

# POLEMNIA G. AMAZEEN, Ph.D.

*(Last update: November 30, 2015)*

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## EDUCATION

1996 Ph.D., University of Connecticut, Center for the Ecological Study of Perception and Action

1994 M.A., University of Connecticut, Center for the Ecological Study of Perception and Action

1990 B.A. cum laude with Honors, Franklin & Marshall College

## RESEARCH INTERESTS

The treatment of coordination as a complex, dynamical system. I look for general principles in coordination patterns across people (social interactions) and within people (bimanual and motor-respiratory coordination) using the tools of dynamical systems analysis. Current research projects include: fractal properties in motor behavior; understanding social coordination from the level of correlated EEG signals; the underrepresentation of women in math and science; and the development of analysis tools for the detection of dynamical patterns in real time.

## ACADEMIC POSITIONS

2011 – Date **Center for Social Dynamics and Complexity**  
**Arizona State University**  
Core Faculty

- 2011 – Date      **Cognitive Science and Engineering Program**  
**Arizona State University**  
Faculty Affiliate
- 2007 – Date      **Cognitive Engineering Research Institute, Mesa, AZ**  
Faculty Research Associate
- 2006 – Date      **Department of Psychology**  
**Arizona State University**  
Associate Professor
- 2000 – 2006      **Interdisciplinary Exercise Science Ph.D. Program**  
**Arizona State University**  
Assistant Professor
- 1999 – 2006      **Department of Psychology**  
**Arizona State University**  
Assistant Professor
- 1996 – 1999      **Faculty of Human Movement Sciences**  
**Vrije Universiteit, Amsterdam**  
Postdoctoral Research Associate
- 1994              **Department of Psychology**  
**University of Connecticut**  
Lecturer
- 1994              **Santa Fe Institute**  
Complex Systems Summer School Fellow
- 1993 – 1996      **Department of Psychology**  
**University of Connecticut**  
Research Assistant
- 1990 – 1993      **Department of Psychology**  
**University of Connecticut**  
Teaching Assistant

<b>AWARDS &amp; HONORS</b>
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|-------------|--|
| 2011        | <b>Jerome H. Ely <i>Human Factors</i> Article Award</b><br>Human Factors and Ergonomics Society<br>Recipient           |
| 2005        | <b>Nominated for a Distinguished Teaching Award</b><br>College of Liberal Arts and Sciences – Arizona State University |
| 1996        | <b>Doctoral Dissertation Award</b><br>University of Connecticut  |
| 1990 – Date | <b>Phi Beta Kappa</b>  |
| 1987 – 1990 | <b>Charles A. Dana Scholar</b><br>Franklin & Marshall College  |

<b>GRANTS</b>
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|-------------|---|
| 2015 – 2016 | <b>US Army Medical Research and Material Command<br/>(USAMRMC – STTR Phase II)</b><br><i>Monitoring, Extracting, and Decoding Indicators of Cognitive Load<br/>(MEDIC II)</i> with Charles River Associates (\$999,964)<br>Principal Investigator |
| 2014 – 2015 | <b>National Science Foundation (NSF) BCS 1255922</b><br><i>Research Experience for Undergraduates (REU) Supplement</i> (\$13,200)<br>Principal Investigator   |
| 2013 – 2016 | <b>National Science Foundation (NSF) BCS 1255922</b><br><i>Collaborative Research: Multifrequency coordination in dyads and teams</i><br>with Texas Tech (\$399,998)<br>Principal Investigator  |
| 2012 – 2014 | <b>Defense Advanced Research Projects Agency<br/>(DARPA – STTR Phase II)</b>  |

- Modeling the neurodynamics of submarine piloting and navigation* with  
The Learning Chameleon and Texas Tech (\$750,000)  
Principal Investigator
- 2011                    **Office of Naval Research (ONR – STTR Phase I)**  
*Rapid Assessment of Team Cognitive Readiness* with Sandia Research  
Corporation, Texas Tech, and UCLA (\$99,998)  
Principal Investigator
- 2010 – 2011           **Office of Naval Research (ONR – STTR Option I)**  
*Dynamical Modeling of Communications for Assessment and Enhancement  
of Team Performance* with Sandia Research Corporation and Texas Tech  
University (\$245,817)  
Principal Investigator
- 2008 – 2010           **Office of Naval Research (ONR – STTR Phase II)**  
*Dynamical Modeling of Communications for Assessment and Enhancement  
of Team Performance* with Sandia Research Corporation (\$491,718)  
Principal Investigator
- 2007 – 2008           **Office of Naval Research (ONR – STTR Phase I)**  
*Dynamical Modeling of Communications for Assessment and Enhancement  
of Team Performance* with Sandia Research Corporation (\$99,811)  
Principal Investigator
- 2007 – 2008           **Office of Naval Research (ONR)**  
*Automatic Tagging of Macro-cognitive Collaborative Processes through  
Communication Analysis* (\$564,546)  
co - Principal Investigator (Principal Investigator: Nancy J. Cooke)
- 2005 – 2009           **National Science Foundation (NSF) BCS 0447039**  
*Dynamics of Motor-Respiratory Coupling* (\$349,988)  
Principal Investigator
- 2004 – 2006           **Air Force Office of Scientific Research (AFOSR)**  
*Acquisition and Retention of Team Coordination in Command-and-Control*  
(\$449,640)

Consultant (Principal Investigator: Nancy J. Cooke)

- 2001 – 2002      **Arizona State University**  
**College of Liberal Arts and Sciences - Faculty Seminar Series**  
*Dynamics of Perception, Action, and Cognition (DPAC)* (\$2250)  
Principal Investigator
- 2001              **Arizona State University**  
**College of Liberal Arts and Sciences**  
*Travel Grant* (\$1000)  
Recipient
- 1997              **Nederlands Wetenschappelijk Organizatie (Dutch National Science Foundation)**  
*Travel Grant* (approx. US \$1400)  
Recipient
- 1996              **University of Connecticut - Doctoral Dissertation Fellowship**  
*Learning a Bimanual Rhythmic Coordination: Schemas as Dynamics*  
(\$2000)  
Principal Investigator
- 1989              **Franklin & Marshall College - Hackman Research Fellowship**  
*The Moon Illusion* (\$1400)  
Principal Investigator

**FACULTY ADVISOR OF STUDENT GRANTS**

- 2009 – 2010      **Arizona State University**  
**Graduate and Professional Student Association**  
*Motor-Respiratory Coordination* (\$2000)  
Awarded to Eric E. Hessler
- 2007 – 2008      **Arizona State University**  
**Graduate and Professional Student Association**  
*Guided learning in Motor-Respiratory Coordination* (\$750)  
Awarded to Eric E. Hessler

<b>PUBLICATIONS</b> (* INDICATES STUDENT AUTHORS)
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**PEER-REVIEWED JOURNAL ARTICLES**

1. Amazeen, P. G., Schmidt, R. C., & Turvey, M. T. (1995). Frequency detuning of the phase entrainment dynamics of visually coupled rhythmic movements. *Biological Cybernetics*, 72, 511-518.
2. Amazeen, E. L., Amazeen, P. G., Treffner, P. J., & Turvey, M. T. (1997). Attention and handedness in bimanual coordination dynamics. *Journal of Experimental Psychology: Human Perception and Performance*, 23, 1552-1560.
3. Mitra, S., Amazeen, P. G., & Turvey, M. T. (1997). Dynamics of bimanual rhythmic coordination in the coronal plane. *Motor Control*, 1, 44-71.
4. Riley, M. A., Amazeen, E. L., Amazeen, P. G., Treffner, P. J., & Turvey, M. T. (1997). Effects of temporal scaling and attention on the asymmetrical dynamics of bimanual coordination. *Motor Control*, 1, 263-283.
5. Amazeen, P. G., Amazeen, E. L., & Turvey, M. T. (1998). Breaking the reflectional symmetry of interlimb coordination dynamics. *Journal of Motor Behavior*, 30, 199-216.
6. Mitra, S., Amazeen, P. G., & Turvey, M. T. (1998). Intermediate motor learning as decreasing active (dynamical) degrees of freedom. *Human Movement Science*, 17, 17-65.
7. Schmidt, R. C., Fitzpatrick, P., Bienvenu, M., & Amazeen, P. G. (1998). A comparison of intra- and interpersonal interlimb coordination: Coordination breakdowns and coupling strength. *Journal of Experimental Psychology: Human Perception and Performance*, 24, 884-900.
8. Amazeen, E. L., Amazeen, P. G., Post, A. A., & Beek, P. J. (1999). Timing the selection of visual information during rhythmic catching. *Journal of Motor Behavior*, 31, 279-289.
9. Amazeen, E. L., Amazeen, P. G., & Beek, P. J. (2001). Eye movements and the selection of optical information for catching. *Ecological Psychology*, 13, 71-85.
10. Amazeen, P. G., Amazeen, E. L., & Beek, P. J. (2001). Coupling of breathing and movement during manual wheelchair propulsion. *Journal of Experimental Psychology: Human Perception and Performance*, 27, 1243-1259.
11. Amazeen, P. G. (2002). Is dynamics the content of a generalized motor program for rhythmic interlimb coordination? *Journal of Motor Behavior*, 34, 233-251.

12. Amazeen, P. G., Amazeen, E. L., & Turvey, M. T. (2004). Symmetry and the Devil. *Journal of Motor Behavior*, *36*, 371-372.
13. Amazeen, E. L., Ringenbach, S. D., & Amazeen, P. G. (2005). The effects of attention and handedness on coordination dynamics in a bimanual Fitts' Law task. *Experimental Brain Research*, *164*, 484-499.
14. Butner, J., Amazeen, P. G., & \*Mulvey, G. M. (2005). Multilevel modeling of two cyclical processes: Extending differential structural equation modeling to nonlinear coupled systems. *Psychological Methods*, *10*, 159-177.
15. \*Mulvey, G. M., Amazeen, P. G., & Riley, M. A. (2005). The use of (symmetry) group theory as a predictive tool for studying bimanual coordination. *Journal of Motor Behavior*, *37*, 295-309.
16. Ringenbach, S. D., & Amazeen, P. G. (2005). How do children control rate, amplitude, and coordination stability during bimanual circle drawing? *Ecological Psychology*, *17*, 1-18.
17. Amazeen, E.L., \*DaSilva, F., & Amazeen, P.G. (2008). Visual-spatial and anatomical constraints interact in a bimanual coordination task with transformed visual feedback. *Experimental Brain Research*, *191*, 13-24.
18. \*Hessler, E. E. & Amazeen, P. G. (2009). Attentional demands on motor-respiratory coordination. *Research Quarterly for Exercise and Sport*, *80*, 510-523.
19. \*Finan, P. H., \*Hessler, E. E., Amazeen, P. G., Butner, J., Zautra, A. J., & Tennen, H. (2010). Oscillations in daily pain prediction accuracy. *Nonlinear Dynamics, Psychology, and Life Sciences*, *14*, 27-46.
20. \*Gonzales, L. M., \*Hessler, E. E., & Amazeen, P. G. (2010). Perceptual constraints on frequency ratio performance in motor-respiratory coordination. *Ecological Psychology*, *22*, 1-24.
21. \*Hessler, E. E., \*Gonzales, L. M., & Amazeen, P. G. (2010). Displays that facilitate performance of multifrequency ratios during motor-respiratory coordination. *Acta Psychologica*, *133*, 96-105.
22. \*Gorman, J. C., Amazeen, P. G., & Cooke, N. J. (2010). Team coordination dynamics. *Nonlinear Dynamics, Psychology, and Life Sciences*, *14*, 265-289.
23. \*Gorman, J. C., Cooke, N. J. & Amazeen, P. G. (2010). Training adaptive teams. *Human Factors*, *52*, 295-307.

24. Holden, J. G., \*Choi, I., Amazeen, P. G., & Van Orden, G. C. (2011). Fractal 1/f dynamics suggest entanglement of measurement and human performance. *Journal of Experimental Psychology: Human Perception and Performance*, 37, 935-948.
25. \*Didonato, M. D., Martin, C. L., \*Hessler, E. E., Amazeen, P. G., Hanish, L. D., & Fabes, R. A. (2012). Gender-consistency and flexibility: Using dynamics to understand the relation between gender and adjustment. *Nonlinear Dynamics, Psychology, and Life Sciences*, 14, 27-46.
26. \*Gorman, J. C., Cooke, N. J., Amazeen, P. G., \*Fouse, S. (2012). Measuring patterns in team interaction sequences using a discrete recurrence approach. *Human Factors*, 54, 503-517.
27. \*Gorman, J. C., \*Hessler, E. E., Amazeen, P. G., Cooke, N. J., & Shope, S. M. (2012). Dynamical analysis in real time: Detecting perturbations to team communication. *Ergonomics*, 55, 825-839.
28. \*Didonato, M. D., \*England, D., Martin, C. L., & Amazeen, P. G. (2013). Dynamical analysis for the social sciences: A primer for intrigued scientists, *Human Development*, 56, 59-75.
29. Stevens, R., Gorman, J., Amazeen, P. G., \*Likens, A., & Galloway, T. (2013). The organizational neurodynamics of teams. *Nonlinear Dynamics, Psychology, and Life Sciences*, 17, 67-86.
30. \*Hessler, E. E., & Amazeen, P. G. (2014). Learning and transfer in motor-respiratory coordination. *Human Movement Science*, 33, 321-342.
31. \*Likens, A. D., Amazeen, P. G., Stevens, R., Galloway, T., & Gorman, J. (2014). Neural signatures of team coordination are revealed by multifractal analysis. *Social Neuroscience*, 9, 219-234.
32. \*Fine, J. M., \*Likens, A. D., Amazeen, E. L., & Amazeen, P. G. (2015). Emergent complexity matching in interpersonal coordination: Local dynamics and global variability. *Journal of Experimental Psychology: Human Perception and Performance*, 41(3), 723-737.
33. Gorman, J. C., Martin, M. J., \*Dunbar, T. A., Stevens, R. H., Galloway, T. L., Amazeen, P. G., & \*Likens, A. D. (in press). Cross-level effects between neurophysiological and cognitive-behavioral levels of analysis during team training. *Human Factors*.



34. \*Likens, A. D., \*Fine, J. M., Amazeen, E. L., & Amazeen, P. G. (in press). Experimental control of scaling behavior: What is not fractal? *Experimental Brain Research*.
35. \*Waddell, M. L., \*Fine, J. M., \*Likens, A., Amazeen, E. L., & Amazeen, P. G. (in press). Weight Perception in the Context of Newton's 2<sup>nd</sup> Law: Combined Effects of Muscle Activity and Lifting Kinematics. *Journal of Experimental Psychology: Human Perception and Performance*.

#### TECHNICAL REPORTS

36. Cooke, N. J., \*Gorman, J. C., \*Pedersen, H. K., \*Winner, J., \*Duran, J., \*Taylor, A., Amazeen, P. G., Andrews, D., & \*Rowe, L. (2007). *Acquisition and retention of team coordination in command-and-control*. Technical Report for AFOSR Grant FA 9550-04-1-0234, AFRL Award Number FA8650-04-6442. <http://handle.dtic.mil/100.2/ADA470220>
37. Shope, S. M., Cooke, N. J., Gorman, J. C., Amazeen, P. G., & Hessler, E. E. (2008). Dynamical modeling of communications for assessment and enhancement of team performance. Technical Report for ONR Contract N00014-07-M-0352.
38. \*Gorman, J. C., Cooke, N. J., Amazeen, P. G., \*Hessler, E. E., & \*Rowe, L. (2009). Automatic tagging of macrocognitive collaborative processes through communication analyses. Technical Report for ONR Grant N00014-05-10625.
39. Shope, S. M., Amazeen, P. G., Gorman, J. C., & Stevens, R. (2011). *Rapid Assessment of Team Cognitive Readiness*. Technical report to the Office of Naval Research.

#### CHAPTERS IN EDITED VOLUMES

40. Baron, R. M., Amazeen, P. G., & Beek, P. J. (1994). Local and global dynamics of social relations. In R. R. Vallacher & A. Nowak (Eds.), *Dynamical systems in social psychology* (pp. 111-138). San Diego, CA: Academic Press.
41. Amazeen, P. G. (1995). The effect of frequency detuning on learning to stabilize a dynamically unstable phase relation. In R. Bootsma & Y. Guiard (Eds.), *Studies in Perception and Action III* (pp. 29-32). Hillsdale, NJ: Lawrence Erlbaum Associates.
42. Mitra, S. & Amazeen, P. G. (1995). Breaking the symmetry between spatial and joint phase space in interlimb coordination. In R. Bootsma & Y. Guiard (Eds.), *Studies in Perception and Action, III* (pp. 49-52). Hillsdale, NJ: Lawrence Erlbaum Associates.

43. Amazeen, E. L., Amazeen, P. G., Post, A. A. & Beek, P. J. (1998). Timing the selection of visual information in rhythmic throwing. In B. Bril, A. Ledebt, G. Dietrich, & A. Roby-Brami (Eds.), *Advances in Perception-Action Coupling* (pp. 85-89). Paris: Éditions EDK.
44. Amazeen, P. G., Amazeen, E. L., & Beek, P. J. (1998). The effect of experience on locomotor-respiratory coupling during wheelchair propulsion. In B. Bril, A. Ledebt, G. Dietrich, & A. Roby-Brami (Eds.), *Advances in Perception-Action Coupling* (pp. 123-127). Paris: Éditions EDK.
45. Amazeen, P. G., Amazeen, E. L., & Turvey, M. T. (1998). Dynamics of human intersegmental coordination: Theory and research. In D. A. Rosenbaum & C. E. Collyer (Eds.), *Timing of behavior: Neural, computational, and psychological perspectives* (pp. 237-259). Cambridge, MA: MIT Press.
46. Amazeen, P. G. (1997). Learning a new phase relation modifies the intrinsic dynamics. In M. A. Schmuckler & J. M. Kennedy (Eds.), *Studies in Perception and Action IV* (pp. 293-296). Hillsdale, NJ: Lawrence Erlbaum Associates.
47. Amazeen, P. G., Amazeen, E. L., & Beek, P. J. (1999). Locomotor-respiratory coupling during manual wheelchair propulsion. In L. H. V. van der Woude, M. T. E. Hopman, & C. H. van Kemenade (Eds.), *Ergonomics of manual wheelchair propulsion: State of the art II* (pp. 202-207). Amsterdam: IOS Press.
48. \*Mitchell, L. A., \*Harrott, M. A., & Amazeen, P. G. (2001). Coordination and efficiency of rhythmic arm movements. In G. Burton & R. C. Schmidt (Eds.), *Studies in Perception and Action VI* (pp. 133-136). Hillsdale, NJ: Lawrence Erlbaum Associates.
49. Ringenbach, S. D. R., Amazeen, P. G., & Amazeen, E. L. (2003). Frequency and amplitude are inversely related in circle drawing. In S. Rogers & J. Effken (Eds.), *Studies in Perception and Action VII* (pp. 41-44). Mahwah, NJ: Lawrence Erlbaum Associates.
50. Carello, C., Pellicchia, G. L., Amazeen, P. G., & Turvey, M. T. (2005). Stability and variability of rhythmic coordination with compromised haptic perceptual systems. In H. Heft & K. L. Marsh (Eds.), *Studies in Perception and Action VIII* (pp. 191-194). Mahwah, NJ: Lawrence Erlbaum Associates.
51. Cooke, N. J., Amazeen, P. G., \*Gorman, J. C., Guastello, S. J., \*Likens, A., & Stevens, R. (2012). Modeling the complex dynamics of teamwork from team cognition to neurophysiology. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 56, 183-187.

52. \*Hessler, E. E., \*Finan, P. H., & Amazeen, P. G. (2013). Psychological rhythmicities. In J. P. Sturmburg & C. M. Martin (Eds.), *Handbook of systems and complexity in health*. New York: Springer.
53. \*Gibbons, C. T., \*Likens, A. D., & Amazeen, P. G. (2015). Multifrequency coordination in dyads. In J. Weast-Knapp, M. Malone, & D. Abney (Eds.), *Studies in Perception & Action XIII* (pp. 49-52). New York: Taylor & Francis Group, LLC.
54. \*Waddell, M., \*Fine, J. M., \*Likens, A. D., Amazeen, E. L., & Amazeen, P. G. (2015). Muscle activity and lifting kinematics combine in the perception of weight by dynamic touch. In J. Weast-Knapp, M. Malone, & D. Abney (Eds.), *Studies in Perception & Action XIII* (pp. 161-164). New York: Taylor & Francis Group, LLC.

#### REFEREED ABSTRACTS

55. Amazeen, E. L., Amazeen, P. G., Post, A. A. & Beek, P. J. (1998). Timing the selection of visual information for catching. *Journal of Sport and Exercise Psychology*, 20, 35.
56. Amazeen, P. G., Amazeen, E. L., & Beek, P. J. (1998). Locomotor-respiratory coupling in wheelchair propulsion. *Journal of Sport and Exercise Psychology*, 20, 40.
57. Amazeen, E. L., Amazeen, P. G., & Beek, P. J. (2000). Eye movements and the selection of optical information for catching. *Journal of Sport and Exercise Psychology*, 22, 14.
58. \*Holden, J. G., & Amazeen, P. G. (2000). Hysteresis and learning in the performance of displaced hand-eye coordination. *Journal of Sport and Exercise Psychology*, 22, 53.
59. Amazeen, P. G., \*Karabel, A. Z., & \*Mulvey, G. M. (2002). Locomotor-respiratory coupling during rhythmic arm movements. *Journal of Sport and Exercise Psychology*, 24, 25.
60. \*Mulvey, G. M., & Amazeen, P. G. (2002). Effects of movement frequency on the reflectional symmetries of bimanual coordination. *Journal of Sport and Exercise Psychology*, 24, 98.
61. Ringenbach, S. D. R., Amazeen, P. G., & Amazeen, E. L. (2003). Frequency and amplitude are inversely related in circle drawing. *Journal of Sport and Exercise Psychology*, 25, 25.
62. \*Hessler, E. E., & Amazeen, P. G. (2006). Learning in motor-respiratory coordination. *Journal of Sport and Exercise Psychology*, 28, 83.

63. \*Gorman, J. C., Cooke, N. J., \*Pedersen, H. K., \*Winner, J., Andrews, D. H., & Amazeen, P. G. (2006). Changes in team composition after a break: Building adaptive command-and-control teams. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting* (pp. 487-491). San Francisco, CA.
64. Amazeen, P. G. (2007). Intentional control of motor-respiratory coordination. *Journal of Sport and Exercise Psychology*, 29, 51-52.
65. \*Gonzales, L. M., \*Hessler, E. E., & Amazeen, P. G. (2007). Do perceptual constraints limit the intentional control of motor-respiratory coordination? *Journal of Sport and Exercise Psychology*, 29, 77.
66. \*Finan, P. H., \*Hessler, E. E., Amazeen, P. G., Butner, J., & Zautra, A. J. (2008). Oscillations in pain prediction accuracy evidence nonlinear damping: A dynamical systems approach to psychosomatic research. *Psychosomatic Medicine*, 70, 21.
67. \*Hessler, E. E., \*Gonzales, L. M., & Amazeen, P. G. (2008). Contributions of visual perception to the selection and performance of multifrequency ratios. *Journal of Sport and Exercise Psychology*, 30, 89.
68. Amazeen, P. G., \*Gorman, J. C., & \*Hessler, E. E. (2010). Dynamical analysis of team coordination in real time. *Journal of Sport and Exercise Psychology*, 32, S56.
69. \*Hessler, E. E. & Amazeen, P. G. (2010). Relative phase dynamics in motor-respiratory coordination. *Journal of Sport and Exercise Psychology*, 32, S85.

#### DISSERTATION

Amazeen, P. G. (1996). Learning a bimanual rhythmic coordination: Schemas as dynamics. *Doctoral Dissertation in Experimental Psychology, University of Connecticut.*

<b>PRESENTATIONS</b> (* INDICATES STUDENT AUTHORS)
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#### KEYNOTE ADDRESS

Amazeen, P. G. (2011). Crossing boundaries with dynamics. Twentieth anniversary conference of the Society for Chaos Theory in Psychology & Life Sciences. Orange, CA.

## **WORKSHOP**

Amazeen, P. G. *Introduction to dynamical systems*. University of Pittsburgh, Pittsburgh, PA. June 8 – 10, 2006.

- 1.4 Continuing Education Units (CEU) from the American Speech and Hearing Association (ASHA); 2 CEUs are required every 2 years to maintain certification
- 21 attendees from 4 departments: Communication Science and Disorders; Rehabilitation Science and Technology; Occupational Therapy; and Bioengineering
- 6 lectures: (1) Complex Systems; (2) Dynamical Systems; (3) Classification of Phase Portraits; (4) Mass-Spring Models; (5) Coordination Dynamics; (6) Multifrequency Dynamics

## **CHAired SATELLITE SESSION**

Amazeen, P. G., & Butner, J. (2015). Dynamics of social interaction: A search for universals. International Conference on Complex Systems (CCS'15), Tempe, AZ.

## **CHAired SYMPOSIA**

Amazeen, P. G., & Treffner, P. J. (2001). Intermodal coupling. Eleventh International Conference on Perception and Action, University of Connecticut, Storrs, CT.

## **WEBINAR**

Gorman, J. C., Cooke, N. J., & Amazeen, P. G. (November 2, 2012). Training Adaptive Teams: Enhancing coordination flexibility in dynamic environments. Webinar ID# 937-824-738. Human Factors and Ergonomics Society.

## **INVITED ADDRESSES**

Amazeen, P. G. (1994). The dynamics of interlimb coordination. Complex Systems Summer School, Santa Fe Institute, Santa Fe, NM.

Beek, P. J., Amazeen, P. G., and Post, A. A. (1997). Quantifying the evolution of oscillating components during the acquisition of rhythmic perceptual-motor skills. VIIème Congrès International de l'Association des Chercheurs en Activités Physiques et Sportives, University of the Mediterranean and Faculty of Sport Sciences, Marseilles, France.

Amazeen, P. G. (1997). Learning a bimanual rhythmic coordination: Schemas as dynamics. Ninth International Conference on Perception and Action, University of Toronto, Canada.

Amazeen, P. G. (1998). Locomotor-respiratory coupling during manual wheelchair propulsion. Second International Workshop on the Biomedical Aspects of Manual Wheelchair Propulsion: The State of the Art II. Vrije Universiteit, Amsterdam, The Netherlands.

Amazeen, P. G. (1998). Reflectional symmetry of interlimb coordination dynamics. Department of Developmental and Experimental Clinical Psychology, Rijksuniversiteit Groningen, The Netherlands.

Amazeen, E. L., Amazeen, P. G., Post, A. A., & Beek, P. J. (1999). Information, eye movements, and the direction of attention in a throwing and catching task. 1999 meeting of the Instituut voor Fundamentele en Klinische Bewegingswetenschappen [Institute for Fundamental and Clinical Human Movement Sciences]. Nijmegen, The Netherlands.

Amazeen, P. G., Amazeen, E. L., & Beek, P. J. (1999). Patterns of locomotor-respiratory coupling during manual wheelchair propulsion. Effecten van Revalidatie-Fysiotherapie [Effects of Rehabilitation-Physiotherapy], Instituut voor Fundamentele en Klinische Bewegingswetenschappen [Institute for Fundamental and Clinical Human Movement Sciences], Vrije Universiteit Ziekenhuis, Amsterdam, The Netherlands.

Amazeen, P. G. (2000). Coordination dynamics. Department of Mathematics, Arizona State University, Tempe, AZ.

Amazeen, P. G. (2002). Locomotor-respiratory coupling. Department of Mathematics, Arizona State University, Tempe, AZ.

Amazeen, P. G. (2003). The Dynamics of Rhythmic Coordination. Applied Complexity Lecture Series, Santa Fe Institute, Santa Fe, NM.

Amazeen, P. G. (2006). A dynamical model of motor-respiratory coordination. Cognitive Engineering Research Institute (CERI) and Department of Applied Psychology. Arizona State University – Polytechnic, Mesa, AZ.

Amazeen, P. G. (2006). The dynamics of motor-respiratory coordination. Department of Psychology. University of Arizona, Tucson, AZ.

Amazeen, P. G. (2006). Intentional control of motor-respiratory coordination. Department of Health and Kinesiology. Texas A&M University, College Station, TX.

Amazeen, P. G., \*Hessler, E. E., & \*Gorman, J. C. (2007). Learning dynamics: Lessons from attractor reconstruction. Santa Fe Institute and Friam Group. Santa Fe, NM.

Amazeen, P. G. (2008). Symmetries in bimanual coordination. A Natural-Physical Perspective on Perception-Action-Cognition. University of Connecticut, Storrs, CT.

Amazeen, P. G. & Gorman, J. C. (2009). Dynamical systems in psychology. Center for Social Dynamics and Complexity. Arizona State University, AZ.

Amazeen, P. G. (2013). Fractals in the social sciences. Center for Social Dynamics and Complexity. Arizona State University, AZ.

Amazeen, P. G. (2014). Modeling social interaction: Multifrequency coordination. Workshop on computationally intensive modeling of social interaction, University of Arizona Biosphere 2, Oracle, AZ.

Amazeen, P. G. (2015). Dynamics of Perception, Action, and Cognition. Center for Social Dynamics and Complexity. Arizona State University, AZ.

**CONFERENCE PAPERS** (PRESENTATIONS WITH PUBLISHED ABSTRACTS ARE OMITTED)

Amazeen, P. G. (2001). Locomotor-respiratory coupling. Eleventh International Conference on Perception and Action, University of Connecticut, Storrs, CT.

\*Gorman, J. C., Cooke, N. J., \*Pedersen, H. K., \*Winner, J., Andrews, D. H., & Amazeen, P. G. (2006). Changes in team composition after a break: Building adaptive command-and-control teams. Fiftieth Annual Meeting of the Human Factors and Ergonomics Society. San Francisco, CA.

\*Gorman, J. C., Amazeen, P. G., Shope, S. M., \*Hessler, E. E., & Cooke, N. J. (2009). Real-time dynamics: Dynamical modeling of communications for assessment and enhancement of team performance. Office of Naval Research: Collaboration and Knowledge Integration Workshop, Orlando, FL.

\*Gorman, J. C., \*Hessler, E. E., Cooke, N. C., & Amazeen, P. G. (2009). Dynamics of team coordination and adaptive performance. Fifteenth International Conference on Perception and Action, Minneapolis, MN.

\*Hessler, E. E., & Amazeen, P. G. (2009). Learning and transfer in motor-respiratory coordination. Fifteenth International Conference on Perception and Action, Minneapolis, MN.

**CONFERENCE POSTERS** (PRESENTATIONS WITH PUBLISHED ABSTRACTS ARE OMITTED)

Amazeen, P. G. & Valenti, S. S. (1992). Social walking: The effects of social constraints on coordination. International Society for Ecological Psychology North American Meeting, Franklin & Marshall College, Lancaster, Pennsylvania.

Amazeen, P. G., Amazeen, E. L., & Turvey, M. T. (1996). Breaking the reflectional symmetry of interlimb coordination dynamics. International Conference on Bernstein's Traditions in Motor Control, Pennsylvania State University, University Park, Pennsylvania.

Mitra, S., Amazeen, P. G., & Turvey, M. T. (1996). Effects of vision and movement plane on interlimb coordination dynamics. International Conference on Bernstein's Traditions in Motor Control, Pennsylvania State University, University Park, Pennsylvania.

Riley, M. A., Amazeen, E. L., Amazeen, P. G., Treffner, P. J., & Turvey, M. T. (1996). Handedness and attentional asymmetries in coordination. International Conference on Bernstein's Traditions in Motor Control, Pennsylvania State University, University Park, Pennsylvania.

Riley, M. A., Amazeen, E. L., Amazeen, P. G., Treffner, P. J., & Turvey, M. T. (1996). The asymmetries of handedness and attention. International Society for Ecological Psychology North American Meeting, Trinity College, Hartford, Connecticut.

Riley, M. A., Amazeen, P. G., Amazeen, E. L., & Turvey, M. T. (1996). Handedness and the coordination of asymmetrically oriented limb segments. International Society for Ecological Psychology North American Meeting, Trinity College, Hartford, Connecticut.

Amazeen, P. G. (1997). Learning a New Phase Relation Modifies the Intrinsic Dynamics. Ninth International Conference on Perception and Action, University of Toronto, Toronto, Canada.

Amazeen, E. L., Amazeen, P. G., Post, A. A., & Beek, P. J. (1997). Perception-action coupling in rhythmic throwing and catching. Ninth International Conference on Perception and Action, University of Toronto, Toronto, Canada.

Amazeen, E. L., Amazeen, P. G., Post, A. A., & Beek, P. J. (1998). Timing the selection of information during rhythmic catching. Annual meeting of the Nijmegen Institute for Cognition and Information (NICI++), Nijmegen, The Netherlands.

Amazeen, P. G. (2001). Locomotor-respiratory coupling. Eleventh International Conference on Perception and Action, University of Connecticut, Storrs, CT.

Amazeen, P. G. (2004). Motor-respiratory coupling: Intention is constrained by dynamics. International Society for Ecological Psychology North American Meeting. University of Connecticut, Storrs, Connecticut.



\*Hessler, E. E., & Amazeen, P. G. (2006). Learning rare ratios improves motor-respiratory coordination. North American meeting of the International Society for Ecological Psychology, Cincinnati, OH.

Amazeen, P. G. & \*Hessler, E. E. (2007). Learning dynamics of motor-respiratory coordination. Coordination Dynamics 2007, Boca Raton, FL.

\*Gorman, J. C., Amazeen, P. G., & Cooke, N. J. (2007). Team coordination dynamics. Coordination Dynamics 2007, Boca Raton, FL.

\*Castillo, A., \*Rogoff, L., \*Mehok, L., \*Cash, D., \*Likens, A. D., \*Gibbons, C. T., & Amazeen, P. G., (2014). Dynamics of multifrequency coordination in dyads. Arizona State University – University of Arizona Cognitive Science Conclave.

## **DEBATES**

Amazeen, P. G. & Amazeen, E. L. (2013). The nature of cognition. Consortium for biosocial complex systems. Arizona State University.

## **TEACHING ACTIVITY**

### **UNDERGRADUATE COURSES**

Dynamics in Psychology (PSY 498)

Learning and Motivation (PSY 320)

Research Methods (PSY 290)

Statistics and Methodology, Lecture and Laboratory (PSY 202Q)

Introduction to Psychology, Laboratory (PSY 100)

### **GRADUATE COURSES**

Dynamical Systems in Psychology

Dynamics and Complexity

Dynamics of Perception, Action, and Cognition

### **POST-DOCTORAL FELLOW**

J. C. Gorman, 2007 - 2010

### **Ph.D. DISSERTATION COMMITTEES**

J. G. Holden, Psychology, Arizona State University, 2000

J. E. Butner, Psychology, Arizona State University, 2002

D. Lantero, Kinesiology, Arizona State University, 2005  
J. C. Gorman, Psychology, New Mexico State University, 2006  
E. Hessler, Psychology, Arizona State University, 2010 (Chair)  
M. DiDonato, School of Social and Family Dynamics, Arizona State University, 2012  
T. Sasaki, Biology, Arizona State University, 2013  
J. Fine, Psychology, Arizona State University, 2015  
A. Likens, Psychology, Arizona State University, Expected 2016 (Chair)  
Y. Cho, Biology, Arizona State University, Expected 2017

**COMPREHENSIVE EXAMINATION COMMITTEE**

D. Lantero, Kinesiology, Arizona State University, 2004  
E. Hessler, Psychology, Arizona State University, 2008 (Chair)  
M. DiDonato, School of Social and Family Dynamics, Arizona State University, 2009  
T. Sasaki, Biology, Arizona State University, 2011  
A. Likens, Psychology, Arizona State University, 2013 (Chair)  
J. Fine, Psychology, Arizona State University, 2013  
Y. Cho, Biology, Arizona State University, 2015  
J. Jackson, Biology, Arizona State University, Expected 2015

**M.A. THESIS COMMITTEES**

L. Kettle, Psychology, Arizona State University, 2001  
J. Wings, Kinesiology, Arizona State University, 2001  
M. Jung, Kinesiology, Arizona State University, 2004  
G. Mulvey, Psychology, Arizona State University, 2004 (Chair)  
E. Hessler, Psychology, Arizona State University, 2006 (Chair)  
M. DiDonato, School of Social and Family Dynamics, Arizona State University, 2008  
S. Fouse, Applied Psychology, Arizona State University, 2012  
J. Fine, Psychology, Arizona State University, 2013 (Chair)  
C. Gibbons, Psychology, Arizona State University, Expected 2015 (Chair)

**UNDERGRADUATE HONORS THESIS COMMITTEES**

J. Kling, Psychology, Arizona State University, 2004  
L. A. Mitchell, Psychology, Arizona State University, 2000

**SERVICE ACTIVITY**

**PROFESSIONAL SERVICE**

**BOARD OF DIRECTORS**

2008-2012; 2013 – Date      The International Society for Ecological Psychology (ISEP)

**COLLEGE OF REVIEWERS**

2013 – Date      National Science Foundation (NSF)  
Perception, Action, & Cognition Directorate

**ASSOCIATE EDITOR**

2007 – 2012      *Research Quarterly for Exercise and Sport*  
Motor Behavior

**EDITORIAL BOARDS**

2006 – Date      *Ecological Psychology*  
2005 – 2008      *Journal of Motor Behavior*

**AD HOC REVIEWER — PROFESSIONAL JOURNALS**

*Acta Psychologica*  
*Cognitive Science*  
*Developmental Psychology*  
*Ecological Psychology*  
*Emotion*  
*Experimental Brain Research*  
*Human Movement Science*  
*International Journal of Sport Psychology*  
*Journal of Experimental Psychology: Human Perception and Performance*  
*Journal of Experimental Psychology: Learning, Memory, and Cognition*  
*Journal of Motor Behavior*  
*Journal of Speech, Language, and Hearing Research*  
*Motor Control*  
*Multivariate Behavioral Research*  
*Nonlinear Dynamics, Psychology, and Life Sciences*  
*Psychological Bulletin & Review*  
*Psychological Methods*

*Psychological Research*  
*Psychological Review*  
*Psychological Science*  
*Research Quarterly for Exercise and Sport*

**AD HOC REVIEWER — GRANTING AGENCIES**

2002 – 2013          National Science Foundation (NSF)

**AD HOC REVIEWER — TEXTBOOK PUBLISHERS**

Brooks/Cole Publishers

**CONFERENCE PROGRAM COMMITTEE**

2001                  Eleventh International Conference on Perception and Action  
University of Connecticut

**UNIVERSITY SERVICE**

2011 – Date          **Center for Social Dynamics and Complexity (CSDC)**  
Executive Committee

2000 – Date          **Dynamics of Perception, Action, and Cognition (DPAC)**  
Founder and Director

- Composed of faculty, post docs, graduate and undergraduate students from multiple ASU departments and campuses, as well as members of the local community
- Awarded a Faculty Seminar Series grant by Arizona State University – College of Liberal Arts and Sciences, 2001 – 2002
- Developed interdisciplinary dynamics curriculum
- Conduct collaborative research, grant-writing, and (internal) review
- Recruit and group-mentor graduate students
- Host American and international colleagues
- Discuss current literature on dynamics and complex systems

2013 – 2015          **Committee on Quality of Instruction**  
Member

2003 – 2005          **Interdisciplinary Exercise Science Ph.D. Program**  
Executive Committee

- Made policy changes for the Ph.D. program in Kinesiology

- Evaluated and make final decisions on graduate applications
- Evaluated annual progress of current students
- Dealt with problem students
- Oversaw program shift from Arizona State University's Graduate College to the College of Liberal Arts and Sciences (CLAS)

2000 – 2001      **Graduate College Representative**  
Dissertation Defenses in Communications and Kinesiology

**DEPARTMENT SERVICE**

2000 – Date      **Graduate Student Admissions Committee**

2007 – 2013      **Space Committee**

Chair

- Supervised expansion of psychology department; created departmental policy on space usage.

2008 – 2012      **Cognition, Action, and Perception (CAP)**

Chair

- Supervised and made programmatic decisions for the CAP program in psychology, including joint programs with Applied Psychology (Polytechnic Campus) and the School of Arts, Media & Engineering.

2009 – 2011      **Planning Advisory Committee (PAC)**

Member

- Advisory committee to the Chair of the Psychology Department.

2009 – 2010      **Faculty Search Committee**

Chair

- Chaired the search for a new faculty member in the Cognition, Action, and Perception (CAP) area of Psychology.

2006              **Faculty Evaluation Committee**

Chair

- Reviewed annual performance for 53 faculty and sabbatical requests for 8 faculty.

2004                    **Faculty Evaluation Committee**

2001 – 2004        **Awards Committee**

**COMMUNITY OUTREACH**

2014                    *Science*  
Scientific outreach to students in an after-school program in the Kyrene School District

2014                    *Math in our Behavior: Fractions, Fractions Everywhere*  
Lecture series for gifted resource math students at C. I. Waggoner Elementary School

2013                    *Scientific Method*  
Hosted field trip to ASU for gifted students from Balsz Elementary School

2012                    *Women’s Mentor Day contributor*  
Mountain Pointe High School

2012                    *Using Math To Understand Behavior*  
Lecture to gifted resource students at C. I. Waggoner Elementary School

2011                    *Science and Health*  
Multiple classes in math and science, physical education and sport at Mountain Pointe High School

2011                    *Motor-Respiratory Coordination*  
Lecture to third grade students at C. I. Waggoner Elementary School

2010 - 2011        *“Be a Scientist” station contributor*  
ASU’s Brain Fair for elementary schoolchildren

2009                    *Balance and Posture*  
Lecture to first grade students at C. I. Waggoner Elementary School

**PUBLIC RELATIONS**

2002                    Research featured in *The State Press* (September 24)