

Stephen B. Broomell, Ph.D.

Purdue University
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Research Interests

Judgment and decision making under uncertainty; Information environments; Information aggregation; Forecasting; Methodology; Risk perception and communication.

Education

- 2010 Ph.D. Quantitative Psychology, University of Illinois at Urbana-Champaign
2007 M.A. Psychology, University of Illinois at Urbana-Champaign
2007 M.S. Statistics, University of Illinois at Urbana-Champaign
2004 B.S. double major in Mathematics and Psychology, The Ohio State University

Academic Positions

Associate Professor

Department of Psychological Sciences, Purdue University *2022 – present*
Department of Social and Decision Sciences, Carnegie Mellon University *2018 – 2022*

Assistant Professor

Department of Social and Decision Sciences, Carnegie Mellon University *2011 – 2018*

Postdoctoral Research Fellow

College of Information Sciences and Technology, Pennsylvania State University *2010 – 2011*

Honors, Awards, and Fellowships

Next Generation of Hazards and Disasters Researchers Fellowship *2014–2016*
Sponsor: National Science Foundation

Intelligence Community (IC) Postdoctoral Research Fellowship *2010–2011*
Sponsor: National Geospatial-Intelligence Agency

Society for Multivariate Experimental Psychology Dissertation Award *2009*

Invited participant at the Summer Institute on Bounded Rationality *2008*
ABC Research Group
Berlin, Germany

Institutional National Research Service Award (NRSA) Pre-doctoral Fellow *2007–2008*
Sponsor: National Institutes of Health (NIH)
Title: Quantitative Methods for Behavioral Research

Research Grants

Sponsor: National Science Foundation 2020 – 2021
Title: RAPID: How uncertainty about risk and conflicting messages affect preventive behaviors against Covid-19.

Amount: \$199,000. Role: Co-PI.

Sponsor: McGill Interdisciplinary Initiative in Infection and Immunity 2020
Title: Expert and Lay Perceptions of Translation of COVID-19 Treatment and Vaccine Development.

Amount: \$35,000. Role: Co-PI.

Sponsor: National Oceanic and Atmospheric Administration 2016 – 2018
Title: Lay Judgments of Environmental Cues that Signal a Tornado.

Amount: \$150,000. Role: PI.

Berkman Faculty Development Grant, Carnegie Mellon University 2012–2014

Publications

* = Papers written by a trainee under my supervision (not all use the last-author convention).

Journal Articles

1. *Huang, S., Broomell, S. B., & Golman, R. (in press). A Hypothesis Test Algorithm for Determining When Weighting Individual Judgments Reliably Improves Collective Accuracy or Just Adds Noise. *Decision*.
2. Kane, P. B., Ward, B., Papenburg, J., Moyer, H., MacPherson, A., Broomell, S. B., & Kimmelman, J. (2022). Relationship between Lay and Expert Perceptions of COVID-19 Vaccine Development Timelines in Canada and USA. *PLOS ONE*, *17*(2).
<https://doi.org/10.1371/journal.pone.0262740>
3. Smithson, M. & Broomell, S. B. (2022). Compositional Data Analysis Tutorial. *Psychological Methods*.
<https://doi.org/10.1037/met0000464>
4. Broomell, S. B. & Kane, P. B. (2021). Perceiving a Pandemic: Global-local Incompatibility and COVID-19 Superspreading Events. *Decision*, *8*(4), 227–236.
<https://doi.org/10.1037/dec0000155>
5. *Kane, P. B. & Broomell, S. B. (2021). Investigating Lay Evaluations of Predictive Models. *Thinking & Reasoning*.
<https://doi.org/10.1080/13546783.2021.1999327>
6. Ellerby, Z., Broomell, S. B., McCulloch, J. & Wagner, C. (2021). Capturing Richer Information—On Establishing the Validity of an Interval-Valued Survey Response Mode. *Behavior Research Methods*. <https://doi.org/10.3758/s13428-021-01635-0>
7. Broomell, S. B. (2020). Global-Local Incompatibility: The Misperception of Reliability in Judgment Regarding Global Variables. *Cognitive Science*, *44*(4), e12831.
<https://doi.org/10.1111/cogs.12831>

8. Broomell, S. B., Wong-Parodi, G., Morss, R., & Demuth, J. (2020). Do We Know Our Own Tornado Season? A Psychological Investigation of Tornado Risk Perception in the Southeast U.S. *Weather, Climate, and Society*, *12*(4), 771–788.
<https://doi.org/10.1175/WCAS-D-20-0030.1>
9. Broomell, S. B., Chapman, G., & Downs, J. (2020). Psychological Correlates of Prevention Behaviors During the COVID-19 Pandemic. *Behavioral Science & Policy*, *6*(2), 1–8.
10. *Kane, P. B. & Broomell, S. B. (2020). Applications of the Bias-Variance Decomposition to Human Forecasting. *Journal of Mathematical Psychology*, *98*, 102417.
<https://doi.org/10.1016/j.jmp.2020.102417>
11. *Dryden, R., Morgan, M. G., & Broomell, S. B. (2020). Lay Detection of Unusual Patterns in the Frequency of Hurricanes. *Weather, Climate, and Society*, *12*(3), 597–609.
<https://doi.org/10.1175/WCAS-D-19-0132.1>
12. Fischhoff, B. & Broomell, S. B. (2020). Judgment and Decision Making. *Annual Review of Psychology*, *71*, 331–355.
<https://doi.org/10.1146/annurev-psych-010419-050747>.
13. Kane, P. B., Moyer, H., MacPherson, A., Ward, B., Papenburg, J., Broomell, S. B., & Kimmelman, J. (2020). Expert Forecasts of COVID-19 Vaccine Development Timelines. *Journal of General Internal Medicine*, *35*(12), 3753–3755.
<https://doi.org/10.1007/s11606-020-06244-9>.
14. Broomell, S. B., Sloman, S., Blaha, L. M., & Chelen, J. (2019). Interpreting Model Comparison Requires Understanding Model-Stimulus Relationships. *Computational Brain & Behavior*, *2*(3), 233–238.
<https://doi.org/10.1007/s42113-019-00052-z>.
15. Dewitt, B., Fischhoff, B., Davis, A. L., Broomell, S. B., Roberts, M., & Hanmer, J. (2019). Exclusion criteria as measurements I: Identifying invalid responses. *Medical Decision Making*, *39*(6), 693–703.
16. Dewitt, B., Fischhoff, B., Davis, A. L., Broomell, S. B., Roberts, M., & Hanmer, J. (2019). Exclusion criteria as measurements II: Effects on utility and health policy implications. *Medical Decision Making*, *39*(6), 704–716.
17. *Silver, E., Broomell, S. B., Davis, A., White, D. & Krishnamurtim, T. (2019). Communicating a Prognosis: A Randomized Trial of Survival Rate Language. *Journal of General Internal Medicine*, *34*(10), 1990–1991. DOI: 10.1007/s11606-019-05056-w.
18. Broomell, S. B., Winkles, J.F., & Kane, P. B. (2017). The Perception of Daily Temperatures as Evidence of Climate Change. *Weather, Climate, and Society*, *9*, 563–574.
19. Broomell, S. B. & Kane, P. B. (2017). Public Perception and Communication of Scientific Uncertainty. *Journal of Experimental Psychology: General*, *146*(2), 286–304.
20. Harris, A., Por, H., & Broomell, S. B. (2017). Anchors and the Interpretation of the Intergovernmental Panel on Climate Changes Verbal Probability Expressions. *Climatic Change*, *140*, 387–398.
21. Dewitt, B., Fischhoff, B., Davis, A., & Broomell, S. B. (2015). Environmental risk perception from visual cues: Caution and sensitivity in evaluating tornado risks. *Environmental Research Letters*, *10*(12), 124009.
22. Davis-Stober, C. P., Budescu, D. V., Broomell, S. B. & Dana, J. (2015). The composition of optimally wise crowds. *Decision Analysis*, *12*(3), 130–143. <http://dx.doi.org/10.1287/deca.2015.0315>.

23. Broomell, S. B., Budescu, D. V., & Por, H. H. (2015). Personal experience with climate change predicts intentions to act. *Global Environmental Change*, *32*, 67–73. DOI: 10.1016/j.gloenvcha.2015.03.001.
24. Broomell, S. B. & Bhatia, S. (2014). Parameter Recovery for Decision Modeling Using Choice Data. *Decision*, *1*, 252–274.
25. Budescu, D. V., Por, H., Broomell, S. B. & Smithson, M. (2014). The Interpretation of IPCC Probabilistic Statements Around the World. *Nature Climate Change*, *4*, 508–512.
26. Budescu, D. V., Broomell, S. B., Lempert, R., & Keller, K. (2014). Aided and unaided decision making with imprecise probabilities. *EURO Journal on Decision Processes*, *2*, 31–62. DOI: 10.1007/s40070-013-0023-4.
27. Davis-Stober, C. P., Budescu, D. V., Dana, J., & Broomell, S. B. (2014). When is a crowd wise? *Decision*, *1*, 79–101.
28. †R. H. Moss, G. A. Meehl, M. C. Lemos, J. B. Smith, J.R. Arnold, J.C. Arnett, D. Behar, G.P. Brasseur, S.B. Broomell, A. J. Busalacchi, S. Dessai, K. L. Ebi, J.A. Edmonds, J. Furlow, L. Goddard, H. C. Hartmann, J. W. Hurrell, J.W. Katzenberger, D.M. Liverman, P. Mote, S. C. Moser, A. Kumar, R. S. Pulwarty, E. A. Seyler, B. L. Turner, W. M. Washington, & T. J. Wilbanks (2013). Hell and High Water: Practice-Relevant Adaptation Science. *Science*, *342*, 696–698.
†*Authorship order starts with primary authors followed by secondary authors ordered alphabetically.*
29. Roy, M. M., Liersch, M. J. & Broomell, S. B. (2013). People believe that they are prototypically good and bad. *Organizational Behavior and Human Decision Processes*, *122(2)*, 200–213. Doi: 10.1016/j.obhdp.2013.07.004.
30. Smithson, M., Budescu, D. V., Broomell, S. B., & Por, H. (2012). Never say “not:” Impact of negative wording in probability phrases on imprecise probability judgments. *International Journal of Approximate Reasoning*, *53(8)*, 1262–1270. DOI:10.1016/j.ijar.2012.06.019.
31. Budescu, D. V., Por, H., & Broomell, S. B. (2012). Effective Communication of Uncertainty in the IPCC Reports. *Climatic Change*, *113(2)*, 181–200. DOI: 10.1007/s10584-011-0330-3.
32. Broomell, S. B., Budescu, D. V., & Por, H. (2011). Pair-wise Comparisons of Multiple Models. *Judgment and Decision Making*, *6*, 821–831.
33. Broomell, S. B., & Budescu, D. V. (2009). Why are experts correlated? Decomposing correlations between judges. *Psychometrika*, *74(3)*, 531–553.
34. Budescu, D. V., Broomell, S. B., & Por, H. (2009). Improving communication of uncertainty in the reports of the intergovernmental panel on climate change. *Psychological Science*, *20*, 299–308.

Refereed Conference Papers

35. *Sloman, S. J., Oppenheimer, D. O., Broomell, S. B., & Shalizi, C. R. (2022). Characterizing the robustness of Bayesian adaptive experimental designs to active learning bias. *The ICML2022 Workshop on Adaptive Experimental Design and Active Learning in the Real World*: Baltimore, USA.
36. *Sloman, S. J., Broomell, S. B., & Kusuma, T. (2020). Diagnosing pervasive issues with parameter estimation. *The 42nd Annual Conference of the Cognitive Science Society*. <https://cognitivesciencesociety.org/cogsci20/papers/0467/0467.pdf>

37. Hibshi, H., Breaux, T., & Broomell, S. B. (2015, August). Assessment of Risk Perception in Security Requirements Composition. In 2015 IEEE 23rd International Requirements Engineering Conference (RE) (pp. 146–155). IEEE.

Invited Papers

38. Broomell, S. B. & Chapman, G. B. (in press). Looking Beyond Cognition for Risky Decision Making: COVID-19, the Environment, and Behavior. *Journal of Applied Research in Memory and Cognition*.
39. Broomell, S. B. (2020). Using a Bifocal Lens Model to Identify Global-Local Incompatibility. *The Brunswick Society Newsletter*, 35, 5–7.

Working Papers

*Drummond, C., Anglin, S., & Broomell, S. B. (R & R). Do individuals selectively engage their analytical reasoning abilities? Submitted to *Judgment and Decision Making*.

Anglin, S., Broomell, S. B., & Drummond, C. (under review). Motivated Reasoning in Research Decision Making. Submitted to *Journal of Experimental Social Psychology*.

*Huang, S., Golman, R., & Broomell, S. B. (under review). Combining the Aggregated Forecasts: An Efficient Method for Improving Accuracy by Stacking Multiple Weighting Models. Submitted to *Management Science*.

Broomell, S. B., Ho, E., Benjamin, D. M., & Budescu, D. V. (in preparation). Expert Judgment and Communication of Uncertainty. In L. Mearns, C. Forest, H. Fowler, R. Lempert, & R. Wilby (Eds.), *Uncertainty in Climate Change Research: An Integrated Approach*. Springer.

Work In Progress

Broomell, S. B., He, L., & Bhatia, S. (in preparation). A numerical approach for evaluating correlations between parameter estimates.

Broomell, S. B., Wong-Parodi, G., Morss, R., & Demuth, J. (in preparation). The Role of Experience and the Environment: A Psychological Investigation of Tornado Risk Perception in the Southeast U.S.

Dummond, C., Broomell, S. B., Anglin, S. (in preparation). Drawing Different Conclusions From the Same Evidence: Belief in Hydroxychloroquine During the SARS-CoV-2 Pandemic.

Invited Talks - Presenter in Boldface

Broomell, S. B. (2021). *Global-Local Incompatibility: The Misperception of Reliability in Judgment Regarding Global Variables*. Invited talk presented at the Purdue University Department of Psychological Sciences, West Lafayette, IN.

Broomell, S. B. (2021). *Global-Local Incompatibility: The Misperception of Reliability in Judgment Regarding Global Variables*. Invited talk presented at the Center for Adaptive Rationality, Berlin, Germany.

Broomell, S. B. (2021). *Global-Local Incompatibility: The Misperception of Reliability in Judgment Regarding Global Variables*. Invited talk presented at the University of Illinois Department of

Psychology, Urbana-Champaign, IL.

Broomell, S. B. (2020). *Global-Local Incompatibility: The Misperception of Reliability in Judgment Regarding Global Variables*. Invited talk for the Decision Processes Colloquia at the University of Pennsylvania, Wharton School: Philadelphia, PA.

Broomell, S. B. (2020). *A Psychological Investigation of Tornado Risk Perceptions*. Invited talk for the Earth System Science Seminar at Stanford University: Stanford, CA.

Broomell, S. B. (2018). *The Connection Between Uncertainty, Personal Experience, and Mitigation Intentions for Global Warming*. Invited talk at the University of Pennsylvania, Wharton Risk Management and Decision Processes Center: Philadelphia, PA.

Broomell, S. B. (2018). *Studies of Uncertainty and Science*. Invited talk at the University of Warwick for the Warwick Business School (WBS): Coventry, United Kingdom.

Broomell, S. B. (2018). *Studies of Uncertainty and Science*. Invited talk at the University of Nottingham Department of Computer Science: Nottingham, United Kingdom.

Broomell, S. B. (2018). *Studies of Uncertainty and Science*. Invited talk at the University College London Department of Experimental Psychology: London, United Kingdom.

Broomell, S. B. (2018). *The Perception of Daily Temperatures as Evidence of Climate Change*. Invited talk at the University of Oklahoma Department of Psychology: Norman, Oklahoma.

Broomell, S. B. (2016). *Risk Perception and Communication*. Invited talk for the Executive Short Course: Risk, Network Analysis, and Geopolitics held by the Institute for Strategic Analysis: October, Washington D.C.

Broomell, S. B., Budescu, D. V., Por, H. (2016). *Personal Experience with Climate Change Predicts Intentions to Act*. Invited talk organized at Georgetown University McDonough School of Business: Washington D.C.

Broomell, S. B. (2016). *Risk Perception and Communication*. Invited talk for the Executive Short Course: Decision Science, Risk, and Network Analytics held by the Institute for Strategic Analysis: May, Washington D.C.

Broomell, S. B. (2015). *The Psychology of Meteorology*. Invited talk at the 43rd Conference on Broadcast Meteorology and the 3rd Conference on Weather Warnings and Communication: Raleigh, NC.

Broomell, S. B. (2015). *Risk Perception and Communication*. Invited talk for the Executive Short Course on Risk held by the Institute for Strategic Analysis: October, Washington D.C.

Broomell, S. B. (2014). *Risk communication under uncertainty: Climate Change*. Invited talk presented at the 13th Annual Social Equity Leadership Conference: Pittsburgh, PA.

Broomell S. B. (2013). *The Psychology of Risk Communication*. Invited talk presented at the Center for Advancing Risk Assessment Science and Policy: Washington, D.C.

Broomell, S. (2012). *Methods for Communicating Uncertainty: Levels of Confidence vs. Numerical Ranges*. Invited talk presented at the meeting on Science for Climate Change Adaptation at the Aspen Global Change Institute: Aspen, CO.

Broomell, S., & Budescu, D. V. (2009). *Why are Experts Correlated? Understanding Inter-Judge Correlations*. Invited talk presented at the University of Illinois Department of Psychology: The Knowledge for All Lecture Series.

Budescu, D. V., & Broomell, S. B. (2005). *The effects of presentation format and decision aids on decisions under deep uncertainty*. Invited presentation at the Meeting on Abrupt Climate Change: Aspen Global Change Institute.

Competitive Conference Talks - Presenter in Boldface

Broomell, S. B. & Kane, P. B. (2021). *Perceiving a Pandemic: Global-local Incompatibility and COVID-19 Superspreading Events*. Talk presented at the 27th International Meeting of the Brunswik Society, Virtual.

Broomell, S. B. & Kane, P. B. (2021). *Perceiving a Pandemic: Global-local Incompatibility and COVID-19 Superspreading Events..* Talk presented at the Society for Mathematical Psychology, Virtual.

Sloman, S. J., Broomell, S. B., & Oppenheimer, D. (2020). *Using parameter contours to achieve more robust model estimation*. Talk presented at the Society for Mathematical Psychology, Virtual.

Huang, S., Broomell, S. B., & Golman, R. (2020). *Getting More Wisdom from the Crowd: When Weighting Individual Judgments Reliably Improves Accuracy or Just Adds Noise*. Talk presented at the 57th Edwards Bayesian Research Conference at California State University: Fullerton, CA.

Kane P. & Broomell, S. B. (2019). *Applications of the Bias-Variance Decomposition to Human Forecasting*. Talk presented at the Society for Judgment and Decision Making: Montreal, Canada.

Broomell, S. B., He, L., & Bhatia, S. (2019). A numerical investigation of parameter correlations in choice models. Talk presented at Subjective Probability, Utility, and Decision Making: Amsterdam, The Netherlands.

Broomell, S. B. (2019). *Global-Local Incompatibility: The Misperception of Reliability in Judgment Regarding Global Variables*. Talk presented at the Society for Mathematical Psychology: Montreal, Canada.

Huang, S., Golman, R., & Broomell, S. B. (2019). *Getting More Wisdom from the Crowd: When Weighting Individual Judgments Reliably Improves Accuracy or Just Adds Noise*. Talk presented at the 14th Tinbergen Institute Conference: Bayesian Crowd. Rotterdam, Netherlands.

Broomell, S. B., Winkles, J. F., & Kane, P. B. (2017). *The Perception of Daily Temperatures as Evidence of Climate Change*. Talk presented at Subjective Probability, Utility, and Decision Making 26: Haifa, Israel.

Kane, P. & Broomell, S. B. (2015). *Predicting Clinical Forecasting Errors with Local Estimators*. Talk presented at the Society for Judgment and Decision Making: Chicago, IL.

Broomell, S. B., Budescu, D. V., Por, H. (2015). *Personal Experience with Climate Change Predicts Intentions to Act* presented as part of the *Psychological Responses to Climate Change Symposium*. Talk presented at the Association for Psychological Science 27th Annual Convention: New York, NY.

Davis-Stober, C. P., Budescu, D. V., Dana, J., & Broomell, S. B. (2014). *When is a crowd*

wise? Talk presented at the Collective Intelligence Conference: Cambridge, MA.

Broomell, S. B. & Bhatia, S. (2013). *Parameter Recovery for Decision Modeling Using Choice Data*. Talk presented at the Society for Judgment and Decision Making: Toronto, Canada.

Budescu, D. V., Por, H., Broomell, S., & Smithson, M. (2013). *A cross-national study of uncertainty and perceptions of global climate change*. Talk presented at the Society of Multivariate Experimental Psychology: St. Petersburg, FL.

Broomell, S. B. & Bhatia, S. (2013). *Parameter Recovery for Decision Modeling Using Choice Data*. Talk presented at Subjective Probability, Utility, and Decision Making 24: Barcelona, Spain.

Broomell, S. B., Budescu, D. V., & Por, H. (2013). *Predicting mitigation action: A cross-national analysis*. Talk presented at Subjective Probability, Utility, and Decision Making 24: Barcelona, Spain.

Budescu, D. V., **Por, H.**, Balassiano, M., Barbopoulos, I., Broomell, S., Fuller, J., Gonzalez-Vallejo, C., Hadar, L., Hansla, A., Hoelzl, E., Hichy, Z., Juanchich, M., Maydeu-Olivares, A., Nakamura, K., Onkal, D., Sirota, M., Smithson, M., Sokolowska, J., Villejoubert, G., & Witteman, C. (2013). *The 2012 cross-national study of uncertainty and perceptions of Global Climate Change*. Talk presented at Subjective Probability, Utility, and Decision Making 24: Barcelona, Spain.

Broomell, S., Budescu, D. V., & Por, H. (2012) *The Impact of Beliefs, Ideology, and Understanding of Climate Change on Mitigation Action*. Talk presented at the Society for Judgment and Decision Making: Minneapolis, MI.

Smithson, M., Budescu, D. V., Broomell, S. B., & Por, H. (2011) *Never Say “Not”: Impact of Negative Wording in Probability Phrases on Imprecise Probability Judgments*. Talk presented at the Seventh International Symposium on Imprecise Probability: Theories and Applications: Innsbruck, Austria.

Por, H., Budescu, D. V., & Broomell, S. B. (2010). *Effective Communication of Uncertainty in the Intergovernmental Panel on Climate Change (IPCC) Reports*. Talk presented at the Society for Judgment and Decision Making: St. Louis, MO.

Broomell, S. B., Por, H., & Budescu, D. V. (2009). *Understanding of Global Climate Change: Beliefs vs. Actions*. Talk presented at the Society for Judgment and Decision Making: Boston, MA.

Budescu, D. V. & Broomell, S. B. (2008). *Why are Experts Correlated? Decomposing Inter-judge Correlations*. Talk presented at Behavioral Decision Research in Management Conference: San Diego, CA.

Broomell, S., & Budescu, D. V. (2007). *Why are Experts Correlated? Understanding Inter-judge Correlations*. Talk presented at the Society for Judgment and Decision Making: Long Beach, CA.

Budescu, D. V., Broomell, S., **Lempert, R.**, & Keller, K. (2007). *Effects of Presentation Format on Judgments and Decisions Under Deep Uncertainty*. Talk presented at the Society for Judgment and Decision Making: Long Beach, CA.

Budescu, D. V. & Broomell, S. B. (2007). *Why are Experts Correlated? Decomposing Inter-judge Correlations*. Talk Presented at annual meeting of the Society of Multivariate Experimental Psychology: Chapel Hill, NC.

Broomell, S. B., & Budescu, D. V. (2007). *Why are Experts Correlated? Understanding Inter-*

Judge Correlations. Talk presented at the Society for Mathematical Psychology: Irvine, CA.

Budescu, D. V., **Broomell, S. B.**, Lempert, R., & Keller, K. (2007). *Decisions with Imprecise Probabilities: Confronting models with data.* Talk presented at Subjective Probability, Utility, and Decision Making 21: Warsaw, Poland.

Budescu, D. V., Broomell, S., **Lempert, R.**, & Keller, K. (2007). *Effects of Presentation Format on Judgments and Decisions Under Deep Uncertainty.* Talk presented at the Society for Judgment and Decision Making: Long Beach, CA.

Poster Presentations - Presenter in Boldface

Sloman, S. J., Oppenheimer, D. O., Broomell, S. B., & Shalizi, C. R. (2022). Characterizing the robustness of Bayesian adaptive experimental designs to active learning bias. Poster presented at the ICML2022 Workshop on Adaptive Experimental Design and Active Learning in the Real World: Baltimore, USA.

Broomell, S. B. & Kane, P. B. (2021). Perceiving a Pandemic: Global-local Incompatibility and COVID-19 Superspreading Events. Poster presented at the Society for Judgment and Decision Making: Virtual.

Broomell, S. B. & Kane, P. B. (2021). Perceiving a Pandemic: Global-local Incompatibility and COVID-19 Superspreading Events. Poster presented at Subjective Probability, Utility, and Decision Making: Virtual.

Broomell, S. B. (2019). *Global-Local Incompatibility: The Misperception of Reliability in Judgment Regarding Global Variables.* Poster presented at the Society for Judgment and Decision Making: Montreal, Canada.

Drummond, C., Anglin, S., & Broomell, S. (2019). *Do individuals selectively engage their analytical reasoning abilities?* Poster presented at the Society for Judgment and Decision Making: Montreal, Canada.

Drummond, C., Anglin, S., & **Broomell, S.** (2019). *Do individuals selectively engage their analytical reasoning abilities?* Poster presented at Subjective Probability, Utility, and Decision Making: Amsterdam, The Netherlands.

Ellerby, Z., McCulloch, J., Broomell, S. & Wagner, C. (2019). *The added-value of interval-values - capturing individual response uncertainty.* Poster presented at the Society for Mathematical Psychology: Montreal, Canada.

Huang, S., Golman, R. & Broomell, S. B. (2019). *Getting More Wisdom from the Crowds: When Weighting Individual Judgments Reliably Improves Accuracy or Just Adds Noise.* Poster presented at the Collective Intelligence Conference: Pittsburgh, PA.

Kane P. & **Broomell, S. B.** (2018). *Application of the Bias-Variance Decomposition to Human Forecasting.* Poster presented at the Society for Judgment and Decision Making: New Orleans, LA.

Anglin, S., Broomell, S.B., Drummond, C. (2018). *Confirmatory vs. Disconfirmatory Hypothesis Testing Strategies.* Poster presented at the Society for Judgment and Decision Making: New Orleans, LA.

Broomell, S. B., Moss, R., & Mearns, L. (2016). *An Empirical Test of Communicating Uncertain*

Geographic Climate Projections. Poster presented at the Society for Judgment and Decision Making: Boston, MA.

Broomell, S. B., Winkles, J.F., & Kane P. (2015). *The Perception of Daily Temperatures as Evidence of Climate Change*. Poster presented at the Society for Judgment and Decision Making: Chicago, IL.

Dewitt, B., Fischhoff, B., Davis, A. & Broomell, S. B. (2015). *Tornado Risk Perception from Visual Cues*. Poster presented at the Society for Judgment and Decision Making: Chicago, IL.

Broomell, S. B., & Kane P. (2013). *Public Perception of Scientific Uncertainty*. Poster presented at the Society for Judgment and Decision Making: Toronto, Canada.

Broomell, S. B., Budescu, D. V., & Por, H. (2011). *Pair-wise comparisons of multiple decision models*. Poster presented at the Society for Judgment and Decision Making: Seattle, WA.

Broomell, S. B. & McGill, W. (2011). *A Social Network Simulation of Information Overlap and Confidence in Intelligence Correspondence*. Poster presented at the 11th Annual Intelligence Community Postdoctoral Research Fellowship Colloquium: Washington D.C.

Broomell, S. B. (2010). *Sampling Processes in Experience Based Decision Making*. Poster presented at the Society for Judgment and Decision Making: St. Louis, MO.

Broomell, S. B., Budescu, D. V., & Por, H. (2009). *Attitudes Toward Global Climate Change*. Poster presentation at Planet U: The Human Story of Climate Change: Urbana-Champaign, IL.

Broomell, S. B. & Budescu, D. V. (2008). *Comparing Individual and Group Level Parameters of Choice Models*. Poster presentation at the Society for Judgment and Decision Making: Chicago, IL.

Shaffer, V. A., Templin, S., Broomell, S. B., & Hulse, L. (2008). *Perceptions of physicians using diagnostic support systems*. Poster presented at Society for Medical Decision Making: Philadelphia, PA.

Broomell, S. B., & Budescu, D. V. (2006). *Exploring Imprecise Probabilities*. Poster presented at the Society for Judgment and Decision Making: Houston, TX.

Arkes, H. R., Shaffer, V. A., White, R., Broomell, S. B., Avner, N., & Anthony, E. (2004). *Debiasing the sunk cost effect by 'punctuating' mental accounts*. Poster presented at the Society for Judgment and Decision Making: Minneapolis, MN.

Shaffer, V. A., Arkes, H. R., White, R., Broomell, S. B., Avner, N., Starrmann, A., Braun, A., & Anthony, E. (2004). *Preference reversals in cash versus non-cash incentives*. Poster presented at the Society for Judgment and Decision Making: Minneapolis, MN.

Students Advised

Shu Huang - Doctoral Thesis 2022
Title: Harnessing the Wisdom of Crowds
Department: Social and Decision Sciences

Lt. Col. Ryan Kenny - Doctoral Thesis 2022
Title: Why Some are Better Than Others at Detecting Social Bots: Comparing Baseline Performance to Performance with Aids and Training
Department: Engineering and Public Policy

Erin Bugbee - Masters Thesis 2022
Title: Deciding When to Stop: Cognitive Models of Sequential Decisions in Optimal Stopping Tasks
Department: Social and Decision Sciences

Keela Thomson - Doctoral Thesis 2021
Title: The other half of human intelligence: Individual differences in type 1 cognitive ability
Department: Social and Decision Sciences

Yanran Yang - Doctoral Thesis 2021
Title: Graphic communication about scientific uncertainties: Examples from influenza and COVID-19 forecasts
Department: Engineering and Public Policy

Erin McCormick - Doctoral Thesis 2021
Title: Adaptation to change in decision making
Department: Social and Decision Sciences

Timothy Kusuma - Undergraduate Honors Thesis 2021
Title: Goals in Misinformation
Departments: Economics; Statistics and Data Science

Shu Huang - Masters Thesis 2019
Title: Getting More Wisdom from the Crowd: When Weighting Individual Judgments Reliably Improves Accuracy or Just Adds Noise
Department: Social and Decision Sciences

Hanan Hibshi - Doctoral Thesis 2018
Title: Composite Security Requirements in the Presence of Uncertainty
Department: School of Computer Science

Patrick Kane - Doctoral Thesis 2017
Title: Investigating Lay Evaluations of Predictive Models
Department: Social and Decision Sciences

Caitlin Drummond - Doctoral Thesis 2017
Title: How Do Nonscientists Reason about Scientific Evidence? Development, Validation, and Application of the Scientific Reasoning Scale
Department: Social and Decision Sciences

Casey Canfield - Doctoral Thesis 2016
Title: Using Vigilance to Quantify Human Behavior for Phishing Risk
Department: Engineering and Public Policy

Barry Dewitt - Masters Thesis 2015
Title: Tornado Risk Perception from Visual Cues
Department: Engineering and Public Policy

Nathanial R. Peterson - Doctoral Thesis 2015
Title: A Behavioral Decision Research Approach to College Graduation Risk
Department: Social and Decision Sciences

Erin McCormick - Masters Thesis 2015
Title: Now Reverse Everything: Detecting Deception with a Response Conflict-Based Cognitive

Load Manipulation

Department: Social and Decision Sciences

Patrick Kane - Masters Thesis

2014

Title: Clinical Versus Actuarial Forecasting: Predicting Errors with Local Estimators

Department: Social and Decision Sciences

Caitlin Drummond - Masters Thesis

2014

Title: How Capable are Laypeople of Assessing the Validity of Scientific Evidence? Development and Validation of The Critical Scientific Thinking Scale

Department: Social and Decision Sciences

Tamar Feigenbaum - Undergraduate Honors Thesis

2014

Title: Consumer Decision Making and Price Partitioning

Department: Social and Decision Sciences

Alycia Chin - Masters Thesis

2012

Title: The effect of readability on responses to probability questions

Department: Social and Decision Sciences

Teaching Experience

Carnegie Mellon University.

2012–present

Social and Decision Science 88-251

Empirical Research Methods

Social and Decision Science 88-388/788

Psychological Models of Decision Making

Social and Decision Science 88-405/605

Risk Perception and Communication

Social and Decision Science 88-435/635

Decision Science and Policy

University of Illinois at Urbana-Champaign.

2008–2009

Psychology 406 Introductory Graduate Statistics I

Psychology 407 Introductory Graduate Statistics II

Psychology 235 Introductory Undergraduate Statistics

Professional Service

Editorial Boards

Decision - American Psychological Association

2015 – present

Thinking & Reasoning - Taylor & Francis

2020 – present

External Committees

Contributing Author

United Nations Global Assessment Report (GAR 22) on Disaster Risk

2022

www.undrr.org/GAR2022

Planning Committee

National Academies of Sciences Engineering and Medicine

2018

Exploring Medical and Public Health Preparedness for a Nuclear Incident: A Workshop

Technical Advisory Committee

Consortium for Resilient Gulf Communities

2015 – 2017

Carnegie Mellon University Departmental Committees

Departmental Climate Committee Member	2020 – present
Judgment Qualifier Committee Member	2011 – present
Faculty Recruiting Committee Member	2016 – 2020
Graduate Education Committee Member	2016 – 2020

Conference Referee

Society for Judgment and Decision Making 2014, 2019

Journal Referee

American Political Science Review; Applied Cognitive Psychology; British Journal of Mathematical and Statistical Psychology; Cognition; Cognitive Psychology; Cognitive Science; Computational Brain & Behavior; Decision; Global Environmental Change; Journal of Experimental Psychology: Applied; Journal of Mathematical Psychology; Journal of Risk Research; Judgment and Decision Making; Management Science; Medical Decision Making; Nature Climate Change; Operations Research; Perspectives on Psychological Science; PLOS One; PNAS; Psychological Methods; Psychological Review; Psychological Science; Risk Analysis; Science; Social Psychology and Personality Science; Thinking & Reasoning; Weather, Climate, & Society