PNIRS
PsychoNeuroImmunology
Research Society

PNIRS 2023

PNIRS: Rocky Mountain High in Colorado

June 12-15 | Hotel Boulderado

Boulder, CO USA

Celebrating 30 Years of Excellence!

Message from the President

On behalf of the PNIRS leadership, it is my great pleasure to welcome you to the 30th meeting of the PsychoNeuroImmunology Research Society in Boulder, Colorado!

Researchers in our society have delivered major advances in our understanding of the bidirectional interactions between the immune system and the brain and highlighted the importance of these processes for both health and a range of diseases. In recognition of this, the PNIRS Executive, Program and Local Organizing Committees have developed an outstanding scientific program centered on the theme of this year's meeting: **PNIRS: Rocky Mountain High in Colorado.**

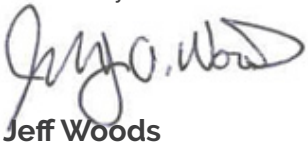
The opening half-day educational short course will equip attendees with the knowledge to recognize and address influential variables in PNI research, empowering them to enhance the scientific rigor of their own research. We have three outstanding member-sponsored symposia selected from a highly competitive pool of over 15 focused on: neuroimmune interactions in mood disorders, peptidoglycan trafficking in holobionts, and cellular and molecular mechanisms in immune-mediated neurodevelopmental disorders. The presidential symposium 'Exercise and PsychoNeuroImmunology', includes three outstanding speakers who will focus their talks on exercise's effects on the brain, immune system, and cancer.

Our award talks include **Mark Opp** who will be giving the 2023 Norman Cousins Memorial Lecture titled 'Sleep and PNI: How Dogs, Goats and Factor S Shaped a Field'; **Keely Muscatell** who will give the Robert Ader Lecture 'Social Psychoneuroimmunology: Uniting Social Psychology and PNI'; and **John Cryan** who will present our keynote Ronald Glaser Frontiers in Psychoneuroimmunology Lecture on "A Gut (Microbiome) Feeling about Psychoneuroimmunology". Closing the meeting, **Lucile Capuron** will give the George Solomon Memorial Lecture titled 'Inflammation-driven Neuropsychiatric Comorbidity: Vulnerability, Mechanisms, and Therapeutic Implications'. We also have three exciting oral sessions with both preclinical and clinical presentations on inflammation, diet, and cancer.

There are many people to thank. I am indebted to the hard work and dedication of various volunteer-led committees as well as our new management team, who have worked tirelessly to bring this meeting to all of us. I would also like to thank our outgoing Past President, **Neil Harrison**, and Board of Directors member, **Peter Grace,** and welcome in our newly elected officers including incoming President-Elect **Lucile Capuron**, and our new Board Member **Ebrahim Haroon** who will assume their positions at the close of the meeting.

Special thanks also go to our local Organizing Team of Mark Opp (his second hosted meeting!) and Rachel Rowe who have done an outstanding job, and to our meeting sponsors: Elsevier and Susan Solomon for their generous financial support for our meeting. Finally, I would like to thank you, our members, for your ongoing support of PNIRS, for your submissions of more than 15 member-sponsored symposia proposals and 180 abstract submissions. We know you have many choices of scientific organizations to contribute to and support. We truly appreciate that you are a member of the PNIRS. Please make sure to fill out the post-meeting survey so we can serve you better and to let us know how you might like to serve PNIRS on committees.

I am very much looking forward to seeing you all in Boulder.



Jeff Woods
PNIRS President
Chair, Scientific Affairs Committee

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Meeting Location

The Hotel Boulderado, 2115 13th St, Boulder, CO 80302 | Phone: (303) 442-4344
For more than 100 years, Hotel Boulderado has been one of the most famous landmarks in Boulder, Colorado. Located in the heart of downtown, it is one block away from the popular Pearl Street Mall.

All rooms are elegantly appointed with everything you need for maximum comfort. Enjoy our elegant rooms with charming décor, plush furnishings and modern amenities. Guests revel in the luxury as all rooms enjoy sweeping views of Downtown Boulder, the Rocky Mountain foothills and the Boulder Flatirons.

Sponsor

We gratefully appreciate the support of **Elsevier, Inc**. for sponsoring the *Brain, Behavior, and Immunity* Editorial Board luncheon, sponsoring the first **Scholarship for Researchers from Underrepresented Countries** and supporting the activities of PNIRS.

Acknowledgment

On behalf of the PNIRS leadership and membership, we'd like to thank Susan Keran Solomon for her many years of dedication to the society. Under her stewardship, we have been able to advance our mission by creating an interdisciplinary forum of scientists in psychoneuroimmunology which has helped support scientific development in the area of psychoneuroimmunology. She has also been instrumental in bringing leaders in the field of PNI to our annual meeting each year through the endowed lecture, The George Solomon Memorial Lecture, named in honor of her husband and PNIR visionary, George Solomon. The lecture honors the history of PNI and the Society, and provides an annual forum for discussion of the important interconnections between psychological and physical processes for health and illness.

We would also like to recognize the dedication and support provided by Jackie Newman over many years of sevice to the Society.

About PNIRS

MISSION

To advance immune-brain research through interdisciplinary collaboration, diverse community support, and scientific dissemination to improve human health and behavior.

VISION

To be a global leader in advancing the understanding of immune-brain interactions to improve human health and behavior. We strive to foster a collaborative, inclusive, and innovative community of basic and clinical researchers, where the latest scientific findings are disseminated to train and educate the next generation of experts in the field.

PNIRS Central Office
6728 Old McLean Village Drive | McLean VA 22101 USA
pnirs@pnirs.org | www.pnirs.org
Managed by Degnon Associates, Inc.

PNIRS Committees

Communications Committee
Caroline Smith, Chair
Danielle Santana Coelho
Luba Sominsky
Estherina Trachtenberg

Constitution and Bylaws Committee
Neil Andrew Harrison, Chair, Past President
Jeff Woods, President
Christopher Engeland, President-Elect

Equity, Diversity and Inclusion (EDI) Committee
Dominique Piber, Chair
Melanie Flint
Lois Harden
Mark Hutchinson
Melissa Rosenkranz
Luba Sominsky
Sarah Spencer

Financial Committee
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Jeff Woods, President
Neil Andrew Harrison, Past President
Christopher Engeland, President-Elect
Adrienne Antonson
Jennifer C. Felger
Manfred Schedlowski
Eric Wohleb
Susan Keran Solomon

Membership Committee
Christopher Engeland, Chair, President-Elect
Ruth Barrientos
Keely Muscatell
Leah Pyter
Jonathan Savitz
Catherine Walsh, Trainee Member

Nominating Committee
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Monika Fleshner
Andrew Miller
Carmine Pariante
Melissa Rosenkrantz
Sarah Spenser
Eric Wohleb

Scientific Affairs Committee
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Neil Andrew Harrison, Past President
Christopher Engeland, President-Elect
Michael Bailey, Secretary-Treasurer
Jennifer Felger, Board Member
Amanda Kentner, Board Member
Laura K. Fonken
Rod Johnson
Julie Lasselin
Valeria Mondelli
Susanne Segerstrom
Molly Wright, Trainee Member

Local Organizing Committee
Mark Opp
Rachel Rowe, Trainee Member

Training Committee
Christoph Rummel, Chair
Teresa Reyes, Past Chair
Jeff Woods, President
Michael Bailey, Secretary-Treasurer
Mark Opp, Local Organizing Committee Chair
Adrienne Antonson
Jean-Christophe Delpech
Bart Ford
Rafael Gonzalez-Ricon
Tabi Green, Trainee Member
Lina Hansson, Trainee Member

General Meeting Information

Registration Desk

The registration desk is located in the **Ballroom Foyer** of the Hotel Boulderado, our headquarters hotel. Please check in to receive your name badge which are required at all times in order to access sessions and events. The registration desk will be open during the following hours:

Monday, June 12	1:00 pm – 6:00 pm	Wednesday, June 14	8:00 am – 6:00 pm
Tuesday, June 13	8:00 am – 5:00 pm	Thursday, June 15	8:00 am – 5:00 pm

Meeting Code of Conduct

The PNIRS Annual Meeting aims to provide a forum for the exchange of ideas in a collaborative and collegial environment. All delegates, speakers, sponsors and volunteers at the Conference are required to abide by the following Code of Conduct.

- All individuals have the right to expect they will be treated with respect regardless of gender, sexual orientation, disability, physical appearance, body size, race, nationality, or religion.
- PNIRS will not tolerate harassment of participants in any form. Harassment and sexist, racist, or exclusionary comments or jokes are not appropriate. Harassment includes sustained disruption of talks or other events, inappropriate physical contact, sexual attention or innuendo, deliberate intimidation, stalking, and photography or recording of an individual without consent. It also includes offensive comments related to gender, sexual orientation, disability, physical appearance, body size, race, or religion.
- All communication should be appropriate for a professional audience including people of many different backgrounds. Sexual language and imagery is not appropriate.
- Alcoholic beverages may be provided at some PNIRS events. Should excessive alcohol consumption result in behaviour that is not respectful, PNIRS reserves the right to ask the attendee to leave the PNIRS sponsored event.
- PNIRS aims to ensure that conferences are characterised by a collegial, collaborative, supportive environment. At all times, commentary and critique should be of a constructive and respectful nature.
- Any participant who wishes to report a violation of this policy is asked to speak, in confidence, to any of the local organizing committee (LOC) members or management team member.
- We value your attendance. That is why we expect all participants to follow these rules at all conference venues or related social events.

PNIRS Commitment to Equity and Diversity

PNIRS is committed to equity and diversity. The society will promote inclusivity and transparency, to improve diversity across all categories of membership and to increase representation of members from underrepresented groups in the society and attending the PNIRS annual conference.

The Annual Meeting will aim to fulfil its commitment to equity and diversity in the following ways:

- Every facet of the conference is committed to facilitating gender balance and cultural diversity
- There is a range of diverse speakers in terms of gender, culture, age and seniority.
- Abstracts will be solicited from a diverse range of people, particularly in areas where those groups are in a minority, and that the gender distribution of the final selected spectra, when compared to the distribution of the submissions, should strive to be similar.
- Where possible, travel support is made available to attendees from under-represented groups who would otherwise not be able to attend the conference.
- All conference materials are accessible, including promotion, signage and abstract submission processes.
- A question on the registration form informs of any support or access requirements that participants may have.
- An equity report will be made accessible on our website for measuring change over time which will include information such as the gender and cultural balance of speakers, participants, and session chairs.

General Meeting Information

Session Chairs
Sessions Chairs should be in the designated room at least 15 minutes before the session starts in order to assist the speakers. Every effort should be made to keep the session on schedule.

Symposium and Oral Session Speakers
Speakers should be in the designated room at least 15 minutes before the session starts. Please introduce yourself to the Chair of your session and strictly adhere to your allocated time. All slide presentations should be provided to the audio visual technician at least 15 minutes prior to the session start time.

Poster Presenters
The Poster Sessions will be held in the **Mezzanine Level (2nd Floor)**. Push pins for mounting the posters will be provided. Poster size is limited to 33 inches wide (838 mm) x 47 inches tall (1194 mm). Look for your poster number in this Program Book. Please remove your poster promptly following your poster session, remaining posters may be discarded.

PNIRS Poster Session 1: Tuesday, June 13, 3:00 - 4:30 pm
You may begin to hang your posters at 12:00 pm on Tuesday, June 13th. Please remove your posters at the conclusion of the poster session.

PNIRS Poster Session 2: Wednesday, June 14, 4:30 - 6:00 pm
You may begin to hang your posters at 8:00 am on Wednesday, June 14th. Please remove your posters at the conclusion of the poster session.

PNIRS Poster Session 3: Thursday, June 15, 1:30 - 3:00 pm
You may begin to hang your posters at 8:00 am on Thursday, June 15th. Please remove your posters at the conclusion of the poster session.

Trainee Social
The PNIRS Trainee Social is on Monday, June 12 from 6:00 - 8:00 pm at The Rayback Collective, 2775 Valmont Rd, a short Uber/Lyft ride away (*attendees are responsible for their own transportation*). All trainees are encouraged to attend. Conference name badge will be required for participation and drink tickets will be provided at the venue.

Welcome Reception
The Welcome Reception is on Tuesday, June 13 from 6:00 - 8:00 pm at Avanti, 1401 Pearl St, just a short walk from the Hotel Boulderado and a perfect way to connect with colleagues, speakers and friends, old and new. On your way, look for the little orange bus, Delilah, for information on all that Boulder has to offer!

Early Career Researcher Social
New this year, PNIRS will host a relaxed social networking opportunity for early career researchers on Wednesday June 14 at 7:30pm at Bohemian Biergarten, at 2017 13th St, Boulder, just a 1 minute walk from the Hotel Boulderado! Attendees will be responsible for the purchase of any food and drinks.

Guests
Guests accompanying registrants are welcome to attend the Opening Reception and Banquet as long as they have purchased a guest ticket in advance, tickets are no longer available.

General Meeting Information

Phones and WiFi
As a courtesy to presenters, speakers, and attendees, please switch cell phones to silent mode during events. Please leave the session if you must answer a call. WiFi will be available at the meeting.

Lost and Found
If you find articles left behind by other conference attendees, please bring items to the PNIRS registration desk for safe-keeping.

Certificates of Attendance and Participation
Please e-mail pnirs@pnirs.org to request a certificate. It will be e-mailed to you after the meeting.

Photo Release
By registering for the PNIRS Annual Meeting, attendees consent to be photographed during the course of the meeting, with the understanding that these images will be used in PNIRS documents and publications only. If anyone prefers to not have their photo used by PNIRS, please contact pnirs@pnirs.org.

Live-Streaming/Recording Prohibited
The use of live-streaming devices and other recording devices during the PNIRS Meeting is prohibited.

Exploring Boulder!
We hope you have time to explore the beauty of Boulder, CO, here are few things to consider.

Getting to Boulder

Must-See Boulder
Where to start? You'll want to make time during your stay for these top things to do in Boulder. And they are just the beginning. Explore more with **48 Hours in Boulder** or go deeper with our **Insider Guides**.

Visit Boulder Mobile VW Bus
The little orange bus, Delilah, is stocked with visitor information, brochures and resources, as well as local insight about activities and locations off the beaten path. And onboard the bus is a Boulder photo booth, complete with props and hats! Stop by on your way to the Welcome Reception on Tuesday, June 13 from 5:00-6:00 pm to find out how to make the most of your stay in Boulder!

Boulder Food & Drink
You can't really know Boulder until you've tasted its **dining scene**. Named a top foodie city in America — with cultured **chefs** in its kitchens, mad-scientist **brewers** on tap, and bountiful **farmland** at its doorstep — there's always something fresh to try. Good food is the essential fuel for Boulder's active lifestyle.

During each lunch break, attendees are encouraged to explore the surrounding area for just the right lunch spot. **Click here** for downtown restaurants within a short walk from the Hotel Boulderado.

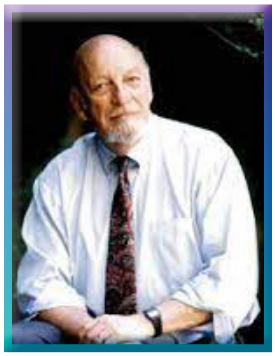
Award Lectures

The Norman Cousins Award Lecture

The **Norman Cousins Award** is the highest honor given by the PsychoNeuroImmunology Research Society to an individual for outstanding contributions to research in psychoneuroimmunology. Norman Cousins was an articulate spokesman and advocate for psychoneuroimmunology, whose support and generosity has facilitated the career development of many investigators in this interdisciplinary field of endeavor. To contribute to the advancement of knowledge in psychoneuroimmunology, Ellen Cousins, Norman's wife, created the Norman Cousins Memorial Fund, and the California Wellness Foundation provided the endowment for the Norman Cousins Memorial Award and Lecture to be delivered as a highlight of the annual meeting of the PsychoNeuroImmunology Research Society.

2023 Norman Cousins Award Lecture
Sleep and PNI: How Dogs, Goats and Factor S Shaped a Field
Mark Opp, PhD
University of Colorado, Boulder
Boulder, CO USA

The Robert Ader New Investigator Award



In honor of Dr. Robert Ader, a pioneer in the field of psychoneuroimmunology, the PsychoNeuroImmunology Research Society presents the **Robert Ader New Investigator Award**. This prestigious award is presented to an outstanding new research scientist who has made exciting basic science or clinical contributions to the field of PNI. The award honors Dr. Ader's innovation and creativity as a scientist and recognizes his contributions to the instantiation of PNI as a meaningful endeavor dedicated to the betterment of health and the prevention of disease.

2023 Robert Ader New Investigator Award Lecture
Social Psychoneuroimmunology: Uniting Social Psychology and PNI
Keely Muscatell, PhD
University of North Carolina at Chapel Hill
Chapel Hill, NC USA

Award Lectures

The Ronald Glaser Frontiers in PNI Lecture

The **Ronald Glaser Frontiers in Psychoneuroimmunology Lecture**, formerly the **Frontiers in Psychoneuroimmunology Lecture**, is supported in part by generous donations to the Ronald Glaser Fund. The Ronald Glaser Fund was established in 2017 to honor Ron for all his contributions to the field of psychoneuroimmunology. As a pioneer in our field, Ron made contributions that have advanced psychoneuroimmunology in many ways. His efforts provided exemplary support for colleagues, trainees and patients around the world with stress-associated illnesses. The "Frontiers" lecture will serve as recognition of Ron's influence across a broad spectrum of biology and medicine and honor those contributions. To make a donation, please **click here**.

2023 Ronald Glaser Frontiers in Psychoneuroimmunology Lecture
A Gut (Microbiome) Feeling about Psychoneuroimmunologye
John F. Cryan, PhD
University College Cork
Cork, Ireland

The George Solomon Memorial Lecture

The **George Solomon Memorial Lecture** was newly established in 2014 and is named for a most prominent figure in the history of PNI. George Solomon was truly a visionary; very early in his career, he came to believe that certain diseases, such as autoimmune diseases, were modified by psychological factors. His formal investigations into the connections between the mind and body, as well as their implications for health and disease date back to his first published reports in the early 1960's. Throughout his illustrious career, Dr. Solomon was a strong leader of our field, an outspoken advocate for our science, and a warm and generous collaborator, mentor and friend. This lecture has been endowed by his wife, Susan Keran Solomon, to honor the history of PNI and the Society, and to provide an annual forum for discussion of the important interconnections between psychological and physical processes for health and illness.

2023 George Solomon Memorial Lecture
Inflammation-Driven Neuropsychiatric Comorbidity: Vulnerability, Mechanisms and Therapeutic Implications
Lucile Capuron, PhD
INRAE, University of Bordeaux
Bordeaux, France

Awards

The BBI Impact Award

Professor Keith W. Kelley, spouse Sara and daughter Megan established the **Brain, Behavior, and Immunity Impact Award**. The goal is to promote submission and publication of high-quality, cutting-edge research in *Brain, Behavior, and Immunity* and to increase visibility and participation in the Psychoneuroimmunology Research Society. The winner is the corresponding author of the paper with the most citations from those articles published three and four years prior to the award. For example, the 2019 award winner, announced in 2018, is the corresponding author of the paper that achieved the highest level of citations in 2017 to papers published in 2016 and 2015. The Kelley Family provides an annual gift of $5,000 per year and a commemorative plaque for the PNIRS to present to the winner of the Brain, Behavior, and Immunity Impact Award at the annual PNIRS meeting.

2023 BBI Impact Award

A longitudinal study on the mental health of general population during the COVID-19 epidemic in China

Roger Ho, MD

Department of Psychological Medicine, National University of Singapore

Michael Irwin Equity and Diversity Travel Awards

PNIRS is committed to increasing the number of academics/researchers from underrepresented groups and supporting research excellence dedicated to issues of equity, diversity, and inclusion. In support of this commitment, PNIRS has established the Michael Irwin Equity and Diversity Travel Awards that are made possibly by a generous donation from Professor Michael Irwin, Cousins Distinguished Professor of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine at UCLA and the Cousins Center for Psychoneuroimmunology at the UCLA Semel Institute for Neuroscience.

The intent of these travel awards is to facilitate attendance by academics/researchers at the annual PNIRS conference who are a) from underrepresented groups and/or b) conduct research dedicated to issues related to equity and diversity. The goal of these awards is to facilitate greater awareness about the public health issues related to diverse communities, and to support and encourage psychoneuroimmunology research that is dedicated to having a significant impact on diverse and underrepresented communities.

Adam Carrico
University of Miami, USA

Jennifer V. Chavez
University of Miami, USA

Aishwarya Ganguli
The Pennsylvania State University, USA

Yeon Sik Jang
Georgetown University, USA

Timothy Simon
Loma Linda University, USA

Anna Strahm
University of South Dakota, USA

Lindsay Strehle
The Ohio State University, USA

Kendra Wilson
The Ohio State University, USA

Awards

PNIRS Trainee Scholar Travel Awards

The intent of the **PNIRS Trainee Scholar Travel Awards** is to facilitate attendance by trainee members at the PNIRS annual meeting. To be eligible for an award, awardees must be a PNIRS trainee member, register for the annual meeting, submit an abstract and attend the PNIRS annual meeting for the current year. Awardees will be selected by the scientific affairs committee using the abstract scoring process as a guide. Awards will vary annually and are to be used to contribute to the trainees' cost of attendance at the PNIRS annual meeting.

Ezra Aydin
Columbia University

Aeson Chang
Monash Institute of Pharmaceutical Sciences

Lourdes Davis
University of Texas at Austin

J Richard Korecki
University of California, Los Angeles

Grant Mannino
University of Colorado Boulder

Raana Mohyee
Temple University

Stephanie Muscat
The Ohio State University

Gregory Pearson
University of Massachusetts Amherst

Madeline Pike
Temple University

Michelle Sequeira
Georgia State University

Abigail Shell
University of Pittsburgh

PNIRS Scholarship for Researchers from Underrepresented Countries

The PNIRS Equity, Diversity and Inclusion (EDI) Committee announces the **Scholarship for Researchers from Underrepresented Countries**. Through financial support provided by Elsevier, funds will be provide to support the attendance of participant(s) from underrepresented countries at the upcoming 2023 PNIRS conference. Registrants who submitted an abstract and reside in an underrepresented country were considered.

Mariazell Yépez-Ortega
Instituto Politécnico Nacional
Mexico City, Mexico

Schedule at a Glance - *PNIRS: Rocky Mountain High in Colorado*

Sessions will be held in **Boulderado Ballroom** *unless otherwise indicated.*

	Monday, June 12	Tuesday, June 13	Wednesday, June 14	Thursday, June 15
8:00		Registration Opens	Registration Opens	Registration Opens
8.30-9.00		Welcome **Jeff Woods**	Presidential Symposium *Exercise and PsychoNeuroImmunology*	Member Symposium 3 *Cellular and Molecular Mechanisms in Immune-Mediated Neurodevelopmental Disorders*
9.00-9.30	Financial Committee Meeting*	Norman Cousins Award Lecture **Mark Opp**		
9.30-10.00	Scientific Affairs Committee Meeting*			
10.00-10.30	Break	Break		Break
10.30-11.00	Membership Committee Meeting*	Member Symposium 1 *Neuroimmune Interactions in Mood Disorders: Transdiagnostic Pathways to Precision Psychiatry*	Break	Oral Session 3
11.00-11.30	Nominating Committee Meeting*		Oral Session 2	
11.30-12.00	EDI Committee Meeting*			
12.00-12.30	Board of Directors Meeting (with lunch)*	LUNCH ON YOUR OWN		LUNCH ON YOUR OWN
12.30-1.00		PNIRS$_{\text{Asia-Pacific}}$ and PNIRS$_{\text{Ibero-America}}$ Meetings *Juniper Room*	LUNCH ON YOUR OWN BBI Editorial Board Lunch *Boulderado Ballroom*	
1.00-1.30				
1.30-2.00		Oral Session 1		Poster Session 3 *Mezzanine*
2.00-2.30	Training Committee Meeting*		Member Symposium 2 *Peptidoglycan Trafficking in Holobionts; The Beauty and the Bargain*	
2.30-3.00	Educational Short Course *Understanding and Accounting for Influential Variables in PNI Research*			
3.00-3.30		Poster Session 1 *Mezzanine*		Award Ceremony & Business Meeting
3.30-4.00			Frontiers in PNI **John Cryan**	George Solomon Lecture **Lucile Capuron**
4.00-4.30				
4.30-5.00		Robert Ader Award Lecture **Keely Muscatell**	Poster Session 2 *Mezzanine*	
5.00-5.30				
5.30-6.00				
6.00-6.30	Trainee Social *The Rayback Collective*	Welcome Reception *Avanti*	Speed Mentoring	
6.30-7.00				
7.00-7.30				Closing Banquet
7.30-8.00			Postdoc/Early Career Investigator Social *Bohemian Biergarten*	
8.00-8.30				
8.30-9.00	*all committee meetings will be held in *Executive Boardroom*			
9.00-9.30				
9.30-10.00				

Schedule Day 1

Monday, June 12
8:30 am - 8:00 pm

8:30 am - 2:30 pm **PNIRS Committee Meetings**

Executive Boardroom

9:00 am	Financial Committee
9:30 am	Scientific Affairs Committee
10:30 am	Membership Committee
11:00 am	Nominating Committee
11:30 am	EDI Committee
12:00 pm	Board of Directors Lunch Meeting
2:00 pm	Training Committee

1:00 - 6:00 pm **Registration**

Ballroom Foyer

2:30 - 5:30 pm **Educational Short Course**

Understanding and Accounting for Influential Variables in PNI Research

Boulderado Ballroom

Chair: Jeffrey Woods, PhD

Many lifestyle (physical activity, diet, sleep) and demographic (sex, race, ethnicity) variables affect outcomes in human psychoneuroimmunology research. In pre-clinical work, experimental details related to the source and strain of animals, their diets, and vivarium conditions among others can lead to high variability and experimental cohort effects. Failure to measure, account, and/or control for such variables either in study design or statistical analyses can lead to challenges with data interpretation and harsh journal or grant reviews. This educational short course will present the role these variables can have in PNI and provide experimental and statistical strategies to account for their influence allowing researchers the ability to provide better data interpretation in PNI research.

The importance of controlling, visualizing, and analyzing influential variables

Christopher Engeland, PhD, Associate Professor of Biobehavioral Health, The Pennsylvania State University

The importance of properly visualizing data will be discussed, as will the ins and outs of identifying covariates. Choosing the wrong covariates may result in unknown/poor construct validity. Other topics include the stratification of analysis by group. Performing within-group analysis makes sense when group disparities have been well-established. Similarly, under such circumstance, it may be sensible for some study designs to focus on (i.e., include) only disadvantaged or minority group(s). Ultimately this may yield more valuable data to inform the underlying cause of disparities and may streamline study design to better focus on the individuals with the most disparity and need. Common examples of such groups include race/ethnicity, gender, age, and maltreated children.

Rhythms in psychoneuroimmunology: accounting for circadian and seasonal rhythms in research

Laura K. Fonken, PhD, Assistant Professor, Division of Pharmacology and Toxicology, University of Texas at Austin

Life on earth has evolved under bright days and dark nights caused by the rotation of the earth about its axis. This has led to the development in most organisms of a 24-hour timekeeping system, termed the circadian system. The circadian system helps coordinate the timing of predictable daily activities such as opportunities for sleep and food availability. In mammals, the circadian system is regulated by a primary pacemaker in the suprachiasmatic nucleus of the hypothalamus, which synchronizes cell specific clocks throughout the body. The circadian system potently regulates many variables involved in psychoneuroimmunology research, including immune, endocrine, and nervous system functions. For example, Halberg et al (1960) were the first to demonstrate that mortality induced by the same dose of lipopolysaccharide can vary from 10% when administered at noon to 80% when administered at midnight. Recent work has uncovered far-reaching roles for the circadian system in modulating multiple psychoneuroimmunology-relevant processes including mood disorders, seasonal responses, aging, and timing of vaccination and drug delivery. Therefore, considering time of day in experiments is important in order to minimize variability and enhance replicability.

The impact of diet on psychoneuroimmunology research
Ruth M. Barrientos, PhD, Associate Professor, The Ohio State University
Dr. Barrientos will discuss the impact of dietary composition, intake duration, and the interaction of these with age and sex on outcome measures including neuroinflammation, pathology, and behavior. Studying the effects of diet on immune response, brain function, and behavior is a hot topic right now, and getting into this work can be as simple as feeding your animals a new diet and seeing what happens. However, depending on your question of interest, many factors should be considered in your experimental design. The use of purified diets, what to use as a control diet, duration of a diet manipulation, oxidation of diets, age and sex of subjects will all be discussed in her talk. Understanding how these factors impact outcome measures will provide guidance for designing experiments and will facilitate cleaner interpretations and conclusions.

The Importance of Understanding and Accounting for Physical Activity and Exercise in PNI Research
Jeffrey Woods, PhD, Mottier Family Professor of Kinesiology and Community Health, Associate Dean for Research, Director, Center on Health, Aging and Disability, College of Applied Health Sciences, University of Illinois at Urbana-Champaign
The goal of this session is to communicate how physical activity and exercise influences outcomes related to PNI research, in particular their effects on the central nervous and immune systems. The session will also focus on the pros and cons of physical activity and exercise measurement in both human and animal experiments. This information will be of value for investigators wanting to account for physical activity/exercise's influence on PNI outcomes and for those interested in manipulating these variables in PNI research.

Understanding and Accounting for Influential Variables in PNI Research - Sex and Age
Sarah J. Spencer, PhD, RMIT University, Melbourne, Australia
Sex and Age are two key variables that can strongly influence outcomes in human and preclinical psychoneuroimmunology research. Yet, the vast majority of research is still conducted in young-adult male animal models without due consideration of these influences. Prof. Spencer will address why sex and age matter in psychoneuroimmunology research. She will provide examples from her own research and that of other key investigators in the field to illustrate how different males and females can be and how age alters how we respond to various challenges. She will also discuss statistical and methodological considerations for incorporating different sexes and ages. This will include considerations of how to interpret behavioural outcomes when learning styles differ, or when abilities in un-tested domains affect performance. She will also consider the statistical power implications of adding multiple variables to your analyses and how some well-accepted approaches to controlling for sex and age may be flawed. dopamine release dynamics at a subsecond resolution in freely moving animals performing complex behavioral tasks. Although dopamine sensors are already very efficient, the ability to track dopamine release in regions with sparse dopamine innervation, like the prefrontal cortex, remains a challenge due to low dopamine levels. In this talk we will present our newly developed strategy to allow high-definition dopamine imaging with enhanced sensitivity. We will also discuss other existing GPCR sensors available and how their usage can illuminate neuropsychiatric and psychoneuroimmunological applications in the years to come.

In Good Times and Bad: Inflammation in relation to Positive and Negative Experiences
Erik L. Knight, PhD, Assistant Professor, Social Psychoneuroimmunology Laboratory, Department of Psychology and Neuroscience, University of Colorado Boulder
Emotions and reactions to affect-laden events are central to understanding psychosomatic influences on physical health. This section of the short course will examine the bidirectional relationships between inflammation and positive and negative experiences. Stress, trauma, negative emotions, and other negative experiences have been linked to heightened and dysregulated inflammation. Comparatively less work has examined inflammation in relation to positive experiences such as positive emotions and uplifting events, but evidence suggests these experiences are linked with reduced inflammation. We will also explore moderators (e.g., gender, age, sex hormones), mediators (e.g., hypothalamic-pituitary-adrenal activity), and practical implications (e.g., for intervention) of the associations between positive and negative experiences and inflammation.

Scientific rigor in animal experiments of PNI research: Knowing, reporting and making sense of heterogeneity

Urs Meyer, PhD, Institute of Pharmacology and Toxicology, Vetsuisse, University of Zurich; Neuroscience Center Zurich, University of Zurich and ETH Zurich, Zurich, Switzerland

Both planned and unplanned sources of variability exist in most animal models that are used in PNI research. Therefore, the design, implementation, and interpretation of PNI animal models warrant a careful consideration of these sources, so that appropriate strategies can be developed to handle them satisfactorily. While every research group may have its own strategy to this aim, it is essential to report the methodological details of the chosen animal model in order to enhance the transparency and comparability of models across research laboratories. Even though it poses a challenge for attempts to compare experimental findings across laboratories, variability does not necessarily undermine the utility of PNI animal models for translational research. In fact, variability and heterogenous outcomes in these animal models offer unique opportunities for new discoveries and developments in this field, including the identification of disease pathways and molecular mechanisms determining susceptibility and resilience to environmental stressors and other factors that are important to PNI research.

6:00 - 8:00 pm

Trainee Social

The Rayback Collective

Held at The Rayback Collective, 2775 Valmont Rd, Boulder, CO 80304, a short Uber/Lyft from the Hotel Boulderado (transportation will not be provided by PNIRS), this event will afford an opportunity for trainees to meet one another in a casual setting. This event will occur immediately following the Educational Short course. *Drink tickets will be provided at the venue.*

Schedule Day 2

Tuesday, June 13
8:30am - 8:00pm

8:00 am - 5:00 pm **Registration**
Ballroom Foyer

8:30 - 9:00 am **PNIRS 2023 Annual Meeting Welcome**
Boulderado Ballroom
Jeffrey Woods, PhD, University of Illinois at Urbana-Champaign, PNIRS President

9:00 - 10:30 am **Norman Cousins Memorial Lecture: *Sleep and PNI: How Dogs, Goats and Factor S Shaped a Field***
Boulderado Ballroom

Mark R. Opp, PhD
Professor of Integrative Physiology; University of Colorado Boulder; Boulder, CO USA
Chair: Jeff Woods, PhD
Nominators: Jeff Woods, PhD and Neil Harrison, MD, PhD
Within the past three decades overwhelming evidence has accumulated demonstrating that adequate sleep is essential for physical and mental health and well-being. This current recognition that sleep is a pillar of health resulted from historic studies that revealed the bi-directional nature of sleep-immune interactions; immune activation alters sleep and importantly, sleep loss or sleep disruption alters immune function. This talk will summarize historic studies of sleep-immune interactions, which paralleled the growth and maturation of the field of psychoneuroimmunology. Vignettes of recent and ongoing pre-clinical research will highlight the importance of understanding sleep-immune interactions for public health.

10:00 - 10:30 am **Break**
Boulderado Ballroom Foyer

10:30 am - 12:00 pm **Member Sponsored Symposium 1: *Neuroimmune interactions in mood disorders: Transdiagnostic pathways to precision psychiatry***
Boulderado Ballroom

Chairs: Susannah Tye, PhD, Queensland Brain Institute; Michael Irwin, MD, UCLA
Aligned fundamental research and translational clinical approaches are providing new mechanistic insight into the effects of inflammation on the brain and behavior in mood disorders. This panel will integrate complementary results from laboratory animal and cellular models with data from human translational and clinical studies to illuminate the role of inflammation on brain structure and function. The relationship between biological actions and transdiagnostic symptom dimensions (cognition and anhedonia) will be discussed, together with implications for precision medicine and novel therapeutics. Importantly, this symposium includes a range of senior to junior investigators, with gender and ethnic diversity, including a new speaker at PNIRS. The symposium Co-Chair, Professor Michael Irwin, will first provide a brief introduction to the topic and overview of the translational goals of the symposium. Dr. Jennifer Kruse will then lead with new, unpublished clinical data on the relationship between inflammation, thyroid hormone, and cognition in patients with treatment resistant depression (TRD). Next, Dr. Ebrahim Haroon will describe new translational research leveraging machine learning-based modeling to predict anhedonia scores from inflammation and white matter bundle diffusivity measures. Dr. Susannah Tye will then complete the session presenting new mechanistic preclinical data demonstrating insulin-dependent control of astrocyte-dopamine structural and functional integrity via immunometabolic regulation of glial mitochondrial function. The impact of chronic stress hormone stimulation on inflammation, thyroid hormone levels, insulin resistance and dopamine-dependent behaviors in a rodent model of TRD will also be discussed, with specific reference to clinical data presented within this symposium, and overarching implications for precision medicine approaches to mood disorder therapeutics.

Inflammation-associated White Matter Pathology in Anhedonic Major Depression
Ebrahim Haroon, MD, Emory University

Inflammation, Thyroid Hormone, and Cognition, Among Patients with Treatment Resistant Depression
Jennifer Kruse, MD, UCLA

Immunometabolic Control of Neurodevelopment and Behavioral Phenotype via Purinergic Signaling
Susannah Tye, PhD, Queensland Brain Institute, The University of Queensland

12:00 - 1:00 pm

PNIRS Asia-Pacific and PNIRS Ibero-America Meeting - *there will be time to get lunch after the meeting*

Juniper Room

Chair: Keith W. Kelley, PhD, Professor Emeritus of Immunophysiology, University of Illinois
Speaker: Ning Quan, PhD, Professor, Biomedical Science, Florida Atlantic University
Professor Quan was born in Wuhan China. He will highlight his experiences growing up in China, the challenges and approaches he used to develop a very successful career in the USA and his continuing commitment to maintaining and growing collaboration with biomedical scientists in China. Ning earned his B.S. in biomedical engineering at Huazhong Univ. of Science & Technology. In 1991, he completed his Ph.D. at the University of Tennessee. Ning remained in the USA, completing post-doctoral training at Duke and NIMH. From 1998-2019, he rose through the ranks at Ohio State University to become a Full Professor. In 2019, he accepted a new position as Full Professor at the FAU Brain Institute. His mother was an immunologist of the Wuhan Institute of Biological Products, contributing to development of Chinese vaccines against meningitis. His father was a professor of Biochemistry in Tongji University. His grandfather was a Chinese historian. He was influenced by both Western style science from his parents and traditional Chinese philosophy from his grandfather. While the systematic logical scientific approach of the Western methodology is rigorous and penetrating, the Chinese way of thinking tends to be more encompassing and relational. For example, ancient Chinese philosophy typically sees body and mind as one, all the bodily systems as integrally connected with each other and with the outside world, and opposite processes such as Ying and Yang are not only antagonistic but engenders each other's existence. This could be why he loves to study PNI which emphasizes the connectivity of different physiological systems and the mind. He also strives to discover the seeds of beneficial effects in the processes generally considered detrimental. Harnessing the positive functions of inflammation could be just as important as taming its negative effects. In these efforts, he finds the joy and balance of his life.

12:00 - 1:30 pm

Lunch on Your Own - Local Options

1:30 - 3:00 pm

Oral Session 1

Boulderado Ballroom

Chairs: Peter Grace, PhD and Annelise Madison, MA

Triple negative breast cancer hijacks the sympathetic nervous system to resist chemotherapy
Aeson Chang, PhD, Monash Institute of Pharmaceutical Sciences; Edoardo Botteri, PhD, Cancer Registry of Norway; Ryan D Gillis, Bsc(Hons), Monash Institute of Pharmaceutical Sciences; Sasagu Kurozumi, PhD, International University of Health and Welfare; Steve W Cole, PhD, University of California Los Angeles; Gavin W Lambert, PhD, Swinburne University of Technology; Adam K Walker, PhD, University of New South Wales; Erica K Sloan, PhD, Monash Institute of Pharmaceutical Sciences

Identifying Mediators of a Mindfulness-Based Intervention for Depression in Breast Cancer Survivors: Focus on Inflammation and Rumination
J Richard Korecki, MA, University of California, Los Angeles; Patricia Ganz, MD, UCLA, Jonsson Comprehensive Cancer Center; Michael Irwin, MD, UCLA, Cousins Center for Psychoneuroimmunology, Semel Institute for Neuroscience; Steve Cole, PhD, UCLA, Cousins Center for Psychoneuroimmunology; Ann Partridge, MD, MPH, Dana-Farber Cancer Institute; Antonio Wolff, MD, Johns Hopkins Sidney Kimmel Comprehensive Cancer Center; Julienne Bower, PhD, University of California, Los Angeles

Biologic indicators of donor socioeconomic disadvantage and recipient mortality following allogeneic hematopoietic cell transplantation
Jennifer Knight, MD, MS, Medical College of Wisconsin; Steven Cole, PhD, UCLA; Kirsten Beyer, PhD; Tao Wang, PhD, Medical College of Wisconsin; Stephen Spellman, MS, National Marrow Donor Program; Mariam Allbee-Johnson, MPH, Center for International Blood and Marrow Research; Yuhong Zhou, PhD, Medical College of Wisconsin; Michael Verneris, MD, University of Colorado; Doug Rizzo, MD, MS, Medical College of Wisconsin; Lucie Turcotte, MD, MPH, MS, University of Minnesota

1:30 - 3:00 pm

Oral Session 1 - continued

Boulderado Ballroom

Associations among gut permeability, inflammation, and cognitive impairment in female breast cancer patients treated with chemotherapy

Lauren Otto-Dobos, BS; Lindsay Strehle, BS, MS; Corena Grant, BS, PhD; Olivia Wilcox, BS; Ashley Lahoud, BS; Nicklaus Halloy, BS, MS; Melina Seng, BS; Yonaida Valentine, BS, Institute for Behavioral Medicine Research, The Ohio State University; Brett Loman, BS, RD, PhD, Division of Animal Sciences, University of Illinois; Michael Bailey, BS, PhD, Nationwide Children's Hospital; Robert Wesolowski, BS, MD, Stefanie Spielman Comprehensive Breast Center, The Ohio State University; Rebecca Andridge, BA, PhD, College of Public Health, The Ohio State University; Leah Pyter, BS, MS, PhD, Institute for Behavioral Medicine Research, The Ohio State University

Early life cancer and chemotherapy lead to cognitive deficits related to alterations in microglial gene expression in prefrontal cortex

Collin Laaker, BS; Claire Cantelon, BS; Alyshia Davis, BS; Adam Hiltz, BS; Brittany Smith, PhD, University of Cincinnati; Jan Pieter Konsman, PhD, CNRS, University of Bordeaux; Teresa Reyes, PhD, University of Cincinnati, College of Medicine

Donepezil prevents chemotherapy-induced cognitive impairment and glial activation following doxorubicin treatment

Ana Luiza Almeida Lopes, MSc; Maria de Fátima Martins, Dr, University Cruzeiro do Sul; Eduardo Bondan, Dr, University Paulista (UNIP)

3:00 - 4:30 pm

Poster Session 1 – *please see page 26 for a listing of posters*

Mezzanine

4:30 - 5:00 pm

Robert Ader Lecture: *Social Psychoneuroimmunology: Uniting Social Psychology and PNI*

Boulderado Ballroom

Keely Muscatell, PhD

Assistant Professor, Psychology & Neuroscience, University of North Carolina at Chapel Hill

Chair: Julienne E. Bower, PhD

Nominators: Julienne E. Bower, PhD, Gregory Miller, PhD, Steven W. Cole, PhD

Social behavior has long been appreciated as a cause and consequence of inflammation. From research demonstrating social defeat-induced increases in cytokines to social withdrawal during sickness, social experiences and inflammation are clearly interconnected. However, there is still much to be learned about interactions between social experience and the immune system, particularly among humans. In the present talk, I will describe my prior and on-going research in "social psychoneuroimmunology," a nascent subfield in which I am attempting to unite social psychology and psychoneuroimmunology to further our understanding of the social causes and consequences of inflammation. I will argue that increases in inflammation sometimes result in social approach and not withdrawal, and that we need more research on the types of social stressors that induce inflammation. More broadly, I will share my perspective on how PNI research could be advanced by incorporating social psychological theory and methods, and will highlight my early career attempts to do just that.

5:00 - 6:00 pm

Visit Boulder Mobile VW Bus

Hotel Boulderado

The little orange bus, Delilah, is stocked with visitor information, brochures and resources, as well as local insight about activities and locations off the beaten path. And onboard the bus is a Boulder photo booth, complete with props and hats! Stop by on your way to the Welcome Reception to find out how to make the most of your stay in Boulder!

6:00 - 8:00 pm

Welcome Reception

Avanti - 1401 Pearl St, Boulder, CO

A short walk from the Hotel Boulderado, enjoy time with friends and colleagues in a casual setting.

Schedule Day 3

Wednesday, June 14
8:30am - 8:00pm

8:00 am - 6:00 pm **Registration**
Boulderado Ballroom Foyer

8:30 - 10:30 am **Presidential Sympsium: *Exercise and PsychoNeuroImmunology***
Boulderado Ballroom
Chair: Jeffrey Woods, PhD, PNIRS President

Effects of physical activity interventions on brain health in late adulthood
Kirk I. Erickson, PhD, Director, Translational Neuroscience, AdventHealth; Mardian J. Blair Endowed Chair of Neuroscience, AdventHealth, Orlando, FL; Research Professor, Department of Psychology, University of Pittsburgh
Engaging in exercise improves brain health and reduces risk for Alzheimer's disease in late adulthood. Yet, despite these assertive claims there is indisputable muddiness and heterogeneity in the scientific literature with a number of randomized trials failing to demonstrate improvements in cognitive performance. In this talk I will describe several reasons for this variability across the literature including methodological considerations for future large-scale randomized clinical trials. I will also focus on recent research findings on exercise and brain health in late adulthood and will discuss the evidence for several levels of mechanisms and moderators of these effects. Overall, engaging in regular exercise is an important modifiable lifestyle factor that carries significant consequences for learning, memory, and brain health in late adulthood, but methodological issues continue to limit the widespread adoption of exercise for enhancing brain health and our understanding of mechanisms and moderators of the effects.

Exercise as an immune adjuvant for cancer therapies
Richard J. Simpson, PhD, School of Nutritional Sciences and Wellness, The University of Arizona; Department of Pediatrics, The University of Arizona; Cancer Center, The University of Arizona; Department of Immunobiology, The University of Arizona, Tucson, AZ, USA
Moderate to vigorous intensity exercise elicits a catecholamine dependent mobilization and redistribution of effector lymphocytes (e.g. Natural Killer-cells, T-cells, CD8+ T-cells) with every bout. This is purported to improve long-term anti-cancer immune surveillance in regular exercisers by increasing contact and elimination of premalignant cells in the initial stages of tumor development. Lymphocyte products can be manufactured from blood cells of healthy donors to treat leukemic relapse after allogeneic hematopoietic stem cell transplantation, but success in achieving leukemic remission remains low. An overarching goal of our lab is to use exercise-mobilized lymphocytes as an adoptive cell therapy for the treatment of a wide range of hematological malignancies. In this talk, I will describe how single exercise bouts mobilize and alter the composition of blood lymphocytes, and, at the single cell and clonal level, affect their phenotypic and transcriptomic signatures as they relate to anti-tumor immunity. I will also show data demonstrating how exercise-mobilized lymphocytes can be used to expand more potent cancer therapeutic cell products ex vivo, and how these exercise-boosted cell products improve tumor suppression in vivo using xenogeneic mouse models engrafted with human leukemia. We posit that single exercise bouts can be used as a simple and economical adjuvant to increase the manufacture and potency of several therapeutic cell products.

Exercise can enhance the immune response to melanoma and other cancers
Keri Schadler, PhD. Associate Professor, Pediatrics Research, MD Anderson Cancer Center
A growing body of work demonstrates that aerobic exercise increases the immune response against some types of cancer in mice, and early evidence suggests that this may also occur in humans. This is important because an enhanced anti-tumor immune response can restrain or even eliminate tumor growth, and may work synergistically with immunotherapies used to treat cancer. We utilized two models of melanoma in mice and daily moderate treadmill running to interrogate the specific effects of exercise on the immune response to melanoma. Excitingly, exercise suppressed tumor growth, increased the number and activation of CD8 T cells, and significantly changed the number and phenotype of myeloid cells within YUMMER melanoma in mice. Our data, which will be discussed in this seminar, suggests an important role for tumor associated macrophages in exercise-induced tumor suppression. This seminar will discuss the specific effects of exercise on macrophages and other immune cells in the tumor microenvironment and potential molecular mechanisms that regulate the effects of exercise on the tumor immune milieu.

10:30 - 11:00 am **Break**
Boulderado Ballroom Foyer

11:00 am - 12:30 pm **Oral Session 2**
Boulderado Ballroom
Chairs: Laura Fonken, PhD and Lourdes Davis

Time-restricted feeding ameliorates age-associated neuroinflammation and social withdrawal in mice
Louise Ince, PhD; Jeffrey Darling, PhD; Krishi Manem; Akshay Prabhakar, BS; Ruizhuo Chen, PhD; Emily Chan, BS; Erika Carlson, BS; Shwetha Sridhar; Anusha Dabak; Laura Fonken, PhD, UT Austin

TLR4 mediates development of persistent post-operative cognitive dysfunction following short-term high-fat diet consumption in male rats
Stephanie Muscat, MS; Michael Butler, PhD; Nicholas Deems, MS; Menaz Bettes, BS; James DeMarsh, BS; Ruth Barrientos, PhS, Ohio State University

The role of inflammation in the relationship between obesity and perinatal depression in women
Luba Sominsky, PhD; Martin O'Hely, PhD, Deakin University; Katherine Drummond, PhD, The Florey Institute of Neuroscience and Mental Health, University of Melbourne; Sifan Cao, PhD; Fiona Collier, PhD; Poshmaal Dhar, PhD; Amy Loughman, PhD; Samantha Dawson, PhD, Deakin University; Mimi Tang, MBBS PhD FRACP FRCPA FAAAAI; Toby Mansell, PhD; Richard Saffery, PhD; David Burgner, MBChB DTM&H MRCP MRCPCH FRACP PhD, Murdoch Children's Research Institute, Royal Children's Hospital; Anne-Louise Ponsonby, MBBS PhD, FAFPHM, FRACP, The Florey Institute of Neuroscience and Mental Health, University of Melbourne; Peter Vuillermin, MBBS BMedSci FRACP PhD, Deakin University; the Barwon Infant Study Investigator Group

Obesity and immune challenge modulate the willingness to expend effort for reward
Iris Ka-Yi Chat, MA, Temple University; Mats Lekander, PhD, Karolinska Institutet; Charlotta Jacobsen, MSc, Stockholm University; Sven Benson, PhD, University Hospital Essen; Johannes Hebebrand, PhD, University of Duisburg-Essen; Vera Bender, MD; Analena Handke, MD, University Hospital Essen; Till Hasenberg, PhD, Witten/Herdecke University; Michael Treadway, PhD, Emory University; Harald Engler, PhD, University Hospital Essen; Robert Dantzer, PhD, University of Texas MD Anderson Cancer; Manfred Schedlowski, PhD, University Hospital Essen; Julie Lasselin, PhD, Karolinska Institutet

Depressive Symptoms and Cardiovascular Risk in Adolescents: The Neighborhood Context
Samantha Scott, MA; Kenia Rivera, MA; Jenalee Doom, PhD, University of Denver

Food allergy elicits behavioral and neurological pathologies via central histaminergic dysregulation
Kumi Nagamoto-Combs, PhD; Danielle Germundson-Hermanson, BS, University of North Dakota

12:30 - 1:30 pm ***BBI* Editorial Board Lunch** *(invitation only)*
Boulderado Ballroom

12:30 - 2:00 pm **Lunch on Your Own - Local Options**

2:00 - 3:30 pm

Member Sponsored Symposium 2: *Peptidoglycan Trafficking in Holobionts; The Beauty and the Bargain*

Boulderado Ballroom

Chair: Rachel Rowe, PhD

Host microbiomes affect multiple brain functions in health and during pathology. Further, sleep-wake disturbances alter intestinal bacterial permeability, the presence of bacterial cell wall peptidoglycan (PG) and sleep regulatory cytokines in brain. Changes in brain PG also occur during normal development and can be consequences of traumatic brain injury (TBI) and stroke. Such changes are associated with exacerbated injury and prolonged recovery. However, how PG or its muramyl peptide (MP) components vary in the brain with physiological processes or after pathological insults, the consequences of those changes, and the cellular and molecular mechanisms involved remain relatively unknown. The speakers and others described PG in mammalian brain. The speakers contributions to this literature are: 1) PG brain levels vary among different brain areas; 2) PG brain levels change locally after sleep loss, ischemic stroke, and TBI; 3) MPs have profound effects on sleep, even in insomniac anterior hypothalamic-lesioned animals; 4) sleep deprivation alters expression of brain PG receptors (i.e., peptidoglycan recognition protein 1 (Pglyrp1); 5) PGs and their MP components induce somnogenic brain cytokines, some of which are involved in brain damage and repair processes; 6) arhythmic suprachiasmatic-lesioned animals retain homeostatic sleep rebound after sleep loss, yet mice null for Pglyrp1 or the brain specific interleukin-1 receptor accessory protein (AcPb) do not; and 7) PG can be delivered to brain in bacteria derived membrane vesicles. These data suggest that an uncharacterized regulatory system involving local bacterial PG initiation of sleep, brain protection or damage, and repair mechanisms exists and exemplify holobiont communication mechanisms.

Bacterial communication with brain
Paul Forsythe, PhD, University of Alberta

Bacterial peptidoglycan in brain: variations with time, area, brain injury, and sleep-wake state
Erika English, BS, Washington State University

Traumatic brain injury: peptidoglycan and microglia responses dictate injury extent and recovery
Rachel Rowe, PhD, University of Colorado-Boulder

3:30 - 4:30 pm

Ronald Glaser Frontiers in Psychoneuroimmunology Lecture: *A Gut (Microbiome) Feeling about Psychoneuroimmunology*

Boulderado Ballroom

John F. Cryan, PhD
Vice President for Research & Innovation, University College Cork; Professor, Department of Anatomy & Neuroscience| Principal Investigator, APC Microbiome Ireland

Chair: Jeff Woods, PhD

The microbiota-gut-brain axis is emerging as a research area of increasing interest for those investigating the biological and physiological basis of neurodevelopmental, age-related and neuropsychiatric disorders. The routes of communication between the gut and brain include the vagus nerve, the immune system, tryptophan metabolism, via the enteric nervous system or via microbial metabolites such as short chain fatty acids. Studies in animal models have been key in delineating that neurodevelopment and the programming of an appropriate stress response is dependent on the microbiota. Developmentally, a variety of factors can impact the microbiota in early life including mode of birth delivery, antibiotic exposure, mode of nutritional provision, infection, stress as well as host genetics. Stress can significantly impact the microbiota-gut-brain axis at all stages across the lifespan. Moreover, animal models have been key in linking the regulation of fundamental brain processes ranging from adult hippocampal neurogenesis to myelination to microglia activation by the microbiome. Finally, studies examining the translation of these effects from animals to humans are currently ongoing. Further studies will focus on understanding the mechanisms underlying such brain effects and developing nutritional and microbial-based psychobiotic intervention strategies and how these interact with various systems in the body across the lifespan.

4:30 - 6:00 pm

Poster Session 2 – *please see page 32 for a listing of posters*
Mezzanine

6:00 - 7:30 pm

Speed Mentoring
Boulderado Ballroom
A short Professional Development talk will be followed by an informal opportunity to chat with a number of PNI scientists for short periods of time (~5 different people for 10 minutes). All are welcome to attend to mentor or be mentored. Drinks and light snacks will be provided throughout the event.

7:30 pm

Postdoc/Early Career Investigator Social
Bohemian Biergarten, 2017 13th St, Boulder
Join fellow early career researchers for a relaxed social networking opportunity! Space has been reserved, but attendees are expected to purchase their own drinks & food. The purpose of this event is to give early career investigators a chance to chat about the job search / application / interview process, the transition to a faculty or independent research position, and experiences starting up your own lab or research program. In other words, connect with your fellow early career psychoneuroimmunology researchers over a few drinks!

Schedule Day 4

Thursday, June 15
8:30am - 10:00pm

8:00 am - 5:00 pm **Registration**
Boulderado Ballroom Foyer

8:30 - 10:00 am **Member Sponsored Symposium 3: *Cellular and Molecular Mechanisms in Immune-Mediated Neurodevelopmental Disorders***
Boulderado Ballroom
Chair: Urs Meyer, PhD

Physiological disturbances compromising the quality of fetal development and growth can affect developmental trajectories in a manner that predisposes the offspring to chronic diseases. Such early-life programming is increasingly recognized to play a critical role in the etiology of neurodevelopmental disorders, including intellectual disability, autism spectrum disorder (ASD), schizophrenia, microcephaly, and cerebral palsy. Converging evidence from epidemiological and basic research suggests that immune-related processes, including inflammation and microglia activation, are key pathogenic factors affecting early neurodevelopmental processes and subsequent brain maturation in response to prenatal exposure to infection or non-infectious maternal immune activation (MIA). Despite this association, however, the precise mechanisms involved in immune-mediated neurodevelopmental disorders remain to be identified. This symposium will bring together scientists from diverse research fields presenting and discussing the most recent discoveries in this clinically important research area. Dr. Carl Sellgren (Karolinska Institute, Stockholm, Sweden) will present data on how microglia modulate the maturation of neuronal circuits in human brain organoids, both under physiological and inflammatory or infectious conditions. Dr. Adrienne Antonson (University of Illinois Urbana-Champaign, USA) will show how maternal infection with influenza virus in animal models triggers downstream intestinal inflammation that influences various developmental processes in the fetal brain. Dr. Konstantin Khodosevich (University of Copenhagen, Denmark) will present single cell-based molecular and cellular analyses showing how maternal inflammation perturbs the development of brain inhibitory systems in animal models and in human brain tissue. The symposium will be chaired by Dr. Urs Meyer (University of Zurich, Switzerland), who is a renowned basic scientist in the fields of developmental immune activation and neuroinflammation. Taken together, the symposium will highlight and discuss novel mechanisms by which immune-related processes can affect the normal course of brain development and maturation, thereby contributing to the early-life programming of neurodevelopmental disorders.

Modeling microglial functions in the developing brain and the implications for schizophrenia
Carl Sellgren, MD, PhD, Karolinska Institutet

Influence of maternal influenza infection on fetal brain development
Adrienne Antonson, PhD, University of Illinois Urbana-Champaign

Perturbation of inhibitory system development by maternal inflammation
Konstantin Khodosevich, PhD, University of Copenhagen

10:00 - 10:30 am **Break**
Boulderado Ballroom Foyer

10:30 am - 12:00 pm **Oral Session 3**

Boulderado Ballroom

Chairs: Peter Hall, PhD and Jennifer Chavez, MPH

Maternal C-reactive Protein Levels in Pregnancy and its Association with Growth Trajectories of Head Circumference in Infants
Ezra Aydin, PhD, Columbia University; Marisa Spann, PhD, MPH; Keely Cheslack-Postava, PhD, Columbia University Vagelos College of Physicians and Surgeons; Andre Sourander, MD, University of Turku; Emmi Heinonen, MSc, Univeristy of Turku; Bin Cheng, PhD, Columbia University; Ian McKeague, PhD, Columbia University Mailman School of Public Health; Alan Brown, MD, MPH, Columbia University Vagelos College of Physicians and Surgeons

Neuroimmune responses to intranasal poly(I:C) are primed by time of day
Gregory Pearson, MS; Brennan Falcy, BS; Jennifer Wang, BS; Nathan Santos, BS; Giancarlo Denaroso, MS; Saïd Akli, PhD; Ilia Karatsoreos, PhD, University of Massachusetts Amherst

Intra-individual stability of repeated measures of circulating and stimulated cytokines among older adults
Molly A. Wright, BS, Pennsylvania State University; Erik L. Knight, PhD, University of Colorado Boulder; Jennifer E. Graham-Engeland, PhD; Christopher G. Engeland, PhD, Pennsylvania State University

Effect of HIV, Chronic Stress and Monocyte Expansion on Resting State Functional Connectivity within the Mesolimbic Network.
Roger McIntosh, PhD, University of Miami; Judith Lobo, PhD, University of California, San Diego; Melissa Hidalgo, MD, Broward Health

Visualization and genetic access of Interleukin-1 expressing cells in the brain during homeostasis and neuroinflammation
Daniel Nemeth, PhD; Loretta Chen, MS; Numana Luqman, BS; Samantha McGovern, MS; Ning Quan, PhD, Florida Atlantic University

Methods matter: Mechanism of traumatic brain injury drives substantial post-traumatic sleep differences
Tabitha Green, PhD, The University of Colorado, Boulder; Grant Mannino, Undergraduate, The University of Colorado, Boulder; Sean Murphy, PhD, Cumberland Biological and Ecological Researchers, Longmont; Rachel Rowe, PhD, The University of Colorado, Boulder

12:00 - 1:30 pm **Lunch on Your Own - Local Options**

1:30 - 3:00 pm **Poster Session 3** – *please see page 38 for a listing of posters*

Mezzanine

3:00 - 3:30 pm **Award Ceremony & Business Meeting**

Boulderado Ballroom

3:30 - 4:30 pm **George Solomon Lecture: *Inflammation-Driven Neuropsychiatric Comorbidity: Vulnerability, Mechanisms and Therapeutic Implications***

Boulderado Ballroom

Lucile Caperon, PhD
Research Director, Laboratory of Nutrition and Integrative Neurobiology, INRAE - University of Bordeaux, France
Chair: Carmine Pariante, MD, FRCPsych, PhD
The finding that inflammatory markers are elevated in various neuropsychiatric disorders raises the need of identifying the symptom dimensions that are driven by inflammation. Data gained with the model of inflammation-induced depression have enabled the identification of distinct pathophysiological pathways involved in neurotransmitter metabolism with specific relevance to the development of

symptom constellations encompassing respectively mood/cognitive symptoms and neurovegetative/motivational alterations. These symptom domains represent core features of various neuropsychiatric disorders that are also characterized by a chronic, low-grade, activation of inflammatory processes. Interestingly, converging findings indicate that the interaction of inflammatory processes with relevant vulnerability factors, including personality, stress, metabolic, and neuroendocrine factors, may modulate the presentation of inflammation-driven neuropsychiatric symptoms. Altogether, these findings make inflammation a key pivotal factor in psychopathology. Accordingly, the development of therapeutic strategies that target inflammation, and specifically the pathways and systems by which inflammatory processes selectively affect neurotransmitter metabolism and function, may be of particular relevance for the prevention and treatment of specific neuropsychiatric symptom domains, in the perspective of a personalized and precision medicine in psychiatry.

7:00 - 10:00 pm

Closing Banquet

Boulderado Ballroom

Announcement of the 2024 Norman Cousins and Robert Ader New Investigator Awards will be made.

Pearl Streeet Mall, Boulder CO

Poster Session 1

Tuesday, June 13
3:00 - 4:30 pm

PS1-1
Quantifying Neuroinflammation Across Multiple Scales: A Novel Approach Employing Quantitative Phase Imaging in Models of Neuroinflammation and Neurodegeneration
Jorge Maldonado DeJesus, Grad, University of Illinois Urbana Champaign (UIUC); Catherine Best, PhD, UIUC

PS1-2
The mediating role of loneliness on the relationships between childhood trauma and depressive symptoms in older people with immune dissonance
Rachel R Jin, BSc, State Key Laboratory of Brain and Cognitive Sciences, The University of Hong Kong; Ji-Tseng Fang, PhD, Chang Gung University College of Medicine; Chang Gung Memorial Hospital Department of Nephrology; Chih-Ming Lin, PhD, Chang Gung Memorial Hospital; Chang Gung Health and Culture Village; Chang Gung University; Shwu-Hua Lee, PhD, Chang Gung University College of Medicine; Linkou Chang Gung Memorial Hospital; Tatia MC Lee, PhD, State Key Laboratory of Brain and Cognitive Sciences, The University of Hong Kong

PS1-3
Characterization of the gut microbiome and oxycodone use disorder phenotypes in select rat strains of the Hybrid Rat Diversity Panel
Eamonn Duffy, BS; Luanne Hale, MS; Jonathan Ward, BS; Kyle Brown, PhD; Andrew Kwilasz, PhD, University of Colorado Boulder; Daniel Frank, PhD; Laura Saba, PhD, University of Colorado Anschutz Medical Campus; Ryan Bachtell, PhD; Marissa Ehringer, PhD, University of Colorado Boulder

PS1-4
Sex hormone imbalance associated with inflammation in major depressive disorder: insights from the BIOmarkers in DEPression Study
Giulia Lombardo, PhD; Valeria Mondelli, MD, PhD; Maria Antonietta Nettis, MD, PhD; Naghmeh Nikkheslat, PhD; Zuzanna Zajkowska, PhD; Nicole Mariani, MSc; Luca Sforzini, MD, PhD student; Courtney Worrell, MSc, PhD student; Melisa Kose, MSc, King's College London; Linda Pointon, MSc, University of Cambridge; Philip J Cowen, MD, University of Oxford; Jonathan Cavanagh, MD, University of Glasgow and Sackler Institute of Psychobiological Research; Neil A Harrison, MD, PhD, Cardiff University Brain Research Imaging Centre; Edward T Bullmore, MD, PhD, University of Cambridge; Paola Dazzan, MD, PhD; Carmine Maria Pariante, MD, PhD, King's College London

PS1-5
Acute nasal inflammation induces immune cell infiltration in the olfactory bulb of male mice
Sanae Hasegawa-Ishii, PhD; Hinami Asano, Master of Health Sciences, Kyorin University; Jaewon Sim, BS, Michigan State University; Robert Dantzer, DVM, PhD, MD Anderson Cancer Center; Geoffroy Laumet, PhD, Michigan State University

PS1-6
A Neurodevelopmental Role for the Microglial Circadian Clock
Brandy Routh, BS; Celina Yang; Laura Fonken, PhD, University of Texas at Austin

PS1-7
Insights into the complex immune environment during pregnancy and association with the developing human connectome
Raimundo Rodriguez, BS, Yale University School of Medicine; Ezra Aydin, PhD; Catherine Monk, PhD, Columbia University Vagelos College of Physicians and Surgeons; Bin Cheng, PhD, Department of Biostatistics, Columbia University Irving Medical Center; Bradley S Peterson, MD, Keck School of Medicine, University of Southern California; Dustin Scheinost, PhD, Yale University School of Medicine; Marisa N Spann, PhD, MPH, Columbia University Vagelos College of Physicians and Surgeons

PS1-8
Exposure to Adversity, TLR-4 Stimulated Inflammation, and Diurnal Cortisol in Women with Interstitial Cystitis/Bladder Pain Syndrome: A MAPP Research Network Study
Susan Lutgendorf, PhD; Sharaf Zia, MA; Yi Luo, MD PhD; Michael O'Donnell, MD, University of Iowa; Adrie von Bokhoven, PhD, University of Colorado Denver; Catherine Bradley, MD, University of Iowa; Robert Gallop, PhD, West Chester University; Jennifer Pierce, PhD, University of Michigan; Bayley Taple, PhD, Northwestern University; Bruce Naliboff, PhD, University of California Los Angeles; Quentin Clemens, MD, University of Michigan; Karl Kreder, MD, University of Iowa; Andrew Schrepf, PhD, University of Michigan

PS1-9

P2X7 receptor inhibition of microglia attenuates repeated social defeat induced monocyte recruitment and anxiety-like behavior

Rebecca Biltz, MS; Samuel Swanson, BS; Natalie Draime, BS; Amara Davis, BS; Weyuan Yin, PhD; Ethan Goodman, MS; Natalie Gallagher, BS, The Ohio State University/Department of Neuroscience; Anindya Bhattacharya, PhD, Janssen Research and Development/ Neuroscience; John Sheridan, PhD, The Ohio State University/Division of Biosciences; Jon Godbout, PhD, The Ohio State University/Department of Neuroscience

PS1-10

Microglia-specific Bmal1 knock-out in mice enhances lipopolysaccharide-induced neuroinflammation and associated sickness behaviors

Emily Chan, BS; Louise M Ince, PhD, Division of Pharmacology and Toxicology, University of Texas at Austin; Anusha A Dabak, University of Texas at Austin; Lourdes K Davis, BS, Institute for Neuroscience, University of Texas at Austin; Emily K Greenough, BS, Dell Medical School, University of Texas at Austin; Andrew D Gaudet, PhD, Department of Neurology, University of Texas at Austin; Laura K Fonken, PhD, Division of Pharmacology and Toxicology, University of Texas at Austin

PS1-11

Fear and Allergic Asthma: potential link via T helper 17/IL17a

Emily Allgire, BS, University of Cincinnati; Jaclyn McAlees, PhD; Ian Lewkowich, PhD, Cincinnati Children's Hospital Medical Center; Renu Sah, PhD, University of Cincinnati

PS1-12

Effect of oral administration of bovine lactoferrin on the pulmonary immune response in a mouse model of restraint stress

Mariazell Yépez-Ortega, PhD student, Laboratorio de Inmunonutrición, Sección de Estudios de Posgrado e Investigación, ESM IPN; Aldo Reséndiz-Albor, PhD; Erick Zárate-Ayón, Master of Science student, Laboratorio de Inmunidad de Mucosas, Sección de Estudios de Posgrado e Investigación, ESM IPN; Axel Gutiérrez-Calvillo, Master of Science student, Laboratorio de Inmunonutrición, Sección de Estudios de Posgrado e Investigación, ESM IPN; Belen Mendoza-Arroyo, PhD student, Laboratorio de Inmunidad de Mucosas, Sección de Estudios de Posgrado e Investigación, ESM IPN; Judith Pacheco-Yépez, PhD, Laboratorio de Inmunología de Enfermedades Infecciosas, SEPI, ESM IPN; Ivonne Arciniega-Martínez, PhD, Laboratorio de Inmunonutrición, Sección de Estudios de Posgrado e Investigación, ESM IPN; Nadia Pérez-Vielma, PhD, Centro Interdisciplinario de Ciencias de la Salud CICS, Instituto Politécnico Nacional

PS1-13

In vitro model for human astrocytes identifies potential neuroinflammatory mechanisms underlying major depressive disorder in people with HIV

Jerel Fields, PhD; Anna Laird, BS; Anh Le, BS; David Grelotti, MD; Jennifer Iudicello, PhD; Brook Henry, PhD; Ronald Ellis, MD, PhD, University of California, San Diego

PS1-14

Elevated levels of peripheral and central nervous system immune markers reflect innate immune dysregulation in Autism spectrum disorders

Attila Szabo, PhD; Kevin S O'Connell, PhD; Ibrahim A Akkouh, PhD, University of Oslo; Thor Ueland, PhD, Oslo University Hospital; Nils Eiel Steen, MD, PhD; Torill Ueland, PhD; Linn Sofie Sæther, MSc; Jordi Requena Osete, PhD; Ole A Andreassen, MD, PhD; Terje Nærland, PhD, University of Oslo; Srdjan Djurovic, PhD, Oslo University Hospital

PS1-15

Exploring the Effects of Probiotic and Lactate Supplementation on Anxiety-like Behavior Following a TLR7-mediated Inflammatory Challenge

Daniel Radford-Smith, PhD; Ho Thi Bao Tien, MSc; Ross McLeod, MSc; Daniel Anthony, PhD, University of Oxford

PS1-16

Effects of Constitutive CX3CR1-Cre Expression in the Developing Mouse Brain on Microglia and Behavior

Fadya Mroue-Ruiz, BSc; Bhoomi Desai, BSc; Madison Garving, BSc; Faith Kamau, High school; Jonila Shehu, High school; Jessica Bolton, PhD, Georgia State University

PS1-17
Perioperative hypothermia and stress jeopardize anti-metastatic effects of TLR-9 immune activation: Potential mediating mechanisms
Elad Sandbank, MSc; Pini Matzner, PhD; Anabel Eckerling, MSc; Liat Sorski, PhD; Ella Rossene, MSc; Shamgar Ben-Eliyahu, PhD, Tel-Aviv University

PS1-18
Maternal immune activation and early postnatal resource deprivation stress induce sex-biased behavioral and proteomic alterations in mice
Evan Bordt, PhD; Haley Moya, BS; Virzhiniya Ruseva, BS; Izabella Bankowski, BS, Massachusetts General Hospital; Abigail Obeng-Marnu, N/A, Harvard College

PS1-19
A sick sense of care: perception of caregivers by sick individuals
Lina Hansson, MSc, Stockholm university/Karolinska Institutet; Arnaud Tognetti, PhD, Karolinska Institutet; Pétur Sigurjónsson, MD; Emily Brück, MD, PhD, Karolinska University Hospital; Karin Jensen, PhD; Mats J Olsson, PhD, Karolinska Institutet; Rani Toll John, MD, PhD; Daniel Wilhelms, MD, PhD, Linköping University / Region Östergötland; Mats Lekander, PhD; Julie Lasselin, PhD, Stockholm University/Karolinska Institutet

PS1-20
Striatal TSPO binding is associated with anhedonia severity and early life stress exposure in anhedonic patients with major depressive disorder
Rachel D Phillips, MA; Kaitlin Cummings, BS, University of North Carolina at Chapel Hill; Ayarah Dharanikota, BS, Campbell University; Tory Eisenlohr-Moul, PhD, University of Illinois at Chicago; Keely A Muscatell, PhD; Gabriel S Dichter, PhD, University of North Carolina at Chapel Hill; David Lalush, PhD, North Carolina State University; Erin C Walsh, PhD, University of North Carolina at Chapel Hill

PS1-21
In vivo blockade of alpha- and beta-adrenergic receptors differentially modify stress-induced changes to intestinal epithelial ROS signaling
Maria Elisa Caetano-Silva, PhD; Akriti Shrestha, MS RN; Mikaela Webb, BS RD; Chia Hao Lin, BS, University of Illinois; Michael Bailey, PhD, Nationwide Children's Hospital; Jacob Allen, PhD, University of Illinois

PS1-22
Characterizing the neonatal and long-term behavioral and neuroimmune impacts of neonatal hypoxic ischemic encephalopathy in a novel model
Elise Lemanski, BS, University of Delaware; Bailey Collins, BA; Jordan Case, N/A; Sayera Muqarram, MD; Elizabeth Wright-Jin, MD, PhD, Nemours

PS1-23
Sympathetic neurotransmission does not directly cause T-lymphocyte inflammation during psychological trauma
Tatlock Lauten, BS; Emily Reed, BS; Tamara Natour, BS; Adam Case, PhD, Texas A&M University

PS1-24
Longitudinal Changes in suPAR Predict Decline in Executive Functioning
Abigail Shell, BS; Peter Gianaros, PhD; Stephen Manuck, PhD; Rebecca Reed, PhD; Zak Hutchinson, MSFS; Anna Marsland, PhD, RN, University of Pittsburgh

PS1-25
Intermittent Infection Via Cytomegalovirus Induces Cognitive Deficits and Inflammation in Nervous Tissue
Lucas Garfinkel, BS; Hanyun Wang, MS; Miayla Marcus, BS In progress; Mark Harrison, PhD; Raul Freitas, PhD; Katherine McDonald, MS; Chandler Monk, BS; Kevin Zwezdaryk, PhD; Elizabeth Engler-Chiurazzi, PhD, Tulane University

PS1-26
Unfavorable transcriptome profiles and social disadvantage in allogeneic hematopoietic cell transplantation
Mallory Taylor, MD, MS, Seattle Children's Hospital; Steve Cole, PhD, University of California Los Angeles; Joelle Strom, MS; Ruta Brazauskas, PhD, Medical College of Wisconsin; K Scott Baker, MD, MS, Fred Hutchinson Cancer Center; Rachel Phelan, MD, MPH, Medical College of Wisconsin; David Buchbinder, MD, Children's Hospital of Orange County; Betty Hamilton, MD, Cleveland Clinic Taussig Cancer Institute; Hélène Schoemans, MD, University Hospitals Leuven; Jennifer Knight, MD, MS, Medical College of Wisconsin

PS1-27
Morphometric investigation into astrocyte and microglial population in mutant tremor mice, a murine model of audiogenic seizures
Catharina Peres Rodrigues, MSc, University Paulista (UNIP); Maria de Fátima Martins, Dr, University Cruzeiro do Sul; Eduardo Bondan, Dr, University Paulista (UNIP)

PS1-28
Emergence of circadian rhythms in clock gene expression in the mouse brain and (neuro)immune system
Kiersten Bell, BS; Ruizhuo Chen, PhD; Aiden Weitzner, BS; Laura Fonken, PhD, The University of Texas at Austin

PS1-29
Prospective relationship between head hair cortisol levels and hippocampal volume: potential differences across racial groups
Kendra Wilson, BS; Charles Ferris, PhD; Bethany Boettner, PhD; Ping Bai, MS; Dylan Wagner, PhD; Christopher Browning, PhD; Baldwin Way, PhD, Ohio State University

PS1-30
Sensitivity to inflammation effects on cancer-related cognitive problems: moderation by age and chemotherapy
Arielle Radin, C Phil; Patricia Ganz, MD; Michael Irwin, MD; Steve Cole, PhD; Julienne Bower, PhD, UCLA

PS1-31
Subcutaneous Mycobacterium vaccae ameliorates the sex-specific effects of early life adversity alone or in combination with chronic stress during adulthood in mice
Giulia Mazzari, MSc, Ulm University Medical Center; Christopher A Lowry, PhD, University of Colorado Boulder; Dominik Langgartner, PhD; Stefan O Reber, PhD, Ulm University Medical Center

PS1-32
Reactions of the brain in response to endotoxemia-induced acute systemic inflammation in adult mice
Atsuyoshi Shimada, MD, PhD; Rei Settsu, BS; Aki Obara, BS; Sanae Hasegawa-Ishii, PhD, Kyorin University

PS1-33
Microglial transcriptional patterns in the prefrontal cortex after prenatal morphine exposure
Brittany Smith, PhD, Northern Kentucky University; Justin L Bollinger, PhD; Samuel C Woodburn, PhD; Tess A Guzman, BS; Alexander H Brendle, BS, University of Cincinnati; Anna G Makela, BS, Northern Kentucky University; Eric S Wohleb, PhD; Teresa M Reyes, PhD, University of Cincinnati

PS1-34
Neuron-Microglia Crosstalk in Development: A new role for the neuron-derived cytokine IL34 in microglial function
Ben Devlin, BS; Gabriel Grullon, BS; Dang Nguyen, BS; Madeline Clark, BS; Ashka Shah; Brayan Campos-Salazar, BS; Martha Deja; Alexis Ceasrine, PhD; Staci Bilbo, PhD, Duke University

PS1-35
The Effect of Elevated Inflammation and Depression on Subjective and Objective Cognitive Function among Breast Cancer Survivors
Annelise Madison, MA; William Malarkey, MD; Janice Kiecolt-Glaser, PhD, The Ohio State University

PS1-36
Behavioural responses to TLR activation are underpinned by a sexually dimorphic shift in metabolism
Isobel Dunstan, DPhil Pharmacology, University of Oxford; Daniel Radford-Smith, DPhil in Pharmacology, Univeristy of Oxford; Ross McLeod, DPhil in Pharmacology; Trinity Pate, MSc; Fay Probert, BSc, MSc, PhD; Daniel Anthony, PhD, University of Oxford

PS1-37
Impact of HIV, Acute and Chronic Stress Exposure on the Suppression of Monocyte Chemoattractant Protein-1 Expression in LPS-stimulated Monocytes
Roger McIntosh, PhD; Kia Howard, BS; Priya Sharma, MA; Surresh Pallikkuth, PhD; Surresh Pallikkuth, PhD, University of Miami

PS1-38
The Impact of High-Fat Diet and Inulin Fiber Supplementation on Anxiety, Memory, Social Interaction, and Hippocampus Oxidative status in Female Wistar Rats
Lucas Vieira, Msc; Sylvana Noronha, PhD; Iara Lelis, Msc; Aline Santos, Msc; Katiane Oliveira Nogueira, Msc; Deoclécio Chianca-Jr, PhD; Rodrigo De Menezes, PhD, Federal University of Ouro Preto

PS1-39
Feasibility of a Mindfulness Intervention on Sleep Disturbance, Immune Function, and Clinical Outcomes in Hematopoietic Stem Cell Transplant Recipients
Elisabeth Henley, BA; Hannah Uttley, BA, Medical College of Wisconsin; Keayra Morris, MD; Melinda Stolley, PhD, Medical College of Wisconsin; Anita D'Souza, MD, Medical College of Wisconsin; Michael Irwin, MD, University of California Los Angeles; Steven Cole, PhD, University of California Los Angeles; Gwen Lomberk, PhD; Jennifer Knight, MD, MS, FACLP, Medical College of Wisconsin

PS1-40
Insomnia remission following treatment modifies metabolic profiles using an untargeted metabolomics analysis
Cynthia Kusters, MD, PhD; Michael Irwin, MD; Judith Carroll, PhD, UCLA

PS1-41
Disturbance of Sleep Maintenance, but not Sleep Duration, Activates Nuclear Factor-B and Signal Transducer and Activator of Transcription (STAT) Family Proteins in Older Adults: Sex Differences
Dominique Piber, MD, Charité - Universitätsmedizin Berlin; Richard Olmstead, PhD; Joshua Cho, MD, PhD; Michael Irwin, MD, Cousins Center for Psychoneuroimmunology, UCLA

PS1-42
Anxiety and depression in Chronic Obstructive Pulmonary Disease: a systematic review and meta-analysis
Ruihua Hou, PhD, MD; Alina Miah, BMedSci, University Of Southampton

PS1-43
Psychological and Immunological Factors Associated with Persistent Back Pain and Disability in Older Adults
Corey Simon, DPT, PhD; Adam Goode, DPT, PhD; Cathleen Colón-Emeric, MD; Francis Keefe, PhD, Duke University

PS1-44
Effects of maternal immune activation with lipopolysaccharide on immune and behavioral outcomes in offspring across the lifespan
Mary Beth Hall, BA; Elina L Rodriguez, BS; Daria E Willis, BS; Jaclyn M Schwarz, PhD, University of Delaware

PS1-45
SARS-CoV-2 Infection is Independently Associated with T-Cell Exhaustion in Sexual Minority Men
Jennifer V Chavez, MPH; Emily M Cherenack, PhD; Vinh Dinh, BS, University of Miami Miller School of Medicine; Sara Gianella, MD, University of California San Diego; Sabina Hirshfield, PhD, SUNY Downstate Medical Center; Keith Horovath, PhD, San Diego State University; Margaret Roach, PhD; Savita Pahwa, MD; Mario Stevenson, PhD; Suresh Pallikkuth, PhD; Adam W Carrico, PhD, University of Miami Miller School of Medicine

PS1-46
Measuring fetal cortical architecture in response to maternal immune activation by live influenza virus
Izan Chalen, MS, Univerisity of Illinois; Selena Wang, BS; Virginia Florianowicz, N/A; Ashley Matan, N/A; Ashley Otero, BS; Rafael Gonzalez-Ricon, MS; Bilal Karim, N/A; Catherine Best-Popescu, PhD; Adrienne Antonson, PhD, University of Illinois

PS1-47
Enhancement of Exercise Expanded Gamma-Delta T-cells Anti-Leukemic Activity with TIGIT Blockade
Grace McKenzie, MS; Kyle Smith, PhD; Emmanuel Katsanis, MD; Richard Simpson, PhD; Forrest Baker, PhD, The University of Arizona

PS1-48
Depression during Pregnancy, Glucose Metabolism and Gestational Length
Anna Strahm, Health Psychology PhD, Sanford Research/University of South Dakota; Hilla Sang, PhD, Sanford Research

PS1-49
Prostaglandin PGE2 Receptor EP4 Signaling in the Brain Regulates Glucose Homeostasis
Anzela Niraula, PhD; Olivia Santiago, BA; Jeremy Frey, BS; Kelly Ness, PhD; Mauricio Dorfman, PhD; Joshua Thaler, MD, PhD, University of Washington

PS1-50
Impacts of Prebiotic Diet and Altered Gravity on Mouse Immune Response, Gut Microbiome, and Home Cage Behavior
Daniyaal Syed, BA; Sophia Blasco, BA; Shelby Hopkins, MS; Tel Kelley, MS; Robert Thompson, PhD, University of Colorado at Boulder; Christoper Wilson, PhD; Michael Pecaut, PhD, Loma Linda University; Monika Fleshner, PhD, University of Colorado at Boulder

PS1-51
Indoleamine 2, 3 dioxygenase (IDO1) regulates microbial-derived aromatic amino acid metabolites at baseline and response to an immune challenge: a pilot study
Akriti Shrestha, MS, RN, University of Illinois Urbana-Champaign; Mikaela Kasperek, BS, RD; Maria Elisa Caetano-Silva, PhD, University of Illinois at Urbana-Champaign; Derek Wainwright, PhD, Loyola University Chicago Stritch School of Medicine; Robert McCuscker, PhD; Jacob Allen, PhD, University of Illinois at Urbana-Champaign

PS1-52
Examining the behavioral and immunological phenotypes for Type II inflammation in food allergy model
Pooja Kher, BS; Ana Cristina Roginski, PhD; Rebecca Reinking-Herd, BA; Cheyanne Woodrow, BS; Bruna Costa Lima, MS; Esther Florsheim, PhD, Arizona State University

PS1-53
Post-surgical morphine induces long-lasting spatial memory deficits in aged female rats
Bryan Alvarez, BA; Stephanie Muscat, BS; Menaz Bettes, BS; James DeMarsh, BS; Michael Butler, PhD; Ruth Barrientos, PhD, The Ohio State University

Poster Session 2

Wednesday, June 14
4:30 - 6:00 pm

PS2-1
Multi-omics clustering of transdiagnostic cases reveals new depression subgroups and two subgroups of immune-related depression
Jonas Hagenberg, MSc; BeCOME Working Group, OPTIMA Working Group, Elisabeth Binder, Prof, Max Planck Institute of Psychiatry; Janine Knauer-Arloth, Dr, Max Planck Institute of Psychiatry

PS2-2
Breaking Ground in Pain Research: Advancements in TLR4 Signaling Pathways and Implications for Brain-Behavior-Immunity Crosstalk
Sanam Mustafa, PhD; Samuel Evans, PhD; Mark Hutchinson, PhD, University of Adelaide

PS2-3
The Pilot Study of Reminder Focused Positive Psychiatry Body Mind Intervention on Improving Heart Rate Variability and Autonomous Nervous System Reactivity in Adults with Posttraumatic Stress Disorder
Naser Ahmadi, MD PhD, Semel UCLA; Mike Ramirez, LCSW; Julien Pineau, HS, Divergent Fitness; Robert Pynoos, MD MPH, Semel UCLA

PS2-4
Unmasking and Addressing COVID-19-related Grief Reactions Among Suicidal Youth: Pilot Evidence for an Enhanced Psychiatry Emergency Room Safety Preventive Intervention
Naser Ahmadi, MD PhD; Robert Pynoos, MD MPH, Semel UCLA; Steven Berkowitz, MD, University of Colorado Anschutz Medical Campus

PS2-5
The influence of psychological stress and stress-related disorders in treatment outcome of periodontitis: A systematic review and meta-analysis
Sudan Prasad Neupane, PhD, University of Oslo; Erik K Mauland, Tannlege spesialist, Oral Health Center of Expertise, Rogaland, Norway

PS2-6
The moderating role of social support in the association between child maltreatment and physical health
Aishwarya Ganguli, BA; Caitlin Givens, BS; Christine Heim, PhD; Jennie Noll, PhD; Idan Shalev, PhD; Chad Shenk, PhD; Hannah Schreier, PhD, The Pennsylvania State University

PS2-7
Sex-specific alterations in emotion and homeostatic neurocircuits underlying stress-induced binge eating-like behaviors
Timothy Simon, Neuroscience; Perla Ontiveros-Ángel, Neuroscience, Loma Linda University; Brenda Noarbe, Neuroscience, University of California, Irvine; James Collins, Advanced MRI and Spectroscopy Facility, University of Florida; Andre Obenaus, Preclinical and Translational Imaging Center, University of California, Irvine; Johnny Figueroa, Physiology, Loma Linda University

PS2-8
The link between neuroactive steroid and immune dysregulation in peripartum anxiety
Semra Etyemez, MD, MPH, Weill Cornell Medicine; Kristin Voegtline, PhD; Kristen Miller, MA, Johns Hopkins University; Morgan Sherer, PhD, Booz Allen Hamilton; Graziano Pinna, PhD, University of Illinois; Lauren Osborne, MD, Weill Cornell Medicine

PS2-9
Microbial modulation prevents the effects of pervasive environmental stressors on microglia and social behavior, but not the dopamine system
Caroline Smith, PhD, Boston College; Danielle N Rendina, PhD, Duke University; Marcy A Kingsbury, PhD, Harvard Medical School/MGH; Karen E Malacon, BS; Dang N Nguyen, BS; BenA Devlin, BS; Madeline J Clark, BS, Duke University; Ravikiran M Raju, MD/PhD, Harvard Medical School/Boston Children's Hospital; Lauren Burgett, BS; Staci D Bilbo, PhD, Duke University

PS2-10

The predictive role of diurnal salivary cortisol and social support on resilience in newly diagnosed women with breast cancer

Ibane Aizpurua Perez, Psychology, Department of Basic Psychological Processes and their Development, University of the Basque Country; Amaia Arregi, Psychology, Department of Basic Psychological Processes and their Development, University of the Basque Country; David Gonzalez, Nursing, Oncologic Center (Onkologikoa); Patricia Macía, Psychology, Department of Basic Psychological Processes and their Development, University of the Basque Country; Gurutze Ugartemendia, Nursing, Oncologic Center (Onkologikoa); Ainitze Labaka, Nursing, Department of Nursing II, University of the Basque Country; Nerea Zabalza, Nursing, Oncologic Center(Onkologikoa); Alina Diez Solinska, Psychology, Department of Basic Psychological Processes and their Development, University of the Basque Country; Joana Perez-Tejada, Psychology, Oncologic Center (Onkologikoa)

PS2-11

Female vulnerability to inflammation-induced reward deficits across the lifespan

Chloe Boyle, PhD; Joshua Hyong-Jin Cho, MD, PhD, Cousins Center for Psychoneuroimmunology, Semel Institute for Neuroscience and Human Behavior, UCLA; Naomi Eisenberger, PhD, Department of Psychology, College of Arts and Sciences, UCLA; Richard Olmstead, PhD; Elizabeth Breen, PhD; Michael Irwin, MD, Cousins Center for Psychoneuroimmunology, Semel Institute for Neuroscience and Human Behavior, UCLA

PS2-12

Social Stress in Mice Alters Beta-adrenergic Signaling in Spleen and Peripheral Myeloid Cells

Catherine Walsh, PhD, University of Pittsburgh/The Ohio State University; Anna Marsland, PhD, RN, University of Pittsburgh; Wenyuan Yin, PhD; Natalie Gallagher, BS; Rebecca Biltz, BS; John Sheridan, PhD, The Ohio State University

PS2-13

Sex differences in sleep: Biological sex and brain injury severity impact sleep in the mouse

Grant Mannino, Undergraduate; Tabitha Green, PhD, University of Colorado Boulder; Sean Murphy, PhD, Cumberland Biological and Ecological Researchers; Mark Opp, PhD; Rachel Rowe, PhD, University of Colorado Boulder

PS2-14

The Effect of Chronic Stress on Tumor Burden in an Autograft Model of Multiple Myeloma – An In Vivo Pilot Study

Hannah Uttley, BA; Jennifer Knight, MD, MS, FACLP; Cecilia Hillard, PhD; Brittany Pace, BA; Elisabeth Henley, BA; Siegfried Janz, MD, Medical College of Wisconsin

PS2-15

The effects of cortisol on inflammation in cardiomyocytesv

Nicole Mariani, MSc; Juliette Giacobbe, MSc; Alessandra Borsini, PhD; Carmine Pariante, PhD, Department of Psychological Medicine, IoPPN, King's College London

PS2-16

Elevated Neuro-Inflammatory Markers are Associated with Aberrant Neural Oscillations in People with HIV

Sarah M Dietz, BS; Mikki Schantell, MPH, Institute for Human Neuroscience, Boys Town National Research Hospital; Rachel Spooner, PhD, Institute of Clinical Neuroscience and Medical Psychology, Heinrich-Heine University Dusseldorf; Matthew Zimmerman, PhD, University of Nebraska Medical Center; Madelyn Willett, BS; Hannah Okelberry, Bachelor of Art; Hallie Johnson, Bachelor of Art; Tony W Wilson, PhD, Institute for Human Neuroscience, Boys Town National Research Hospital; Adam J Case, PhD, Psychiatry and Behavioral Sciences Department of Medical Physiology School of Medicine

PS2-17

Decreased hippocampal neurite density in middle-aged adults following prenatal exposure to higher levels of maternal inflammation

Raana Mohyee, BA; Blake Elliott, PhD; Madeline Pike, BA, Temple University; Ann Kring, PhD, University of California, Berkeley; Ingrid Olson, PhD, Temple University; Elizabeth Breen, PhD, University of California-Los Angeles; Barbara Cohn, PhD; Piera Cirillo, MPH; Nickilou Kirgbaum, MPH, Child Health and Development Studies, Public Health Institute; Thomas Olino, PhD, Temple University; Mark D'Esposito, MD; Ashby Cogan, BA; Bhakti Patwardan, BA, University of California, Berkeley; Lauren Ellman, PhD, Temple University

PS2-18
The development of microglia tolerance is associated with dynamic alterations in microglia checkpoint receptors expression
Elad Robinson, MA; Eyal Dinur, MA; Lior Naggan, MSc; Raz Yirmiya, PhD, The Hebrew University of Jerusalem

PS2-19
Sleep Deprivation Differentially Alters Physiological Systems' Responses to Repeated Stressors
Kirsie R Lundholm, BS; Sara Delane, BS; Stephen M James, PhD; Kimberly A Honn, PhD; Hans Van Dongen, PhD; Brieann C Satterfield, PhD, Sleep and Performance Research Center & Department of Translational Medicine and Physiology

PS2-20
Downregulation of stress-evoked EMV miRNA target inflammasome gene networks and is highly predictive of plasma IL-1b revealed by LASSO
Tel Kelley, BA; Shelby Hopkins, BA, Department of Integrative Physiology, University Of Colorado, Boulder; Lida Beninson, PhD, National Academy of Sciences; Monika Fleshner, PhD, Department of Integrative Physiology, University of Colorado, Boulder

PS2-21
The effect of acute restraint or social isolation stress exposure on B and T:B lymphocyte profiles
Miayla Marcus, Undergraduate Neuroscience; India Pursell, Doctoral Student; Connie Porretta, BS; Lucas Garfinkel, BS; Raul Freitas, PhD; Hanyun Wang, MS; Sam Rawlins, Undergraduate Neuroscience; Sydney Monix, Doctoral Student; Kierstin Cousin, Doctoral Student; Elizabeth Engler-Chiurazzi, PhD, Tulane University

PS2-22
Methotrexate exposure alters astrocytic transcription and blood-brain-barrier permeability
Alyshia Davis, BS; Justin Bollinger, PhD; Claire Cantelon, BS; Eric Wohleb, PhD; Teresa Reyes, PhD, University of Cincinnati

PS2-23
Investigation of brain-specific estradiol supplementation for attenuation of mammary tumor-induced fatigue in a female mouse model
Lindsay Strehle, MS; Lauren Otto-Dobos, BS, Institute for Behavioral Medicine Research, Ohio State University; Dakota Dustin, BS, Department of Human Sciences, Ohio State University; Yonaida Valentine, BS; Melina Seng, BS, Institute for Behavioral Medicine Research, Ohio State University; Martha Belury, PhD, RDN, Institute for Behavioral Medicine Research and Department of Human Sciences, Ohio State University; Leah Pyter, PhD, MS, Department of Psychiatry and Behavioral Health, Ohio State University

PS2-24
Neurological involvements of acute SARS-CoV2 infection
Chanida Fongsaran, PhD; Irma Cisneros, PhD, University of Texas Medical Branch

PS2-25
An Integrative Methamphetamine Treatment Alters the Leukocyte DNA Methylome in Sexual Minority Men with HIV
Adam Carrico, PhD; Emily Cherenack, PhD, University of Miami; Annesa Flentje, PhD, University of California, San Francisco; Kesava Asam, MS, New York University; Delaram Ghanooni, MD, MPH; Jennifer Chavez, MPH, University of Miami; Judith Moskowitz, PhD, MPH, Northwestern University; Torsten Neilands, PhD; Samantha Dilworth, MS, University of California, San Francisco; Leah Rubin, PhD,MPH, Johns Hopkins University; Hetta Gouse, PhD, University of Miami; Dietmar Fuchs, PhD, University of Innsbruck; Robert Paul, PhD, University of Missouri, St Louis; Bradley Aouizerat, PhD, New York University

PS2-26
Histone- and DNA-modifying enzymes in late cognitive dysfuntion of rats submitted to doxorubicin administration during infancy
Eduardo Bondan, Dr; Carolina Vieira, Dr; Rodrigo Augusto da Silva, Dr, University Paulista (UNIP)

PS2-27
A novel marker of interleukin 6 activity and clinical and cognitive outcomes in depression
Éimear M Foley, MSc; Chloe Slaney, PhD, University of Bristol; Muzaffer Kaser, MD, MPhil, PhD, MRCPsych, University of Cambridge; Louise Ziegler, MD, PhD, Karolinska Institutet; Golam Khandaker, PhD, MRCPsych, University of Bristol

PS2-28
The Relationship between Early Life Community Violence Exposure and Susceptibility to the Common Cold in Adulthood
Yeon Sik Jang, MA; Jessica Chiang, PhD, Georgetown University

PS2-29
Imapct of Perinatally Oxycodone-Exposed Offspring During Adolescence
Adrian Flores, BA; Melody Nguyen, BS; Sowmya Yelamanchili, PhD; Gurudutt Pendyala, PhD, University of Nebraska Medical Center

PS2-30
Peri-hippocampal mast cells prevent PNN formation in the developing hippocampus
Kaliroi Engel, Graduate student, University of Maryland, School of Medicine

PS2-31
From blood markers to performance prediction: new insights for athletes and beyond
Mark Hutchinson, PhD(Med); Daniel T Barratt, PhD(Med); Joshua Holmes, PhD(Med); Sanam Mustafa, PhD; Juliana E Bajic, PhD(Med), University of Adelaide; Daniel Kolarich, PhD, Griffith University; Nicki H Packer, PhD, Macquarie University; Ewa M Goldys, PhD, University of New South Wales; Ian McKeown, PhD, Port Adelaide Football Club; Anna Ma-Wyatt, PhD; Carolyn Semmler, PhD, University of Adelaide

PS2-32
Early-life adversity alters microglial pruning of excitatory synapses in the developing amygdala of male mice
Michelle Sequeira, PhD; Hannah Lichtenstein, BS; Sara Correa, BS; Peter Clements, BS; Jessica Bolton, PhD, Georgia State University

PS2-33
Novel spatial quantification showed glial-neuron interactions after TBI
Tabitha Green, PhD, The University of Colorado, Boulder; Lindsey Beauregard, BS, The University of Colorado, Boulder; Sean Murphy, PhD, Cumberland Biological and Ecological Researchers, Longmont; Mark Opp, PhD; Rachel Rowe, PhD, The University of Colorado, Boulder

PS2-34
Alcohol after injury: uncovering the synergistic effects of chronic alcohol use after blast-induced mTBI
Makenzie Patarino, BS; Samantha Keil, PhD, University of Washington, VA Puget Sound; Alexandria Murry, BS, University of Washington; Mathew Sevao, BS, University of Washington, VA Puget Sound; Tami Wolden-Hanson, PhD, VA Puget Sound; Garth Terry, MD, PhD, University of Washington, VA Puget Sound; Sam Golden, PhD, University of Washington; Jeffrey Iliff, PhD; Abbie Schindler, PhD, University of Washington, VA Puget Sound

PS2-35
Non-injurious blast overpressure disrupts real-time learned behavior and alters cardiac physiology in rats
Robert Thompson, PhD; Josh Havassy, Bachelors; Tel Kelley, Bachelors; Shelby Hopkins, Bachelors; Daniyaal Syed, Bachelors, CU Boulder; Nicholas Brunstad, Bachelors; Gregory Rule, Masters, Applied Research Associates; Nathaniel Greene, PhD, CU Anschutz; Mark Espinoza, Bachelors; Theodore Argo, PhD, Applied Research Associates; Monika Fleshner, PhD, CU Boulder

PS2-36
Psychoneuroimmunology of Resilience and its impact on treating pediatric posttraumatic stress disorder
Maayan Epstein, BS, Olive View UCLA Education and Research Institute; Naser Ahmadi, MD, PhD, Olive View UCLA Medical Center

PS2-37
Chronic Social Stress effects on brain neurochemistry and immune-system regarding sociability in OF1 female mice
Alina Díez-Solinska, Psychology; Garikoitz Azkona, Veterinary; Maider Muñoz-Culla, Biochemistry; Andrea Lebena, Psychology; Garikoitz Beitia, Psychology; Ibane Aizpurua, Psychology; Oscar Vegas, Psychology, Basque Country University

PS2-38
Gender Differences in Depressive Symptoms of Older US Adults: A Role for Inflammatory Biomarkers
Kristina Pagel, PhD; Sarah Krieghoff, In progress, BA, Colorado Mesa University

PS2-39
Blood-based Biomarkers for Intestinal Permeability: A Pilot Study of US Veterans with and without Posttraumatic Stress Disorder
Lisa Brenner, PhD, University of Colorado; Andrew Hoisington, PhD; Christopher Stamper, PhD; Kelly Stearns-Yoder, MA, VHA Rocky Mountain MIRECC; Fatemeh Haghighi, PhD, Ichan School of Medicine at Mount Sinai; Christopher Lowry, PhD, University of Colorado

PS2-40
Daily pet contact during urban upbringing ameliorates the inflammatory stress-response during adulthood
Dominik Langgartner, PhD; Katja Weimer, PhD; Jonas Brunner-Weisser, studmed; Raphael Winkler, studmed, Ulm University Medical Center; Nicolas Rohleder, PhD, Friedrich-Alexander-University/ Erlangen-Nürnberg; Marc N Jarczok, PhD; Harald Gündel, Dr med; Stefan O Reber, PhD, Ulm University Medical Center

PS2-41
Sex Steroids Buffer the Relationship Between Self-Reported Psychosocial Stress and Glucocorticoids
Eleanor Goulden, BA, University of Colorado, Boulder; Christopher G Engeland, PhD; Jennifer E Graham-Engeland, PhD; Martin J Sliwinski, PhD, Penn State University; Erik Knight, PhD, University of Colorado, Boulder

PS2-42
Ido1 and Ido2 deficiency in neurons attenuates depression-like behavior, but induces obesity of mice
Robert H McCusker, PhD, The University of Illinois at Urbana-Champaign; Zoë A MacDowell Kaswan, PhD, University of Illinoisat Urbana-Champaign

PS2-43
Sex differences in a mouse model of mild neuroinvasive coronavirus infection
Catherine LaCourse, BS; Robert Yolken, MD; Lorraine Jones-Brando, PhD, Johns Hopkins School of Medicine

PS2-44
Sex differences in rat microglial activation across the lifespan
Lourdes Davis, BS; Jeffrey Darling, PhD; Laura Fonken, PhD, University of Texas at Austin

PS2-45
Cognitive and inflammatory subgroups in severe mental illness: translating findings from blood to brain
Linn Sofie Sæther, MSc, Oslo University Hospital/University of Oslo; Thor Ueland, PhD, Institute of clinical medicine, University of Oslo, Oslo, Norway; Attila Szabo, PhD, Norwegian Centre for Mental Disorders Research, Division of Mental Health and Addiction, Oslo Univer; Srdjan Djurovic, PhD, NORMENT, Department of Clinical Science, University of Bergen, Bergen, Norway; Beathe Haatveit, PhD, Norwegian Centre for Mental Disorders Research, Division of Mental Health and Addiction, Oslo Univer; Pål Aukrust, PhD, Institute of Clinical Medicine, University of Oslo, Oslo Norway; Nils Eiel Steen, PhD; Monica Bettina Elkjaer Greenwood Ormerod, MD; Ingrid Melle, PhD; Ole A Andreassen, PhD; Torill Ueland, PhD, Norwegian Centre for Mental Disorders Research, Division of Mental Health and Addiction, Oslo Univer

PS2-46
Brain structure and sensitivity to inflammatory activation
Mats Lekander, PhD; Lina S Hansson, MSc, Karolinska Institutet and Stockholm University; Amirhossein Manzouri, PhD; Arnaud Tognetti, PhD; Pétur Sigurjónsson, MSc; Emily Brück, PhD, Karolinska Institutet; Rani Toll, PhD; Daniel Wilhelms, PhD, University of Linköping; Predrag Petrovic, PhD; Kristoffer Månsson, PhD, Karolinska Institutet; Julie Lasselin, PhD, Stockholm University and Karolinska Institutet

PS2-47
Long-term reduced activation of striatal microglia after acute stress is associated with persistently reduced motivation for running
Meghan Connolly, MS, University of Illinois Urbana Champaign; Zachary Johnson, PhD, Georgia Institute of Technology; Lynna Chu, PhD; Peter Clark, PhD, Iowa State University; Justin Rhodes, PhD, University of Illinois Urbana-Champaign

PS2-48
Stem cell factor and c-kit signaling promote proliferation of peri-hippocampal mast cells in early postnatal development of the rat
Anna Maximova, BS; Alexa Blanchard, BS; Margaret McCarthy, PhD, University of Maryland School of Medicine

PS2-49
A comparison of affective and neuroinflammatory responses to unpredictable chronic mild stress and chronic hyperglycemia in male C57BL/6J mice
Kayla Gilley, MA; Riley McCready, BS; Laura Kusumo, BS; Grace Hall, BS; Elisabeth Vichaya, PhD, Baylor University

PS2-50
Inflammation-Related Proteins as Biomarkers of Behavioral Symptoms after Treatment: A Longitudinal Study of Breast Cancer Patients and Age-Matched Controls
Sunita Patel, PhD, City of Hope Comprehensive Cancer Center; Elizabeth Breen, PhD, Cousins Center for Psychoneuroimmunology; Melodey Soong, BA; Lennie Wong, PhD, City of Hope Comprehensive Cancer Center; Michael Irwin, MD, Cousins Center for Psychoneuroimmunology, UCLA Geffen School of Medicine; Carolyn Behrendt, PhD, City of Hope Comprehensive Cancer Center

PS2-51
Antioxidant effect of bovine lactoferrin in large intestine of BALB/c mice in chronic stress
Axel Gutierrez-Calvillo, Master of Science student; Ivonne Arciniega-Martínez, PhD; Mariazell Yépez-Ortega, PhD student, Laboratorio de Inmunonutrición, Sección de Estudios de Posgrado e Investigación, ESM IPN; Erick Zárate-Ayón, Master of Science student; Belen Mendoza-Arroyo, PhD student, Laboratorio de Inmunidad de Mucosas, Sección de Estudios de Posgrado e Investigación, ESM IPN; Judith Pacheco-Yépez, PhD, Laboratorio de Inmunología de Enfermedades Infecciosas, SEPI ESM IPN; Nadia Pérez-vielma, PhD, Centro Interdisciplinario de Ciencias de la Salud CICS, Instituto Politécnico Nacional; Aldo Reséndiz-Albor, PhD, Laboratorio de Inmunidad de Mucosas, Sección de Estudios de Posgrado e Investigación, ESM IPN

PS2-52
Polygenic risk score for C-reactive protein is associated with accelerated cortical thinning in adolescents: a population-based longitudinal cohort study
Haixia Zheng, PhD; Jonathan Savitz, PhD, Laureate Institute for Brain Research; Ebrahim Haroon, MD, PhD, Emory University School of Medicine; Jonathan Ahern, BS; Robert Loughnan, PhD, University of California, San Diego; Bohan Xu, PhD; Katie Forthman, MS, Laureate Institute for Brain Research; Robin Aupperle, PhD, Laureate Institute for Brain Resaech; Martin Paulus, MD; Wesley Thompson, PhD; Chun Chieh Fan, PhD, Laureate Institute for Brain Research

PS2-53
Oral Ingestion of CBD-rich Hemp Extract Modulates Sterile Inflammation Differently in Male Versus Female Rats
Shelby Hopkins, BA, Department of Integrative Physiology University of Colorado at Boulder; Tel Kelley, BA; Robert Thompson, PhD; Monika Fleshner, PhD, Department of Integrative Physiology, University of Colorado at Boulder

PS2-54
Spatial Light Interference Microscopy (SLIM) for Label-Free quantification of Neuroinflammation in Alzheimer's Disease
Jorge Maldonado DeJesus, Grad, University of Illinois Urbana Champaign (UIUC); Suhaani Nigham, HS, Nanyang Technological University Singapore3; Liviu Mirica, PhD; Catherine Best, PhD; Dmitry Yurchanka, HS, UIUC

Poster Session 3

Thursday, June 15
1:30 - 3:00 pm

PS3-1
Modeling HIV-1 infection dynamics in cells of a myeloid lineage to better understand HIV/HBV co-infection
Alexis Brantly, MSc, Drexel University; Stephanie Matt, PhD, Drexel; Kyle Yeakle, BS, Drexel University; Michael Bouchard, PhD; Peter Gaskill, PhD, Drexel; Michael Nonnemacher, PhD, Drexel University

PS3-2
The Interaction of Prenatal Maternal Interleukin-6 and Maternal Psychosocial Stress in Pregnancy on Risk for Offspring Adolescent Depressive Symptoms
Rachel Furlan, BS; Madeline Pike, MA; Emily Lipner, MA, Temple University; Elizabeth Breen, PhD, Cousins Center for Psychoneuroimmunology, University of California-Los Angeles; Barbara Cohn, PhD; Piera Cirillo, MPH; Nickilou Krigbaum, MPH, Child Health and Development Studies, Public Health Institute; Christian Perez, BS, Cousins Center for Psychoneuroimmunology, University of California-Los Angeles; Lauren Alloy, PhD; Thomas Olino, PhD; Lauren Ellman, PhD, Temple University

PS3-3
The Interdependence of TNF and IL-6 in the Pathophysiology of Depression: A Meta-Analysis
Mike Wang, MHS, Johns Hopkins Bloomberg School of Public Health Department of Molecular Microbiology and Immunology; Samuel Jin, BS; Al Garcia-Romeu, PhD, Johns Hopkins Department of Psychiatry; Cory Weissman, MD, University of California, San Diego Department of Psychiatry

PS3-4
Changes in oligodendrocyte gene expression and cognition following Influenza A virus infection are not alleviated by clemastine treatment
Joseph Tingling, PhD; Payton Haak, BSc; Allison Louie, MS; Richard Carr, BSc; Rodney Johnson, PhD; Andrew Steelman, PhD, University of Illinois Urbana Champaign

PS3-5
Anxiolytic behavior accompanied by the alteration of the intestinal bacteriome during psilocybin treatment
Emese Prandovszky, PhD; Zachary Cordner, MD, PhD; Hua Liu, PhD; Megan Pedicini, High School Diploma; Lindsey Macias, MSc; Kellie Tamashiro, PhD; Robert Yolken, MD, Johns Hopkins University

PS3-6
Effects of immunization with Mycobacterium vaccae ATCC 15483, a bacterium with anti-inflammatory, immunoregulatory and stress resilience properties, on high-fat/high-sugar "Western" diet-induced weight gain, adiposity, neuroinflammation, and behavior in adolescent male mice
Luke Desmond, Master's Degree; Evan Holbrook, BA; Tyler Akonom, Master's Degree; Lamya'a Dawud, PhD; Brandon Marquart, Master's Degree; Nathan Anderson, Master's Degree; Lyanna Kessler, PhD student; Elizabeth Hunter, Undergraduate, University of Colorado Boulder; Lucas Guerrero, Undergraduate, Front Range Community College; Dennis Boateng, Undergraduate; Barbara Stuart, BA; Christopher Lowry, PhD, University of Colorado Boulder

PS3-7
Lymphatic development and Autism Spectrum Disorders
Antoine Louveau, PhD; Gabriel Tavares, PhD; Natalie Frederick, PhD, Lerner Research Institute Cleveland Clinic

PS3-8
Exploring Relationships between Socioeconomic Status and Health Disparities in Pre-HSCT Multiple Myeloma Patients and Caregivers
Anthony Kantaras, BS Neuroscience (ongoing); Annelise Madison, MA, The Ohio State University; Ashley Rosko, MD; Lisa Christian, PhD, The Ohio State University Wexner Medical Center

PS3-9
Absolute beginners: psychological, neural and immune effects of mindfulness in novice meditators
Ivana Buric, PhD; Esther de Bruin, PhD, University of Amsterdam; Adrian Onicas, PhD, Sano Centre for Computational Personalised Medicine; Danijela Marasovic, MA, University of Amsterdam; Jelica Milojičić, MA, University of Belgrade; Marija Gadžić, BA; Maja Kolanović, BA, University of Amsterdam; George Slavich, PhD, University of California, Los Angeles (UCLA); Jos Bosch, PhD, University of Amsterdam

PS3-10
Transcriptomic profiling reveals biological pathways associated with different major depressive disorder phenotypes
Luca Sforzini, MD, King's College London; Annamaria Cattaneo, PhD, University of Milan, IRCCS Fatebenefratelli Brescia; Moira Marizzoni, PhD, IRCCS Fatebenefratelli Brescia; Valentina Zonca, PhD, king's College London, University of Milan; Chiara Bottanelli, MSc, University of Milan, IRCCS Fatebenefratelli Brescia; Veronika Kunšteková, PhD, Slovak Medical University Limbova, Comenius University Sasinskova; Nicole Mariani, MSc; Maria A Nettis, MD, PhD; Naghmeh Nikkheslat, PhD; Courtney Worrell, MSc; Zuzanna Zajkowska, PhD; Melisa Kose, MSc, King's College London; Linda Pointon, MSc, University of Cambridge; Philip J Cowen, MD, University of Oxford; Jonathan Cavanagh, MD, University of Glasgow; Neil A Harrison, MD, PhD, University of Cardiff; Valeria Mondelli, MD, PhD, King's College London; Edward T Bullmore, MD, PhD, University of Cambridge; Carmine M Pariante, MD, PhD, King's College London

PS3-11
Blood metabolites stably predict resilience in individuals at risk of major depressive disorder
Daniel Radford-Smith, PhD; Daniel Anthony, PhD; Fee Benz, MSc; James Grist, PhD; Monty Lyman, BM, BCh; Jack Miller, PhD; Fay Probert, PhD, University of Oxford

PS3-12
Differential expression of endoplasmic reticulum stress and NLRC4 inflammasome genes in major depressive disorder
Soumyabrata Munshi, MD, PhD, Laureate Institute for Brain Research; Ahlam Alarbi, PhD, Integrative Immunology Center, University of Oklahoma - School of Community Medicine; Haixia Zheng, PhD; Robin Aupperle, PhD; Sahib Khalsa, MD, PhD; Martin Paulus, MD, Laureate Institute for Brain Research & The University of Tulsa; T Kent Teague, PhD, Integrative Immunology Center, University of Oklahoma - School of Community Medicine; Jonathan Savitz, PhD, Laureate Institute for Brain Research & The University of Tulsa

PS3-13
Individually-tailored perioperative psychological intervention improves pro-metastatic gene expression profiles in breast cancer
Itay Ricon-Becker* (equal contribution), PhD, University of California, Los Angeles; Tsipi Hanalis-Miller* (equal contribution), PhD, The Academic College of Tel Aviv–Yaffo; Estherina Trachtenberg, MA; Nahida Sakis, MA, Tel-Aviv University; Ada Magen, MD, Rabin Medical Center; Gil Goldzweig, PhD, The Academic College of Tel Aviv-Yafo; Yehudit Birnboim-Hazan, MD; Frida Ohayon, RN; Sonya Wadhawker, MD; Eran Sharon, MD, Rabin Medical Center; Rebecca Jacoby, PhD, The Academic College of Tel Aviv-Yaffo; Steve Cole, PhD, University of California, Los Angeles; Shamgar Ben-Eliyahu, PhD, Tel-Aviv University

PS3-14
Hemoglobin buffers T-lymphocyte mitochondrial redox and inflammation after psychological trauma
Emily Reed, BS; Tatlock Lauten, BS; Tamara Natour, BS; Adam Case, PhD, Texas A&M University

PS3-15
Excision of Ido1 and Ido2 in astrocytes induces obesity while attenuating LPS-induced depression of mice
Robert H McCusker, PhD, The University of Illinois at Urbana-Champaign; Zoë A MacDowell Kaswan, PhD, University of Illinois at Urbana-Champaign

PS3-16
Structural Determinants of Immune Dysfunction Among Sexual Minority Men in the Era of COVID-19
Delaram Ghanooni, MD, MPH, University of Miami; Annesa Flentje,, PhD, University of California, San Francisco; Sabina Hirshfield, PhD, MPH, SUNY Downstate Health Sciences University; Keith J Horvath, PhD, San Diego State University; Emily J Ross, PhD; Daniel Jimenez, PhD; Patricia I Moreno, PhD; Audrey Harkness, PhD, University of Miami; Samantha E Dilworth, MS, University of California, San Francisco; Suresh Pallikkuth, PhD; Savita Pahwa, MD; Adam W Carrico, PhD, University of Miami

PS3-17
Alphavirus encephalitis and risk for neurodegenerative disease pathology
Krit Jirakanwisal, Doctor of Philosophy; Chanida Fongsaran, Doctor of Philosophy; Kelly T Dineley, Doctor of Philosophy; Slobodan Paessler, Doctor of Veterinary Medicine, Doctor of Philosophy; Irma E Cisneros, Doctor of Philosophy, University of Texas Medical Branch

PS3-18
Diffuse traumatic brain injury altered function of the growth hormone axis in juvenile rats
Grant Mannino, Undergraduate; Nicole Couillard, Undergraduate, University of Colorado Boulder; Sebastian Tellez, BS, Arizona State University; Matias Mendez, Undergraduate; Tabitha Green, PhD, University of Colorado Boulder; J Bryce Ortiz, PhD, University of Arizona; Sean Murphy, PhD, Cumberland Biological and Ecological Researchers; Rachel Rowe, PhD, University of Colorado Boulder

PS3-19
High-fat diet impairs memory, alters phagocytic function, and activates the complement cascade in the 3xTg-Alzheimer's Disease mouse model
Sabrina Mackey-Alfonso, BS; Michael Bulter, PhD; Ashton Taylor, BS; Nick Deems, MS; Stephanie Muscat, BS; Brigitte Gonzalez Olmo, BS; Ruth Barrientos, PhD, Ohio State University

PS3-20
Relationships among marital status, oxytocin, and chemotherapy-induced behavioral side effects in female breast cancer patients
Melina Seng, BS; Lauren Otto-Dobos, BS; Lindsay Strehle, MS, Institute for Behavioral Medicine Research, The Ohio State University; Erica Glasper, PhD, Department of Neuroscience, Institute for Behavioral Medicine Research, The Ohio State University; Leah Pyter, PhD, MS, Departments of Psychiatry and Behavioral Health & Neuroscience, Institute for Behavioral Medicine

PS3-21
Systematic review and meta analysis of immune and inflammation related gene variations in suicidal behaviors
Sudan Prasad Neupane, PhD, University of Oslo; Liat Itzhaky, PhD, Geha Mental Health Center; Assaf Shelef, MD, Lev-Hasharon Mental Health Center; Oren Tene, MD, Tel Aviv Sourasky Medical Center; Federico M Daray, MD, PhD, University of Buenos Aires; Elizabeth D Ballard, PhD, National Institutes of Health; Hanga Galfalvy, PhD; J John Mann, MD, Columbia University; Gil Zalsman, MD, Tel Aviv University and Geha Mental Health Center

PS3-22
Regulation of CCL2 transport across the blood-brain barrier
Takashi Fujimoto, MD/PhD; Lindsey Williams, BS; Daniel Quaranta, BS; Riley Weaver, BS; William Banks, MD; Michelle Erickson, PhD, VA Puget Sound Healthcare System

PS3-23
Bacterial Peptidoglycan Levels in Host Brain Fluctuate with Rest and Activity
Erika English, BS Biology; Cheryl Dykstra-Aiello, PhD; Catherine Schwartzmann, BS Biology; James M Krueger, PhD, Washington State University

PS3-24
Polyethylene and polypropylene microplastics induce anxiety-like behavior and brainstem astrogliosis in zebrafish
Alex Luciano Fernandes, MSc; Daniel Santos, BSc; Eduardo Bondan, Dr; Thiago Kirsten, Dr, University Paulista (UNIP)

PS3-25
Increased glial activation in 'Long-COVID' detected by positron emission tomography (PET) neuroimaging
Michael VanElzakker, PhD, Massachusetts General Hospital/ Harvard Medical School/ PolyBio Research Foundation; Hannah Bues, BA; Ludovica Brusaferri, PhD; Minhae Kim, BA; Deena Saadi, BA, Massachusetts General Hospital/ Harvard Medical School; Christalie Anor, BA, Tufts University; Darin Dougherty, MD; Marco Loggia, PhD, Massachusetts General Hospital/ Harvard Medical School

PS3-26
Sex Specific Alteration of Kynurenine Pathway in Adolescent Depression
Naghmeh Nikkheslat, PhD, Institute of Psychiatry, Psychology & Neuroscience, King's College London; Zuzanna Zajkowska, PhD, Institute of Psychiatry, Psychology & Neuroscience, King's College London; Pedro Manfro, PhD; Laila Souza, MSc; Rivka Pereira, MSc, Department of Psychiatry, School of Medicine, Universidade Federal do Rio Grande do Sul; Helen L Fisher, PhD PGCAP AFBPsS CPsychol FHEA, Institute of Psychiatry, Psychology & Neuroscience, King's College London; Brandon A Kohrt, MD, PhD, Department of Psychiatry, School of Medicine and Health Sciences, The George Washington University; Christian Kieling, PhD, Department of Psychiatry, School of Medicine, Universidade Federal do Rio Grande do Sul; Valeria Mondelli, MD, PhD, Institute of Psychiatry, Psychology & Neuroscience, King's College London

PS3-27
Dopamine drives NF-kB mediated inflammation through non-canonical catecholamine receptor signaling in human macrophages
Breana Channer, BS, Drexel University, Department of Pharmacology & Physiology; Dayna Robinson, BS; Stephanie Matt, PhD; Marzieh Daniali, PharmD; Sheida Majnoon Jahromi, BS; Peter Gaskill, PhD, Drexel University, Department of Pharmacology and Physiology

PS3-28
Free fatty acid receptor 2 (FFAR2) expression by intestinal epithelial cells (IEC) is not integral for regulating the microglia response to intestinal inflammation
Maria Elisa Caetano-Silva, PhD; Laurie Rund, PhD; Jacob Allen, PhD; Jeffrey Woods, PhD; Andrew Steelman, PhD; Rodney Johnson, PhD, University of Illinois

PS3-29
The Role of Astrocytes in Postnatal Synaptic Refinement of the Medial Prefrontal Cortex
Johanna Furrer, MSc; Sina Schalbetter, PhD; Urs Meyer, PhD; Bruno Weber, PhD; Tina Notter, PhD, University of Zurich

PS3-30
PKR regulates sleep-wake behavior and its homeostatic responses to sleep deprivation and LPS administration in mice
Salvador Valencia, Ph D; Charles Hoeffer, Ph D; Christopher D Link, Ph D; Mark R Opp, Ph D, University of Colorado

PS3-31
Investigating the role of childhood trauma in inflammatory gene expression differences observed in depression treatment response groups
Courtney Worrell, MSc, King's College London; Annamaria Cattaneo, PhD, IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli, University of Milan; Clarissa Ferrari, PhD, Research and Clinical Trials Service, Fondazione Poliambulanza Istituto Ospedaliero; Nicole Mariani, MSc; Giulia Lombardo, PhD; Maria Antonietta Nettis, MD, PhD; Naghmeh Nikkheslat, PhD; Luca Sforzini, MD; Melisa Kose, MSc, King's College London; Nadia Cattane, PhD, IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli; Linda Pointon, MSc, University of Cambridge; Phillip J Cowen, MD, University of Oxford; Jonathan Cavanagh, MD, University of Glasgow and Sackler Institute of Psychobiological Research, Queen Elizabeth University; Neil A Harrison, MD, PhD, Cardiff University Brain Research Imaging Centre; Valeria Mondelli, MD, PhD, King's College London; Edward T Bullmore, MD, PhD, University of Cambridge; Carmine M Pariante, MD, PhD, King's College London

PS3-32
Prenatal Maternal Inflammation, Cognition in Childhood, and Adolescent Depressive Symptoms
Madeline Pike, BA; Emily Lipner, MA; Kathleen O'Brien, MA, Temple University; Elizabeth Breen, PhD, University of California-Los Angeles; Barbara Cohn, PhD; Piera Cirillo, MPH; Nickilou Kirgbaum, MPH, Child Health and Development Studies, Public Health Institute; Thomas Olino, PhD; Lauren Alloy, PhD; Lauren Ellman, PhD, Temple University

PS3-33
Fetal blood-brain barrier breakdown during gestational influenza virus infection allows large glycoprotein fibrinogen to reach the fetal brain
Rafael Gonzalez-Ricon, MSc; Ashley M Otero, BSc; Izan Chalen, MSc; Adrienne Antonson, PhD, University of Illinois at Urbana-Champaign

PS3-34
Mice with a null mutation for interleukin 6 show improved short-term versus long-term memory with methamphetamine
Leslie Essel, MS Cell and Molecular Biology, MPhil Pharmacology; Gerald Wyckoff, PhD, Division of Pharmacology and Pharmaceutical Sciences University of Missouri-Kansas City

PS3-35
Chronic Interluekin-1 Signaling causes Neuronal Dysfunction, Neuropathology and Cognitive Decline after Diffuse Traumatic Brain Injury
Amara Davis, BS; Jonathan Packer, MS; Ethan Goodman, MS; Lynde Wangler, BS, The Ohio State University; Ning Quan, PhD, Florida Atlantic University; Jonathan Godbout, PhD, The Ohio State University

PS3-36
Surgical stress alters tumor secretome and promotes metastasis via -adrenergic and prostaglandin signaling
Anabel Eckerling, MSc; Elad Sandbank, MA; Adi Ovadia, BA; Ella Rosenne, MSc; Lir Beck, PhD; Gali Yanovich-Arad, PhD, Tel Aviv University; Tami Geiger, PhD, Weizmann Institute of Science; Steve Cole, PhD, University of California, Los Angeles; Shamgar Ben-Eliyahu, PhD, Tel Aviv University

PS3-37
IL1R1 Knockout on Glutamatergic Neurons Prevents Stress-induced Increase in Fear Memory
Ethan Goodman, Master's; Becca Biltz, MS; Jonathan Packer, MS; Damon Disabato, PhD, Ohio State University; Ning Quan, PhD, Florida Atlantic University; John Sheridan, PhD; Jonathan Godbout, PhD, Ohio State University

PS3-38
Microglia phenotype and expression of checkpoint receptors contribute to resilience to stress-induced depression
Eyal Dinur, MA; Elad Robinson, MA; Lior Naggan, MA; Raz Yirmiya, Prof, The Hebrew university of Jerusalem

PS3-39
Antidepressant-mediated regulation of inflammation and HIV in myeloid cells
Stephanie Matt, PhD; Breana Channer, BS; Yash Agarwal, BS; Krisna Mompho, BS; Alexis Brantly, MS; Oluwatofunmi Oteju, BS; Peter Gaskill, PhD, Drexel University College of Medicine

PS3-40
Subjective and Objective Measures of Neighborhood Disadvantage on Inflammation in Healthy Adults
Maya Martinko, BA; Peter Gianaros, PhD; Stephen Manuck, PhD; Zakary Hutchinson, MSFS; Anna Marsland, PhD, University of Pittsburgh

PS3-41
Ayahuasca-based psychedelic-assisted therapy for PTSD and its effects on the microbiome: a discovery cohort
Lyanna Kessler, BS; Lamya'a Dawud, PhD; John Sterrett, PhD; Ahmed Elsayed, PhD, University of Colorado Boulder; Brandon Weiss, PhD, Imperial College London; Jesse Gould; Kate Pate, PhD, Heroic Hearts Foundation; W Keith Campbell, PhD, University of Georgia; Christopher Lowry, PhD, University of Colorado Boulder

PS3-42
Microglial BDNF regulates synaptic and behavioral responses to stress and ketamine administration
Eric Wohleb, PhD; Samuel Woodburn, PhD; Helina Asrat, BS; David Dadosky, BS; James Flurer, BS; Hana Schwierling, BS; Justin Bollinger, PhD; Lauren Vollmer, PhD, University of Cincinnati College of Medicine

PS3-43
The roles of mitochondrial dysfunction and mitokines in cisplatin-induced fatigue
Brandon Chelette, PhD; Chinenye Chidomere, BS, MD Anderson Cancer Center; Arkadiy Bazhin, MS PhD; Ekaterina Solodnikova, MS; Elena Goun, MS PhD, University of Missouri; Robert Dantzer, PhD DVM, MD Anderson Cancer Center

PS3-44
Effect of chronic stress on the transport and secretion of IgA in lung from Balb/c mice
Erick Zárate-Ayón, Master of Science student, Laboratorio de Inmunidad de Mucosas, Sección de Estudios de Posgrado e Investigación, ESM IPN; Ivonne Arciniega-Martínez, PhD; Mariazell Yépez-Ortega, PhD student; Axel Gutiérrez-Calvillo, Master of Science student, Laboratorio de Inmunonutrición, Sección de Estudios de Posgrado e Investigación, ESM IPN; Belen Mendoza-Arroyo, PhD student, Laboratorio de Inmunidad de Mucosas, Sección de Estudios de Posgrado e Investigación, ESM IPN; Judith Pacheco-Yépez, PhD, Laboratorio de Inmunología de Enfermedades Infecciosas, SEPI ESM IPN; Nadia Pérez-Vielma, PhD, Centro Interdisciplinario de Ciencias de la Salud CICS, Instituto Politécnico Nacional; Patricia Rojas-Castañeda, PhD; Aldo Reséndiz-Albor, PhD, Laboratorio de Inmunidad de Mucosas, Sección de Estudios de Posgrado e Investigación, ESM IPN

PS3-45
Characterization of behavioral avoidance to a food allergen in different strains of mice
Bruna Genisa Costa Lima, MSc, Arizona State University; Jaime Cullen, BS; Leonardo de Paula Carvalho, PhD; Jeremy Bober, BS, Yale University; Esther Borges Florsheim, PhD, Arizona State University; Ruslan Medzhitov, PhD; Marcelo Oliveira Dietrich, PhD, Yale University

PS3-46
Neuropsychiatric symptoms and brain hypoxia in Post-COVID-19 condition: evidence from population and laboratory studies
Peter Hall, PhD, University of Waterloo; Hasan Ayaz, PhD, Drexel University; Gang Meng, PhD; Anna Hudson, PhD; Mohammad Nazmus Sakib, PhD; Anne Quah, PhD; Thomas Agar, MSc; Christian Boudreau, PhD; Geoffrey Fong, PhD, University of Waterloo

PS3-47
The role of wounding in stress-induced glucocorticoid resistance
Jessica Schiele, MSc; Dominik Langgartner, Dr rer nat; Stefan O Reber, Prof Dr, Ulm University Medical Center - Molecular Psychosomatics

PS3-48
Negative affective states – the influence of perineuronal nets
Jane Morphett, PhD candidate, The University of Adelaide

PS3-49
The impact of a murine coronavirus in a neuron-glial co-culture system: LRRK2 mutation and neurodegeneration
Shawn Hayley, PhD; Ashley Mcfee, MSc, Carleton University

PS3-50
Quantification of Biophysical Markers of Inflammation using Spatial Light Interference Microscopy (SLIM) in a Repeated Social Stress Disorder Murine Model
Tanishka Trivedi, University of Illinois at Urbana Champaign and Cardiff University; Jorge Maldonado, PhD(c), University of Illinois at Urbana Champaign; Patti Brewster, PhD(c), University of Illinois at Urbana Champaign and Montana State University; Isabelle Guerra, PhD(C); Jacob Allen, PhD; Catherine Best-Popescu, PhD, University of Illinois at Urbana Champaign

PS3-51
Omega-3 polyunsaturated fatty acids modulate LPS-induced ARDS and the lung-brain axis of communication in wild type versus Fat-1 mice genetically modified for leukotriene B4 receptor 1 or chemerin receptor 23 knock-out
Christoph Rummel, Dr vet med, Institute of Veterinary Physiology and Biochemistry, Justus Liebig University Gießen; Jessica Hernandez, MSc; Julia Schaeffer, MSc, Institute of Veterinary Physiology and Biochemistry Justus Liebig University Giessen, Germany; Christiane Herden, Prof Dr; Svenja Koerber, Veterinarian, Institute of Veterinary Pathology Justus Liebig University Giessen, Germany; Fabian Joahannes Pflieger, PhD, Institute of Veterinary Physiology and Biochemistry Justus Liebig University Giessen, Germany; Silvia Reiche, Veterinarian, Cardio-Pulmonary Institute, Justus Liebig University, Giessen, Germany; Hiromo Kitagawa, MSc, Department of Biomedical Engineering, Osaka Institute of Technology, Omiya, Asahiku, Osaka, Japan; Joelle Welter, MSc, Institute of Veterinary Physiology and Biochemistry Justus Liebig University Giessen, Germany; Carsten Culmsee, Prof Dr, Institute of Pharmacology and Clinical Pharmacy, Philipps University of Marburg, Marburg, Germany; Jens Bier, Technitian; Natascha Sommer, Prof Dr, Cardio-Pulmonary Institute, Justus Liebig University, Giessen, Germany; Jing Kang, Prof Dr, Laboratory for Lipid Medicine and Technology, Department of Medicine, Harvard Medical; Konstantin Mayer, Prof Dr, Department of Internal Medicine, Justus Liebig University, Giessen, Germany; Matthias Hecker, Prof Dr, Cardio-Pulmonary Institute, Justus Liebig University, Giessen, Germany

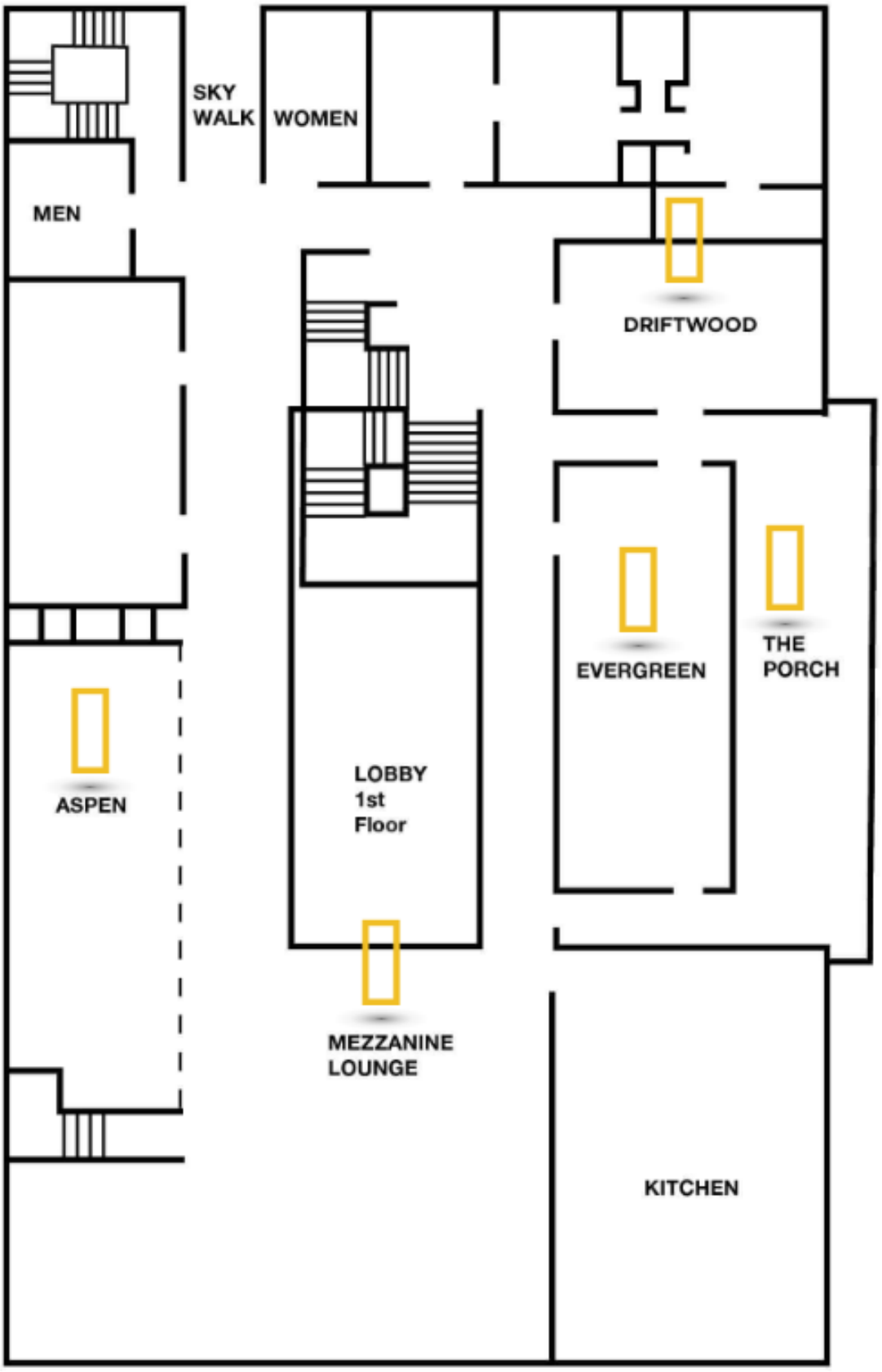
PS3-52
Dietary fatty acids differentially impact phagocytosis, inflammatory gene expression, and cell metabolism in microglial and neuronal cell models
Michael Butler, PhD, The Ohio State University; Sabrina Mackey-Alfonso, BS; Nashali Massa, BS; Kedryn Baskin, PhD; Ruth Barrientos, PhD, The Ohio State University

PS3-53
Chemotherapy-induced changes to the gut microbiota mediate fatigue and depressive-like behavior and induces neuroinflammation
Yonaida Valentine, BS; Lindsay Strehle, MS, The Ohio State University; Audrey Duff, PhD, Nationwide Children's Hospital; Lauren Otto, BS; Melina Seng, BS, The Ohio State University; Michael Bailey, PhD, Nationwide Children's Hospital; Leah Pyter, PhD, The Ohio State University

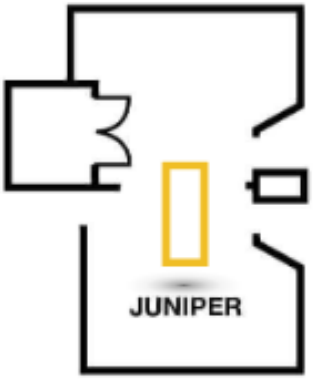
PS3-54
The Role of Experimentally Induced Low-grade inflammation and Sleep Loss in Psychiatric Symptomatology and Motivation
Leonie JT Balter, PhD; John Axelsson, PhD, Karolinska Institutet / Stockholm University

Hotel Boulderado Floor Plan - Historic Building

Mezzanine Level (2nd Floor)

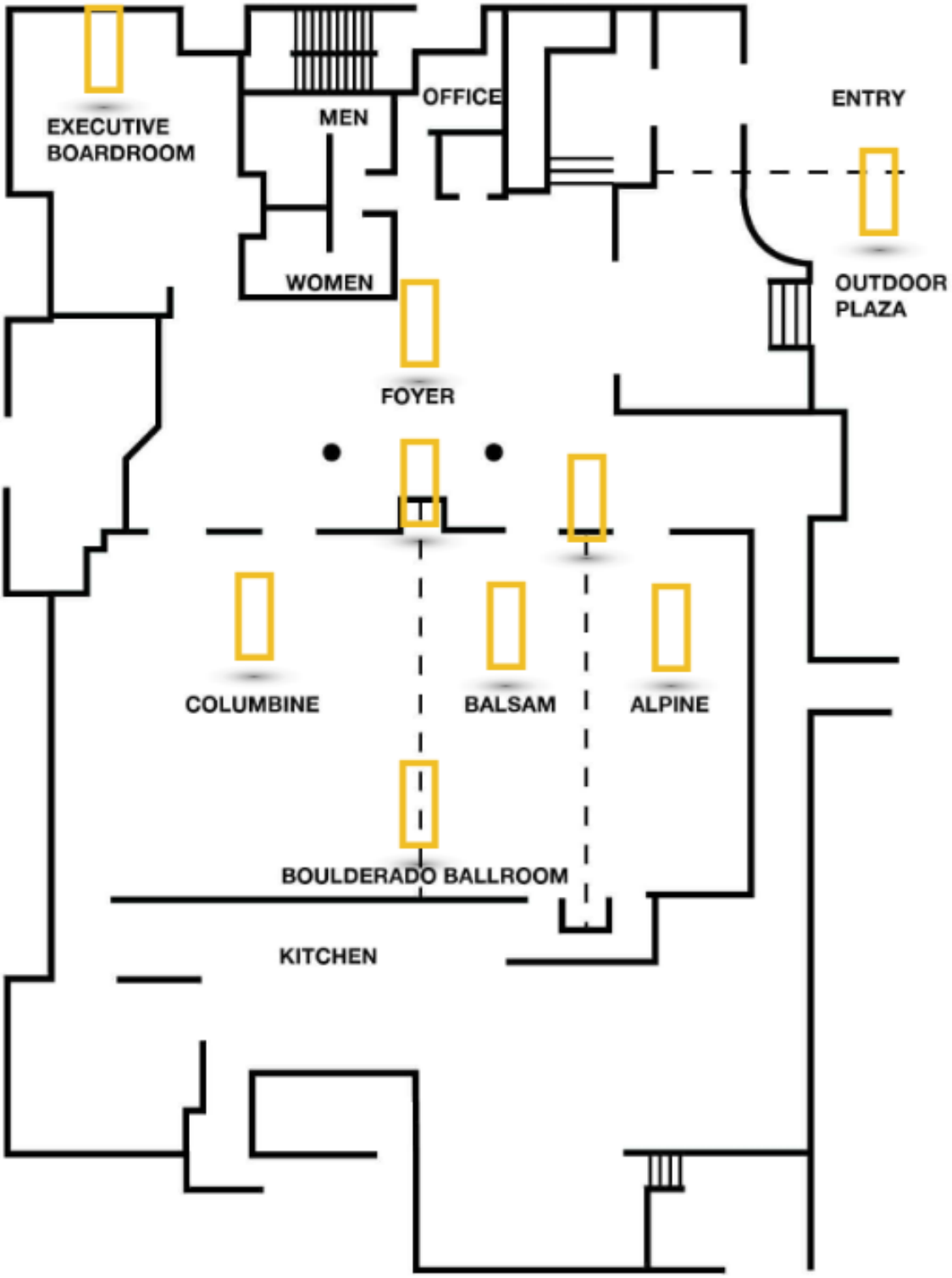


Lobby Level



Hotel Boulderado Floor Plan - North Wing Conference Center

Main Level



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