group, Human Factors & Ergonomics Society (2019-present)

Program Chair-Elect, Cognitive Engineering and Decision Making technical Group, Human Factors & Ergonomics Society (2017-2019)

Secretary/Treasurer, Cognitive Engineering and Decision Making technical Group, Human Factors & Ergonomics Society (2015-2017)

Session Chair, Human Factors and Ergonomics Society Conference (2012-2013, 2015)

Session Chair, IEEE Systems, Man, and Cybernetics Conference (2011)  
Session Co-Chair, IEEE Systems, Man, and Cybernetics Conference (2002)  
Session Chair, Digital Avionics Systems Conference (2002)

Member, Industry/NASA Flight Deck Research Working Group (2008-2011).  
Member, DARPA Information Science and Technology (ISAT) study group on "Engineering Ensemble Effects" (2007)

Panel Reviewer, National Aeronautics and Space Administration (NASA) (2018, 2020).  
Panel Reviewer, National Science Foundation (NSF) (2017, 2018, 2020)  
Ad Hoc Reviewer, National Science Foundation (NSF) (2017)  
Proposal Reviewer, Institutes of Higher Learning, Singapore (2020)  
Proposal Reviewer, Netherlands Organization for Scientific Research (NWO) (2016).  
Program Reviewer, Office of Naval Research (ONR) Program Reviews (2015).

Reviewer, ACTA Astronautica (2016)  
Reviewer, Aviation (2020).  
Reviewer, Computer Methods and Programs in Biomedicine (2015)  
Reviewer, Engineering Economist (2020)  
Reviewer, Frontiers in Psychology (2021).  
Reviewer, Human Factors and Ergonomics Conference (2013-16, 2018-2021)  
Reviewer, Human Factors and Ergonomics Journal (2012-16, 2020)  
Reviewer, IEEE Transactions on Emerging Topics in Computational Intelligence (2016)  
Reviewer, IEEE Transactions on Human-Machine Systems (2013-2016)  
Reviewer, IEEE Transactions on Intelligent Systems (2012, 2015-2016)  
Reviewer, IEEE Transactions on Knowledge and Data Engineering (2000)  
Reviewer, IEEE Transactions on Neural Systems & Rehabilitation Engineering (2020)  
Reviewer, IEEE Transactions on Systems, Man, and Cybernetics, Part A (1998-9, 2002-3, 2005-2010)  
Reviewer, IEEE Transactions on Systems, Man, and Cybernetics, Part C (2003)  
Reviewer, IEEE Systems, Man, and Cybernetics Conference (2005)  
Reviewer, International Journal of Advanced Robotic Systems (2013)  
Reviewer, International Journal of Environmental Research and Public Health (2018).  
Reviewer, International Journal of Human-Computer Interaction (IJHCI) (2018).  
Reviewer, Journal of Aircraft (2014)  
Reviewer, Journal of Applied Ergonomics (2011-2012)  
Reviewer, Journal of Cognitive Engineering and Decision Making (2011-2019)  
Reviewer, Journal of Ergonomics (2014-15, 2018)  
Reviewer, Safety (2017)

## **UNIVERSITY SERVICE**

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Member, OVPR Internal Funding Proposal Evaluation Committee (2021-2024).

Member, Resume Face-to-Face Humans Subjects Research Committee, 2020-present  
Member, Graduate College Curriculum Committee, 2019-present  
Coordinator, Team-Based Learning Teaching and Learning Community (2019-2021).  
Senior Faculty Mentor, Teaching Partners Program, Center for Excellence in Learning and Teaching (CELT), 2016-2017, 2018-2020  
Member, College of Engineering Honors Program Committee (2017-present).  
CELT Classroom Improvement Study Focus Group for Faculty, 2013  
Engineering-LAS Online Learning (ELO) Search Committee, 2015

IMSE Graduate Committee, Member, 2014-present  
IMSE Governance Committee, Member, 2019-present  
IMSE Faculty Search Committee, Chair, 2019-2020  
IMSE Faculty Search Committee, Member, 2012-2013, 2015-2016, 2017-2018  
IMSE Awards & Honors Committee, Member, 2013-2015, 2016-2017  
IMSE Publicity & Relations, Member, 2012-2014  
IMSE P&T Fact Finding Committee, Member, 2012-2013

## **COMMUNITY SERVICE**

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Board Chair, Board of Education, Charter District 4152, Twin Cities German Immersion School, Minneapolis/St. Paul, MN (Chair: 2007-2009, Elected Member 2006-2009)  
Board Secretary, Board of Education, Charter District 4152, Twin Cities German Immersion School, Minneapolis/St. Paul, MN (2006-2007)  
Member, Finance Committee, Twin Cities German Immersion School (2009-present)  
Member, Governance Committee, Twin Cities German Immersion School (2009-present)  
Committee Chair, Grants Committee, Twin Cities German Immersion School (2006-2007)  
Committee Chair, Technology Committee, Twin Cities German Immersion School (2006-2007)  
Judge, First LEGO League State Championships, Minnesota (1998)

## **MEMBERSHIPS, AWARDS AND RECOGNITION**

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Senior Member, Institute of Electrical and Electronics Engineers (2014-present).  
Member, Human Factors and Ergonomics Society (2003-present).  
Elected Member, Sigma Xi (2017-present), Scientific Research Honor Society.  
  
Outstanding Academic Title (chapter author to edited volume) (2021). *Choice Publishing*  
Education/Human Performance – Team Award, *National Training & Simulation Association (NTSA)*  
*Modeling & Simulation Awards* (2019)  
IMSE Omurtag Research Excellence Award, Iowa State University (2019)  
Best of Session Award (2018). *AIAA/IEEE Digital Avionics Systems Conference*, Human-Agent Team for  
Space Operations beyond Low-Earth Orbit.  
Outstanding Engineer Award (2011). Honeywell (Peer-nominated award).

David Meister Award Runner-Up (2010). *Human Factors and Ergonomics Society: Systems Development Technical Group*, "The Combat Causal Reasoner Approach to Robotic Control" (M. Dorneich, lead author).

Best Topic Paper (2006). *Augmented Cognition International Society*, Neurotechnology for Image Analysis: Searching for Needles in Haystacks Efficiently (S. Mathan, lead author).

Technical Achievement Award (2006). Honeywell, Augmented Cognition.

COE Technical Achievement Award (2004). Honeywell, Augmented Cognition.

COE Technical Achievement Award (2002). Honeywell, AWIN Decision Aid.

Technical Achievement Award (2001). Honeywell, Integrated Flight Operations. (Highest R&D award in Honeywell)

50 internal Honeywell Bravo, Spot or Special Recognition awards for research excellence

Nominated for the Harold L. Oleson Award for Excellence in Undergraduate Teaching by a Graduate Student (Fall 1992). University of Illinois.