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Newsletter Highlights

August USASP Trainee Spotlight

Edina Szabo, PhD
Postdoctoral Research Fellow
Department of Anesthesia

Dr. Edina Szabo received her Ph.D. in Clinical Psychology from ELTE Eotvos Lorand University in Budapest, Hungary. For her postdoctoral training, she joined the Center for Pain and the Brain research group at Boston Children's Hospital, working under the mentorship of Dr. David Borsook and Dr. Christine Sieberg. She is currently working at Dr. Rami Burstein's lab at Beth Israel Deaconess Medical Center, Harvard Medical School, where she conducts structural and functional magnetic resonance imaging (MRI) studies to assess brain changes in migraine prevention and treatment.

Dr. Szabo has received trainee travel awards from USASP and IASP to present her work. She was also invited to give a talk at the 1st IHS/EHF Headache

Critical Care and Pain Medicine,
Beth Israel Deaconess Medical Center
Harvard Medical School

Research Academy in Baku, Azerbaijan, and the AHS 65th Annual Scientific Meeting in Austin, Texas. She was also named an “Exceptional Trainee Author” for her first-authored paper, one of the Top 3 Award-winning Basic Science Papers at the *Headache: The Journal of Head and Face Pain*. Dr. Szabo also serves as a member of the USASP Educational and Professional Development Committee, where for the past two years, she has been organizing career development networking events for postdoctoral fellows.

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ASPMN® 33rd National Conference

Click here to learn more!

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2024 USASP Meeting Updates

Click here to learn more!

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12th World Congress on Itch

Click here to learn more!

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Gulf Coast Consortia #Pain2023 Workshop

The Gulf Coast Consortia's #Pain2023 workshop series will continue on August 25, 2023, from 1-2 pm (CDT) with *Contribution to the Extracellular Matrix of Pain*. Register for the August #Pain2023 by August 24. The event will take place online.

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Journal of Pain

Current Issue

Featured Article

CpG Methylation Levels in HPA Axis Genes Predict Chronic Pain Outcomes Following Trauma Exposure

Erica M. Branham,[*,y,z] Samuel A. McLean,[*,y,x] Ishani Deliwala,[*,y] Matthew C. Mauck,[*,y] Ying Zhao,[*,y] Lauren A. McKibben,[*,y] Aaron Lee,[*,y] Alex B. Spencer,[*,y] Anthony S. Zannas,[*,{,k,**] Megan Lechner,[yy] Teresa Danza,[zz] Marc-Anthony Velilla,[xx] Phyllis L. Hendry,[{{] Claire Pearson,[kk] David A. Peak,[***] Jeffrey Jones,[yyy] Niels K. Rathlev,[zzz] and Sarah D. Linnstaedt[*,y,z]

[*]Institute for Trauma Recovery, University of North Carolina, Chapel Hill, North Carolina, [y]Department of Anesthesiology, University of North Carolina, Chapel Hill, North Carolina, [z]Curriculum in Genetics and Molecular Biology, University of North Carolina, Chapel Hill, North Carolina, [x]Department of Emergency Medicine, University of North Carolina, Chapel Hill, North Carolina, [{]Department of Psychiatry, University of North Carolina, Chapel Hill, North Carolina, [k]Department of Genetics, University of North Carolina, Chapel Hill, North Carolina, [**]Carolina Stress Initiative, University of North Carolina, Chapel Hill, North Carolina, [yy]Forensic Nursing Program, Memorial Health System, Colorado Springs, Colorado, [zz]Forensic Nursing Program, Albuquerque SANE Collaborative, Albuquerque, New Mexico, [xx]Department of Emergency Medicine, Sinai Grace Hospital, Detroit, Michigan, [{{]Department of Emergency Medicine, University of Florida College of Medicine, Jacksonville, Florida, [kk]Department of Emergency Medicine, Detroit Receiving, Detroit, Michigan, [***]Department of Emergency Medicine, Massachusetts General Hospital, Boston, Massachusetts, [yyy]Department of Emergency Medicine, Spectrum Health Butterworth Campus, Grand Rapids, Michigan, [zzz]Department of Emergency Medicine, University of Massachusetts Chan Medical School Baystate, Springfield, Massachusetts

Abstract

Chronic post-traumatic musculoskeletal pain (CPTP) is a common outcome of traumatic stress exposure. Biological factors that influence the development of CPTP are poorly understood, though current evidence indicates that the hypothalamic-pituitary-adrenal (HPA) axis plays a critical role in its development. Little is known about molecular mechanisms underlying this association, including epigenetic mechanisms. Here, we assessed whether peritraumatic DNA methylation levels at 248 5′—C—phosphate—G—3′ (CpG) sites in HPA axis genes (*FKBP5, NR3C1, CRH, CRHR1, CRHR2, CRHBP, POMC*) predict CPTP and whether identified CPTP-associated methylation levels influence expression of those genes. Using participant samples and data collected from trauma survivors enrolled into longitudinal cohort studies (n = 290), we used linear mixed modeling to assess the relationship between peritraumatic blood-based CpG methylation levels and CPTP. A total of 66 (27%) of the 248 CpG sites assessed in these models statistically significantly predicted CPTP, with the three most significantly associated CpG sites originating from the *POMC* gene region (ie, cg22900229 [β = .124, *P* < .001], cg16302441 [β = .443, *P* < .001], cg01926269 [β = .130, *P* < .001]). Among the genes analyzed, both *POMC* (z = 2.36, *P* = .018) and *CRHBP* (z = 4.89, *P* < .001) were enriched in CpG sites significantly associated with CPTP. Further, *POMC*expression was inversely correlated with methylation levels in a CPTP-dependent manner (6-months NRS<4: r = -.59, *P* < .001; 6-months NRS ≥ 4: r = -.18, *P* = .2312). Our results suggest that methylation of HPA axis genes including *POMC* and *CRHBP* predict risk for and may contribute to vulnerability to CPTP.

Perspective

Peritraumatic blood levels of CpG methylation sites in HPA axis genes, particularly CpG sites in the *POMC* gene, predict CPTP development. This data substantially advances our understanding of epigenetic predictors and potential mediators of CPTP, a highly common, morbid, and hard-to-treat form of chronic pain.

Funding Opportunities & Webinars

Applicant Webinars for NIH Funding Opportunity: Developing Quantitative Measures of Myofascial Tissues for Clinical Pain Management

A reissued National Institutes of Health (NIH) notice of funding opportunity, RFA-AT-24-003, seeks research applications to develop quantitative measures of myofascial tissues and assess their abilities to detect changes to myofascial tissues across a variety of pain management interventions. The opportunity is part of the NIH Helping to End Addiction Long-term (HEAL®) Initiative which bolsters research across NIH to (1) improve treatment for opioid misuse and addiction and (2) enhance pain management. The application deadline is October 18, 2023.

NIH is hosting two related, optional webinars for applicants who plan to apply to HEAL Initiative: Toward Developing Quantitative Imaging and Other Relevant Biomarkers of Myofascial Tissues for Clinical Pain Management (R61/R33, Clinical Trial Required) -- RFA-AT-24-003.

- **Technical Assistance Webinar**
  August 9, 2023; 1 pm ET to 2 pm ET
  NIH program and review staff will provide information and answer questions about applying for RFA-AT-24-003. Register

- **Teaming/Collaboration Webinar**
  August 16, 2023; 11 am - 12:15 pm ET
  Join this interactive, teambuilding experience to meet potential collaborators.
  Register

Registrants are encouraged to view Frequently Asked Questions and submit questions to: Myofascial_Pain_HEAL@mail.nih.gov.

Webinar Series: HEAL Connections Sharing Sessions

Inclusive Language, Imagery, and Storytelling for Addiction and Pain Researcher Teams—Focus on Pain

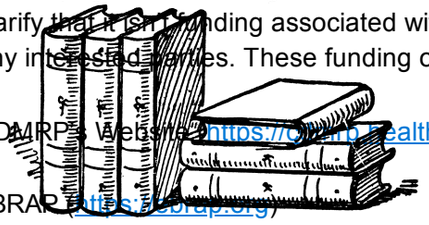
August 31, 1:00 p.m. – 2:30 p.m. ET In consideration of the distinct challenges HEAL Initiative research teams face, we will host two focused sessions on this topic, one focused on addiction, and one focused on pain, to broadly cover the HEAL portfolio.

- **Keynote:** Walter Koroshetz, National Institute of Neurological Disorders and Stroke (NINDS)
- **Presenter:** Joanna Hobson, University of Alabama
- **Presenter:** Emily Wakefield, Connecticut Children's Hospital
- **Presenter:** Kate Nicholson, National Pain Advocacy Center
- **Presenter:** Soumitri Sil, Emory University
- **Presenter:** Kerri Cavanaugh, Vanderbilt University

Learn more here: https://heal.nih.gov/news/events/inclusive-language-part-two

CDMRP Chronic Pain Management Research Program (CPMRP) Update

The 4 funding opportunities from the FY23 Vision Setting meeting's investment strategy were released in July. They are the Clinical Exploration Award, Investigator Initiated Research Award, Clinical Outcomes Research Award, and the Pain Management Collaborative Clinical Research Award (slight name change from Vision Setting to emphasize collaborative clinical research and clarify that it isn't funding associated with the PMC clinical core). Please share the information with any interested parties. These funding opportunities can be found any of the following ways:

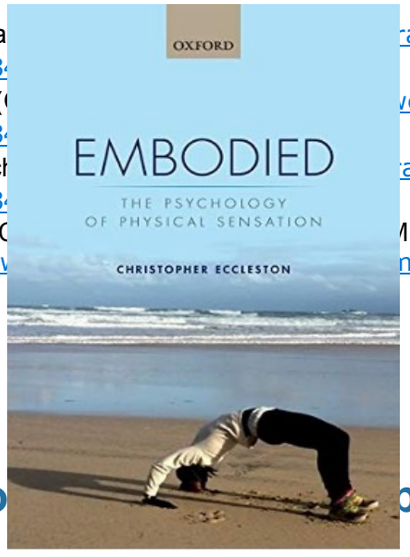


CDMRP's Website (https://cdmrp.health.mil/funding/cpmrp)

eBRAP (https://ebrap.org)

Grants.Gov

- Investigator-Initiated Resea rants.gov/web/grants/view-opportunity.html?oppId=3
- Clinical Exploration Award (web/grants/view-opportunity.html?oppId=3
- Clinical Outcomes Research rants.gov/web/grants/view-opportunity.html?oppId=3
- Pain Management Clinical C MCCRA): https://www.grants.gov/w nl?oppId=349080



Featured Jo pportunities

Oxford University Press, 2016, 296 pages.

Postdoctoral Associate Research Position in Sickle Cell Disease

ISBN: 978-0198727903

Stanford Post-Doctoral Fellowship in Pain Psychology

A Review of Embodied: The Psychology of Physical Sensation

Assistant Professor/Associate Professor level in the School of Medicine at Texas Tech University Health Sciences Center

Being embodied is how we experience, what we experience, and whom we experience.

Members can sign into the USASP website to view additional job postings

Interested in reconsidering Aristotle's ancient declaration that there can be only five human senses: *sight, hearing, touch, taste,* and *smell*? But what about pain? We *and our patients* know well that touch and pain feel like very different sensory experiences with unmistakably different contexts, meanings, and biobehavioral responses. We'd do well to consider not just pain, but also a number of other sensations that are not currently among the 'big five.' And according to Christopher Eccleston, there are at least nine more.

Regular readers of Cochrane Review “Pain, Palliative Care and Supportive Care” section are likely familiar with Christopher Eccleston PhD, its coordinating editor, and Professor of Medical Psychology and Director of the University of Bath’s Centre for Pain Research. ***Embodied: The Psychology of Physical Sensation****,* Eccleston’s engaging and provocative 2016 book, enumerates those “ten neglected senses.” He includes *Pain* (at long last!) in the midst of those other nine senses worthy of study: *Balance, Movement, Pressure, Breathing, Fatigue, Itch, Temperature, Appetite, and Expulsion.* These ten senses, plus the big five, all interact in complex biopsychosocial mechanisms, many already well studied, mostly interconnected, and far more still undiscovered.

Each chapter is consistent with the others; all deliberative, clear, and concise. They each start with a topic description and the current state of the science, then a well-curated evidence-based review, concluding with summaries of why and what’s needed next to advance our scope of knowledge. Eccleston views sensations as embodied “urges” to activate, limit, stop or avoid specific functions. Pain urges avoidance of perceived harm, fatigue urges a switch of activity, and appetite urges consumption and cravings. For every sensation, he emphasizes the importance of individual context, meaning and belief. And as a self-described “functional psychologist,” Eccleston also effectively intersperses 20 illustrative personal interviews. “A psychology of the senses needs to account not only for individual sensory experiences but also for how they operate together, how they allow action upon the world, and how the world makes action possible.” He contends that pain is among the most problematic of the physical senses, affecting “our very sense of who we are and what is possible in life.” I certainly agree.
Pain is hard for us- clinicians and scientists, and even more so for our patients. Eccleston acknowledges, “The work of labeling sensations, interpreting them as threatening and returning to previously interrupted goals and tasks takes time and effort.” Yes, indeed it is challenging to effectively study, understand, teach and advance the science and management of pain. I recommend Eccleston’s book to be well worth the time and effort.

David Tauben, MD

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Upcoming Events

August 11: Letters of Intent Due: NOFO opportunity (RFA-NS-24-015)
August 14: Application deadline for a "Frontiers in Headache Research" Scholarship for 2023 #AHSAZ
August 14: IASP Collaborative Research Grant- Deadline to Apply (more information here)
August 25 (2 pm ET): August #Pain2023 Workshop Series: Sponsored by the GCC Translational Pain Research Consortium and the Texas Pain Research Consortium
August 31st (1 pm ET): Inclusive Language, Imagery, and Storytelling for Addiction and Pain Researcher Teams—Focus on Pain
September 7-9: NeuPSIG 2023 International Congress on Neuropathic Pain
September 12-14: For Patients, By Patients (PxP) Conference
September 25 (3 pm ET): Diversity, Inclusion, and Anti-Racism SIG Meeting

More information about these events and others can be found on the USASP Event Calendar.

USASP

US Association for the Study of Pain

If your SIG or committee has updates or events you would like shared with USASP membership please email them using the contact below.

Contact Info:

US Association for the Study of Pain
admin@usasp.org

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