



CACPR MEMBER SPOTLIGHT:

Kristen R. Weaver, PhD, CRNP

Assistant Professor in the Department of Pain & Translational Symptom Science



Dr. Weaver joined UMSON in July of 2019 from Johns Hopkins University School of Medicine. Kristen completed a Post-Doctoral Fellowship in the Interdisciplinary Training Program in Biobehavioral Pain Research, with a focus on neurogastroenterology. She was awarded her PhD from New York University, Rory Meyers College of Nursing, and performed her dissertation research at the National Institute of Nursing Research, with a focus on brain-gut axis dysregulation in patients with chronic abdominal pain. Kristen received a Bachelor of Arts from Vanderbilt University, a Bachelor of

Science and Master of Science from Columbia University, and is certified as an Acute Care and Adult Nurse Practitioner. Her research surrounds the role of stress, sex hormones and the microbiota, as modulators of the brain-gut axis in patients with chronic abdominal pain.

Kristen is a recent recipient of pilot funding through the P30 Omics Associated with Self-Management Interventions for Symptoms (OASIS)

Center. Supported by the National Institute of Nursing Research, the P30 Center combines rigorous phenotyping of patients in chronic pain with cutting-edge omics methods, to advance understanding of how individual differences influence one's resilience, motivation and capability to engage in physical activity and exercise to manage chronic pain. Kristen will conduct a study entitled, "Impact of a yoga intervention on chronic abdominal pain, and associations with the metagenome and metabolome in participants with IBS". The aims of this investigation are twofold: first, to identify differences in microbial features and metabolites among participants with irritable bowel syndrome (IBS) and healthy controls, and evaluate associations with participant characteristics. Second, to determine if a six-week yoga intervention reduces pain among participants with IBS, and evaluate associations with microbial features and metabolites. Findings from this study will enhance our understanding of the interplay between the microbiota, microbial-derived intermediates and pain in patients with IBS. Furthermore, this research will facilitate the identification of relevant microbial features and metabolites that may prove modifiable, and work towards diminishing the public health burden surrounding chronic pain.

CACPR Member Accolades

Highlights of recent grant awards, authorships, and other CACPR member news.

Vinita Agarwal, PhD

Recent Publication

Agarwal, V. (2020). The semi-structured interviewing method in qualitative study examining complementary and alternative medicine providers' knowledge discourse. *SAGE Research Methods Cases: Medicine & Health*.

Marianne Cloeren, MD, MPH

Recent Publication

Recently published an online continuing medical education course created for the Massachusetts Medical Society, called "Work Is Medicine – Strategies for Improving Functional Outcomes." It relates to chronic pain because many patients with chronic pain wind up disabled from working, when this may not be the optimal outcome.

Luana Colloca, MD, PhD

Recent Publications

Schenk LA, Colloca L. The neural processes of acquiring placebo effects

through observation. *Neuroimage*. 2019 Dec 30;209:116510. doi: 10.1016/j.neuroimage.2019.116510. [Epub ahead of print] PubMed PMID: 31899287.

Darnall BD, Mackey SC, Lorig K, Kao MC, Mardian A, Stieg R, Porter J, DeBruyne K, Murphy J, Perez L, Okvat H, Tian L, Flood P, McGovern M, Colloca L, King H, Van Dorsten B, Pun T, Cheung M. Comparative Effectiveness of Cognitive Behavioral Therapy for Chronic Pain and Chronic Pain Self-Management within the Context of Voluntary Patient-Centered Prescription Opioid Tapering: The EMPOWER Study Protocol. *Pain Med*. 2019 Dec 26. pii: pnz285. doi: 10.1093/pm/pnz285. [Epub ahead of print] PubMed PMID: 31876947.

Raghuraman N, Wang Y, Schenk LA, Furman AJ, Tricou C, Seminowicz DA, Colloca L. Neural and behavioral changes driven by observationally-induced hypoalgesia. *Sci Rep*. 2019 Dec 24;9(1):19760. doi: 10.1038/s41598-019-56188-2. PubMed PMID: 31874985; PubMed Central PMCID: PMC6930247.

Colloca L, Panaccione R, Murphy TK. The Clinical Implications of Nocebo Effects for Biosimilar Therapy. *Front Pharmacol*. 2019 Nov 29;10:1372. doi: 10.3389/fphar.2019.01372. eCollection 2019. Review. PubMed PMID: 31849647; PubMed Central PMCID: PMC6895996.

Alan Faden

Recent Publications

Bhat SA, Henry RJ, Blanchard AC, Stoica BA, Loane DJ, Faden AI. Enhanced Akt/GSK-3 β /CREB signaling mediates the anti-inflammatory actions of mGluR5 positive allosteric modulators in microglia and following traumatic brain injury in male mice. *J Neurochem*. 2020 Jan 11:e14954. doi: 10.1111/jnc.14954. [Epub ahead of print]

Barrett JR, Henry RJ, Shirey KA, Doran SJ, Makarevich OD, Ritzel RM, Meadows VA, Vogel SN, Faden AI, Stoica BA, Loane DJ. Interferon- β plays a detrimental role in experimental traumatic brain injury by enhancing neuroinflammation that drives chronic neurodegeneration. *J of Neuroscience* (in press).

Henry RJ, Ritzel RM, Barrett JR, Doran SJ, Jiao Y, Leach JB, Szeto GL, Wu J, Stoica BA, Faden AI, Loane DJ. Microglial depletion with CSF1R inhibitor during chronic phase of experimental traumatic brain injury reduces neurodegeneration and neurological deficits. *J of Neuroscience* (in press).

Doran SJ, Henry RJ, Shirey KA, Barrett JP, Ritzel RM, Lai W, Blanco JC, Faden AI, Vogel SN, and Loane DJ. Early or late bacterial lung infection increases mortality after traumatic brain injury in male mice and chronically impairs monocyte innate immune function. *Critical Care Medicine* 2020 (in press).

Joel Greenspan, PhD

Recent Publication

Emerson NM, Meeker TJ, Greenspan JD, Saffer MI, Campbell CM, Korzeniewska A, et al. Missed targets, reaction times, and arousal are related to trait anxiety and attention to pain during an experimental vigilance task with a painful target. *J Neurophysiol* 2020;123:462-472.

Barbara Resnick, PhD, CRNP

R01 AG065338 (Resnick/Boltz)

01/01/2020-12/31/2024

NIH/NIA

"Testing the Efficacy of FFC-AC-EIT in Patients with Alzheimers Disease and Related Dementias"

The purpose of this new NIH grant award is to test function focused care in acute care settings with patients who have Alzheimer's disease or related dementias.

Joyce Teixeira da Silva, PhD

Recent Publication

Da Silva JT, Tricou C , Zhang Y, Seminowicz DA , Ro JY. Brain networks and endogenous pain inhibition are modulated by age and sex in healthy rats.

Publishing journal: *Pain*. Date: 2020 Jan 17.

Junfang Wu, B.M., PhD

Recent Publication

Henry RJ, Ritzel RM, Barrett JR, Doran SJ, Jiao Y, Leach JB, Szeto GL, Wu J, Stoica BA, Faden AI, Loane DJ.. Microglial depletion with CSF1R inhibitor during chronic phase of experimental traumatic brain injury reduces neurodegeneration and neurological deficits. *J of Neuroscience* (in press).



Richard Traub and two colleagues in the Department of Microbial Pathogenesis in the School of Dentistry, along with three bioengineering colleagues from University of Maryland, College Park were awarded a \$100,000, one-year award for pilot data from the UMCP/UMB AI + Medicine for High Impact (AIM-HI) Challenge Awards for a project entitled, "Tackling

Chronic Pain: Machine Learning-Enabled Biomarker Discovery and Sensing."

Recent Publications

Xu, G. Z., Xue, Y., Wei, S. Q., Li, J. H., Traub, R. J., Wang, M. D., Cao, D. Y. Valproate reverses stress-induced somatic hyperalgesia and visceral hypersensitivity by up-regulating spinal 5-HT_{2C} receptor expression in female rats. *Neuropharmacology*, 2019. <https://doi.org/10.1016/j.neuropharm.2019.107926>

Zhuo-Ying Tao, ZY., Wang, PX., Wei, SQ., Traub, RJ, Li, JF, Cao, DY. The Role of Descending Pain Modulation in Chronic Primary Pain: Potential Application of Drugs Targeting Serotonergic System. *Neural Plasticity* Volume 2019, Article ID 1389296, 16 pages, <https://doi.org/10.1155/2019/1389296>

This Is Your Brain On Pain: Colloca Featured on WYPR's On the Record

Powerful painkillers can often dispatch acute pain, but using them for chronic, persistent pain carries the risk of addiction.

Nearly two million Americans have a substance abuse disorder stemming from prescribed opioids. So scientists are researching ways to treat pain without drugs.



PHOTO CREDIT:

Lydia Thompson (21st Century Fox)

for National Geographic

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Colloca Featured in 'National Geographic,' January 2020 Edition

Colloca has shown that the key driver of the benefit is the entertainment provided by the experience, which helps relax patients and reduce their anxiety. Whatever the mechanisms underlying its effectiveness, doctors already are using virtual reality to help patients in acute pain, such as those

with severe burns. Colloca believes the strategy also could prove useful in treating chronic pain.

[Read the story](#)

The UM Center to Advance Chronic Pain Research (CACPR) is a multidisciplinary center composed of nationally and internationally renowned clinical and preclinical translational scientists whose principle research focus is on the physiological, genetic, and psychosocial underpinnings of the development and persistence of debilitating chronic pain conditions.



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