Pre-Conference Workshop 1
 METHODS FOR ANALYZING NEURAL OSCILLATIONS AND APERIODIC ACTIVITY
Andrew Bender, Dillan Cellier, Quirine van Engen, Ryan Hammonds, Eena Kosik, Michael Preston, and Sydney Smith
University of California, San Diego

Perception, action, and cognition depend upon coordinated neural activity. This coordination operates within noisy, distributed neural networks, which themselves change with development, aging, and disease. Extensive field potential and EEG research shows that neural oscillations interact with neuronal spiking. This interaction has been proposed to be a mechanism for implementing dynamic coordination between brain regions, placing oscillations at the forefront of neuroscience research. Recent work has begun to challenge our definitions of neural oscillations and noise.

In this workshop we will cover the theory and practice of separating oscillations from aperiodic activity. This will include hands-on training, using Python, on methods for examining dynamic and event-related changes in aperiodic activity, as well as how to quantify the presence and burstiness of neural oscillations and their nonsinusoidal waveform properties. We show that, while not all things that appear oscillatory are so, the physiological information we can extract from the local field potential and EEG may nevertheless be far richer than previously thought.

Pre-Conference Workshop 2
AN INTRODUCTION TO MACHINE LEARNING IN PYTHON USING EYE-TRACKER DATA
Dr. Thomas Hartmann
Senior Scientist, Centre for Cognitive Neuroscience and Department of Psychology, University of Salzburg, Salzburg, Austria

Multivariate analysis approaches (often called Machine Learning, MVPA or even Artificial Intelligence) have become ubiquitous in neuroscientific research. Its ability to exploit patterns in the data has led to advances in the research of memory, attention, perception and how the brain predicts upcoming events - just to name a few. In the realm of cognitive neuroscience, MVPA was first applied on fMRI data, with its application to EEG and MEG data following shortly after. The number of articles using machine learning or related methods on peripheral physiological data like ECG and
ocular tracking data is rather low in comparison but increasing exponentially with significant findings, for instance for the diagnosis of diseases.

In this workshop, participants are going to learn how to apply Machine Learning, more specifically decoding and encoding methods, on data acquired with an eye-tracker. The topics are going to include:

1. Installing and setting up the necessary software to run the analysis.
2. An introduction to python and the commonly used scientific packages (numpy, scipy, MNE, eelbrain,...).
3. A theoretical introduction to machine learning methods with a focus on particularities of peripheral physiological data.
4. A hands-on tutorial using eye tracking data.

Participants are asked to bring their own laptops. Setup instructions will be published in advance.

9:00 a.m.-4:30 p.m.
**Pre-Conference Workshop 3**
**DECIDING HOW MUCH TO BET ON AN IDEA: BAYESIAN DATA ANALYSIS**
Charles Green, PhD
Center for Clinical Research and Evidence-Based Medicine, Professor, Department of Pediatrics, University of Texas Medical School at Houston, Houston, TX

Can’t reject the null hypothesis? Have you ever wondered what the probability of the alternative hypothesis is? Learn to model common types of data, both single time point and longitudinally, using freely available Bayesian statistical programs in the R language. Using previously published data from a randomized controlled trial where we measured emotional reactivity in smokers using ERPs and questionnaires, we will evaluate continuous and dichotomous outcomes as a function of a treatment manipulation. The first part of the workshop will be didactic: we will introduce Bayesian statistical thinking and the way in which it differs from more commonly used Frequentists statistical models. We will primarily focus on specification of prior and interpretation of posterior distributions. Having covered the theoretical background, we will start the hands-on part of the workshop. We will move from simple Bayesian models to more flexible generalized linear Bayesian approaches, and we will extend them to the repeated measures scenario. This second part of the workshop will include implementing R code (provided), evaluating the quality of the models, and interpreting the results.

At the end of the workshop you will be better equipped to apply these methods to your own data.

12:00 p.m.-5:00 p.m.
**Board of Directors Meeting**

2:30 p.m.-7:30 p.m.
**Registration Open**

7:00 p.m.-9:00 p.m.
**Opening Reception and Poster Session I**
*(Cash bar and light hors d’oeuvres)*

**Thursday, September 28, 2023**

7:30 a.m.-6:30 p.m.
**Registration Open**

8:30 a.m.-10:00 a.m.
**Symposium 1.1**
**THREAT PROCESSING AT CENTRAL AND PERIPHERAL PROCESSING LEVELS IS MODULATED BY CONTEXTUAL AND INDIVIDUAL FACTORS**
Session Chair: Stephan Moratti
Complutense University of Madrid

Discussant: Stephan Moratti
Complutense University of Madrid
PREPARE FOR TROUBLE, MAKE IT DOUBLE: AVER-SIVE CONTEXTS ENHANCE DEFENSIVE RESPONS-ES TO CONDITIONED THREAT
Yannik Stegmann\textsuperscript{1}, Matthias Wieser\textsuperscript{2}, and Matthias Garner\textsuperscript{1}
\textsuperscript{1}University of Wurzburg, \textsuperscript{2}Erasmus University Rotterdam

TRACKING THE TEMPORAL DYNAMICS OF REWARD AND PUNISHMENT INFORMATION DURING APPROACH-AVOIDANCE DECISION-MAKING UNDER THREAT
Felix Klaassen\textsuperscript{1}, Bob Bramson\textsuperscript{1}, Jan-Mathijs Schoffelen\textsuperscript{1}, Linda de Voogd\textsuperscript{1,2}, and Karin Roelofs\textsuperscript{1}
\textsuperscript{1}Redboud University, \textsuperscript{2}Leiden University

THREAT IMMINENCE AS INDEXED BY HEART RATE CHANGES MODULATES SENSORY AND MOTOR CORTEX ACTIVITY IN HUMANS
Javier De Echegaray\textsuperscript{1} and Stephan Moratti\textsuperscript{2}
\textsuperscript{1}University of Leipzig, \textsuperscript{2}Complutense University

DEFINITE THREAT VS POTENTIAL THREAT: A HUMAN OSCILLATORY BRAIN ACTIVITY INVESTIGATION
Arash Mirifar\textsuperscript{1}, Hannah Engle\textsuperscript{1}, Yannik Stegmann\textsuperscript{2}, Matthias Gamer\textsuperscript{2}, Andreas Keil\textsuperscript{1}
\textsuperscript{1}University of Florida, \textsuperscript{2}Julius-Maximilians University of Wurzburg

REVEALING THE LIMITATIONS OF CONVENTIONAL LABORATORY RESEARCH FOR CAPTURING COMPLEX COGNITIVE MECHANISMS: A COMPARATIVE EEG ANALYSIS INVESTIGATING OBJECT PERCEPTION AND MEMORY PROCESSING IN REALISTIC VIRTUAL, REAL-LIFE, AND LABORATORY ENVIRONMENTS
Marike Johnsdorf\textsuperscript{1}, Joanna Kisker\textsuperscript{1}, Thomas Hofmann\textsuperscript{2}, Thomas Gruber\textsuperscript{1}, and Benjamin Schöne\textsuperscript{1,3}
\textsuperscript{1}Osnabrück University, \textsuperscript{2}University of Applied Science Osnabrück, \textsuperscript{3}Norwegian University of Science and Technology

CAN HANDLE THIS! EVIDENCE FOR A SITUATIONAL INDUCTION STRENGTH BASES QUADRATIC EXTENSION TO THE CAPABILITY MODEL
Johannes Rodrigues\textsuperscript{1}, John Allen\textsuperscript{2}, Mathias Müller\textsuperscript{1}, and Johannes Hewig\textsuperscript{1}
\textsuperscript{1}Julius-Maximilians-Universität, \textsuperscript{2}University of Arizona

BEYOND AMBIGUITY: EFFECTS OF TRANSCRANIAL ULTRASOUND NEUROMODULATION OF MIDFRONTAL THETA AND RELATED APPROACH VERSUS WITHDRAWAL BEHAVIOR IN UNAMBIGUOUS EVENTS OF A VIRTUAL T-MAZE
Philipp Ziebell\textsuperscript{1}, Johannes Rodrigues\textsuperscript{1}, André Forster\textsuperscript{1}, Joseph Sanguinetti\textsuperscript{2}, John Allen\textsuperscript{2}, and Johannes Hewig\textsuperscript{1}
\textsuperscript{1}University of Würzburg, \textsuperscript{2}University of Arizona

FACE PERCEPTION IN VIRTUAL REALITY: A COMPARISON OF ELECTROPHYSIOLOGICAL MARKERS IN VR AND THE CONVENTIONAL LABORATORY
Merle Sagehorn\textsuperscript{1}, Marike Johnsdorf\textsuperscript{1}, Joanna Kisker\textsuperscript{1}, Sophia Sylvester\textsuperscript{1,2}, Thomas Gruber\textsuperscript{1}, and Benjamin Schöne
\textsuperscript{1}Osnabrück University, \textsuperscript{2}Norwegian University of Science and Technology

8:30 a.m.-10:00 a.m.
Symposium 1.2
BEYOND CONVENTIONAL LAB SETTINGS: INVESTIGATING THE BENEFITS OF VIRTUAL REALITY IN PSYCHOPHYSIOLOGICAL RESEARCH
Session Chair: Benjamin Schöne
Norwegian University of Science and Technology

\textsuperscript{1}CDT = Central Daylight Time
8:30 a.m.-10:00 a.m.
**Open Topic Symposium**

**INTERVENTIONS AND THERAPEUTIC APPROACHES**

**INFLUENCE OF RESPIRATORY FREQUENCY OF SLOW-PACED BREATHING ON VAGALLY-MEDIATED HEART RATE VARIABILITY**

Sylvain Laborde\(^1\),\(^2\), Min You\(^3\), Stefan Ackermann\(^1\), Urassu Borges\(^1\),\(^4\), Fabrice Dosseville\(^2\),\(^5\), Emma Mosley\(^6\)

\(^1\)German Sport University Cologne, \(^2\)Université de Caen Normandie, Caen, \(^3\)Université de Caen Normandie, \(^4\)German Sport University Cologne, \(^5\)Bournemouth University, Fern Barrow

**MODULATING ESCAPE MOTIVATION IN THE ANXIETY DISORDER SPECTRUM: EFFECTS OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION OF MEDIAL PREFRONTAL CORTEX ON STARTLE REACTIVITY DURING ESCAPE PREPARATION**

Christopher Sege, Lisa McTeague, Samantha LaPorta, Cameron Robins, Thomas Uhde, Mark George
Medical University of South Carolina

**HEARTBEAT EVOKED POTENTIAL AND TIME-FREQUENCY ANALYSES REVEAL ENHANCED NEURAL INTEROCEPTIVE PROCESSING WITH DEEP BRAIN STIMULATION FOR TREATMENT-RESISTANT DEPRESSION**

Elisa Xu\(^1\), Jacob Dahill-Fuchel\(^2\), Samantha Pitts\(^1\), Jacqueline Overton\(^1\), Tanya Nauvel\(^1\), Patricio Riva Posse\(^3\), Andrea Crowell\(^3\), Martijn Figee\(^1\), Shannon O’Neill\(^1\), Sankareelengam Alagapan\(^4\), Christopher Rozell\(^4\), Kisueno Choi\(^1\), Helen Mayberg\(^1\), Allison Waters\(^1\)

\(^1\)Icahn School of Medicine at Mount Sinai, \(^2\)University of Arizona, \(^3\)Emory University School of Medicine, \(^4\)Georgia Institute of Technology

**THE LATE POSITIVE POTENTIAL PREDICTS CHANGES IN DRUG DEMAND OVER TREATMENT FOR COCAINE USE DISORDER**

Douglas Calvillo\(^1\),\(^2\), Heather Webber\(^1\), Jin Yoon\(^1\), Constanza de Dios\(^1\), Robert Suchting\(^1\), Jessica Vincent\(^1\), Vincent Dang\(^1\), Lanelle Ochaim\(^1\), Francesco Versace\(^3\), Charles Green\(^1\), Scott Lane\(^1\), Joy Schmitz\(^1\)

\(^1\)The University of Texas Health Science Center at Houston, \(^2\)Rice University, \(^3\)The University of Texas MD Anderson Cancer Center
NEGATIVE SYMPTOM AND MRI CORRELATES OF PRESERVED NATURAL LANGUAGE PROCESSING IN SCHIZOTYPAL PERSONALITY DISORDER COMPARED WITH SCHIZOPHRENIA

Erin Hazlett¹,², Mary Kowalchyk¹, Sean Hollander¹, Margaret Zhong¹, Agrima Srivastava¹, Steve Heisig¹, Philip Szeszko¹,², Cheryl Corcoran¹,²
¹Icahn School of Medicine, Mount Sinai, ²James J. Peters VA Medical Center

10:00 a.m.-10:30 a.m.
Refreshment Break

10:30 a.m.-10:35 a.m.
Opening Remarks

10:35 a.m.-11:30 a.m.
Invited Address
ENHANCING RECOVERY OF THE PREFRONTAL CORTEX IN HUMAN DRUG ADDICTION: WHAT DOES LANGUAGE HAVE TO DO WITH IT?
Rita Z. Goldstein, PhD
Mount Sinai Professor in Neuroimaging of Addiction, Department of Psychiatry (primary) and Department of Neuroscience, Friedman Brain Institute (secondary), Chief, Neuropsychoimaging of Addiction and Related Conditions Research Program, Icahn School of Medicine at Mount Sinai, New York

11:30 a.m.-1:00 p.m.
Women in Science and Education (WISE) Luncheon
BUILDING AN INCLUSIVE PSYCHOPHYSIOLOGICAL RESEARCH LAB (Available for an additional fee)

The WISE Luncheon returns! This year, Dr. Modupe Akinola (Columbia University) and Dr. Elizabeth Page-Gould (University of Toronto) will discuss their research and experiences incorporating equity, diversity, and inclusivity into their psychophysiological research and attempting to create inclusive and vibrant lab environments that support budding psychophysiologists during their early careers.

11:30 a.m.-1:00 p.m.
Lunch Break (on your own)

1:00 p.m.-1:05 p.m.
Opening Remarks

1:05 p.m.-2:00 p.m.
Invited Address
NEURAL CODE OF SPEECH SOUNDS
Edward F. Chang, MD
Professor, Neurological Surgery, School of Medicine, University of California, San Francisco

2:00 p.m.-2:30 p.m.
Refreshment Break

2:30 p.m.-4:00 p.m.
Symposium 2.1
DYADIC PSYCHOPHYSIOLOGY WITH CLINICAL POPULATIONS
Session Chair: Wendy D’Andrea
The New School

DIMINISHED PHYSIOLOGICAL LINKAGE WITH SPOUSAL CAREGIVERS IS ASSOCIATED WITH IMPAIRED EMOTION RECOGNITION IN PERSONS WITH DEMENTIA
Kuan-Hua Chen¹,², Alice Verstaen¹,³, Casey Brown¹,⁴, Marcela Otero¹,⁵, and Robert Levenson¹
¹University of California, Berkeley, ²University of Nebraska, ³Lyra Health, Inc., ⁴Georgetown University, ⁵MaxPlank Institute for Social Law and Policy
DYADIC REGULATION IN THE TIME OF TRAUMA: HOW POSTTRAUMATIC STRESS REACTIONS INFLUENCE PHYSIOLOGICAL THREAT ReactIVITY BETWEEN PARTNERS
Wendy D’Andrea¹, Erin Stafford¹,², and Nadia Nieves¹,³
¹The New School for Social Research, ²La Salle University, ³Therapists of New York

THE BOND BETWEEN CLIENT AND THERAPIST IS MORE THAN SKIN DEEP
Nnammidi Pole¹, Kuan-Hua Chen²,³, and Robert Levenson²
¹Smith College, ²University of California, Berkeley, ³University of Nebraska

THE REWARD POSITIVITY REFLECTS ACTIVATION OF A NETWORK OF SPATIALLY SEGREGATED VALUE- AND SALIENCE-SENSITIVE CORTEX
Eric Rawls¹, Caroline Demro¹, Byron Mueller¹, Angus MacDonald III¹, and Scott Sponheim¹,²
¹University of Minnesota, ²Minneapolis VA Healthcare System

2:30 p.m.-4:00 p.m.
Symposium 2.2
IDENTIFYING THE NEURAL GENERATORS OF THE REWARD POSITIVITY: MULTIMODAL SOURCE LOCALIZATION TECHNIQUES
Session Chair: Joyce Oerlemans
University of Ghent
Discussant: Travis E. Baker
Rutgers University

FINDING REWP: A POTENTIAL SOURCE OF THE REWARD POSITIVITY REVEALED BY THE APPLICATION OF REPRESENTATIONAL SIMILARITY ANALYSIS OF EEG-FMRI DATA
Jaleesa Stringfellow-James¹, Malte R. Güth¹, Yang Yang², Clay Holroyd², and Travis Baker¹
¹Rutgers University, ²Ghent University

MEG REVEALS MULTIPLE SOURCES TO THE REWARD POSITIVITY, ONLY ONE OF WHICH IS AFFECTED BY MAJOR DEPRESSION
Christopher Pirrung, Garima Singh, Davin Quinn, Jeremy Hogeveen, and James Cavanagh
University of New Mexico

IDENTIFYING THE SOURCE OF THE REWARD POSITIVITY: INTRACRANIAL ERP-ANALYSIS IN HUMAN EPILEPSY PATIENTS
Joyce Oerlemans¹,², Ricardo Alejandro¹, Alfred Meurs¹,², Paul Boon¹,², Veerle De Herdt¹,², and Clay Holroyd¹
¹Ghent University, ²University Hospital Ghent

CAPTURING AND INTERPRETING INDIVIDUAL DIFFERENCES IN CUE-REWARD LEARNING: FROM RODENTS TO HUMANS
Shelly Flagel
University of Michigan

THE ADVANTAGES OF REVERSE TRANSLATION FROM HUMAN ADDICTION AND LONGITUDINAL RECOVERY
Rita Goldstein and Nelly Alia-Klein
Icahn School of Medicine at Mt. Sinai

CROSS-SPECIES TRANSLATION OF EFFORTFUL MOTIVATION – IMPORTANCE OF CLINICAL SENSITIVITY
Jared Young
University of California, San Diego
TRANSLATING VS TRANSFERRING MODELS OF APPROACH MOTIVATION BETWEEN RODENTS AND HUMANS?
Brett Froeliger
University of Missouri

2:30 p.m.-4:00 p.m.
Open Topic Symposium
METHODOLOGICAL ASPECTS OF PSYCHOPHYSIOLOGY

WEARABLE BUT NOT ALWAYS RELIABLE: EVALUATING THE RELIABILITY AND VALIDITY OF PSYCHOPHYSIOLOGICAL SIGNALS FROM WEARABLE DEVICES IN LABORATORY AND AMBULATORY SETTINGS
Xin Hu¹, Tanika Sgherza², Jessie Northrup¹, David Fresco³, Kristin Naragon-Gainey², Lauren Bylsma¹
¹University of Pittsburgh, ²University of Western Australia, ³University of Michigan

TASK DIFFICULTY INDUCED FLOW STATE: A SUMMARY OF FINDINGS FROM TWO DIFFERENT TASKS
Hairong Lu¹, Dimitri Van der Linden¹, Arnold Bakker¹,²
¹Erasmus University Rotterdam, ²University of Johannesburg

UNDERSTANDING THE NEURAL UNDERPINNINGS OF MOTOR IMPAIRMENT IN PERSONS WITH MULTIPLE SCLEROSIS USING THE LATERALIZED READINESS POTENTIAL
Shelby Martell¹, Shelby Keye¹, Jeongwoon Kim¹, Anne Walk², John Erdman Jr.¹, Brynn Adamson³, Robert Motl⁴, Naiman Khan¹
¹University of Illinois, Urbana-Champaign, ²Eastern Illinois University, ³University of Colorado, Colorado Springs, ⁴University of Illinois, Chicago

SHAP VALUE BASED ERP ANALYSIS (SHERPA): INCREASING THE SENSITIVITY OF EEG SIGNALS WITH EXPLAINABLE AI METHODS.
Sophia Sylvester¹,², Merle Sagehorn², Thomas Gruber², Martin Atzmueller²,³, Benjamin Schöne¹,²
¹Norwegian University of Science and Technology, ²Osnabrück University, ³German Research Center for Artificial Intelligence

THE MARKED POINT PROCESS AS A METHOD FOR QUANTIFYING TRANSIENT BRAIN OSCILLATIONS
Jourdan Pouliot¹, Richard Ward¹, Shailaja Akella², Jose Principe¹, Andreas Keil¹
¹University of Florida, ²Allen Institute

4:00 p.m.-4:30 p.m.
Break

4:30 p.m.-6:00 p.m.
Symposium 3.1
PSYCHOPHYSIOLOGICAL MECHANISMS OF THE IMPACT OF EARLY ADVERSITY ON STRESS RESPONSE AND EMOTION REGULATION
Session Chair: Annie T. Ginty
Baylor University

Discussant: Mustafa al’Absi
University of Minnesota

EMOTION REGULATION DIFFICULTIES MODERATE THE ASSOCIATION BETWEEN EARLY LIFE ADVERSITY AND CARDIOVASCULAR HABITUATION TO REPEATED ACUTE STRESS
Alexandra Tyra and Annie Ginty
Baylor University
DIFFERENTIAL PHYSIOLOGICAL RESPONSES TO SOCIAL-EVALUATIVE STRESS IN DEPRESSIVE PATIENTS WITH VARIOUS DEGREES OF PEER VICTIMIZATION
Benjamin Iffland, Hanna Kley, and Frank Neuner
Bielefeld University

FACING THE AFTERMATH: UNCOVERING THE ASSOCIATION OF EARLY LIFE Adversity WITH EMOTIONAL PROCESSING, PSYCHOPHYSIOLOGY AND MEASUREMENT HETEROGENEITY
Alina Koppold¹, Alexandros Kastrinogiannis¹, Manuel Kuhn¹,², Mana Ehlers¹, Julia Ruge¹, Maren Klingelhöfer-Jens¹, and Tina Lonsdorf¹
¹University Medical Center Hamburg-Eppendorf, ²Harvard Medical School and MacLean Hospital

4:30 p.m.-6:00 p.m.
Symposium 3.2
ADVANCEMENTS IN CLOSED-LOOP NEUROSTIMULATION TECHNIQUES FOR CREATING PERSONALIZED STIMULATION PROTOCOLS FOR RESEARCH AND THERAPY
Session Chair: Malte R. Güth
Rutgers University

Discussant: Miles Wischnewski
University of Minnesota

REAL-TIME STIMULATION OF THETA OSCILLATIONS UNDERLYING SPATIAL MEMORY ENCODING USING CLOSED-LOOP EEG-TMS
Malte R. Güth, Drew Headley, and Travis Baker
Rutgers University

INDIVIDUALIZED SPATIOTEMPORAL TARGETING OF THE FRONTAL-PARIETAL THETA NETWORK
Justin Riddle
Florida State University

REAL-TIME NEUROMODULATION OF OSCILLATORY BRAIN SIGNALS IN NEUROLOGICAL AND PSYCHIATRIC PATIENTS
Miles Wischnewski, Zachary Haigh, and Alexander Opitz
University of Minnesota

CLOSED-LOOP INDIVIDUALIZED TRANSCRANIAL ALTERNATING CURRENT STIMULATION FOR THE TREATMENT OF DEPRESSION
Tobias Schwippel¹, Leah Townsend²,³, Christopher Walker², David Rubinow¹, and Flavio Fröhlich¹
¹University of North Carolina, Chapel Hill, ²Electromedical Products International, Inc., ³Pulvinar Neuro LLC

4:30 p.m.-6:00 p.m.
Open Topic Symposium
PSYCHOPATHOLOGY AND TREATMENT STRATEGIES

TEMPORAL DYNAMICS OF EMOTION AND EMOTION REGULATION
Sylvia Kreibig, James Gross
Stanford University

THE RELATIONSHIP BETWEEN HEART RATE VARIABILITY (HRV) AND NEGATIVE EMOTIONS DURING 5-WEEKS OF HRV BIOFEEDBACK INTERVENTION
Heidi Jung¹, Hyun Joo Yoo², Paul Choi², Kaoru Nashiro², Jungwon Min², Christine Cho², Mara Mather²
¹New York University, Shanghai, ²University of Southern California

BEYOND BIOMARKERS: LEVERAGING TASK-BASED PSYCHOPHYSIOLOGY TO ILLUMINATE FUNCTIONAL IMPAIRMENTS IN PSYCHOPATHOLOGY AND IMPROVE TARGETED INTERVENTION
Jason Moser, Michigan State University

INDIVIDUAL DIFFERENCES IN NEURAL ALCOHOL CUE-REACTIVITY ARE SHAPED BY HEAVY EPISODIC DRINKING
Jorge Martins¹, Simon Golosheykin², Andrey Anokhin², Bruce Bartholow³
¹ISPA-Institute of Applied Psychology, ²Washington University, ³St. Louis, University of Missouri, Columbia
As an impressive example of human cognitive complexity, language allows for exchanges of thoughts and feelings across space and time through a swift orchestration among vast psychophysiological resources. Language is learned and modified over the lifespan and, in turn, shapes our apprehension of the world. The study of language, therefore, ideally encompasses speakers and comprehenders of all ages and with different backgrounds, queries the bidirectional relationship between language and other cognitive processes, and brings together multiple, complementary techniques. This symposium aims to showcase these features of current research. We begin with a series of short talks emphasizing the novel inferences about language and its interface with cognitive and emotional processing that have been gained through innovative combinations of different psychophysiological measurement techniques (e.g., EEG, MEG, eyetracking, pupillometry, Transcranial Magnetic Stimulation) and analysis approaches (e.g., ERPs, oscillations, Representational Similarity Analysis). Drawing on their experience with diverse populations across the lifespan and socio-economic spectrum, the speakers will also share their insights into how considering development and broadening the participant base in our studies enhances our understanding of language. With the foundation laid by these talks, this symposium aims to spark a lively discussion among the audience and the panelists on the challenges and opportunities of working with different populations and using these novel approaches to understand language.

Submit your questions to the panel using this Google Form: https://forms.gle/ERz7JKFihxg4g8U7

Friday, September 29, 2023

8:00 a.m.-6:30 p.m.
Registration Open

8:30 a.m.-10:00 a.m.
Symposium 4.1
EMOTION GENERATION AND REGULATION IN DEPRESSION: NEUROBIOLOGICAL ABNORMALITIES AND RELATION TO TREATMENT OUTCOME
Session Chairs: Kayla A. Wilson
Texas A&M University
Anmarie MacNamara
Texas A&M University

Discussant: Anmarie MacNamara
Texas A&M University
AVERSIVE IMAGERY IN INTERNALIZING DISORDERS: A TRANSDIAGNOSTIC ANALYSIS OF FUNCTIONAL BRAIN ACTIVITY AND CONNECTIVITY
Nicola Sambuco, Margaret Bradley, and Peter Lang
University of Florida

DIFFICULTY SAVORING MENTAL IMAGERY IN DEPRESSION
Kayla A. Wilson, Lauren Jackson, and Annmarie MacNamara
Texas A&M University

NEUROPHYSIOLOGICAL MARKERS OF EMOTION REGULATION IN ADOLESCENCE: DIFFERENCES IN CLINICAL DEPRESSION AND DEPRESSION RISK
Lindsay Dickey, Ann Dao, Samantha Pegg, and Autumn Kujawa
Vanderbilt University

TARGETING MECHANISMS OF EMOTION REGULATION DURING COGNITIVE BEHAVIOR THERAPY IN DEPRESSION: PRELIMINARY FINDINGS LINKING MINDFULNESS, TREATMENT RESPONSE, AND ERPS TO EMOTIONALLY-AROUSING STIMULI
Jurgen Kayser\textsuperscript{1,2}, Yifan Gao\textsuperscript{2}, Tayler Wilson\textsuperscript{2}, Rocco Rinaldi-Rose\textsuperscript{2}, Christopher Aceto\textsuperscript{2}, Steven Holton\textsuperscript{2}, Gerard Bruder\textsuperscript{1}, and Ronit Kishon\textsuperscript{1,2}
\textsuperscript{1}Columbia University, \textsuperscript{2}New York State Psychiatric Institute, \textsuperscript{3}Vanderbilt University

8:30 a.m.-10:00 a.m.

Symposium 4.2
ONE SIZE DOES NOT FIT ALL: THE CRITICAL ROLE OF SEX DIFFERENCES IN PSYCHOPHYSIOLOGICAL RESEARCH
Session Chair: Cristina Ottaviani
Sapienza University of Rome

Discussant: Bruce H. Friedman
Virginia Tech

SEX DIFFERENCES IN THE BRAIN-HEART CONNECTION: A NEUROVISCERAL INTEGRATION PERSPECTIVE
Julian Thayer
University of California, Irvine

SEX DIFFERENCES IN RESTING HEART RATE VARIABILITY AND IN THE CARDIOVASCULAR EFFECTS OF VICARIOUS SOCIAL STRESS IN RATS
Luca Carnevali, Margherita Barbetti, and Andrea Sgoifo
University of Parma

STRESS EXPOSURE AND DEPRESSION: SEX DIFFERENCES IN PSYCHOPHYSIOLOGICAL MECHANISMS
Christine Sigrist\textsuperscript{1}, Cristina Ottaviani\textsuperscript{2,3}, Luise Baumeister-Lingens\textsuperscript{1}, Silvia Bussone\textsuperscript{2}, Chiara Pesca\textsuperscript{2}, Michael Kaess\textsuperscript{4,5}, Valeria Carola\textsuperscript{2,3}, and Julian Koenig\textsuperscript{1,4}
\textsuperscript{1}University of Cologne, \textsuperscript{2}Sapienza University of Rome, \textsuperscript{3}IRCC Santa Lucia Foundation, \textsuperscript{4}Heidelberg University, \textsuperscript{5}University of Bern

8:30 a.m.-10:00 a.m.

Symposium 4.3
PSYCHOPHYSIOLOGY SYMPOSIUM: JOURNAL PUBLISHING IN THE 2020S: CHALLENGES AND OPPORTUNITIES
8:30 a.m.-10:00 a.m.
Open Topic Symposium
NEUROPSYCHOLOGICAL MECHANISMS OF THE LIFE-SPAN
RESTING EEG PERIODIC AND APERIODIC COMPONENTS PREDICT COGNITIVE DECLINE OVER 10 YEARS
Douglas Angus¹, Anna Finley², Erik Knight³, Carien van Reekum⁴, Margie Lachman⁵, Richard Davidson², Stacey Schaefer²
¹Bond University, ²University of Wisconsin, Madison, ³University of Colorado, Boulder, ⁴University of Reading, ⁵Brandeis University

UNIQUE EFFECTS OF AGE AND FITNESS ON WHITE MATTER MICROSTRUCTURAL INTEGRITY
Grace Clements¹, Paul Camacho¹, Benjamin Zimmerman², Daniel Bowie¹, Samia Islam¹, Samantha Rubenstein¹, Hannah Jones¹, Jeffery Gustafson¹, Kathy Low¹, Bradley Sutton¹, Gabriele Gratton¹, Monica Fabiani¹
¹University of Illinois Urbana-Champaign, ²National University of Natural Medicine

BEHAVIORAL AND CARDIOVASCULAR MARKERS OF EMOTIONAL REACTIVITY IN MIDDLE CHILDHOOD
Madison Politte-Corn¹, Rebecca Brooker², H. Goldsmith³, Kristin Buss¹
¹The Pennsylvania State University, ²Texas A&M University, ³University of Wisconsin, Madison

AFFECTIVE MODULATION OF THE LPP AND SUBJECTIVE EMOTIONAL AROUSAL: A COMPARISON BETWEEN ADOLESCENTS AND YOUNG ADULTS
Nicola Sambuco¹,², Elise Stevens³, Francesco Versace⁴
¹University of Florida, ²University of Bari “Aldo Moro”, ³University of Massachusetts Chan Medical School, ⁴The University of Texas MD Anderson Cancer Center

COGNITIVE CONTROL DEFICITS ASSOCIATED WITH EARLY CHILDHOOD TRAUMA
Katharina Paul¹, Sven Mueller²,³
¹University Hamburg, ²Ghent University, ³Nencki Institute

10:00 a.m.-10:30 a.m.
Refreshment Break

10:30 a.m.-12:00 p.m.
President’s Symposium: The Psychophysiology of Music
Session Chair: Julian Thayer
University of California, Irvine
Speakers: Psyche Loui¹, Petr Janata², Elaine Chew³, Stephane Guetin⁴, Gui de Chauliac⁵
¹Northeastern University, ²University of California, Davis, ³King’s College London, ⁴Music Care, ⁵University Hospital and Montpellier School of Medicine

12:00 p.m.-1:30 p.m.
Preparing for a Career at Every Stage: Horizons in Academia and Industry
Sponsored by the Committee to Promote Student Interests and the Education and Training Committee
Join us for a luncheon roundtable jointly hosted by the Committee to Promote Student Interests (CPSI) and the Education and Training Committee (ETC) and designed for undergraduates, post-baccalaureate students, graduate students, interns, postdocs, early career faculty, and individuals from industry. The roundtable format will facilitate close interaction with SPR members, who will share their experiences and strategies on finding, applying, interviewing for, and securing academic faculty and industry positions. Learn what you should do now to prepare for the next step on your career pathway.

12:00 p.m.-1:30 p.m.
Lunch Break (on your own)
1:30 p.m.-3:00 p.m.  
**President’s Symposium on Diversity, Equity, and Representation**  
Session Chair: Lisa Gatzke-Kopp  
Pennsylvania State University  

Panel: Lisa Brown¹, Andreas Keil², Heather Kissel³, Ty Lees⁴, Julian Thayer⁵  
¹Purdue University, ²University of Florida, ³Virginia Tech, ⁴Pennsylvania State University, ⁵University of California, Irvine

In 2016, *Psychophysiology* published a special issue on the topic of Diversity and Representation in psychophysiological science, and in the years since, our understanding of the importance of these issues has only grown. Reviews of published manuscripts continue to identify (a) frequent failure to adequately describe the racial and demographic background of participants as well as (b) a notable lack of inclusion of racial minorities, most prominently Black individuals and Indigenous populations. Although the problem is readily apparent, solutions are more challenging to navigate. For instance, mandates for reporting sample characteristics are challenging in a global society, where historical migration and political shifts in power result in different compositions of indigenous and occupying racial lineages. Cultural and political norms in different regions also influence how personal and delicate identity is for participants, and asking for disclosure of racial, ethnic, and gender identity needs to be handled with respect and transparency of purpose. It is clear that psychophysiology needs to move beyond the implicit assumption of “universally human” mechanisms, but how exactly to integrate the diversity of human identity in our research is very much the next frontier this field faces. On this 3rd annual Symposium on Diversity, Equity, and Representation, we engage a panel of researchers in a discussion of these issues. Presenters will briefly describe the current state of representation in psychophysiology, discuss challenges to the inclusion of Black participants, particularly in EEG research and strategies for recruitment, as well as practical strategies for overcoming challenges with both recruitment and EEG logistics. The discussion will center on concrete actions researchers can take and ways that the Society and the journal (*Psychophysiology*) can support progress in this domain.

3:00 p.m.-3:15 p.m.  
**Refreshment Break**

3:15 p.m.-4:45 p.m.  
**Symposium 5.1**  
**TRANSLATIONAL PSYCHOPHYSIOLOGY: PSYCHOPHYSIOLOGICAL MEASURES IN ANIMAL MODELS CAN INFORM UNDERSTANDING OF HUMAN PSYCHOLOGY**  
Session Chair: Jeffrey J. Sable  
Christian Brothers University

Discussant: Bruce Cuthbert  
National Institute of Mental Health

PRAIRIE VOLES AS AN ANIMAL MODEL TO BETTER UNDERSTAND THE NEUROBIOLOGICAL MECHANISM LINKING STRESS AND HEALTH IN ISOLATED ENVIRONMENTS  
Neal McNeal  
Naval Submarine Medical Research Laboratory

UNDERSTANDING EXERCISE-INDUCED HIPPOCAMPAL PLASTICITY FROM A COMBINED ANIMAL AND HUMAN PERSPECTIVE  
Jennie Gardner¹, Samantha Rubenstein¹, Kelsey Canada², Samaah Saifullah², Svatoslav Dvoretsky¹, Yanyu Yang¹, Sanjana Venkataraman¹, Dominica Lange¹, Shiping Lia¹, Alexandria Boppart¹, Noah Kim¹, Catarina Rendeiro¹, Mami Boppart¹, Justin Rhodes¹, Ana Daugherty¹, Bradley Sutton¹, Gabriele Gratton¹, and Monica Fabiani¹  
¹University of Illinois, Urbana-Champaign, ²Wayne State University, ³University of Birmingham
AUDITORY ERPS IN A NOVEL GENETIC KNOCKOUT MODEL AND A PHENOTYPIC MODEL OF ADHD -- EVIDENCE OF INATTENTION
Logan Brewer¹, Jankiben Patel¹, Frank Andrasik¹, Jeffrey Sable¹, Samantha Regan³,⁴, Michael Williams³,⁴, Charles Vorhees³,⁴, and Helen Sable¹
¹University of Memphis, ²Christian Brother University, ³University of Cincinnati, ⁴Cincinnati Children’s Research Foundation

THE EFFECT OF SCHIZOPHRENIA RISK FACTORS ON MISMATCH RESPONSES IN A RAT MODEL, AND THE IMPORTANCE OF CONTEXT AND SEX
Laura Harms, Jaishree Jalewa, Juanita Todd, Deborah Hodgson, and Pat Michie
University of Newcastle

3:15 p.m.-4:45 p.m.

Symposium 5.2
THE HEART DOES NOT LIE: NEWS ABOUT EFFORT INTENSITY
Session Chair: Guido H.E. Gendolla
University of Geneva
EFFECTS OF CORRELATED COLOR TEMPERATURE OF LIGHT ON EFFORT-RELATED CARDIOVASCULAR RESPONSE
Ruta Lasauskaite¹, Michael Richter², and Christian Cajochen¹
¹University of Basel, ²John Moores University

Symposium 5.3
UNDERSTANDING THE ROLE OF GENES, NEUROBIOLOGY, AND DEVELOPMENT IN HUMAN BEHAVIOR AND ITS PATHOLOGIES: THE CONTRIBUTIONS OF PSYCHOPHYSIOLOGIST WILLIAM G. IACONO
Session Chair: Christopher J. Patrick
Florida State University

BILL IACONO’S LEADERSHIP IN SPR AND IN OUR FIELD
Gregory A. Miller
University of California, Los Angeles and University of Illinois, Champaign-Urbana

BILL IACONO, THE MINNESOTA CENTER FOR TWIN AND FAMILY RESEARCH, AND CHARTING THE DEVELOPMENT OF SUBSTANCE ABUSE AND RELATED DISORDERS
Matt McGue
University of Minnesota
BILL IACONO, THE MINNESOTA EMPIRICIST
TRADITION, AND DEVELOPMENTAL
PSYCHOPATHOLOGY RESEARCH
Dante Cicchetti
University of Minnesota

FOLLOW THE DATA: IACONO’S CONTRIBUTIONS
TO DELINEATING ETIOLOGIC BASES FOR
PERSONALITY AND ITS LINK TO STRUCTURAL
DIMENSIONS OF PSYCHOPATHOLOGY
Robert F. Krueger
University of Minnesota

PSYCHOLOGICAL SCIENCE IN THE PUBLIC
INTEREST AND THE INDEFATIGABLE BILL
IACONO: TELLING THE TRUTH ABOUT “LIE”
DETECTION
John J.B. Allen
University of Arizona

MORE THAN MEETS THE EYE: BILL IACONO’S
CONTRIBUTIONS TO SCIENTIFIC INVESTIGATION
OF SCHIZOPHRENIA
Diane C. Gooding
University of Wisconsin, Madison

BILL IACONO AND THE COLLISION OF GOOD
THEORY WITH DUSTBOWL EMPIRICISM IN
THE HUNT FOR PSYCHOPHYSIOLOGICAL
ENDOPHENOTYPES
Scott Vrieze
University of Minnesota

DON’T BE AFRAID TO BE BOLD: LESSONS
LEARNED FROM BILL IACONO WHEN SEEKING
TO DISENTANGLE CAUSE FROM CONSEQUENCE
OF SUBSTANCE USE ON THE BRAIN
Sylia Wilson
University of Minnesota

FINDINGS YOU CAN TRUST, AND BUILD ON:
THE EXAMPLE OF P300 AND EXTERNALIZING
PSYCHOPATHOLOGY
Christopher J. Patrick
Florida State University

5:00 p.m.-6:30 p.m.
Symposium 6.1
PSYCHOPHYSIOLOGY’S ROLE IN ADVANCING
MENTAL HEALTH NOSOLOGY: INTEGRATION
WITH THE HIERARCHICAL TAXONOMY OF
PSYCHOPATHOLOGY
Session Chairs: Samuel E. Cooper
University of Texas, Austin

Emily R. Perkins
University of Pennsylvania

PREDICTABLE AND UNPREDICTABLE THREAT
RESPONDING AS TRANSDIAGNOSTIC
CORRELATES AND PREDICTORS OF FEAR AND
ANXIETY
Annmarie MacNamara and Kayla Wilson
Texas A&M University

P300 AND THE EXTERNALIZING SPECTRUM:
THE PROMISE OF INCORPORATING
PSYCHOPHYSIOLOGY INTO CLINICAL SCREENING
Emily Perkins1, Jeremy Harper2, Jonathan Schaefer3,
Stephen Malone3, William Iacono3, Sylia Wilson3,
and Christopher Patrick4
1University of Pennsylvania, 2St. Paul, 3University of
Minnesota, 4Florida State University

APPLYING EMPIRICAL PSYCHOPATHOLOGY
DIMENSIONS TO THE PSYCHOPHYSIOLOGY OF
THREAT CONDITIONING
Samuel Cooper1, Robert Krueger2, and Shmuel
Lissek2
1University of Texas, Austin, 2University of Minnesota,
Twin Cities

3:15 p.m.-4:45 p.m.
Faces of the Future Flash Talks

4:45 p.m.-5:00 p.m.
Break
CONNECTING PSYCHOPHYSIOLOGICAL MEASURES TO WITHIN- AND BETWEEN-SUBJECT HIERARCHICAL MODELS OF PSYCHOPATHOLOGY
Keanan Joyner and Danielle Jones
University of California, Berkeley

ENVIRONMENTAL STRESS, BRAIN DEVELOPMENT, AND PSYCHOPATHOLOGY SYMPTOMS IN YOUTH
Antonia Kaczkurkin, Hee Jung Jeong, E. Leighton Durham, Gabrielle Reimann, and Camille Archer
Vanderbilt University

5:00 p.m.-6:30 p.m.
Symposium 6.2
TRANSCUTANEOUS AURICULAR VAGUS NERVE STIMULATION (TAVNS) AS A VERSATILE NEUROMODULATORY TOOL: BIOMARKERS OF NEUROTRANSMISSION AND EFFECTS ON BEHAVIOR
Session Chairs: Anna Marzecová Heinrich Heine University Düsseldorf
Lina I. Skora Heinrich Heine University Düsseldorf

EMULATED SIGNALS FROM THE BODY: VAGUS NERVE STIMULATION TO MODULATE LEARNING AND DECISION-MAKING
Cecilia Vezzani1, Anne Kühnel1, Sophie Müller2, Alessandro Petrella2, and Nils Kroemer1,2
1University of Bonn, 2University of Tübingen

ENHANCEMENTS IN LEXICAL TONE LEARNING WITH TRANSCUTANEOUS VAGUS NERVE STIMULATION DEPEND ON TASK AND STIMULATION TYPE
Stefanie Kochinsky1,2, Michael Johns2, Valerie Karuzis2, Ian Phillips1, Nick Pandža2, and Regina Calloway2
1Walter Reed National Military Medical Center, 2University of Maryland

AN ATTEMPT TO REPLICATE THE NEUROMODULATORY EFFECTS OF TRANSCUTANEOUS VAGUS NERVE STIMULATION
Franz Wurm, Beth Lloyd, and Sander Nieuwenhuis
Leiden University

NOT THERE YET: INCONCLUSIVE EVIDENCE FOR A NORADRENERGIC MECHANISM OF TRANSCUTANEOUS AURICULAR VAGUS NERVE STIMULATION
Martina D’Agostini, Andreas Burger, Valentina Jelinčić, Andreas von Leupoldt, and Ilse Van Diest
KU Leuven

5:00 p.m.-6:30 p.m.
Open Topic Symposium
PSYCHOPATHOLOGY AND INDIVIDUAL DIFFERENCES

A NOVEL PARADIGM TO INVESTIGATE THE ROLE OF ERROR MONITORING IN SOCIAL ANXIETY
Kianoosh Hosseini Ghalebin, Jeremy Pettit, Fabian Soto, Aaron Mattfeld, George Buzzell
Florida International University and The Center for Children and Families

WHERE EMPATHIC STATES AND PSYCHOPATHIC TRAITS INTERSECT
Hedwig Eisenbarth1, Joana Vieira2, Anna Dapprich3
1Victoria University of Wellington, 2University of Exeter, 3Radboud University

HIGH-ANXIOUS PARTICIPANTS SHOW REDUCED VMPFC ACTIVITY DURING THREAT/SAFETY REVERSAL LEARNING: MAGNETOENCEPHALOGRAPHIC CORRELATES
Florian Bublatzky1, Alejandro Espino2, Sebastian Schindler3, Jonas Reichelt2, Tom Schwegmann2, Markus Junghöfer2
1Central Institute of Mental Health, 2University Hospital Münster, 3University of Münster

15 • CDT = Central Daylight Time
NEURAL CORRELATES OF PERSONALITY: 
DISENTANGLING CONTRIBUTIONS OF PERIODIC 
AND APERIODIC RESTING EEG SIGNALS
Luiza Bonfim Pacheco¹, Daniel Feuerriegel¹, Hayley 
Jach², Stefan Bode¹, Luke Smillie¹
¹University of Melbourne, ²University of Tübingen

AMYGDALA STRUCTURE AND FUNCTION IN 
TRAUMA-RELATED PSYCHOPATHOLOGY
Nicola Sambuco, Margaret Bradley, Peter Lang 
University of Florida

5:00 p.m.-6:30 p.m. 
Discussion Panel C

6:30 p.m.-8:30 p.m. 
Poster Session III 
(Cash bar and light snacks)

10:00 p.m. 
Student Social 
(Location to be announced)

Saturday, September 30, 2023

8:00 a.m.-12:00 p.m. 
Registration Open

8:30 a.m.-9:00 a.m. 
Early Career Award Address 
REEVALUATING 
PSYCHOPHYSIOLOGY: 
THE IMPERATIVE OF 
PSYCHOMETRIC RIGOR 
Peter E. Clayson, PhD 
University of South Florida

9:00 a.m.-9:30 a.m. 
Early Career Award Address 
REWARD RESPONSIVENESS 
AND DEPRESSION 
VULNERABILITY: 
TRANSLATIONAL INSIGHTS 
FROM EVENT-RELATED 
POTENTIALS 
Autumn Kujawa, PhD 
Vanderbilt University

9:30 a.m.-9:45 a.m. 
Refreshment Break

9:45 a.m.-9:50 a.m. 
Opening Remarks

9:50 a.m.-10:45 a.m. 
Invited Address 
The Entangled Brain: 
Integration of Emotion, 
Motivation, and Cognition 
Luiz Pessoa, PhD 
Professor and Director, 
Maryland Neuroimaging 
Center, Department of 
Psychology, University of 
Maryland, Baltimore

10:45 a.m.-11:00 a.m. 
Break

11:00 a.m.-12:00 p.m. 
Presidential Address 
VISION AND EMOTION: 
THE SECRET LIFE OF A 
CONTROL AREA 
Andreas Keil, PhD 
University of Florida

12:15 p.m.-2:30 p.m. 
Business Meeting Luncheon 
Secure your ticket for the 
business meeting luncheon when you register. 
Students receive a complimentary ticket if they 
register prior to September 15, 2023!

9:00 p.m. 
Saturday Night Social with the SPR Blues Band 
(Cash bar and light snacks)

Sunday, October 1, 2023

9:00 a.m.-12:00 p.m. 
Board of Directors Meeting

Society for Psychophysiological Research 
 sprweb.org 
info@sprweb.org