



## Pilleriin Sikka

Postdoctoral Scholar, Anesthesiology, Perioperative and Pain Medicine

### CONTACT INFORMATION

- **Alternate Contact**

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### Bio

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#### BIO

Pilleriin Sikka is a postdoctoral scholar at Stanford University School of Medicine in the lab of Dr. Boris Heifets. She holds a PhD in Psychology from the University of Turku, Finland, an MSc in Neuroscience from the University of Oxford, and BSc/MSc degrees in Psychology from Tallinn University, Estonia. She has received several prestigious research and teaching awards and secured competitive grants (e.g., Tiny Blue Dot Foundation, Mind Science Foundation) as both principal and co-investigator. With more than a decade of teaching experience, Pilleriin has designed and taught courses in psychology, neuroscience, and well-being, and has mentored numerous undergraduate and master's students, and is currently supervising several PhD students.

#### HONORS AND AWARDS

- "Transformative Potential of Anesthesia-Induced Dream States" (Co-I), The Tiny Blue Dot Foundation (2024)
- Winner of the Brainstorm Neuroscience Pitch Competition, Mind Science Foundation, USA (2024)
- Merited Lecturer (awarded for excellence in research-based teaching), University of Skövde, Sweden (2022)
- First Prize for PhD dissertation, Skaraborg's Academy, Sweden (2021)
- PhD Dissertation Award, The Finnish Sleep Research Society, Finland (2021)
- Postdoctoral Fellowship, The Finnish Foundations' Post Doc Pool and the Emil Aaltonen Foundation (2020)
- The Golden Apple Award for Excellence in Teaching, University of Skövde, Sweden (2020)
- Best Poster Award, The Finnish Sleep Research Society, Finland (2018)
- The Golden Apple Award for Excellence in Teaching, University of Skövde, Sweden (2015)
- The Golden Apple Award for Excellence in Teaching, University of Skövde, Sweden (2010)
- Winner of the Main Prize at the National Contest for University Students, Estonian Research Council (2005)
- Winner of the Main Prize at the Contest of Students' Research Papers, Tallinn University, Estonia (2005)
- Harald Raudsep Scholarship, Estonian-Revelia Academic Fund, Maryland, USA (2005)
- Kristjan Jaak Scholarship, Archimedes Foundation, Estonia (2005)
- Kristjan Jaak Scholarship, Archimedes Foundation, Estonia (2004)
- National Scholarship, Estonian Ministry of Education and Research, Estonia (2000)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Editor, Journal of Emotion and Psychopathology
- Member, Stanford Center for Affective Science
- Member, Stanford Center for Sleep and Circadian Sciences
- Member, Stanford Psychedelic Science Group
- Member, Stanford Postdoctoral Association (SURPAS)
- Member, Society for Affective Science (SAS)
- Member, International Society for Research on Emotion (ISRE)
- Member, Association for the Scientific Study of Consciousness (ASSC)
- Member, European Sleep Research Society (ESRS)
- Member, Finnish Sleep Research Society (SUS)
- Member, International Association for the Scientific Study of Dreams (IASD)

## PROFESSIONAL EDUCATION

- Doctor of Philosophy, University Of Turku (2020)
- Master of Science, University of Oxford , Neuroscience (2006)
- Master of Science, Tallinn University (2005)
- Bachelor of Science, Tallinn University (2003)

## STANFORD ADVISORS

- Boris Heifets, Postdoctoral Faculty Sponsor

## LINKS

- Google Scholar: <https://scholar.google.com/citations?user=0GF-M4oAAAAJ&hl=en>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

What makes certain experiences transformative, and how can we harness them to support resilience and mental health? I explore this question by studying emotions across various states of consciousness—waking, dreaming, anesthesia, psychedelics, and meditation. With a background in psychology, neuroscience, and anesthesiology, I bring together methods that are rarely combined: daily diaries and surveys, language and narrative analysis, neurophysiological recordings, lab experiments, and clinical trials. My work has three main aims: (1) to understand how affective experiences unfold across states; (2) to test whether these experiences can be deliberately shaped to support mental health; and (3) to identify the mechanisms that make them transformative. This interdisciplinary approach has led to the first controlled studies of anesthesia-induced dreams for trauma, new insights into peace of mind and emotion regulation, and cross-state comparisons showing how affective experiences in altered states can foster resilience. My long-term goal is to develop a new frontier in affective science: the study of how transformative experiences across different states of mind can improve well-being.

### LAB AFFILIATIONS

- Boris Heifets, The Heifets Lab (11/1/2023)
- James Gross, Stanford Psychophysiology Laboratory (7/1/2021)

## Publications

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### PUBLICATIONS

- **Protocol and pilot results for a double-blind randomized placebo-controlled trial of ketamine under propofol sedation for chronic pain and depression.** *Pain management*  
Lii, T. R., Sikka, P., Deverett, B., Altirkawi, O. K., Heifets, B. D.  
2026: 1-11
- **General Anesthesia and Discrete Components of Ketamine Neurophysiology.** *JAMA psychiatry*  
Deverett, B., Li, D., Lii, T. R., Vlisides, P. E., Tarnal, V., Forsyth, A., Sumner, R., Sikka, P., Schatzberg, A. F., Muthukumaraswamy, S., Mashour, G. A., Heifets, B. D.  
2026
- **Testing Affect Regulation Theories of Dreaming.** *Sleep*  
Baber, G. R., Hamilton, N. A., Girard, J. M., Sikka, P., Watts, A., Jun, D., Gratton, M. K., Cohen, J. M., Quesada, A. K., Nichols, E. C., Cunningham, T. J.  
2026
- **Feasibility of a Multicomponent Protocol to Promote Dreaming during Surgical Anesthesia.** *Anesthesiology*  
Sikka, P., Ngo, M. C., Hu, S., Wilkerson, T. B., Shull, M., Imbordino, K., Ishii, T., Kawai, M., Deverett, B., Chow, H. S., Heifets, B. D.  
2026
- **Understanding alexithymia: the role of experiential avoidance.** *Cognition & emotion*  
Stiller, M. C., Gross, J. J., Förster, K., Heekerens, J. B., Sikka, P., Preece, D. A.  
2026: 1-16
- **The interplay of psychedelic use and meditation in shaping psychological well-being.** *Consciousness and cognition*  
Krabbe, A., Sikka, P., Jylkkä, J.  
2025; 137: 103977
- **A dream EEG and mentation database.** *Nature communications*  
Wong, W., Herzog, R., Andrade, K. C., Andriillon, T., de Araujo, D. B., Arnulf, I., Ataei, S., Avvenuti, G., Baird, B., Bellesi, M., Bergamo, D., Bernardi, G., Blagrove, et al  
2025; 16 (1): 7495
- **Meditation and psychedelics facilitate similar types of mystical, psychological, and philosophical-existential insights predictive of wellbeing: a qualitative-quantitative approach.** *Consciousness and cognition*  
Jylkkä, J., Väyrynen, H., Lin, E., Walldén, C., Krabbe, A., Kähönen, J., Sikka, P.  
2025; 133: 103901
- **Validating Potential EEG Biomarkers of Anesthesia-Induced Dream States for Future Therapeutic Application in Post-Traumatic Stress Disorder: Preliminary Results**  
Hack, L., Sikka, P., Kawai, M., Ben Deverett, Chow, H. S., Heifets, B.  
SPRINGER NATURE.2024: 117
- **Acceptance as a possible link between past psychedelic experiences and psychological flexibility.** *Scientific reports*  
Krabbe, A., Sikka, P., Jylkkä, J.  
2024; 14 (1): 24253
- **The role of objective sleep in implicit and explicit affect regulation: A comprehensive review** *NEUROBIOLOGY OF STRESS*  
Straus, L. D., ten Brink, M., Sikka, P., Srivastava, R., Gross, J. J., Colvonen, P. J.  
2024; 31
- **Reduction in Trauma-Related Symptoms After Anesthetic-Induced Intra-Operative Dreaming.** *The American journal of psychiatry*  
Hack, L. M., Sikka, P., Zhou, K., Kawai, M., Chow, H. S., Heifets, B.  
2024: appiajp20230698
- **Alexithymia profiles and depression, anxiety, and stress.** *Journal of affective disorders*  
Preece, D. A., Mehta, A., Petrova, K., Sikka, P., Pemberton, E., Gross, J. J.

2024

- **Alexithymia or general psychological distress? Discriminant validity of the Toronto Alexithymia Scale and the Perth Alexithymia Questionnaire.** *Journal of affective disorders*  
Preece, D. A., Petrova, K., Mehta, A., Sikka, P., Gross, J. J.  
2024
- **Affect Across the Wake-Sleep Cycle.** *Affective science*  
Sikka, P., Gross, J. J.  
2023; 4 (3): 563-569
- **Individual differences in peace of mind reflect adaptive emotion regulation** *PERSONALITY AND INDIVIDUAL DIFFERENCES*  
Sikka, P., Revonsuo, A., Gross, J. J.  
2023; 215
- **COVID-19 on mind: Daily worry about the coronavirus is linked to negative affect experienced during mind-wandering and dreaming.** *Emotion (Washington, D.C.)*  
Sikka, P., Tuominen, J., Ezquerro Nassar, A., Kirberg, M., Loukola, V., Revonsuo, A., Valli, K., Windt, J., Bekinschtein, T. A., Noreika, V.  
2023
- **Mediation Analysis of Conspiratorial Thinking and Anti-Expert Sentiments on Vaccine Willingness** *HEALTH PSYCHOLOGY*  
Blackburn, A. M., Han, H. A., Gelpi, R. A., Stockli, S., Jelic, A., Ch'ng, B., Koszalkowska, K., Lacko, D., Milfont, T., Lee, Y., Vestergren, S., COVIDISTRESS II Consortium  
2023; 42 (4): 235-246
- **Alexithymia and Emotion Regulation** *AFFECTIVE SCIENCE*  
Preece, D. A., Mehta, A., Petrova, K., Sikka, P., Bjureberg, J., Becerra, R., Gross, J. J.  
2023; 4 (1)
- **The Perth Alexithymia Questionnaire-Short Form (PAQ-S): A 6-item measure of alexithymia.** *Journal of affective disorders*  
Preece, D. A., Mehta, A., Petrova, K., Sikka, P., Bjureberg, J., Chen, W., Becerra, R., Allan, A., Robinson, K., Gross, J. J.  
2023
- **COVIDISTRESS diverse dataset on psychological and behavioural outcomes one year into the COVID-19 pandemic (vol 9, 331, 2021)** *SCIENTIFIC DATA*  
Blackburn, A. M., Vestergren, S., Tran, T. P., Stockli, S., Griffin, S. M., Ntontis, E., Jelic, A., Chrona, S., Ikizer, G., Han, H., Milfont, T. L., Parry, D., Byrne, et al  
2023; 10 (1): 12
- **Alexithymia and emotion regulation.** *Journal of affective disorders*  
Preece, D. A., Mehta, A., Petrova, K., Sikka, P., Bjureberg, J., Becerra, R., Gross, J. J.  
2022
- **Event-Related Potential Correlates of Learning to Produce Novel Foreign Phonemes.** *Neurobiology of language (Cambridge, Mass.)*  
Railo, H., Varjonen, A., Lehtonen, M., Sikka, P.  
2022; 3 (4): 599-614
- **The Neural Bases of Expressive Suppression: A Systematic Review of Functional Neuroimaging Studies.** *Neuroscience and biobehavioral reviews*  
Sikka, P., Stenberg, J., Vorobyev, V., Gross, J. J.  
2022: 104708
- **Negative dream affect is associated with next-day affect level, but not with affect reactivity or affect regulation.** *Frontiers in behavioral neuroscience*  
Sikka, P., Engelbrektsson, H., Zhang, J., Gross, J. J.  
2022; 16: 981289
- **Event-Related Potential Correlates of Learning to Produce Novel Foreign Phonemes** *NEUROBIOLOGY OF LANGUAGE*  
Railo, H., Varjonen, A., Lehtonen, M., Sikka, P.  
2022; 3 (4): 599-614

- **The dynamics of affect across the wake-sleep cycle: From waking mind-wandering to night-time dreaming.** *Consciousness and cognition*  
Sikka, P., Valli, K., Revonsuo, A., Tuominen, J.  
2021; 94: 103189
- **Tears evoke the intention to offer social support: A systematic investigation of the interpersonal effects of emotional crying across 41 countries\*** *JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY*  
Zickfeld, J. H., Ven, N., Pich, O., Schubert, T. W., Berkessel, J. B., Bhushan, B., Mateo, N., Barbosa, S., Sharman, L., Kokonyei, G., Schrover, E., Kardum, I., Aruta, et al  
2021; 95
- **Stress and worry in the 2020 coronavirus pandemic: relationships to trust and compliance with preventive measures across 48 countries in the COVIDiSTRESS global survey** *ROYAL SOCIETY OPEN SCIENCE*  
Lieberoth, A., Lin, S., Stockli, S., Han, H., Kowal, M., Gelpi, R., Chrona, S., Tran, T., Jetic, A., Rasmussen, J., Cakal, H., Milfont, T. L., Yamada, et al  
2021; 8 (2): 200589
- **COVIDiSTRESS Global Survey dataset on psychological and behavioural consequences of the COVID-19 outbreak** *SCIENTIFIC DATA*  
Yamada, Y., Cepulic, D., Coll-Martin, T., Debove, S., Gautreau, G., Han, H., Rasmussen, J., Tran, T. P., Travaglino, G. A., Lieberoth, A., Blackburn, A. M., Boullu, L., Bujic, et al  
2021; 8 (1): 3
- **Subjective ratings of fear are associated with frontal late positive potential asymmetry, but not with early brain activity over the occipital and centro-parietal cortices** *PSYCHOPHYSIOLOGY*  
Grassini, S., Sikka, P., Revonsuo, A., Koivisto, M.  
2020; 57 (12): e13665
- **Dream affect: Conceptual and Methodological Issues in the Study of Emotions and Moods Experienced in Dreams** *PhD Dissertation*  
Sikka, P.  
University of Turku.2020
- **EEG Frontal Alpha Asymmetry and Dream Affect: Alpha Oscillations over the Right Frontal Cortex during REM Sleep and Presleep Wakefulness Predict Anger in REM Sleep Dreams** *The Journal of Neuroscience*  
Sikka, P., Revonsuo, A., Noreika, V., Valli, K.  
2019; 39 (24): 4775-4784
- **How to Study Dream Experiences** *DREAMS Understanding Biology, Psychology, and Culture*  
Sikka, P.  
Greenwood, an Imprint of ABC-CLIO LLC.2019; 1: 153-166
- **Peace of mind and anxiety in the waking state are related to the affective content of dreams** *SCIENTIFIC REPORTS*  
Sikka, P., Pesonen, H., Revonsuo, A.  
2018; 8: 12762
- **Dream emotions: a comparison of home dream reports with laboratory early and late REM dream reports** *JOURNAL OF SLEEP RESEARCH*  
Sikka, P., Revonsuo, A., Sandman, N., Tuominen, J., Valli, K.  
2018; 27 (2): 206-214
- **How You Measure Is What You Get: Differences in Self- and External Ratings of Emotional Experiences in Home Dreams** *AMERICAN JOURNAL OF PSYCHOLOGY*  
Sikka, P., Feilhauer, D., Valli, K., Revonsuo, A.  
2017; 130 (3): 367-384
- **I know how you felt last night, or do I? Self- and external ratings of emotions in REM sleep dreams** *CONSCIOUSNESS AND COGNITION*  
Sikka, P., Valli, K., Virta, T., Revonsuo, A.  
2014; 25: 51-66
- **The Existence of a Hypnotic State Revealed by Eye Movements** *PLOS ONE*  
Kallio, S., Hyona, J., Revonsuo, A., Sikka, P., Nummenmaa, L.  
2011; 6 (10): e26374
- **D-Serine Metabolism in C6 Glioma Cells: Involvement of Alanine-Serine-Cysteine Transporter (ASCT2) and Serine Racemase (SRR) but Not D-Amino Acid Oxidase (DAO)** *JOURNAL OF NEUROSCIENCE RESEARCH*

Sikka, P., Walker, R., Cockayne, R., Wood, M. J. A., Harrison, P. J., Burnet, P. W. J.  
2010; 88 (8): 1829-1840

● **What is an altered state of consciousness?** *PHILOSOPHICAL PSYCHOLOGY*

Revonsuo, A., Kallio, S., Sikka, P.  
2009; 22 (2): 187-204

● **D-amino acid oxidase activity and expression are increased in schizophrenia** *MOLECULAR PSYCHIATRY*

Burnet, P. J., Eastwood, S. L., Bristow, G. C., Godlewska, B. R., Sikka, P., Walker, M., Harrison, P. J.  
2008; 13 (7): 658-660

● **Perception of successive targets presented in invariant-item streams** *ACTA PSYCHOLOGICA*

Bachmann, T., Sikka, P.  
2005; 120 (1): 19-34