

Timothy L. Dunn
Curriculum Vitae
(Updated October 24th, 2023)

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Website : timothydunn.co

Google Scholar : scholar.google.com/citations?user=RFQltkkAAAAJ&hl=en

Open Science Framework: osf.io/r26az

Employment

Research Psychologist – 2021 - Present
Principal Investigator, Expeditionary Cognitive Science (ExCS) Group
Warfighter Performance Department
Naval Health Research Center
Naval Base Point Loma, San Diego, CA

Cognitive Psychologist (Leidos Contractor) – 2018-2021
Warfighter Performance Department
Naval Health Research Center
Naval Base Point Loma, San Diego, CA

Education

Post-Doctoral Research Associate – 2018
Center for Research on Consumer Financial Decision Making
Department of Marketing
Leeds School of Business
University of Colorado Boulder
Advisors: Dr. Philip Fernbach and Dr. John G. Lynch, Jr.

Doctor of Philosophy; Cognitive Psychology – 2017
On the Determinants of Effort
University of Waterloo, Ontario, Canada
Advisor: Dr. Evan F. Risko
Committee: Dr. Maggie Toplak, Dr. Selcuk Onay, Dr. Colin M. MacLeod, and Dr. Daniel Smilek

Master of Arts; Psychology – 2014
Determinants of Cognitive Offloading: Toward a Metacognitive Approach
University of Waterloo, Ontario, Canada
Advisor: Dr. Evan F. Risko
Readers: Dr. Colin M. MacLeod, and Dr. Daniel Smilek

Education (cont.)

Bachelor of Arts; Psychology - 2012
Arizona State University, Arizona, United States of America

Current Support (PI/Co-PI)

Marksmanship simulator assessments

Supporting Agency: US Marine Corps Systems Command Program Manager Training Systems

Performance Period: 05/1/2023 - 9/30/2025

Level of Funding: 1,000k

Principal Investigator

Adaptive human-automation teamings and biofeedback as a performance optimizer under fatigue

Supporting Agency: US Army Medical Research and Materiel Command, Joint Program

Committee 5; Fatigue Mechanisms Working Group

Performance Period: 10/1/2023 - 9/30/2026

Level of Funding: 1,660k

Principal Investigator

Evaluation of pre-determined psychological approaches to cold water immersion and recovery

Supporting Agency: US Army Medical Research and Materiel Command, Joint Program

Committee 5; Fatigue Mechanisms Working Group

Performance Period: 10/1/2023 - 9/30/2025

Level of Funding: 696K

Co-Principal Investigator w/ Doug Jones

Enhancing low visibility lethality (E-LVL)

Supporting Agency: Office of Naval Research; Code 34

Performance Period: 10/1/2022 - 9/30/2024

Level of Funding: 2,684k

Principal Investigator

The cold shock response, problem solving, and survivability at sea

Supporting Agency: Office of Naval Research; Code 34

Performance Period: 10/1/2022 - 9/30/2024

Level of Funding: 600k

Co-Principal Investigator w/ Doug Jones

Understanding and optimizing Unmanned Maritime Systems (UMS) Operator Training

Supporting Agency: Office of Naval Research; Code 34

Performance Period: 10/1/2021 - 9/30/2024

Level of Funding: 270k

Principal Investigator

Human-machine teaming and fatigue during mine countermeasures.
Supporting Agency: US Army Medical Research and Materiel Command, Joint Program
Committee 5; Fatigue Mechanisms Working Group
Performance Period: 10/1/2020 - 9/30/2023
Level of Funding: 1,230k
Principal Investigator

Completed Projects

Physiological and cognitive responses to cold stress during water- and land-based warfare
Supporting Agency: Office of Naval Research; Code 34
Performance Period: 10/1/2021 - 9/30/2022
Level of Funding: 320k
Co-Principal Investigator w/ Doug Jones

Training to fatigue resilience: Promoting best practices in the UUV PMA training curriculum.
Supporting Agency: US Army Medical Research and Materiel Command, Joint Program
Committee 5; Fatigue Mechanisms Working Group
Performance Period: 10/1/2020 - 9/30/2022
Level of Funding: 322K
Principal Investigator

Cognitive fatigue under thermal stress
Supporting Agency: Defense Health Agency, J9
Performance Period: 10/1/2021 – 9/30/22
Level of funding: 450K
Principal Investigator

Quantifying and mitigating the effects of sleep loss on mission performance of MK18 unmanned
underwater vehicle (UUV) operators.
Supporting Agency: US Army Medical Research and Materiel Command, Joint Program
Committee 5; Fatigue Mechanisms Working Group
Performance Period: 10/1/2019 - 9/30/2021
Level of Funding: 1,030K
Co-Investigator w/ Rachel Markwald (PI)

Articles in Review/Working Papers

** Pre-prints available @ timothydunn.co/publications*

Carnes, N. C., Biggs, A. T., Hamilton, J. A., & **Dunn, T. L.** (in review). The Paradox of Reality
Constraints: Distributional Violations of Normality Change Outcomes in Human Performance
Modeling.

Carnes, N. C., Biggs, A. T., Hamilton, J. A., Huffman, G. H., & **Dunn, T. L.** (in review).
Logistical challenges in modeling marksmanship outcomes: striking a balance between reliability
and efficiency.

Jones, D. M., Weller, R. S., McClintock, R. J., Roberts, N., Soutiere, S., **Dunn, T. L.** (in review). Physiological responses to ruck marching in a high-altitude environment following blood donation.

Daley, M. S., Bolkhovskiy, J. B., Markwald, R. M., & **Dunn, T. L.** (in review). Wearables to detect independent variables, objective task performance, and metacognitive states.

Dunn, T. L., Smith, M., Kracinovich, A., Walker, M., Cuellar, & Markwald, R. R. Promise of early completion recovers attentional control performance after 24+ hours of sleep deprivation.

Huffman, G. H., Hamilton, J. A., Javes, K., & **Dunn, T. L.** A review of validated marksmanship simulators studies.

Biggs, A. T., Hamilton, J. A., Javes, K., Huffman, G., & **Dunn, T. L.** Transparent guidance for developing an effective marksmanship test: the Mark IV Matrix

Peer Reviewed Publications

† *Includes pre-registered experiment(s)*

Weller, R. S., Daanen, H. A., McClintock, R. J., Roberts, N., **Dunn, T. L.**, Jones, D. M. (2023). Cold-induced vasodilation during multiple immersions of the hand. *European Journal of Applied Physiology*. <https://doi.org/10.1007/s00421-023-05304-2>

Jones, D. M., Weller, R., McClintock, R. J., Roberts, N., Zheng, W., & **Dunn T. L.** (2023). Prevalence of hypothermia and critical hand temperatures during military cold water immersion training. (2023). *International Journal of Circumpolar Health*, 82(1), 2236777.

Dunn, T. L., Jones, D., & Heaney, J. H. Cold entropy: Assessing individual differences in cognitive adaptability during cold stress. (2022). *Ecological Psychology*, 34(1-2), 19-47.

Jones, D. M., Weller, R., Eggan, S., Roberts, N., Heaney, J., & **Dunn T. L.** (2022). Influence of core temperature on psychomotor performance during cold weather military training. *Journal of Human Performance in Extreme Environments*, 17(1).

Dunn, T. L., Gaspar, C., McLean, D., Koehler, D., & Risko, E. F. (2021). Distributed metacognition: Increased bias and deficits in metacognitive sensitivity when retrieving information from the Internet. *Mind, Technology, and Behavior*, 2(3).
Data and code freely available @ osf.io/k6jpw/

Biggs, A. T., Hamilton, J. A., Jensen, A. E., Huffman, G. H., Suss, J., **Dunn, T. L.**, Sherwood, S., Hirsch, D. A., Rhoton, J., Kelly, K. R., & Markwald, R. R. (2021). Perception during use-of-force and the likelihood of firing upon an unarmed person. *Scientific Reports*, 11, 13313.

Dunn, T. L., & Risko, E. F. (2019). Understanding the cognitive miser: Cue-utilization in effort avoidance. *Acta Psychologica*, 198, 102863.
Data and code freely available @ osf.io/f6cmp/

Dunn, T. L., Gaspar, C., & Risko, E. F. (2019). Cue awareness in avoiding effortful control. *Neuropsychologia*, *123*, 77-91. †
Data and code freely available @ osf.io/khtn3/

Dunn, T. L., Inzlicht, M. & Risko, E. F. (2017). Anticipating cognitive effort: Roles of perceived error-likelihood and time demands. *Psychological Research*, *83*(5), 1033-1056. †
Data and code freely available @ osf.io/2szy3/

Dunn, T. L., Koehler, D. J., & Risko, E. F. (2017). Evaluating effort: influences of evaluation mode on subjective judgments of domain-specific efforts. *Journal of Behavioral Decision Making*, *30*(4), 869-888.
Data and code freely available @ osf.io/t4uv4/

Dunn, T. L., Lutes, D. J. C., & Risko, E. F. (2016). Metacognitive evaluation in the avoidance of demand. *Journal of Experimental Psychology: Human Perception and Performance*, *42*(9), 1372-1387.
Data and code freely available @ osf.io/mfcxd/

Dunn, T. L., & Risko, E. F. (2016). Toward a metacognitive account of cognitive offloading. *Cognitive Science*, *40*(5), 1080-1127.
Data and code freely available @ osf.io/4ves2/

Risko, E. F., & **Dunn, T. L.** (2015). Storing information in-the-world: Investigating cognitive offloading in a short-term memory task. *Consciousness & Cognition*, *36*, 61-74.

Technical Reports

‡ *Restricted Distribution*

‡ **Dunn, T. L.,** Kracinovich, A., Walker, M., Van Dehy, J., Schrom, B., Lukos, J., & Markwald, R. R. (2023). *Effects of ocean-bottom complexity, target prevalence, and sleep deprivation on Unmanned Maritime Systems operators performing simulated post-mission analysis.* (Report No. AD1211211). Defense Technical Information Center.

‡ Expeditionary Cognitive Science Group & Marine Corps Systems Command. (2023). *M110 Semi-Automatic Sniper System Product Improvement Plan Comparison Test.*

Smith, M., Schrom, B., Markwald, R. M., **Dunn, T. L.** (2023). *Navy Unmanned Maritime Systems platoon leadership Fatigue Level Negatively Impacts Platoon Performance During Expeditionary Mine Countermeasures Missions.* (Report AD1203017). Defense Technical Information Center.

Ordille, A., Jones, D., Weller, R., Zheng, W., **Dunn, T. L.,** Roberts, N., & Heaney, J. (2020). *Commercial heat packs do not influence cognitive performance following cold water immersion.* (Report No. 20-57). Defense Technical Information Center.

Conference Presentations (last 5 years)

Dunn, T. L., Smith, M. K., Schrom, B., & Jones, D. M. (2023). Tracking attention control decrements across mountain warfare training. Talk given at the *International Conference of Soldier Physical Performance*, London, United Kingdom.

Schrom, B., Smith, M. K., & **Dunn, T. L.** (2023). Understanding Unmanned Maritime Systems (UMS) operator training. Talk given at the *Military Health System Research Symposium*, Kissimmee, FL, USA.

Smith, M. K., Lagoy, A. D., Jones, D. M., & **Dunn, T. L.** (2023). Effects of Operational Fatigue on Attentional Control Performance during Marine Corps Infantry Mountain Warfare Training. Poster presented at the *Military Health System Research Symposium*, Kissimmee, FL, USA.

Jones, D. M., Weller, R. S., McClintock, B. J., Duong, T., ... & **Dunn, T. L.** (2023). Resistance Index of Frostbite as a Predictor for Manual Dexterity Performance in the Cold. Talk given at the *Military Health System Research Symposium*, Kissimmee, FL, USA.

Dunn, T. L. (2023). Human-automation teaming and fatigue during post-mission analysis: Interim results. Talk given at the MK-18 ATR/ML Community of Interest, Annapolis, MD, United States of America.

Duong, T., Weller, R. S., McClintock, B. J., **Dunn, T. L.**, & Jones, D. M. (2023). Physiological Responses to cycling at high-altitude following blood donation in unacclimatized individuals. Poster presented at the annual *American College of Sports Medicine* meeting, Denver, CO, United States of America.

Jones, D. M., Weller, R. S., McClintock, B. J., & **Dunn, T. L.** (2023). Prevalence of tachycardia during sudden immersion in cold water in an outdoor setting. Poster presented at the annual *American College of Sports Medicine* meeting, Denver, CO, United States of America.

McClintock, B. J., Weller, R. S., **Dunn, T. L.**, & Jones, D. M. (2023). Influence of Cold Shock Magnitude on Core Temperature Cooling Rates. Poster presented at the annual *American College of Sports Medicine* meeting, Denver, CO, United States of America.

Weller, R. S., McClintock, B. J., Cuellar, J., Roberts, N., **Dunn, T. L.**, & Jones, D. M. (2023). Impact of Cold Exposure Frequency on Cold-Induced Vasodilation and Finger Rewarming. Poster presented at the annual *American College of Sports Medicine* meeting, Denver, CO, United States of America.

Dunn, T. L., Kracinovich, A., Walker, M., Schrom, B., Van Dehy, J., Lukos, J., & Markwald, R. (2022). Complexity of sea floor and target prevalence diminishes metacognitive accuracy and performance during simulated mine hunting under sleep deprivation. Talk given at the annual meeting of the *Psychonomics Society*, Boston, Massachusetts, United States of America

Dunn, T. L., & Jones, D. (2022). Low hand temperature predicts individual differences in cognitive adaptability during cold water immersion. Paper presented at the *HFM-RSY-349 Symposium on Human Performance and Medical Treatment and Support During Cold Weather Operations*, Washington, D.C., United States of America.

Jones, D., Weller, R., McClintock, R., Weimin, Z., & **Dunn, T. L. (2022).** Prevalence of hypothermia and critical hand temperatures during military cold water immersion training. Paper presented at the *HFM-RSY-349 Symposium on Human Performance and Medical Treatment and Support During Cold Weather Operations*, Washington, D.C., United States of America.

Weimin, Z., Weller, R., McClintock, R., Roberts, N., **Dunn, T. L., & Jones, D. (2022).** Altered neural network oscillations and impaired cognitive performance during military cold water immersion. Paper presented at the *HFM-RSY-349 Symposium on Human Performance and Medical Treatment and Support During Cold Weather Operations*, Washington, D.C., United States of America.

McClintock, R., Jones, D., Weller, R., Cuellar, J., Roberts, N., & **Dunn, T. L. (2022).** Physiological and perceptual responses to blood donation during cold weather military training. Poster presented at the *International Conference of Environmental Ergonomics*, Niagara Falls, Canada.

Venkatesh, A., Kracinovich, A., **Dunn, T. L., & Lukos, J. (2022).** Signal detection without correct rejections. Poster presented at the 74th convening of the Department of Defense *Human Factors Engineering Technical Advisory Group (TAG)*. Oklahoma City, OK, United States of America.

McClintock, R., Jones, D. M., Weller, R., Cialdella-Kam, L., Soutiere, S., Roberts, N., & **Dunn, T. L. (2022).** Influence of tyrosine on body temperature and perceptual responses to cold water immersion in military cold-weather medicine trainees. Poster presented at the annual *American College of Sports Medicine* meeting, San Diego, CA, United States of America.

Jones, D. M., Weller, R., McClintock, R., L., Roberts, N., Soutiere, S., & **Dunn, T. L. (2022).** Evaluation of exercise performance and perception following blood Donation at high altitude. Poster presented at the annual *American College of Sports Medicine* meeting, San Diego, CA, United States of America.

Kracinovich, A., Walker, M., Cuellar, J., Markwald, R., & **Dunn, T. L. (2021).** Incentivizing performance eliminates attentional control decrements after 24 Hours of sleep deprivation. Poster presented at the annual meeting of the *Psychonomics Society*, New Orleans, Louisiana, United States of America.

Chinoy, E. D., Hirsch, D., Cuellar, J. A., Snider, M.N., **Dunn, T. L., Brookfield, J.S., Markwald, R. R. (2020).** Effects of experimental sleep disruption on morning cognitive performance and alertness. Poster presented at the annual meeting of the *Associated Professional Sleep Societies*, Philadelphia, Pennsylvania, United States of America.

Dunn, T. L., Hirsch, D., Zheng, W., Ordille, A., Jones, D., Eggan, S., Roberts, N., Heany, J. (2020). Cold noise: ex-Gaussian analysis reveals shifts, stretching, and individual differences in response time distributions due to cold stress. Talk given at the *International Congress on Soldier's Physical Performance*, Quebec City, Quebec, Canada.

Zheng, W., Ordille, A., Jones, D., **Dunn, T. L.**, Viboch, T., Poh, P., Eggan, S., Roberts, N., Heaney, J. (2020). Temporal dynamics of cognitive operations during a military cold water immersion and rewarming exercise. Talk given at the *International Congress on Soldier's Physical Performance*, Quebec City, Quebec, Canada.

Jones, D., Ordille, A., Zheng, W., Weller, R., Wilson, K., **Dunn, T. L.**, Hirsch, D., Eggan, S., Roberts, N., Heaney, J. (2019). Physiological and Perceptual Markers of Performance During a Military Cold Water Immersion and Rewarming Exercise. Poster presented at the *International Conference of Environmental Ergonomics*, Amsterdam, Netherlands.

Professional Service

Medical Technology Enterprise Consortium Sponsor Office Technical Representative (SOTR)

International Cooperative Engagement Program for Polar Research (ICE-PPR), Cognitive and Physical Performance Task Area (TA4) Lead - 2022 – Present

Navy Robotics Rate (RxS) Futures Working group - 2022 – Present

Honors and Awards

Professional:

United States Navy, Naval Health Research Center, Division I Civilian of the Year - 2023

United States Navy Special Act Award - 2022

Academic:

University of Waterloo ARTS Senate Graduate Award – 2015; \$1200

University of Waterloo Special Graduate Entrance Award – 2014; \$2,250

University of Waterloo Graduate Scholarship – 2014-2017; \$17,377

University of Waterloo Psychology Graduate Scholarship – 2014-2016; \$10,000

University of Waterloo International Doctoral Student Award - 2013-2017; \$31,630

University of Waterloo Arts Graduate Experience Award - 2013-2014; \$10,591

University of Waterloo Graduate Research Studentship - 2013 & 2015-2016; \$5400

Ontario Graduate Fellowship - 2013; \$2000

New College Undergraduate Inquiry and Research Experience (NCUIRE) Research Assistant Award – 2012; \$600

Dean's List – 2009-2012

Ad-Hoc Reviewer

Journal of Experimental Psychology: General; Journal of Experimental Psychology: Learning, Memory, and Cognition; Journal of Applied Research in Memory and Cognition; Cognitive Research: Principles and Implications; Psychological Science; Psychological Research; Psychological Record; American Journal of Psychology; Cognitive Development

Professional References

Dr. Rachel Markwald, Senior Research Physiologist, Sleep, Tactical Efficiency, and Endurance Laboratory (STEEL), Warfighter Performance Department, Naval Health Research Center, rachel.r.markwald.civ@health.mil, 619.767.4494

Dr. Evan F. Risko, Associate Professor, Department of Psychology, University of Waterloo, efrisko@uwaterloo.ca, 519.888.4567 x38135