CURRICULUM VITAE
Monika Fleshner, PhD

I. PERSONAL INFORMATION

Address: [1]**Department of Integrative Physiology**
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Monika Fleshner, PhD is a professor in the Department of Integrative Physiology, a Center for Neuroscience member, and the Stress Physiology laboratory director. She won the international Norman Cousins Award from the Psychoneuroimmunology Research Society and the national Guyton Distinguished Research Award from the Association of Chairs of Departments of Physiology. She teaches immunology and stress physiology and has mentored ~50 MS/PhD/Postdoctoral students. Her integrative research program focuses on understanding 1) the impact of acute and chronic stressor exposure (mental and physical) on behavior, neural, hormonal, and immunological function; 2) how such systems interact to affect the whole organism; and 3) mechanisms of stress resilience produced by exercise, prebiotics, and nutraceuticals. She has published ~190 peer-reviewed articles with a GoogleScholar h-index of 91. The National Science Foundation, the National Institutes of Health, the Department of Defense, the Office of Naval Research, NASA, Mead Johnson Nutrition, the Joint Intermediate Force Capabilities (JIFCO, DoD), and Pharmavite, Inc. support her research. She served as the President of the International Society for Exercise Immunology (ISEI, 2011-2013), President (2011-2012) and Secretary/Treasurer (2004-2006) of the Psychoneuroimmunology Research Society (PNIRS) and a member of the National Academies of Sciences, Engineering and Medicine (2021-2023).

II. EDUCATION

1991-1993	**Postdoctoral Fellow, Neuroscience** University of Colorado, Boulder, CO
1990-1991	**Postdoctoral Fellow, Microbiology/Immunology** University of Colorado Health Science Center, Denver CO
1988-1990	**PhD, Behavioral Neuroscience** University of Colorado, Boulder, CO
1986-1988	**MA, Behavioral Neuroscience** University of Colorado, Boulder, CO
1982-1984	**BS, Psychology** Iowa State University, Ames, IA

III. PROFESSIONAL ACADEMIC POSITIONS

2009-present	**Professor with Tenure** Department of Integrative Physiology University of Colorado at Boulder CO
2003-2008	**Associate Professor with Tenure** Department of Integrative Physiology University of Colorado at Boulder CO
2002-present	**Faculty** Center for Neuroscience

	University of Colorado, Boulder CO
1997-2003	**Assistant Professor** Department of Integrative Physiology University of Colorado, Boulder CO
1996-1997	**Assistant Research Professor** Behavioral Neuroscience University of Colorado, Boulder CO
1993-1996	**Research Associate and Instructor** Behavioral Neuroscience University of Colorado, Boulder CO
1993-1995	**Instructor** Department of Psychology University of Colorado, Denver CO

IV. LEADERSHIP/ADMINISTRATIVE POSITIONS (description of duties in IX. Service)

2024-present	**GCRC Patient Advocate,** University of Colorado at Boulder.
2018-present	**Radiation Safety Committee, Vice Chair,** University of Colorado at Boulder.
2017-2020	**Executive Committee,** Department of Integrative Physiology, University of Colorado at Boulder.
2014-2016	**Boulder Faculty Assembly Executive Committee,** University of Colorado at Boulder.
2014-2016	**Boulder Faculty Assembly Budget and Planning Committee, Chair** (elected position), University of Colorado at Boulder.
2009-2013	**Faculty Associate** **Office of the Vice Chancellor for Research** University of Colorado at Boulder CO
2011-2012	**Psychoneuroimmunology Research Society (https://www.pnirs.org/)** **President (elected position)**
2011-2013	**International Society for Exercise Immunology (http://www.isei.dk/)** **President (elected position)**
2004-2006	**Psychoneuroimmunology Research Society** **Secretary/Treasurer (elected position)**

V. HONORS and AWARDS

2023-2026	International Research Foundation Flanders (FWO): Med5 Fellowship panel on Neurology, Neuroscience, ENT medicine, Ophthalmology, Psychiatry
2021-2023	National Academies of Sciences, Engineering and Medicine, Space Biology Congressional Review Committee
2019	Norman Cousins Award, Psychoneuroimmunology Research Society (International) https://www.pnirs.org/society/society_awards.cfm
2016	Arthur C. Guyton Distinguished Lectureship Award, Association of Chairs of Departments of Physiology (National)
2014	Boulder Faculty Assembly Service Recognition Award, University of Colorado, Boulder
2014	Student Award (Kristina Hulen) Everson Trust Undergraduate Scholarship for Women in Science
2012-2013	Excellence in Leadership Program, University of Colorado System

2013	Student Award (Parsa Ghasem) Best Poster Presentation @ Rocky Mountain Regional Neuroscience Group
2010-2013	College of CSR Reviewers, National Institutes of Health
2010	Public Broadcast System (PBS)-*The Science of Healing*
2009	Boulder Faculty Assembly Award-Excellence in Research
2002	National Public Radio-*The Infinite Mind,* Featured Scientist
2005	Independent Investigator Award, National Alliance for Research on Schizophrenia and Depression
2001	Motor Board Honor Society, Faculty Appreciation
1998	Young Investigator Award, Psychoneuroimmunology Research Society
1998	Junior Faculty Development Award, University of Colorado, Boulder CO
1997	Society for Neuroscience CNN (national and international), Featured Scientist
1992-1994	National Institutes of Health Behavioral Neuroscience Postdoctoral Fellowship
1991	National Institutes of Health Developmental Psychobiology Postdoctoral Fellowship
1988	Research featured on PBS, "The Mind"
1986-1990	National Institutes of Health Training Grant Fellowship
1984	Phi Kappa Phi
1984	Graduated with Honors, BS, Iowa State University, Ames, IA
1981	Rivercade Queen Undergraduate Scholarship Morningside College, Sioux City, IA

VI. GRANTS: ACTIVE, PENDING, APPLIED (not funded) and COMPLETED

i. Active

"Flash Bang Timing and Task Performance Effects"
HUMAN EFFECTS EXPERIMENTATION AND MODEL DEVELOPMENT, M67854-22-D-7209
Joint Intermediate Force Capabilities (JIFCO)
Multiple PIs: Monika Fleshner (Science PI) and Ted Argo (Project PI)
Period: 2025-2027
Award: $1,311,008

"The impact of Pharmavite© prebiotics on disturbed sleep and anxiety"
Pharmavite, Inc.
PI: Monika Fleshner
Period: 2023-2025
Award: $465,530

"A multi-inflammatory hit model of post-acute sequelae of COVID-19 (PASC): neuroinflammatory and neurological outcomes"
PolyBio Research Foundation
Multiple PIs: Matt Frank, Monika Fleshner, Steven Maier
Period: 2023-2025
***Award:* $304,050**

"Flash Bang Effects: Pressure Impulse"
Joint Intermediate Force Capabilities (JIFCO), Task Order#2, IDIQ Contract #M67854-22-D-7209
Multiple PIs: Monika Fleshner (Technical Co-PI); Ted Abel (Task Leader, Co-PI)

Period: 2023-2024
Award (Fleshner): $278,000

***ii.* Recent Submissions Not Funded**

"Western Honey-Bee Biotransformation of Full Spectrum Hemp Extract: Impacts on Bioavailability and Physiological Efficacy."
Institute of Cannabis Research CSU-Pueblo, **Multiple Principal Investigators, Fleshner, Palumbo, Breed**
Period: 2022-2024
Total Award: $249,664

"The S1 subunit of the SARS-CoV2 spike protein operates as a PAMP to produce neuroinflammation and behavioral change."
National Institutes of Allergy and Infectious Disease
NIH, **Multiple Principal Investigators, *Fleshner, Maier, Frank***
P***eriod: 2022-2017***
Total Award: $3,891,899

"Prebiotics and Stress-Opiate Relapse."
Ab Nexus, **Lead PI: Fleshner, Co-PI: Lozupone, Collaborators: Root, Thompson**
Period: 2022-2023
Total Award: $125,000

"Suppression of glioma-driven astrocyte inflammatory responses by plasma extracellular vesicles derived from physically fit donors."
Ab Nexus, **Lead PI: Graner, Co-PI: Fleshner, Collaborators: DeSouza**
Period: 2022-2023
Total Award: $125,000

"Cell-Derived Microparticles in Hypertension: Biomarkers, Vascular Mediators, and Therapeutic Targets"
NIH-HL-16-024, **Multiple Principal Investigators, *DeSouza, Fleshner, Link, Stauffer, McQueen***
Period: 2021-2024
Total Award: $1,200,000

"Prediabetes, Exercise and Microparticles"
NIH, **Multiple Principal Investigators, *DeSouza, Fleshner, Stauffer***
Period: 2021-2025
Total Award: $1,150,000.

iii. Completed

"The microbiome and responsiveness to stress: Countermeasure strategies for improving resilience to sleep and circadian disruption."
Office of Naval Research (ONR) MURI N00014-15-1-2809
Multiple Principal Investigators (MPI), *Ken Wright (Team Leader), Monika Fleshner, Chris Lowry, Fred Turek, Rob Knight, Pieter Dorrestein*
Period: 2015-2022
Total Award: $7,100,000. Fleshner Project ($1,400,000)

"Stress Response to Flash Bang Exposure"
Applied Research Associates, Inc, Ted Argo (PI)

Monika Fleshner (Technical PI)
Period: 2022-2023
Award (Fleshner): $473,979

"Physiological impacts of oral hemp extracts". Charlotte's Web Targeted Donation-CU REACH.
Principal Investigator, *Monika Fleshner*
Period: 2021-2022
Total Award: $15,000

"A systems-biology approach to assessing the impact of a centrifugation model of spaceflight on cross-system communication."
NASA-NSPIRES, **16-ROSBFP_PI-0079**
Research Opportunities in Space Biology (ROSBio) - Solicitation of Proposals for Flight and Ground Space Biology Research
Multiple Principal Investigators, *Monika Fleshner (CU), Michael Pecaut (Loma Linda University), Christopher Wilson (Loma Linda University).*
Period: 2018-2022
Total Award: $950,000

"Nutritional Modulation of Brain Development, Cognitive Function, Sleep, and Stress Reactivity: The Role of the Gut Microbiota"
Mead Johnson Nutrition, **Principal Investigator, Monika Fleshner**
Period: 2013-2017
Total Award: $1,055,749

"Neurobiology of the Stress Resistant Brain"
R01-MH068283-06, NIH, **Principal Investigator, Monika Fleshner**
Period: 2010-2015
Total Award: $1,200,000

"Extracellular Hsp72 is a DAMP Released by Stress"
IOS 1022451 NSF, **Principal Investigator, Monika Fleshner**
Period: 2010-2013
Total Award: $539,045

"Enabling Stress Resistance with Controllable Exercise"
DARPA, W911NF-10-1-0050. Defense Science Office, **Principal Investigator**
Period: 2010-2012
Total Award: $2,800,000

"Preventing Transition of Acute-to-Chronic Neuropathic Pain: Models, Mechanisms, and Treatment"
RO1-DE021966, NIH, ***Multiple Principal Investigators (MPI) PD/PI, Linda Watkins, Monika Fleshner, Dan Barth***
Period: 2011-2016
Total Award: $1,800,000

"Exercise Mitigates Stress-Induced Memory Disturbances"
RO3-NIMH**,** NIH, ***Co-PI, Monika Fleshner***

Period: 2009-2012
Total Award: $143,000

"Physiological Functions of the Gut Microbiome"
Innovative Seed Grant Program-U of CO, ***Principal Investigator, Monika Fleshner***
Period: 2010-2012
Total Award: $43,750

"Stress, Heat-Shock Proteins and Innate Immunity"
R01-AI057797-01, NIH, ***Principal Investigator, Monika Fleshner***
Period: 2004-2010
Total Award: $1,738,025

"Chemotherapy and Cognition in Older Breast Cancer Patients"
(SUBCONTRACT) NIH, ***Principal Investigator, Monika Fleshner***
Period: 2004-2009
Total Award: $154,000

"The Neurobiology of the Stress Resistant Brain"
R01-MH068283-01, NIH, ***Principal Investigator, Monika Fleshner***
Period: 2004-2009
Total Award: $1,804,225

"Prevention of the Negative Behavioral Effects of Acute Fluoxetine: Role of BDNF"
NARSAD, ***Principal Investigator, Monika Fleshner***
Period: 2005-2009
Total Award: $100,000

"Regulation of Brain IL-1 and Sickness Responses Following *E.coli* Challenge"
R21-MH NIH, ***Co-Investigator, Monika Fleshner***
Period: 2007-2009
Total Award: $403,820

Leap Associate Professor Award
University of Colorado, ***Principal investigator, Monika Fleshner***
Period: 2004-2005
Total Award: $5,000

"Stress, Exercise, and Innate Immunity"
RO3-MH60301-01, NIH, ***Principal Investigator, Monika Fleshner***
Period: 1999-2001
Total Award: $35,875

"Exercise Prevents the Immunosuppressive Effect of Stress"
RO3-AI45576-01, NIH, ***Principal Investigator, Monika Fleshner***
Period: 1999-2001
Total Award: $143,131

"Exercise, Stress and Immunity: Physiological Mechanisms"
RO1-AI48555-01, NIH, ***Principal Investigator, Monika Fleshner***
Period: 2000-2004
Total Award: $1,223,472

"Exercise and Stress Resistance: A Systems Biology Approach"
CRCW, University of Colorado, ***Principal Investigator, Monika Fleshner***
Period: 2006-2007
Total Award: $7,000

"Obesity/Insulin Resistance and Endothelial t-PA Release"
RO3-DK62061, NIH, ***Co-Investigator, Monika Fleshner***
Period: 2002-2004
Total Award: $143,131

"Arousal and Motor Performance in Older Adults"
RO3-AG20339, NIH, ***Co-Investigator, Monika Fleshner***
Period: 2002-2004
Total Award: $143,000

"Effect of Sleep Deprivation on Inflammatory Markers"
NIH, ***Co-Investigator, Monika Fleshner***
Period: 2002-2004
Total Award: $290,369

"Potential Benefits of a Physically Active Lifestyle on Immune Response to Immunization"
protocol B5009, General Clinical Research Center-Boulder Satellite, NIH, ***Principal Investigator, Monika Fleshner***
Period: 2000-2002
Total Award: $15,000

"Neural Mechanisms of the Stress-Resistant Brain"
University of Colorado, Council on Creative Work, ***Principal Investigator, Monika Fleshner***
Period: 2002
Total Award: $2,500

"The Behavioral Analysis of the Protective Effect of Exercise" Council on Research and Creative Work"
University of Colorado, ***Principal Investigator, Monika Fleshner***
Period: 1999-2000
Total Award: $6,730

Junior Faculty Development Award, University of Colorado
Principal Investigator, Monika Fleshner
Period: 1998
Total Award: $5,000

"Stress and Immunity: Behavioral and Physiological Mechanisms
RO1-MH-4505, NIH, ***Co-Investigator, Monika Fleshner***

Period: 1996-2001
Total Award: $1,725,994

"Effects of space flight on *in vivo* immune function and bone resorption"
BioServe-NASA (SUBCONTRACT), ***Principal Investigator, Monika Fleshner***
Period: 1996
Total Award: $3,500

University of Colorado Health Sciences Center Young Investigator Award
Principal Investigator, Monika Fleshner
Period: 1991-1992
Total Award: $3,000

VII. PUBLICATIONS

GoogleScholar
Total Citations (12.24): 28,776
h-index: 91
10-index: 193

***i. Manuscripts* / Chapters Submitted (Peer-reviewed)**

**indicates 1st author is/was a student or postdoctoral fellow supervised by Dr. Fleshner*

***ii. Manuscript*/Chapters Published or In Press (Peer-Reviewed)**

**indicates 1st author is/was a student or postdoctoral fellow supervised by Dr. Fleshner*

Frank MG, Ball JB, Hopkins S, Kelley T, Kuzma AJ, Thompson RS, **Fleshner M**, Maier SF. *SARS-CoV-2 S1 subunit produces a protracted priming of the neuroinflammatory, physiological, and behavioral responses to a remote immune challenge: A role for corticosteroids.* Brain Behav Immun. **2024**;121:87-103. Epub 20240721. doi: 10.1016/j.bbi.2024.07.034. PubMed PMID: 39043345.

Thompson RS*, Bowers SJ, Vargas F, Hopkins S, Kelley T, Gonzalez A, Lowry CA, Dorrestein PC, Vitaterna MH, Turek FW, Knight R, Wright KP, Jr., **Fleshner M**. *A Prebiotic Diet Containing Galactooligosaccharides and Polydextrose Produces Dynamic and Reproducible Changes in the Gut Microbial Ecosystem in Male Rats.* Nutrients. **2024**;16(11). Epub 20240606. doi: 10.3390/nu16111790. PubMed PMID: 38892722; PMCID: PMC11175065.

Boruch AE, Barhorst EE, Rayne TJ, Roberge GA, Brukardt SM, Leitel ZT, Coe CL, **Fleshner M,** Falvo MJ, Cook DB, Lindheimer JB. *Exercise does not cause post-exertional malaise in Veterans with Gulf War Illness: A randomized, controlled, dose-response, crossover study.* Brain Behav Immun. **2024**;120:221-30. Epub 20240520. doi: 10.1016/j.bbi.2024.05.026. PubMed PMID: 38777281.

Mayer MP, Blair L, Blatch GL, Borges TJ, Chadli A, Chiosis G, de Thonel A, Dinkova-Kostova A, Ecroyd H, Edkins AL, Eguchi T, **Fleshner M,** Foley KP, Fragkostefanakis S, Gestwicki J, Goloubinoff P, Heritz JA, Heske CM, Hibshman JD, Joutsen J, Li W, Lynes M, Mendillo ML, Mivechi N, Mokoena F, Okusha Y, Prahlad V, Repasky E, Sannino S, Scalia F, Shalgi R, Sistonen L, Sontag E, van Oosten-Hawle P, Vihervaara A, Wickramaratne A, Wang SXY, Zininga T. *Stress biology: Complexity and*

multifariousness in health and disease. Cell Stress Chaperones. **2024**;29(1):143-57. Epub 20240203. doi: 10.1016/j.cstres.2024.01.006. PubMed PMID: 38311120; PMCID: PMC10939078.

Seals DR, DeSouza CA, Enoka RM, **Fleshner M,** Mazzeo RS, Moore RL. *Is it the people or the place? The remarkable 30-year period of integrative physiology research in the Carlson Gymnasium at the University of Colorado Boulder.* Journal of Applied Physiology. **2024**;137(1):42-50. Epub 20240606. doi: 10.1152/japplphysiol.00316.2024. PubMed PMID: 38841758.

Bouchet, CA*; Fleshner, M (**2024**). *Exercise Immunology and Interactions with Psychological Stress*. published by Taylor Francis/Routledge 2nd Edition, eBook Published23 October 2024, London, Routledge, DOIhttps://doi.org/10.4324/9781003256991, ISBN9781003256991

Buhr, TJ; Reed, CH; Wee, OM; Lee, JH; Yuan, LL; **Fleshner, M.**, . . . Clark, PJ*. (**2023**). *The persistence of stress-induced physical inactivity in rats: an investigation of central monoamine neurotransmitters and skeletal muscle oxidative stress.* Front Behav Neurosci, *17*, 1169151. doi:10.3389/fnbeh.2023.1169151.

Hopkins, S*; Kelley, T; Roller, R; Thompson, RS; Colagiovanni, DB; Chupka, K; & **Fleshner, M.** (**2023**). *Oral CBD-rich hemp extract modulates sterile inflammation in female and male rats.* Front Physiol*, 14*, 1112906. doi:10.3389/fphys.2023.1112906.

Frank, MG, **Fleshner, M** and Maier, SF. (**2023**). *Exploring the immunogenic properties of SARS-CoV-2 structural proteins: PAMP:TLR signaling in the mediation of the neuroinflammatory and neurologic sequelae of COVID-19.* Brain Behav Immun, **(**2023) 111: p. 259-269.

Bowers, SJ; Summa, KC; Thompson, RS; González, A; Vargas, F; Olker, C; Jiang, P; Lowry, CA; Dorrestein, PC; Knight R; Wright, Jr KP; **Fleshner, M**; Turek, FW; Vitaterna, MV. *A Prebiotic Diet Alters the Fecal Microbiome and Improves Sleep in Response to Sleep Disruption in Rats.* Frontiers in Neuroscience (**2022**) DOI: 10.3389/fnins.2022.889211.

Frank, MG; Nguyen, KH; Ball, JB; Hopkins, SL; Kelley, T; **Fleshner, M**; Maier, SF. *SARS-CoV-2 spike S1 subunit induces neuroinflammatory, microglial and behavioral sickness responses: evidence of PAMP-like properties.* Brain, Behavior, and Immunity **(2022)** DOI: 10.1016/j.bbi.2021.12.007.

Thompson, RS*; Gaffney, M; Hopkins, S; Kelley, T,; Gonzalez, A,; Bowers, SJ; Vitaterna, M;H; Turek, FW; Foxx, CL; Lowry, CA; Vargas, F; Dorrestein, PC; Wright, KP Jr; Knight, R; **Fleshner, M**., *Ruminiclostridium 5, Parabacteroides distasonis, and bile acid profile are modulated by prebiotic diet and associate with facilitated sleep/clock realignment after chronic disruption of rhythms.* Brain, Behavior, and Immunity (**2021**) doi.org/10.1016/j.bbi.2021.07.006.

Fleshner, M. (**2021**). *Mentorship Memoriam: Mark Laudenslager, PhD*. Brain Behav Immun. doi:10.1016/j.bbi.2021.01.006.

Fleshner, M; Epperson, N; & Dantzer, R. (**2021**). *Those we have lost: Dr. Mark L. Laudenslager.* Psychoneuroendocrinology, 105126. doi:10.1016/j.psyneuen.2020.105126.

Foxx, CL; Heinze, JD; González, A; Vargas, FD; Baratta, MV; Elsayed, AI; Stewart, JR; Loupy, KM; Arnold, MR; Flux, MC; Sago, SA; Siebler, PH; Milton, LN; Lieb, MW; Hassell, JE; Smith, DG; Lee, KAK; Appiah, SA; Schaefer, EJ; Panitchpakdi, M; Sikora, NC; Weldon, KC; Stamper, CE; Schmidt, D; Duggan, DA; Nguyen, KT; Gates, CA; Schnabel, K; Vitaterna, MH; Turek, FW; **Fleshner, M**; Dorrestein, PC; Knight, R; Wright, KP; and Lowry, CA. *Effects of Immunization With the Soil-Derived Bacterium Mycobacterium vaccae on Stress Coping Behaviors and Cognitive Performance in a "Two Hit" Stressor Model.* Frontiers in Physiology (**2020**) 11, p. 524833, doi: 10.3389/fphys.2020.524833.

Bowers, SJ; Vargas, F; Gonzalez, A; He, S; Jiang, P; Dorrestein, PC; Knight, R; Wright, KP, Jr.; Lowry, CA; **Fleshner, M**; Vitaterna, MH; Turek, FW. *Immunization with a heat-killed bacterium, Mycobacterium vaccae NCTC 11659, prevents the development of cortical hyperarousal and a PTSD-like sleep phenotype after sleep disruption and acute stress in mice.* Sleep **(2020)** doi:10.1093/sleep/zsaa271.

Thompson, RS*; Vargas, F; Dorrestein, PC; Chichlowski, M; Berg, BM; **Fleshner, M**. *Dietary Prebiotics Alter Novel Microbial Dependent Fecal Metabolites That Improve Sleep.* Sci Rep, (**2020)** 10(1): p. 3848.10.1038/s41598-020-60679-y.11131.

Bowers, SJ; Vargas, F; Gonzalez, A; He, S; Jiang, P; Dorrestein, PC; Knight, R; Wright, KP, Jr.; Lowry, CA; **Fleshner, M;** Vitaterna, MH; Turek, FW. *Repeated Sleep Disruption in Mice Leads to Persistent Shifts in the Fecal Microbiome and Metabolome.* PLoS One, (**2020)** 15(2): p. e0229001.10.1371/journal.pone.0229001.11132.

Arnold, MR; Greenwood, BN; McArthur, JA; Clark, PJ; F**leshner, M**; Lowry, CA. *Effects of Repeated Voluntary or Forced Exercise on Brainstem Serotonergic Systems in Rats.* Behav Brain Res, (**2020)** 378: p. 112237.10.1016/j.bbr.2019.112237.11129.

Fleshner, M. *Bidirectional Gut-Microbial Mediated-Brain Signaling: A New Player in Stress Physiology? (Commentary on O'Mahony et al., 2019).* Eur J Neurosci, (**2020)** *52*(5), 3487-3489. doi:10.1111.

Sprecher, KE; Ritchie, HK; Burke, TM; Depner, CM; Smits, AN; Dorrestein, PC; **Fleshner, M;** Knight, R; Lowry, CA; Turek, FW; Vitaterna, MH; Wright, KP. *Trait-Like Vulnerability of Higher-Order Cognition and Ability to Maintain Wakefulness During Combined Sleep Restriction and Circadian Misalignment.* Sleep, (**2019)** 42(8).10.1093/sleep/zsz113.11128.

Greenwood, BN*; **Fleshner, M.** *Voluntary wheel running: A useful rodent model for Investigating the mechanisms of stress robustness and neural circuits of exercise motivation.* Current Opinion in Behavioral Sciences (**2019**) 28, p. 78-84 doi: 10.1016/j.cobeha.2019.02.001.

Mika, A*; Gaffney, M; Roller, R; Hills, A; Bouchet, CA; Hulen, KA; Thompson, RS; Chichlowski, M; Berg, BM; **Fleshner, M**. *Feeding the Developing Brain: Juvenile Rats Fed Diet Rich in Prebiotics and Bioactive Milk Fractions Exhibit Reduced Anxiety-Related Behavior and Modified Gene Expression in Emotion Circuits.* Neurosci Lett, (**2018)** 677: p. 103-109.10.1016/j.neulet.2018.01.052.

Fleshner, M; Frank, MG; Watkins, LR; Maier, SF. Editorial: *Danger-associated molecular patterns in health and disease.* Brain, Behavior, and Immunity (2018) DOI: 10.1016/j.bbi.2018.06.022.

Fleshner, M. and Crane, CR*. *Exosomes, DAMPs and miRNA: Features of stress physiology and immune homeostasis.* Trends in Immunology, (**2017**) 38 p. 63 doi: 10.1016/j.it.2017.08.002.

Thompson, RS*; Roller, R; Greenwood, BN; Knight, R; Chichlowski, M; Berg, BM; **Fleshner, M.** *Dietary prebiotics and bioactive milk fractions support early-life NREM sleep quality, REM rebound sleep recovery following acute stress and ameliorate stress-induced decrease in alpha diversity in the rat*. Frontiers in Behavioral Neuroscience, (**2017**) 10, 10:240. doi: 10.3389/fnbeh.2016.00240.

Lloyd, BA; Hake, HS; Ishiwata, T; Farmer, CE; Loetz, EC; **Fleshner, M**; Bland, ST; Greenwood, BN. *Exercise Increases Mtor Signaling in Brain Regions Involved in Cognition and Emotional Behavior.* Behav Brain Res, (**2017)** 323: p. 56-67.10.1016/j.bbr.2017.01.033.

Fleshner, M; Frank, M; Maier, SF. *Danger Signals and Inflammasomes: Stress-Evoked Sterile Inflammation in Mood Disorders.* Neuropsychopharmacology, **(2017)** 42(1): p. 36-45.10.1038/npp.2016.125.

Mika, A; Day, HE; Martinez, A; Rumian, NL; Greenwood, BN; Chichlowski, M; Berg, BM; **Fleshner, M**. *Early Life Diets with Prebiotics and Bioactive Milk Fractions Attenuate the Impact of Stress on Learned Helplessness Behaviours and Alter Gene Expression within Neural Circuits Important for Stress Resistance.* Eur J Neurosci, (**2017)** 45(3): p. 342-357.10.1111/ejn.13444.

Mika, A; Rumian, N; Loughridge, AB; **Fleshner, M.** *Exercise and Prebiotics Produce Stress Resistance: Converging Impacts on Stress-Protective and Butyrate-Producing Gut Bacteria.* Int Rev Neurobiol, (**2016)** 131: p. 165-191.10.1016/bs.irn.2016.08.004.

Speaker, KJ*; Paton, MM; Cox, SS; **Fleshner, M.** *A Single Bout of Fasting (24 H) Reduces Basal Cytokine Expression and Minimally Impacts the Sterile Inflammatory Response in the White Adipose Tissue of Normal Weight F344 Rats.* Mediators Inflamm, (**2016)** 2016: p. 1698071.10.1155/2016/1698071.

Reber, SO; Siebler, PH; Donner, NC; Morton, JT; Smith, DG; Kopelman, JM; Lowe, KR; Campbell, K; Fox, JH; Hassell, JE; Greenwood, BN; Jansch, C; Lechner, A; Uschold-Schmidt, N; Füchsl, AM; Langgartner, D; Walker, FR; Hale, MW; Perez, GL; Van Treuren, W; González, A; Halweg-Edwards, AL; **Fleshner, M.** Raison, CL; Rook, GAW; Peddada, SD; Knight, R; Lowry, CA. *Immunization with a heat-killed preparation of the environmental bacterium Mycobacterium vaccae promotes stress resilience in mice*. Proc Natl Acad Sci U S A, (**2016)**. 113(22): p. E3130-9PMC4896712.

Grace, PM; Fabisiak, TJ; Green-Fulgham, SM; Anderson, ND; Strand, KA; Kwilasz, AJ; Galer, EL; Walker, FR; Greenwood, BN; Maier, SF; **Fleshner, M**; Watkins, LR. *Prior Voluntary Wheel Running Attenuates Neuropathic Pain.* Pain, (**2016)** 157(9): p. 2012-23.10.1097/j.pain.0000000000000607.

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Diamond, DM; Bennett, MC; **Fleshner, M.** Rose, GM; *Modulation of hippocampal primed burst potentiation by stress and corticosterone.* Peripheral Signaling of the Brain: Role in Neural-Immune Interactions and Cognitive Function, Fredrickson, RCA; Felton, DL; McGaugh, JI; Eds.; Hogrefe and Huber, Toronto **(1991)** 503-508.

Barnes, CA; Forster, MJ; **Fleshner, M**; Ahanotu, EN; Laudenslager, ML; Mazzeo, RS; Maier, SF; Lal, H. *Exercise Does Not Modify Spatial Memory, Brain Autoimmunity, or Antibody Response in Aged F-344 Rats.* Neurobiol Aging, (**1991)** 12(1): p. 47-53, https://www.ncbi.nlm.nih.gov/pubmed/2002883.

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Watkins, LR; Thurston, CL; **Fleshner, M.** *Phenylephrine-Induced Antinociception: Investigations of Potential Neural and Endocrine Bases.* Brain Res, (**1990)** 528(2): p. 273-84, https://www.ncbi.nlm.nih.gov/pubmed/2271928.

Fleshner, M; Laudenslager, ML; Simons, L; Maier, SF. *Reduced Serum Antibodies Associated with Social Defeat in Rats.* Physiol Behav, **(1989)** 45(6): p. 1183-7, https://www.ncbi.nlm.nih.gov/pubmed/2813542.

Diamond, DM; Bennett, MC; Engstrom, DA; **Fleshner, M**; Rose, GM. *Adrenalectomy Reduces the Threshold for Hippocampal Primed Burst Potentiation in the Anesthetized Rat.* Brain Res, (**1989)** 492(1-2): p. 356-60, https://www.ncbi.nlm.nih.gov/pubmed/2752305.

Laudenslager, ML; **Fleshner, M**; Hofstadter, P; Held, PE; Simons, L; Maier, SF. *Suppression of Specific Antibody Production by Inescapable Shock: Stability under Varying Conditions.* Brain Behav Immun, (**1988)** 2(2): p. 92-101, https://www.ncbi.nlm.nih.gov/pubmed/3148338.

VIII. PROFESSIONAL SEMINARS

***i.* International**

** indicates the first author is/was a student or postdoctoral fellow supervised by Dr. Fleshner*

Fleshner, M. A Fresh Perspective on Exercise Immunology: It's All in the Brain, **Invited Speaker,** *International Society for Exercise Immunology* **(2024), Vienna, Austria.**

Fleshner, M. Prebiotics, Probiotics, and a Stress Robust Phenotype, **Invited Speaker**, *Naturally Informed, Stress and Wellness Webinar* (**2022**), National and International.

Fleshner, M. Dynamic role of exosomes, DAMPs, and miRs in stress physiology and immune homeostasis, **Invited Speaker,** *Society for Thermal Medicine* (**2022**), remote, National and International.

Fleshner, M. Prebiotics, Probiotics, and a Stress Robust Phenotype, **Invited Speaker**, *Neutraingredients_USA* Webinar (2021) ~600 registrants, National and International.

Fleshner, M. Prebiotics, Probiotics and a Stress Robust Phenotype, **Invited Speaker,** *Swammerdam Institute for Life Sciences, University of Amsterdam*, Amsterdam, Netherlands (2020).

Fleshner, M. Impacts of exercise and prebiotic dietary substrates on mind and body: The role of the gut microbiome/metabolome. **Invited Speaker,** 14th *International Society of Exercise Immunology Symposium,* Shanghai, China (2019).

Fleshner, M. Microbial modulatory dietary substrates promote stress robustness, **Invited Speaker,** 9th *Mind-Body Interface International Symposium,* Taichung, Taiwan (2019).

Fleshner, M. Integrative stress physiology: Brain, Behavior & Immunity, **Invited Speaker,** Norman Cousins Award, https://www.pnirs.org/society/society_awards.cfm, *Psychoneuroimmunology Research Society*, Berlin, Germany (2019).

Fleshner, M. Dietary prebiotic supplements prevent stress-evoked sleep disruptions, anxiety and gut microbial dysbiosis, **Invited Speaker,** *6th Beneficial Microbes Conference*, Amsterdam, The Netherlands (2017).

Fleshner, M. Early Life Exercise Promotes Changes in Gut Microbial Ecology, Persistent Stress Robustness & Metabolic Health, **Invited Speaker,** *The International Society of Exercise Immunology,* Coimbra, Portugal (2017).

Fleshner, M. Acute Stressor Exposure Modulates Plasma Exosomal miRNA cargo and Hsp72 expression. **Invited Speaker,** *The First International Congress: DAMPs*, Guanajuato, Mexico (2016).

Fleshner, M. The Neurobiology and Physiology of Exercise-Induced Stress Robustness. ***The 2016 Arthur C. Guyton Distinguished Lectureship Award.*** *The Association of Chairs and Directors of Departments of Physiology,* Cabo San Lucas, Mexico (2016).

Fleshner, M. Gut Microbiome Promotes Stress Robustness, **Invited Speaker,** *International Society for Exercise Immunology*, Vienna, Austria (2015).

Fleshner, M. Exercise and stress robustness: Benefits for physical and mental health. **Invited Speaker,** *University of Adelaide,* Adelaide, Australia (2013).

Fleshner, M. A healthy mind in a healthy body: Impacts of exercise on stress robustness. **Presidential Symposium,** *International Society for Exercise Immunology,* Newcastle, Australia (2013).

Fleshner, M. Stress and Immunity. **Invited speaker,** *Corsi Residenziali Di Neuroimmunolgia. Centro*

Congressi Giovanni XXIII, Bergamo-Italy (2013).

Fleshner, M. Stress-evoked sterile inflammation is modulated by physical fitness. **Keynote speaker,** *1st Brazilian Symposium of Immunology and Sport,* Sao Paulo, Brazil (2013).

Fleshner, M. Exercise produces stress resistance: Benefits for mental and physical health. **Keynote speaker,** *International Society for Exercise Immunology,* Oxford, England (2011).

Fleshner, M; Maslanik, T; Tannura, K; Mahaffey, L; Bennison, L. The role of the gut microbiota in the acute stressor evoked sterile inflammatory response. **Invited speaker,** *International Society for Exercise Immunology,* Oxford, England (2011).

Fleshner, M. Exosome-associated extracellular heat shock protein 72 is released by stress and functions as a DAMP. *Psychoneuroimmunology Research Society,* Dublin, Ireland (2010).

Fleshner, M. Exercise and central autonomic regulation: Mechanisms for the protective effect of exercise on stress-induced immunosuppresssion. *International Society of Exercise Immunology*, Tubingen, Germany (2009).

Fleshner, M. Extracellular Hsp 72: A double edged sword for health. *Psychoneuroimmonolgy Research Society*, Arcachon, France (2007).

Fleshner, M. Extracellular Hsp 72: A double-edged sword for health. *International Cell Stress and Chaperone Society*, Budapest, Hungary (2007).

Fleshner, M. Elevated level of circulating cytokines and endotoxin are not necessary for the activation of the sickness or corticosterone responses produced by peripheral *E. coli* challenge. *Physiology and Pharmacology of Temperature Regulation*, Rhodes, Greece (2004).

Fleshner, M. Extracellular Hsp72 released by stress facilitates innate immunity: *In vivo and in vitro* support. *Psychoneuroimmunology Research Society*, Titisee, Germany (2004).

Fleshner, M. Hsps and the general stress response. *First International Congress on Stress Responses in Biology and Medicine.* Quebec City, Canada (2003).

Fleshner, M. Stress, heat shock proteins and innate immunity: "The danger signal hypothesis". *International Society for Exercise Immunology*, Copenhagen, Denmark (2003).

Elphick, GF*; **Fleshner, M.** B-1 cell depletion attenuates the enhanced *E.coli* clearance in physically active rats. *International Society for Exercise Immunology*, Copenhagen, Denmark (2003).

Fleshner, M. Leem, T; Campisi, J; Greenwood BN; The potential role of heat shock proteins in stress-induced modulation of innate and acquired immunity. *Psychoneuroimmunology Research Society,* Utrecht, Netherlands (2001).

Fleshner, M. Neuroendocrine regulation of the antibody response. *The International Society of Exercise and Immunology IV,* Rome, Italy (1999).

Fleshner, M. Leem, T; Kintzel, J; Moraska, A; Deak, T; Smith, TP; Physical activity facilitates bacterial inflammation resolution produced by stress. *The International Society of Exercise and Immunology IV,* Rome, Italy (1999).

***ii.* Domestic**

** indicates the first author is/was a student or postdoctoral fellow supervised by Dr. Fleshner*

Fleshner, M. Robust Impacts of Prebiotics on Stress and Disturbed Sleep **(2024)** IPHY Microbiome Seminar, University of Colorado Boulder, **Invited Speaker**.

Fleshner, M. A Multi-Hit Model of Long COVID **(2024)** PolyBio LCRC Meeting, Remote, **Invited Speaker.**

Fleshner, M. Immune Disruptive Stressors & Interventions **(2024)** NIH workshop: Advancing the Biomedical Science of Resilience: NIH workshop, Remote, **Invited Speaker.**

Fleshner, M. Prebiotics Promote Stress-Protective Microbial Ecology (**2024**) Center for Microbiome - International Microbiome Meeting (CIMM), San Diego, CA **Invited Speaker.**

Fleshner, M. Microbiome Standards: Q & A (**2024**) Center for Microbiome - International Microbiome Meeting (CIMM), San Diego, CA **Invited Panel Discussant**.

Fleshner, M. The Other Shoe to Drop: Fear, Anxiety, and Cancer Extracellular Microvesicular Biomarkers **(2023).** *Society for Thermal Medicine, Cellular Stress Symposium. San Diego, CA,* **Invited Speaker.**

Fleshner, M. The Stress Response: Friend and Foe (**2023**). 12th International Symposium on Heat Shock Proteins in Biology, Medicine, and the Environment*.* Washington DC., **Invited Speaker.**

Fleshner, M. Prebiotics, Exercise, and Stress Robustness. (**2023**). American College of Sports Medicine, Denver, Co, **Invited Speaker.**

Fleshner, M. Superheros Within! Immunity in Health and Disease (**2022**). *CU Wizards*, *Boulder, Colorado,* **Invited Speaker.**

Fleshner, M. Prebiotics, Probiotics and Sleep (**2022**). *ipa World Congress + Probiotic America* (2022), *Washington D.C,* **Invited Speaker.**

Fleshner, M. Microbiome modulation to improve stress-induced disturbed sleep (**2022**). *University of Colorado Sleep and Circadian Summer School,* **Invited Speaker.**

Fleshner, M. Work-Life Balance. (2021). *IPHY Professional Skills Webinar*, **Invited Speaker.**

Fleshner, M. Superheros Within! Immunity in Health and Disease. (2021) *CU Wizards Webinar*, **Invited Speaker**

Fleshner, M. The Science of Wellness and Stress Resiliency. *Health and Wellness Summit, University of Colorado Boulder, Boulder, CO* (2020) **Invited Speaker**.

Fleshner, M. Prebiotics, Probiotics, and a Stress Robust Phenotype. *The Institute for Behavioral Medicine Research, Wexner Medical Center, The Ohio State University* (2020) **Invited Speaker**.

Fleshner, M. Early Life Prebiotics, Probiotics, and a Stress Robust Phenotype. *American Academy of Child and Adolescent Psychiatry, Chicago, IL* (2019) **Invited Speaker.**

Fleshner, M. Exercise and Prebiotic Diet Modulates the Gut Microbiota and Promotes Stress Robustness. *Cell and Molecular Biology Fall Seminar Series, Colorado State University, Fort Collins, CO* (2019) **Invited Speaker.**

Fleshner, M. Prebiotics, Probiotics, and a Stress Robust Phenotype. *Center for Neuroscience, University of Colorado-Boulder, Colloquium* (2019) **Invited Speaker.**

Fleshner, M. Dietary Prebiotics Impact Gut Microbiome and Metabolome: A Successful Countermeasure for Improving Resilience to Sleep & Circadian Disruption, *Integrative Physiology, University of Colorado-Boulder, Departmental Colloquium* (2018) **Invited Speaker**.

Fleshner, M. Dietary prebiotics & stress resistance: Impacts on the brain, sleep, inflammation and the gut microbiome/metabolome, *Probiota Americas, Miami, Florida* (2018) **Invited Speaker.**

Fleshner, M. Inflammatory Homeostasis: A role for MAMPs, DAMPs and microRNA, *Experimental Biology, San Diego, CA* (2018) **Invited Speaker**.

Thompson RS*; Bowers SJ; Gonzalez A; Vargas F; Wright KP Jr; Lowry CA; Vitaterna MH; Turek FW, Knight R; Dorrestein PC; **Fleshner M.** Gut Microbial Modulatory Diet Reduces the Impact of Chronic Circadian Disruption on Sleep and Facilitates Rhythm Realignment, *Society for Research on Biological Rhythms, Amelia Island, Florida (2018)* **Selected Speaker.**

Fleshner, M. Stress evoked sterile inflammation: A role for MAMPs, DAMPs and microRNA, *Colorado State University, Health and Exercise Science Spring Seminar Series, Fort Collins, CO (2018)* **Invited Speaker.**

Fleshner, M. Dietary Prebiotics Impact Gut Microbiome and Metabolome: A Successful Countermeasure for Improving Resilience to Sleep & Circadian Disruption, *Integrative Physiology, University of Colorado-Boulder, Departmental Colloquium (2018)* **Invited Speaker**.

Fleshner, M. Dietary prebiotics & stress resistance: Impacts on the brain, sleep, inflammation and the gut microbiome/metabolome, *Probiota Americas, Miami, Florida* (2018) **Invited Speaker.**

Fleshner, M. Stress-evoked sterile inflammation & inflammatory homeostasis: A role for MAMPs and exosome-associated DAMPs & miRNA. *Immunology Current Topics Workshop, Iowa State University, Ames, Iowa* (2018) **Invited Speaker.**

Fleshner, M. Inflammatory Homeostasis: A role for MAMPs, DAMPs and microRNA, *Experimental Biology, San Diego, CA* (2018) **Invited Speaker**.

Fleshner, M. Neurobiology and Physiology of Exercise Induced Stress Robustness. *Department of Kinesiology, Iowa State University, Ames, Iowa* (2018) **Invited Speaker.**

Fleshner, M. The Microbiome and Responsiveness to Stress: Countermeasure Strategies for Improving Resilience to Sleep and Circadian Disruption: Prebiotic Countermeasure. *University of California San Diego, Office of Naval Research Review* (2018) **Project PI.**

Thompson RS*; Bowers SJ; Gonzalez A; Vargas F; Wright KP Jr; Lowry CA; Vitaterna MH; Turek FW, Knight R; Dorrestein PC; **Fleshner M.** Gut Microbial Modulatory Diet Reduces the Impact of Chronic Circadian Disruption on Sleep and Facilitates Rhythm Realignment, *Society for Research on Biological Rhythms, Amelia Island, Florida (2018)* **Selected Speaker.**

Fleshner, M. Stress evoked sterile inflammation: A role for MAMPs, DAMPs and microRNA, *Colorado State University, Health and Exercise Science Spring Seminar Series, Fort Collins, CO (2018)* **Invited Speaker.**

Fleshner, M. Early life exercise promotes favorable changes in gut microbial ecology, persistent stress robustness, and metabolic health, *Duke University School of Medicine Interdisciplinary Symposium, Raleigh-Durham, North Carolina* (2017) **Invited Speaker**.

Fleshner, M. Inflammatory Homeostasis: A role for MAMPs, DAMPs and microRNA, *Integrative Physiology, University of Colorado-Boulder, Departmental Colloquium (2017)* ***Invited Speaker****.*

Fleshner, M. Early life exercise promotes favorable changes in gut microbial ecology, persistent stress robustness and metabolic health, *Department of Integrative Biology, University of Colorado-Denver, Fall Seminar Series* (2017), **Invited Speaker**.

Fleshner, M. The neurobiology and physiology of exercise-induced stress robustness. *ACSM: World Congress on the Basic Science of Exercise and the Brain, Denver CO (2017),* **Invited Speaker.**

Fleshner, M. Prebiotic diet modulates the impact of stress on REM sleep. *The Colorado Sleep and Circadian Research Symposium,* The University of Colorado, Boulder, CO (2016), **Invited Speaker**.

Fleshner, M. Danger signals, microRNA and the inflammasome: Stress-evoked sterile inflammation and its relevance in mood disorders. *American College of Neuropsychopharmacology, Hollywood*, FL (2016), **Invited Speaker**.

Fleshner, M. Exercise induces stress robustness across the lifespan: The role of the gut microbiota. *The Integrative Biology of Exercise, American Physiological Society,* Phoenix, AZ (2016), **Invited Speaker.**

Fleshner, M. Exercise induces stress robustness across the lifespan: The role of the gut microbiota. *Cousins Center Lectures in Psychoneuroimmunology (PNI) at UCLA School of Medicine.* Los Angeles, CA (2016), **Invited Speaker**.

Fleshner, M. Early life prebiotic diet promotes sleep and stress robustness. *Gordon Conference on Sleep*, Galveston, TX (2016), **Invited Speaker**.

Fleshner, M. Early life exercise and the gut microbiota: Long lasting impacts on brain, stress resistance, and metabolism. *Neurobiology of Learning and Memory, 40th Anniversary.* Park City, UT (2016).

Fleshner, M. Promoting Stress Robustness. Georgia State University, *Neuroscience Institute Distinguished Lecture Series,* Atlanta, GE (2015), **Invited Speaker**.

Fleshner, M. Stress, Exercise and Sleep. University of Colorado School of Medicine Anschutz, *Department of Neurology, Resident Sleep Seminar,* Denver, CO (2015).

Fleshner, M. Exercise promotes stress robustness: Modulation of brain serotonin neurocircuitry. University of Colorado Anschutz Medical Campus, *Integrated Physiology Graduate Program Seminar,* Denver, CO (2015).

Fleshner, M. Protecting our troops from damaging stress. *University of Northern Colorado School of Biological Sciences Symposium,* Greeley, CO (2015).

Fleshner, M. Acute stressor exposure modulates plasma exosomal miRNA and Hsp72 cargo. *Academic Health Research Seminars University of Minnesota School of Medicine,* Duluth, MN (2014).

Fleshner, M. Rhythm disruptions and stress sensitization. *The Colorado Sleep and Circadian Research Symposium,* The University of Colorado, Boulder, CO (2014).

Fleshner, M. Exercise promotes stress robustness. *The Society for Neuroscience* (Exercise, energy intake, and the brain, selected symposium). Washington, DC (2014).

Fleshner, M. Exercise and prebiotic modulation of the gut microbiome promotes stress robustness*. The Psychoneuroimmunology Research Society*, (Integrating the microbiome into PNI paradigm and Mind/Body science, selected symposium). Philadelphia, PA (2014).

Fleshner, M. Acute stressor exposure modulates plasma exosomal miRNA and Hsp72 cargo. *The Seventh International Symposium on Heat Shock Proteins in Biology and Medicine.* Washington, DC (2014).

Fleshner, M. Disruptions in body temperature rhythms predict stress sensitization. *The International Behavioral Neuroscience Society*, Las Vegas, NV (2014).

Fleshner, M. Mindful movement and movement of the minds. *The Diversity Summit,* University of Colorado at Boulder.

Fleshner, M. Exercise promotes stress robustness. *The American College of Neuropsychopharmacology,* Phoenix, AZ (2014) selected symposium.

Fleshner, M. Putting the ice on stress, aging and CNS trauma. *Winter Conference on Brain Research*, Steamboat, CO (2014).

Fleshner, M. Extracellular Hsp72 is a DAMP released by stress. *Experimental Biology*, Boston, MA (2013). https://www.webges.com/cslide/e02816c/public/play_video/19 (ACVP Symposium: Inside-Out- Extracellular Roles for Heat Shock Proteins)

Fleshner, M. Protecting our troops from damaging stress. *Center for Neuroscience seminar,* University of Colorado, Boulder, CO (2013).

Fleshner, M. Novel gene targets of exercise-induced stress resistance in the dorsal raphe nucleus. *Winter Conference on Brain Research*, Breckenridge, CO (2013).

Fleshner, M. Impact of physical activity on stress robustness*, Department of Physiology & Neurobiology,* Dartmouth, Lebanon NH (2013).

Fleshner, M. Exercise and stress "robustness": Benefits for physical and mental health. *Department of Psychology and Neuroscience*, Duke University, Durham, NC (2012).

Fleshner, M. Protecting our troops from damaging stress. *IPHY seminar,* University of Colorado, Boulder, CO (2012).

Fleshner, M. Exercise and stress resistance and resilience: Benefits for mental and physical health. University of Vermont **Macmillan Symposium, Keynote Lecture (***includes webcast to local colleges and high schools).* Burlington, VT (2012).

Fleshner, M. Stress, inflammasomes and sterile inflammation. **Presidential Symposium Lecture,** *Psychoneuroimmunology Research Society*, San Diego, CA (2012).

Fleshner, M. DAMPs, MAMPs, & the Inflammasome in Stress-Evoked Sterlie Inflammatory Protein Responses. **Presidential Symposium Lecture,** *Society for Behavioral Neuroendocrinology*, Madison, WI (2012).

Fleshner, M. Exercise and stress resistance and resilience: Benefits for mental and physical health. *Biology Department Colloquium*, Kent State University, Kent, OH (2011).

Fleshner, M. Exercise and stress resistance and resilience. *School of Life Sciences Lecture Series*, Arizona State University, Tempe, AZ (2011).

Fleshner, M. Stress, DAMPs and Immunomodulation. *Society for Leukocyte Biology Meeting PNIRS Symposium,* Kansas City, MO (2011).

Fleshner, M. Extracellular Hsp72 is an endogenous DAMP released by stress. *Biological and Immunological Sciences Seminar*, Ohio State University, Columbus, OH (2011).

Fleshner, M. Stress & Immunity in Experimental Animal Models. *PNIRS Educational Short Course*, Chicago, IL (2011).

Fleshner, M. Endogenous Hsp72: Releasing signals, cellular sources & releasing pathways. *Graduate PNI Seminar*, University of Denver, Denver, CO (2010).

Fleshner, M. Enabling stress resistance with exercise. *Neuroscience Seminar*, University of Illinois, Champaign, IL (2010).

Fleshner, M. Exercise and stress resistance: From brain to behavior. *Winter Brain Conference***,** Breckenridge, CO (2010).

Fleshner, M. Enabling stress resistance with controllable exercise: Affective consequences and 5HT mechanisms. *Neuroscience Colloquium*, Smith College, Northhampton, MA (2010).

Fleshner, M. The stress buffering effects of exercise: Immune consequences & SNS mechanisms. *Biology Colloquium*, Smith College, Northhampton, MA (2010).

Fleshner, M. The stress buffering effects of exercise. *The Neurobiology of Stress Workshop*, Session Chair, Boulder, CO (2010).

Fleshner, M. The stress buffering effects of exercise. *The Winter Brain Conference on the Neurobiology of Learning and Memory*, Park City, Utah (2009).

Fleshner, M. Endogenous alarm signals: Immune consequences, releasing signals, and cellular sources. *Integrated Biomedical Science Seminar Series,* Loma Linda, CA (2008).

Fleshner, M. Extracellular Hsp72: Releasing signals and cellular source. *Integrative Physiology seminar,* University of Colorado, Boulder, CO (2008).

Fleshner, M. Extracelluar Hsp72: A double-edged sword for health. *Center for Neuroscience seminar,* University of Colorado, Boulder, CO (2008).

Fleshner, M. Exercise and stress resistance: Neural mechanisms and health consequences. *The Repole Lecture*, University of Vermont, Birminghan VT (2007).

Fleshner, M. Exercise and stress resistance: Neural mechanisms and health consequences. University of California-Irvine, Irvine, CA (2007).

Fleshner, M. Exercise and stress resistance: Neural mechanisms and health consequences. *Integrative Physiology seminar*, University of Colorado, Boulder, CO (2007).

Fleshner, M. Exercise and stress resistance: Neural mechanisms and immunological consequences. *Anatomy and Physiology seminar*, Kansas State University, Manhattan, KA (2006).

Fleshner, M. Extracellular Hsp 72: A double-edged sword for health. *Integrative Physiology seminar*, University of Colorado, Boulder, CO (2006).

Fleshner, M. The protective effect of physical activity on stress-induced immunosuppression: neuroendocrine mechanisms. *Department of Physiology and Neuroscience,* University of Colorado Health and Science Center, Denver, CO (2006).

Fleshner, M. Extracellular Hsp 72: A double edged sword for host defense. *Pediatrics seminar,* University of California-Irvine, Irvine, CA (2006).

Fleshner, M. Physical activity suppresses the negative effect of stress: A systems biology approach. *Health and Exercise Science seminar*, Colorado State University, Fort Collins, CO. (2006).

Fleshner, M. Physical activity and tyrosine supplementation-Two effective interventions that prevent stress-induced immunosuppression: Implications for aging. **Keynote Speaker,** *Seminar workshop of Center for Aging and the Life Course*, *Purdue University,* West Lafayette, IN (2005).

Fleshner, M. Sympathetic nervous system activation stimulates the release of heat shock protein 72 into the circulation: Potential immunological consequences. *NIH Biodefense workshop, Integrative Neural Immune Program*. Washington, DC (2005).

Fleshner, M. Adaptations in 5HT systems produced by exercise prevents stress-induced affective dysregulation. *Winter Conference on Brain Research,* Winter Park, CO (2005).

Fleshner, M. Endogenous Hsp72 is released by catecholamines and may function as a “danger signal” for immunity. *American Association of Immunologists* (2005).

Fleshner, M. Physical activity reduces the negative effects of stress on behavior, neural, endocrine and immune responses. **Keynote Address,** *American College of Sports Medicine* (2005).

Fleshner, M. Exercise and Stress Resistance: A Systems Biology Approach. *Pennington Research Conference Series*, Baton Rouge, Louisiana. (2004).

Fleshner, M. The protective effect of physical activity on stress-induced immunosuppression: Neuroendocrine mechanisms. *Integrative Neuroscience Colloquium Series*, Marquette University, Milwaukee, WI (2004).

Fleshner, M. Exercise prevent s learned helplessness: The role of serotonin. *Susan Samueli Center for Complementary and Alternative Medicine*, College of Medicine, University of California-Irvine, Irvine, CA (2004).

Fleshner, M. Heat shock proteins and the stress response: Implications for immunity. *School of Medicine Basic Science Seminar Series*, Loma Linda University, Loma Linda, CA (2004).

Fleshner, M. Heat shock proteins and the stress response: Danger signals for immunity. *Immunology Seminar Program*, Department of Medicine, Ohio State University, Columbus, OH (2004).

Fleshner, M. The neurobiology of the stress resistant brain. *Integrative Physiology Colloquium series*. University of Colorado, Boulder CO (2004).

Fleshner, M. A sedentary lifestyle reduces stress resistance. *Department of Kinesiology,* University of Illinois, Urbana, IL (2003).

Fleshner, M. Possible mechanisms of activation on the innate immune system by non-immune stressors: "The danger signal" hypothesis. *Presidential symposium, Psychoneuroimmunology Research Society,* Ameila Island, Florida (2003).

Fleshner, M. Stress, inflammation and heat shock proteins. *American College of Sports Medicine, Featured session*, San Francisco, CA (2003).

Fleshner, M. Stress-induced extracellular HSP72 is a functionally significant "danger signal to the immune system". *American Association of Immunologists and International Society for NeuroImmunoModulation (ISNIM), Guest symposium.* Denver, CO (2003).

Fleshner, M. Exercise prevents learned helplessness: The role of 5HT. *Neuroscience Seminar Series,* University of Colorado, Boulder CO (2003).

Fleshner, M. A sedentary lifestyle reduces stress-resistance. *Institute of Behavioral Science, Population and Health Seminar*, University of Colorado, Boulder CO (2003).

Fleshner, M. Physical Activity and Depression: Neural mechanisms. *Introduction to Neuroscience II*, University of Colorado, Boulder CO (2003).

Fleshner, M. The immune system and its relationship to pain. *Internal Medicine Review: Pueblo Association for Interest in Neuroscience and TMD Study*, Peublo, CO (2002).

Fleshner, M. The physiology of the stress response in sedentary and physically active organisms". *Rocky Mountain chapter of the American College of Sports Medicine*, Fort Collins, CO (2002)

Fleshner, M. The stress-susceptibility of a sedentary lifestyle. *University of Colorado Health Sciences Center, Center for Nutrition seminar*, Denver, CO (2002).

Fleshner, M. The stress susceptibility of a sedentary lifestyle: Brain neurocircuitry. *Department of*

Neuroscience Seminar Series, University of Virginia (2001).

Fleshner, M. The immune system: A tutorial. *The Summer Institute for Psychoneuroimmunology Research II*, University of Washington (2000).

Fleshner, M. Stress-induced extracellular HPS72 is a functionally significant "danger signal" to the immune system. *Basic Science Conference, The Division of Medical Oncology,* University of Colorado Health Sciences Center, Denver, CO (2002).

Fleshner, M. Heat shock proteins and inflammation: The body's "danger signal", *American Association of Immunologists and PNIRS Guest symposium,* New Orleans, Louisiana (2002).

Fleshner, M. Campisi, J; Miller, JK; Kennedy, SL; Smith, TP; Physical activity reduced circulating and tissue cytokine and sympathetic responses to stress. *Psychoneuroimmunology Research Society,* Madison, Wisconsin (2002).

Fleshner, M. Leem, T; Campisi, J; Greenwood BN; The potential role of heat shock proteins in stress-induced modulation of innate and acquired immunity. *The International Society of Exercise Immunology,* Baltimore, MD (2001).

Maier, SF; Nguyen, KT; Watkins, LR; **Fleshner, M.** Acute stress suppresses the KLH-specific but not mitogenic (ConA) proliferative response. *Research Perspectives in Psychoneuroimmunology, VIII,* (1998).

Fleshner, M. Moraska, A; The protective effect of exercise on stress-induced suppression of the specific antibody response. *Research Perspectives in Psychoneuroimmunology, VIII,* (1998).

Fleshner, M. The interface between brain, behavior and immunity: Is stress always bad? *The 19th annual conference of the New York Neuropsychology Group and New York Academy of Science,* New York, NY (1998).

Fleshner, M. Stress, Exercise and Immunity. *The Summer Institute for Psychoneuroimmunology Research,* University of Washington, Seattle, WA (1998).

Moraska, A*; Nguyen, KT; Mazzeo, RM; Roth, DA; **Fleshner, M.** Voluntary exercise potentiates whereas forced exercise suppresses anti-KLH responses. *Research Perspectives in Psychoneuroimmunology,* VII. (1997).

Fleshner, M. Nguyen, KT; Effects of unweighting on innate and specific immunity. *Aerospace Gravitational and Space Biology XII*, Charlotte, NC (1996).

Fleshner, M. Watkins, LR; Laudenslager, ML; Maier, SF; A CD4+ T cell shift from Th1 to Th2: A mechanism of stress-induced reduction of the KLH-specific antibody response. *Research Perspectives in Psychoneuroimmunology, V,* (1994).

Fleshner, M. Stress-induced reduction in MLR is dependent on macrophages but not on changes in phenotypes. *Research Perspectives in Psychoneuroimmunology, IV,* (1993).

Fleshner, M. Watkins, LR; Lockwood, LL; Bellgrau, D; Laudenslager, ML; Maier, SF; Stress-Induced Changes in CD4+ and CD8+ Lymphocytes. *NIMH Research Training Directors Meeting*, Bethesda, MD (1991).

***iii.* Administrative**

Fleshner M. Ways to get your scholarly work off to a great start*. Faculty Fair, Office of the Vice Chancellor for Research,* Boulder, CO (2013).

Fleshner M. Seed grants, competitions, applications and awards. *Faculty Fair, Office of the Vice Chancellor for Research,* Boulder, CO (2012).

Fleshner M. Level 1 Research. *Postdoc Career Development Retreat,* Denver, CO (2013).

IX. SERVICE

***i.* Departmental**

1998, 2001	Faculty Search Committee, member
2002, 2008, 2010	Faculty Search Committee, member
2005-2006	Faculty Search Committee, Chair
2003-2008	Graduate Admissions Committee
2003-2013	Future Hiring/Steering Committee
2005-2013	Strategic Planning Committee
2005	Grievance Committee (special appointment)
2005	Tenure and Promotion Committee (Pei-San Tsai)
2006-2008	Identity Task Force Committee, Chair
2008	Tenure and Promotion Committee PUEC (Wright)
2009-2010	Tenure and Promotion Committee PUEC (Allen)
2010-2011	IPHY Student Board Lecture
2011	Tenure and Promotion Committee PUEC (Tsai, Chair)
2011	Program Review: Space and Infrastructure, Chair
2011	Awards Committee, Chair
2010-2013	Welfare Committee, Chair
2005-2013	Space Committee, Chair
2014	Tenure and Promotion Committee PUEC (Wright, Chair)
2015-2016	Search Committee, Joint IPHY/PSYCH, Chair
2015-2022	Wilderness Place Space Committee
2017-2020	IPHY Executive Committee
2018-2019	IPHY Academic Review and Planning Advisory Committee (ARPAC): Internal Report: Research
2021	Promotion and Tenure Committee PUEC (Chair, Ehringer)
2021-present	**Graduate Curriculum Committee (Ad-hoc)**
2021	Amanda Schaeztel Peer Class Review
2021	Abigail Casso, Comprehensive Review Committee
2022	**Promotion and Tenure Committee PUEC (Lowry)**
2022-2023	**Computational TTT Hire Chair**
2022-2023	**DEI TTT Hire Co-Chair**
2023	**Maureen Floriano, Peer Review**
2023	**Abigail Longtine, Dissertation Committee**
2023	**Charlene Gust, Dissertation Committee**

***ii.* University**

1997	Dean's Master Plan Task Force
1997-2007	Institutional Animal Care & Use Committee (IACUC) Co-Chair

1998	Undergraduate Honor's Council
1999-2002	Neuroscience Ph.D. Steering Committee
2002-present	**Neuroscience Ph.D. Admissions and Curriculum Committee**
2004-2009	Integrative Physiology Graduate Admissions Committee
2005	McNair Program Summer Minority Research Opportunity Program
2006-2011	Biological Science Initiative Faculty Board
2007-2011	Executive Advisory Committee
2009-2011	East Campus Advisory Committee
2010	VC for Research Office IT Search Committee, Chair
2011	LEAP/Faculty Affairs Workshop "Management"
2011-2012	College of Arts and Sciences Dean's Search Committee (40+ hrs)
2012	CV Workshop (Postdoctoral Association)
2012-2013	Vice Chancellor for Research: Research Review Board (2 hrs per month)
2012-2013	Office of Animal Research OLAW Assurance Task Force (3 hrs per wk)
2009-2013	Faculty Associate to the Vice Chancellor for Research
2010-2014	College of Arts and Sciences Personnel and Tenure Committee (20 hrs per mo)
2012-2014	Boulder Faculty Assembly Budget and Finance Committee (1 hr per wk)
2013-2016	Academic Affairs Budget Advisory Committee
2014-2016	Boulder Faculty Assembly Budget and Finance Committee (Chair, 1 hr per wk)
2014-2016	Boulder Faculty Assembly Executive Committee (1 hr per wk)
2014	Boulder Faculty Assembly Discrimination/Harassment Policy and Procedure
2015	Carlson Renovation and Re-purposing Committee
2016	Academic Review and Planning Advisory Committee (ARPC)
2016	Leeds External Personnel Actions Committee
2016	Base Budget Steering Committee
2016	BFA Research Awards Committee (chair)
2015-2017	Associate Vice Chancellor Advisory Committee (AVC)
2015-2017	Radiation Safety Committee (2 hr per mo)
2019	Academic Review and Planning Advisory Committee (ARPAC) Internal Reviewer Institute for Cognitive Science
2016-2022	College of Arts & Sciences Dean's Budget Committee (4 hr per mo)
2022	Research Innovation Office (RIO), Panelist
2018-present	**Radiation Safety Committee, Co-Chair (2hr per mo)**
2021-present	**Colorado Clinical and Translational Science Institute (CCTSI) reviewer**
2022-2023	**Associate Dean of Research Search Committee**
2022-2023	**Associate Dean of Natural Sciences Search Committee**

iii. **Professional**

Journal Reviewer (selected list):

American Journal of Reproductive Immunology
American Journal of Physiology
Behavioral Brain Research
Biological Psychiatry
Brain, Behavior and Immunity
Brain Research
Behavioral Neuroscience
Cell Biochemistry and Function

Developmental Psychobiology
European Journal of Physiology
Exercise Science and Sport Reviews
Expert Reviews in Vaccines
Frontiers
International Journal of Behavioral Medicine
Journal of Applied Physiology
Journal of Immunology
Journal of Neuroscience
Journal of Neuroimmunology
Journal of Gerontology: Medical Sciences
Neuroscience
Neurosignals
Neurobiology of Aging
Nutrients
Physiology and Behavior
Pharmacology, Biochemistry, and Behavior
PlosONE
Psychopharmacology
Psychosomatic Medicine
Stress: The International Journal on the Biology of Stress
Synapse

Journal Editor:

2002-2005	Assistant Editor: Exercise Science and Sport Reviews
2002-2007	Editorial Board: Journal of Applied Physiology
2011-2013	Section Editor: BioMedCentral: Physiology
2008-2014	Editorial Board: Frontiers in Neuroscience
2011-2016	Editorial Board: Brain, Behavior and Immunity
2017-2018	Special Issue Editor: Brain, Behavior and Immunity
2014-2020	Editorial Board: The Neurobiology of Stress

Grant Reviewer:

1999-2015	National Science Foundation (NSF)
1999-2015	Undergraduate Research Opportunities Program (UROP)
2000-2001	National Aeronautics and Space Administration (NASA)
2000	National Institutes of Health (NIH) ad hoc reviewer
2001	National Institutes of Health CSR (IFCN-2) ad hoc reviewer
2000-2001	National Aeronautics and Space Administration (NASA)
2003	National Institutes of Health: Special Emphasis Panel
2003	National Science Foundation Postdoctoral Fellowship review panel: Microbiology, Physiology, and Neuroscience section.
2004-2008	National Institutes of Health: Neurobiology of Motivated Behavior, regular member
2008	National Institutes of Health: Special Emphasis Panel
2008	Swiss National Science Foundation
2008	National Aeronautics and Space Administration
2010	Deutsche Forschungsgemeinshchaft (DFG) in Regensburg, Germany

2010-2012	National Institutes of Health: College of CSR Reviewers
2010	Army Research Office
2010	Medical Research Council, United Kingdom
2011	National Science Foundation Postdoctoral Fellowship Review Panel: Microbiology and Cell Biology Section
2011	National Institutes of Health Study Section, NNRS, Baltimore, MD
2011	National Institutes of Health Study Section, APDA, San Francisco, CA (2011)
2012	National Institutes of Health Study Section, BBBP, Washington DC
2013	National Aeronautics and Space Administration (Immunology), Review, Washington DC (2013).
2013	National Science Foundation, Neural Systems Cluster Integrative Organismal Systems / BIO
2013	Inserm Institut National, Institut des sciences biologiques
2013	Netherlands Organization for Scientific Research
2015	National Institutes of Health: Neurobiology of Motivated Behavior, *ad hoc*.
2016	Knut and Alice Wallenberg Foundation, Stockholm, Sweden.
2016	National Institutes of Health Study Section Biobehavioral Regulation, Learning, and Ethology (BRLE), *ad hoc*, Washington DC
2017	Knut and Alice Wallenberg Foundation, Stockholm, Sweden.
2017	Crohn's and Colitis Foundation, New York, NY.
2017	NIH-National Center for Complementary and Integrative Health (NCCIH / NIH)
2018	NIH-Fellowship, Career Development, and Research Grant Programs *Ad hoc reviewer.*
2018	NIH-Biobehavioral Regulation, Learning and Ethology Panel (BRLE/NIH) *Ad hoc reviewer.*
2018-present	Crohn's and Colitis Foundation, *Grant reviewer*
2019	NIH Helping to End Addiction Long-Term (HEAL), *Grant Reviewer*
2020	NIH-Biobehavioral & Behavioral Processes (BBBP), *Grant Reviewer*
2020	NIH-Sleep, Stress, Motion, and Taste, *Grant Reviewer*
2020	NIH- Special Emphasis Panel/SRG, Exosomes and SUDs, *Chair.*
2021	Science Foundation Ireland, APC 8th Year Center Review
2021	CCTSI Grant Reviewer
2021	NASA Grant Reviewer: HERO Appendices C&D Immunology Panel
2022	Colorado Clinical and Translational Sciences Institute (CCTSI) grant reviewer
2021-present	**Boettcher Webb-Waring Biomedical Research Awards Program Reviewer**
2022	NASA Space Biology Animal Studies Sleep-Circadian Rhythms Grant Reviewer
2022	NIH-Neurobiology of Pain and Itch Study Section (NPI), *Integrative, Functional and Cognitive Neuroscience Integrated Review Group*
2022	NIH-ME/CFS (Chronic Fatigue) U54/U24 Center Grant Review
2022-2023	**National Academy of Sciences Congressional Mandated Review of NASA Space Biology**
2022-present	**Crohn's and Colitis Foundation, Scientific Reviewer, New York, NY.**
2023	**NIH-NINDS ME/CFS Special Emphasis Panel, Chair**
2023	**NIH-FO3C-N Training Grants, Reviewer**
2023	**NASA, HERO Grants, Reviewer**

Professional Society:

1990-present	**Society for Neuroscience, Member**
2000-present	**International Society for Exercise Immunology, Board Member**
1995-present	**Psychoneuroimmunology Research Society, Member**
2001-2010	American Association of Immunologist, Member
2003-2010	Cell Stress Society International, Member
1998-2001	Psychoneuroimmunology Research Society, Nomination Committee
2000	Psychoneuroimmunology Research Society, Session Chair
1999-2001	Psychoneuroimmunology Research Society, Advisory Committee
2001	International Society for Exercise Immunology-Session Chair
2001-2004	Psychoneuroimmunology Research Society, Scientific Council (elected position)
2001-present	International Society for Exercise Immunology, Scientific Program committee
2003	International Society for Exercise Immunology, Session Chair
2002-2004	Psychoneuroimmunology Research Society, Scientific Program Committee
2003	Psychoneuroimmunology Research Society, Session Chair
2005	Psychoneuroimmunology Research Society, Co-Host, Annual Meeting Denver, CO
2004-2006	Psychoneuroimmunology Research Society-Officer Secretary/Treasurer (elected position)
2004	Psychoneuroimmunology Research Society, Scientific Program Committee
2003-2004 workshop	American Physiological Society: Human use of animals: exercise design
2005-2006	American Physiological Society: Animal Care and Experimentation Committee (ad hoc member)
2007-2011	American Physiological Society: Animal Care and Experimentation Committee (Regular member)
2008-2013	Psychoneuroimmunology Research Society-Scientific Program Committee
2009	Psychoneuroimmunology Research Society-Co-Host of Annual Meeting Breckenridge, CO
2011-2012	Psychoneuroimmunology Research Society-President (elected position)
2011-2013	International Society for Exercise Immunology (ISEI), President (elected position)
2012-2013	Psychoneuroimmunology Research Society, Election & Awards Committee, Chair
2016-2018	Industrial Hemp Research Foundation: Founding member of the board
2018-2021	Psychoneuroimmunology Research Society Finance Committee
2018-present	**CU-Research Education, and Application in Cannabinoids and Health: Founding member of the board.**
2018-present	**CCAPM IACUC**
2015-present	**Immunitybio IACUC**
2019 -2025	**Psychoneuroimmunology Research Society, Election & Awards Committee, Member**

Community:

1998-2000	Community Outreach High School Research Advisor
2002	Internal Medicine Review: Pueblo Association for Interest in Neuroscience and TMD Study
2005-2015	High School Outreach Program. Annual group lab visits and presentations to students from inner city Denver High Schools
2011	Boulder Country Day Science Fair Judge (8 hrs)
2011	Medical Advance Community Lecture (Thorton, CO, 4 hrs)

2011-2015	Promoting Athletic Performance Recovery and Stress Resistance (PAPRR) Development Board (+4 hrs)
2013	CU at the Library Outreach, "Exercise & stress robustness: Benefits for mental physical health" (+5 hrs)
2015	CAPS (Counseling & Psychological Services) at CU, “Exercise Promotes Stress Robustness”
2015	CAPS (Counseling & Psychological Services) at CU, “Exercise and Prebiotic Diet Promotes Stress Robustness”
2018	CU Media Lab Presentation: Open Access Publishing Video Interview
2019	“Cannabis Science Today” Podcast Interview
2020	“The Science of Wellness and Stress Resiliency”, Boulder Flatirons Rotary Club
2020	“*Realities of Medical Cannabis Research*”, Boulder Cannabis Industry Meetup
2012-present	**CU Wizards, “Immunity in Health & Disease: The Army Within” (+12 hrs per show/per year)**

X. SELECTED MEDIA RELATIONS: Featured scientist

Fleshner, M. MSNBC, November 29, 2006, “Can stress actually be good for you?”

Fleshner, M. Psychology Today, August 10, 2006, “A case for double edged optimism.”

Fleshner M; “O” The Oprah magazine, January 2007, “Why it’s so hard to change yourself”.

Fleshner, M. Body and Soul, November 2008, “Stay healthy this season.”

Fleshner, M. US World & News Report, June 2008, “Relax! Stress can be good for

you.”

Fleshner, M. PBS TV Special, November 2009, “The Science of Healing”.

Fleshner, M. Fitness, September 2010, “Stop stress for good.”

Fleshner, M. *Doctor Radio,* Sirius Radio, September 5, 2014, “Nutrition, Health and Fitness with Samantha Heller”.

Fleshner, M. *Early life exercise and the gut microbiota*. January 1st 2016, Channel 7 News, 5pm, 6pm, and 10pm. https://shar.es/16gvDZ.

Fleshner, M. *Could your workout impact your gut health? Yes and here’s why.* Vogue, March 25, 2016. http://www.vogue.com/13420406/gut-health-microbiome-good-bacteria-exercise-new-studies-research/

Fleshner, M. Prebiotics in early life may boost sleep and daytime rhythms, 2016. http://www.nutraingredients-usa.com/Research/Prebiotics-in-early-life-may-boost-sleep-and-daytime-rhythms Study?utm_source=copyright&utm_medium=OnSite&utm_campaign=copyright

Calmer Waters, *The Caregiver’s Journey through Alzheimer’s and Dementia*, by Barbara Cohn. Blue River Press, Indianapolis, IN. (2016). Contributing Author, “Exercise and Stress Robustness: Benefits for Mental and Physical Health” pp 173-177.

Fleshner, M. Live healthy: Sleep-Stress Connection. Shape, Sept 2017, pg. 114. https://shape.com.

Fleshner, M. 2021, KDVR, Fox 31 TV.

Fleshner, M. 2021, Prebiotics keep body clocks running on time. WebMD (Amanda Loudin).

Fleshner, M. 2021, Is your body clock off schedule? Prebiotics may help. CU Boulder Today (Lisa Marshal).

XI. TEACHING

***i.* Graduate Seminars/Courses**

Courses are each a semester in duration (3 hrs lecture/ contact per week) at the University of Colorado at Boulder, unless otherwise indicated.

2024-present	**IPHY 6010 Stress Physiology,**	**25 students/class**
2023	**IPHY 6010 Microbiome-Gut-Brain axis,** 1 lecture/year	**25 students/class**
2023	**IPHY 5840, Independent Study (Lena Kuzma)**	
2023	**IPHY 5840, Independent Study (Josh Havassy)**	
2007-present	**IPHY 5600 Graduate Immunology**	**25 students/class**
2022	**IPHY 5840, Independent Study (Josh Havassy)**	
2022	**IPHY 5840, Independent Study (Josh Havassy)**	
2006-2013	IPHY 6830 Professional Skills, 2 lectures/year	20 students/class
2002, 2003, 2006		
2013, 2016	IPHY 5100 Colloquium	25 students/class
2003-2011	ARSC 5110 Neuroscience II, 1 lecture per year	25 students/class
1998-1999	IPHY 6010 Exercise Immunology	**20 students/class**
1996	Behavioral Neuroscience	**25 students/class**
1994	Stress and Immunity	**15 students/class**

***ii.* Undergraduate Seminars/Courses**

Courses are one semester in duration (3 hrs lecture/ contact per week) at the University of Colorado at Boulder, unless otherwise indicated.

2022	**IPHY 4860, Independent Study** (Geetali Lal)	
2022	**IPHY 4100 Colloquium**	**30 students/class**
2020-2021	**IPHY-2010-RAP**, Hot Topics in Immunology	**10-20 students/class**
2007-present	**IPHY 4600 Immunology**	**100-200 students/class**
2006	**IPHY** Student Board Lecture	**15 students/class**
2005-2006	**IPHY 3600** Immunology	**125 students/class**
2003-2004	**IPHY 4770** Mind-Body Health	**75 students/class**
1998-2001, 2004	**IPHY 4660** Critical Thinking: Exercise Immunology	**30 students/class**
2002	**IPHY 4750** Psychological Kinesiology	**75 students/class**
2001	**IPHY 4100** Colloquium	**30 students/class**
1993, 1996	Behavioral Neuroscience, Dept of Psychology	**35 students/class**
1993, 1996	Introductory Psychology, U of Colorado-Denver	**200 students/class**
1995	BioPsychology, Dept of Psychology	**45 students/class**
1994	Behavioral Neuroscience, U of Colorado-Denver	**30 students/class**
1993, 1994	Drugs and Behavior, U of CO-Denver	**40 students/class**
1992	Intro Psychology, Front Range Community College	**40 students/class**
1991	Physiological Psychology, University of Denver	**20 students/class**

***iii.* Training Grant Faculty Advisor**

2021-2025 PI: Case, Adam: Fleshner (Consultant)
R01HL147285-01
National Institutes on Heart, Lung and Blood
Title: "T-lymphocyte Mechanisms of Psychological Stress-induced Hypertension"

2018-2023 PI: Lindheimer, Jacob; Fleshner (Mentor)
NIH Career Development Award: GRANT12478366
Research Health Scientist | William S. Middleton Veterans Memorial Hospital
Honorary Fellow | UW-Madison Department of Kinesiology
Title: "Acute exercise tolerance among Veterans with Gulf War Illness"

2020-2024 PI: Karoly, Hollis; Fleshner (Mentor)
1K23AA028238-01A1
National Institutes on Alcohol Abuse and Alcoholism (NIAAA)
K23
Title: Exploring the Effects of Cannabinoids on Alcohol Consumption and the Microbiota-Gut-Brain-Axis
Study explores the effects of smoked cannabis containing THC on alcohol consumption, craving, intoxication and alcohol-related biomarkers (e.g., gut microbiome, peripheral inflammatory markers)

2020-2024 PI: Wright, Ken; Fleshner (Preceptor)
NHLBI T32
Title: "Sleep and Circadian"

***iv.* Supervised Trainees (Primary Mentor)**

Date / Student name / Research topic

Current Master's and BA/MA Students

2022-2024	**Josh Havassy, Flashbang-Evoked Stress Responses**
2023-2024	**Lena Kuzma, S1 and LPS Impacts on Natural Behavior**
2024-Present	**Tina Nguyen, Behavioral Analyses Altered Gravity and S1**

Graduate Students: Past Master's Students

1997-1998	Jen Kintzel, "Exercise, stress and inflammation", MS advisor
1997-1998	Taro Smith, "Exercise, stress, and hormones", MS thesis advisor
1998-1999	Ted Leem, "Stress and inflammation", MS advisor
1997-1998	Bristol Sorensen, "CFS and exercise", MS thesis advisor
1998-1999	Gwen Elphick, "Exercise, stress and antibody", MS advisor
1999-2000	Jay Campisi, "Stress and inflammation", MS advisor
1999-2000	Jill Miller, "Exercise, stress and cytokines", MS advisor
1999-2000	Kim Hansen, "Exercise and aging", MS thesis advisor
1999-2001	Danielle Stinchfield, "Exercise and Parkinson's", MS advisor
1999-2001	Ben Greenwood, "Exercise, stress and c-Fos", MS advisor
2002-2003	Julianne West, "Microbiology of inflammation", MS advisor
2001-2003	Karianne Higgins, "Age and intracellular HSPs", MS advisor
2001-2003	Molly Nickerson, "Physical activity and brain cytokines", MS advisor
2004-2006	Kyle Kirby, "Stress and the DRN", MS thesis advisor
2003-2006	Craig Sharkey, "Stress and Inflammation" MS thesis advisor

2010-2011	Arman Serebrakian, BA/MS, "ADR signaling of adipose cytokines", MS thesis advisor
2010-2012	Brianne Loughridge, MS, "Gene array analyses of DRN", MS advisor
2011-2012	Justin Hellwinkel, MS, "Behavioral Consequences of Stress and Exercise on Fear Conditioning". MS advisor
2011-2013	Stuart Cox, "Beta3 ADR signaling of IL1beta in adipose." BA/MS advisor
2011-2013	Katie Spence, "Exercise and brain plasticity", BA/MS advisor
2012-2014	Madeline Paton, "Stress, Nutrition and Sterile Inflammation" BA/MA advisor
2012-2014	Jon Herrara, "The role of dopamine circuitry in the reward of exercise", MS advisor
2015-2017	Camille Crane, MS advisor
2015-2017	Donald Borchert, MS advisor
2016-2017	Rebecca Hall, "The Second Brain: The Impact of Intestinal Microbiota on Stress-Induced Behavioral Depression", MS advisor
2016-2018	Rachel Roller, "Oral Phytochemical and Sterile Inflammation", MS advisor.
2019-2021	Trey Jouard, MS advisor
2021	Kelley Anne Stockelman, Dissertation Committee
2021	Abigail Casso, Comprehensive Exam Committee
2022	**L. Madden Brewster, Dissertation Committee**
2022	**Charleen Gust, Dissertation Committee, Psych&NS**
2022	**Camden L. C. McFarland, Honor's Committee Member, Psych & NS**

Graduate Students: Current PhD Students

2019-present	**Shelby Hopkins, "Bolstering Stress Robustness: Prebiotics and CBD"**
2020-present	**Tel Kelley, "State Dependent Modulation of Microvesicle Cargo"**
2022-2024	**Josh Havassy, "Overpressure, Stress, and Behavioral Performance"**

Graduate Students: Past PhD Students

1997-1999	Michael Pecaut, "Spaceflight and immunity", PhD advisor
Current Position:	Professor, Dept of Radiation Medicine/Division of Radiobiology, Loma Linda University
1998-2001	Albert Moraska, "Exercise, stress and antibody", PhD advisor
Current Position:	Associate Professor, UCHSC
1999-2003	Gwen Elphick, "nIgM and exercise", PhD advisor
Current Position:	Research Fellow, Brown Medical School
2000-2003	Jay Campisi, "Stress, Hsp and Inflammation", MS and PhD advisor
Current Position:	Professor and Chair, Dept of Biology, Regis University
1998-2004	Taro Smith, "Aging and physical activity: Implications for human immune function and health", PhD advisor
Current Position:	Product Development
1999-2005	Sarah Kennedy, "Exercise, stress and catecholamines", PhD advisor
Current Position:	Medical Science Liaison, Immunology, UCB Pharmaceuticals

2001-2005	Ben Greenwood, “Neurocircuitry of stress”, PhD advisor
Current Position:	Associate Professor, Dept of Psychology, University of Colorado at Denver
2001-2006	Molly Nickerson, “A role for estrogen in the expression of heat shock protein 72”, PhD advisor
Current Position:	Translational Medical Scientist at Mitsubishi Tanabe Pharma
2002-2009	Teresa Foley, “The neurobiology of exercise”, MS advisor, PhD advisor.
Current Position:	Science Education Fellow, University of Colorado
2007-2012	Paul Strong, “Neurobiology, stress and exercise”, MS advisor, PhD advisor
Current Position:	Scientific Communications Manager, Medical Affairs, Spectranetics Inc.
2007-2012	Tom Maslanik, “Defining stress-induced sterile inflammatory responses: Network, signal, and pathways”, MS advisor, PhD advisor
Current Position:	Product Manager, Novus Biologicals
2008-2012	Kristin Speaker, “The effects of habitual exercise and fasting on stress-evoked cytokine expression in non-obese white adipose tissue”, PhD advisor
Current Position:	Postdoctoral Fellow & Transformational Weight Loss Coach, Anschutz Health and Wellness Center, Denver, CO
2006-2013	Robert Thompson, “Biotelemetric analyses of stress physiology: The impact of stressor chronicity, stressor controllability and exercise" MS/PhD advisor
Current Position:	Research Associate, Department of Integrative Physiology
2007-2013	Lida Beninson, "The emerging role of exosomes in stress physiology" MS/PhD advisor
Current Position:	National Academy of Sciences, Program Officer, Washington, DC.
2012-2016	Aggie Mika, “The long-term impact of exercise across the lifespan”, PhD advisor
Current Position:	Medical Associate, Health Care Consultancy Group, NY, NY.

Postdoctoral Fellows: Past Fellows

2002-2007	John D. Johnson, PhD, Postdoctoral Fellow Mentor,
Current Position:	Professor, Neuroscience Dept, Kent State University
2006-2007	Josh Friedman, PhD, Postdoctoral Fellow Mentor.
Current Position:	Medical Liaison, Immunology, Roche Pharmaceuticals
2007-2008	Isaac Bernstein-Hanley, PhD, Postdoctoral Fellow Mentor,
Current Position:	Harvard School of Medicine, Research Liaison
2005-2008	Sarah Kennedy, PhD advisor/Postdoctoral Fellow Mentor.
Current Position:	Medical Science Liaison, Immunology, UCB Pharmaceuticals
2005-2014	Ben Greenwood, Postdoctoral Fellow Mentor

Current Position:	Associate Professor, Depart of Psychology, University of Colorado at Denver
2011-2013	Peter Clark, PhD, Postdoctoral Mentor
Current Position:	AssociateProfessor, Iowa State University
2013-2014	Lida Beninson, Postdoctoral Mentor
Current Position:	National Academy of Sciences, Program Officer, Washington, DC.
2016-2018	Aggie Mika, Postdoctoral Mentor
Current Position:	Medical Associate, Health Care Consultancy Group, NY, NY.

Postdoctoral/Research Associate Level Trainees: Current

2018-2021	Heidi Grabenstatter, Postdoc/Research Associate Advisor
2013-2021	Robert Thompson, Postdoctoral Advisor
2022-present	Robert Thompson, Research Associate

Junior Faculty Supervised: Past and Present

2010-2023	Monique LeBourgeois, PhD-Professor, IPHY
2004-2010	Marissa Ehringer, PhD-Assitant Professor, IPHY & The Institute of Behavioral Genetics

Undergraduate Student Researchers Supervised: Past and Present

1998	Karianne Higgins, “Tissue catecholamines”, Hughes Undergraduate Research Assistant Program (URAP)
1998	Ted Leem, “Bacterial inflammation”, Honor’s student
1999	Mary Nickerson, “Brain *c-fos* activity”, Undergraduate Research Opportunity Program (UROP)
1999	Jason McCarl, “Total immunoglobulin”, UROP
2000	Kate Robinson,”Stress and catecholamines”, Independent study
2000	Kristine Thompson, “Celiac ganglion *cfos*”, UROP
2000	Deric McIntosh, “Autonomic brain nuclei and *cfos*”, UROP
2001	Heather Crump, “Stress and inflammation”, UROP
2001	Silvie Kilworth, “Stress and innate immunity”, Independent study
2001	Danielle Frey, “Cytokines and aging”, Independent study
2001	Julianna West, “Cell Localization of Intracellular HSP”, UROP
2001	Alexander Tran, “Splenic Sympathetic Content”, URAP
2001	Stephanie Cho, “Extracellular HSP and inflammation”, URAP
2001	Lisa Umphrey, “Exercise and brain cfos”, URAP
2001	Teresa Foley, “nIgM and Exercise”, URAP
2001	Deric McIntosh, “Neural basis of frustration”, Independent study
2002-2003	Daniel Burhans, “Exercise and BNST”, UROP, Work study
2002-2003	Melissa Hippley, “nIgM and Exercise”, Independent study/URAP
2002-2003	Leah Brooks, “Neurochemistry of exercise”, Independent study
2002	Karen Tal Oren, “Exercise and aging”, Independent study
2002	Probin Shrestha, Volunteer medical aid - Kanti Children’s Hospital Nepal, Independent study
2002	Lindsay Levkoff, “Exercise and nIgM”, URAP

2002	Peter Bekker, “Aging and the antibody response”, Volunteer
2002	Heather Crump, “Brain responses to bacteria and prior stress”, UROP
2003	Brittany Shock, “Stress and splenic NE”, URAP
2003	Katherine Hooley, “E. coli and brain IL1”, URAP
2003	Craig Sharkey, “Stress and bacterial inflammation”, URAP
2003	Carla Amat, “5HT1A and exercise”, Independent study
2003	Lisa Malloy, “SERT and stress”, Independent study
2004	James Lish, “BK vascular leaking and Hsp72”, Independent study
2004	Jeff Kimes, “Hsp72 in brain and spleen”, Independent study
2004	Ashley Eyre, “Stress and brain Hsp72”, Independent study
2005	Garth Huberty, “EAE and neuroinflammatory pain”, Independent study
2005	Robert Thompson, “Neural mechanism of the protective effects of exercise on stress-induced affective disregulation”, Independent study
2005-2006	Paul Strong, UROP, Independent study
2005-2007	Kristen Hetzler, “Heat shock proteins and stress”, Independent study
2005-2007	Hugo (Trey) Hanson,“IL1 and the brain”, Work study
2006	Valerie Cortez, SMART student, “NE and brain IL1”
2006-2007	Sarah Naguse, UROP
2006	Delsa Phillips, Independent study sponsor for Global Service Corp
2006-2008	Janelle Posey, “Brain Hsps”, NIMH minority undergraduate trainee
2008	Lydia Urrutia, “Brain and 5HT”, UROP
2006-2009	Sam Bowers, “Bacteria, brain and stress”, High School Student Worker
2008-2009	Bradley Frazier, “Stress, 5HT and behavior”, UROP
2008-2009	Brianne Loughridge, “Stress, 5HT and behavior”, UROP
2008-2009	Tony Le, “Exercise and Motivation”, Independent study
2008-2009	Katharine Strelitz, “Stress, 5HT and behavior”, Independent study
2008-2009	Julia Rennick, “Stress and vascular cytokintes”, Independent study
2009-2011	Arman Serebrakian, “Stress & Adipose”, Independent study
2009-2011	Danielle Crevling, HHMI, Independent study, “Stress, 5HT and behavior”
2009-2011	Justin Hellwinkel, “Stress, 5HT and behavior”, Independent study
2010	Sierra Wohlman, “Stress and immunity”, Independent study
2010-2011	Wendy Craig, “Stress and cardiovascular adaptations”, Independent study
2010-2012	Katie Spence, “Stress, 5HT and behavior”, Independent study
2010-2012	Lucas Macaffey, “Stress and Immunity”, Independent study, UROP
2010-2012	Kate Tannura, “Stress and immunity” Independent study, UROP
2010-2012	Noaura Sadaoui, Work study, NIH HHMI, “Gene array analyses of DRN”
2010-2012	Stewart Cox, Independent study
2011	Phillip Adams, “Gene array analyses of DRN”, Work study
2011	Charlie Bowers, High School Student Worker
2011	Leslie Blacksheer, “Stress, fat and cytokines”, Volunteer
2011-present	Jonathan Herra, “Stress, fat and cytokines”, Independent study
2011-2012	Jodie Rigali, “Stress, 5HT and behavior”, Independent study
2011-2012	Michael Murphy, “Hsp72 and releasing signals”, Independent study, BURST applicant
2011-2012	Abigail Hills, Independent study
2011	Brittany Sak, Internship
2011	Taylor Schmidt, Internship
2012-2014	Parsa Ghasem Independent study, Honor’s Thesis (HHMI awardee)

2012-2014	Samantha Engel Independent study (Honor's student)
2013-2014	Courtney Bouchet, Independent study, HHMI applicant, Honor's Thesis
2013-2014	Roxie Christ, Independent study (UROP awardee)
2013-2014	Michelle Keag, Independent study (HHMI fellow)
2013-2014	Tyler Wieman, Independent study (BURST awardee)
2013-2014	Erika Sisneros (HHMI fellow)
2013-2014	Haley Manchester (BURST awardee)
2013-2014	Preston Bunker (HHMI awardee)
2013-2014	Sara McConnell (UROP awardee)
2013-2014	Tyler Woodworth (UROP, Independent Study)
2014	James Needle (RA)
2014	Nicco Baumann (Independent Study)
2013-2016	Kristina Hulen (HHMI awardee RA)
2013-2015	Donald Borchert (HHMI fellow, Independent Study)
2013-2016	Nicole Rumian (Independent Study, HHMI Awardee)
2014-2015	Mira Guha (Monarch High School, Science Research Seminar Program)
2014-2017	Alex Martinez (RA)
2014-2016	Michelle Gaffney (BURST Awardee & HHMI Awardee)
2014-2016	Rachel Roller (BURST Awardee & HHMI Awardee, Honors Awardee)
2015-2017	Kevin O'Connor (BUST Awardee)
2016-2017	Monica Patten (BUST Awardee)
2016-2017	Shelby Hopkins (BURST Awardee, BSI Awardee, RA)
2016-2018	Brooke Bower (BSI Awardee, Honors Awardee)
2016-2018	Leah Ramey (BSI Awardee)
2016-2019	Tel Kelley (Work Study, BSI Awardee)
2017-2019	Trey Jouard (Independent Study, Honors)
2016-2018	Brooke Bower (BSI Awardee, Honors Awardee)
2016-2018	Leah Ramey (BSI Awardee)
2016-2019	Tel Kelley (Work Study, BSI Awardee)
2017-2019	Trey Jouard (Independent Study, Honors)
2019-2019	Hash Brown (Independent Study)
2019-2021	Abbey Marye (BSI Awardee, Honors Advisor)
2020-2021	Jonathan Noe (BSI Awardee)
2020-2021	Sean Pierce (BSI Awardee, Honors Advisor)
2020-2021	Sarah Bellati (Independent Study)
2020-2021	Perry Hayman (Independent Study)
2021	Anna E. Cohen: Honors Thesis Committee Member.
2021-2022	Geetali Lai, BSI winner, Independent Study, Diversity
2021-2022	Daniyaal Syed, Independent Study, Diversity
2021-2022	Krishna Shenoy, BSI winner, Diversity
2021-2023	Sophia Blasco, UROP, Goldwater Scholar Campus Candidate, NIH summer internship, Diversity
2022-2023	Zackry Schultz, Independent Study
2023-2024	**Lindsey Land, UROP, ARA Summer Internship**
2023-2024	**Jade Ryan, Independent Study**
2023-2024	**Cori Barber, Independent Study**
2024-present	**Jack Simone, UROP**
2024-present	**Lindsay Land, Lab Member**

2025-present **Brandon Jakubsen, Lab Member**