18th Annual Meeting of
The PsychoNeuroImmunology Research Society

PsychoNeuroImmunology
Mechanisms of Disease: From Pathophysiology
to Prevention and Treatment

June 8-11, 2011, Hilton Indian Lakes Resort
Chicago Illinois

Conference Program
Acknowledgements

We gratefully appreciate the support of Elsevier Inc. for sponsoring the Brain, Behavior, and Immunity Editorial Board luncheon and providing the complimentary copies of Brain, Behavior, and Immunity for non-member registrants. Funding for the 2011 travel awards were made possible in part by a conference grant from the National Institutes of Health. We are also indebted to Gayle Page, Jan Moynihan and Firdaus Dhabhar for preparing the proposals. We also acknowledge the assistance of staff, trainees and faculty of the University of Illinois @ Urbana Integrative Immunology and Behavior Program and the University of Illinois-Chicago.

Special acknowledgements are extended to local organizers, Jeff Woods and Chris Engeland, and their team for their dedication and commitment to making this meeting a success.
Society Officers and Committees

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Susan Solomon (Executive Director)

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Jeffrey Woods
Message from the President of the PNIRS

Dear meeting participants,

I am happy and honored to welcome you to the 18th Annual Meeting of the PsychoNeuroImmunology Research Society (PNIRS). The program committee and I have made every effort to put together an exciting, high quality and well-balanced scientific program. We are pleased and proud that we have been successful in recruiting some of the best researchers in our field as lecturers for the symposia and key note addresses. We were delighted and impressed by the high quality of the submitted abstracts. This made it quite difficult for us to select the presentations for the oral sessions, which were eventually selected not only on the basis of quality but also on the basis of topic coherence and balanced representation of the various sub-disciplines of PNI. Thus, we can assure you that both the oral and poster sessions will include excellent scientific presentations.

Our society has come a long way since its inception more than two decades ago - when the ideas that psychological and neural variables can influence and be influenced by immune cells and molecules were met with much skepticism. Thanks to members of our society and other researchers in our field it is now well established that interactions among brain, behavior and immunity are involved in almost every known disease. Furthermore, recent translational research is beginning to identify these interactions as prime targets for specific preventive and therapeutic procedures. These developments are reflected by our meeting’s theme “PNI Mechanisms of Disease: From Pathophysiology to Prevention and Treatment”. Indeed, many of the symposia and oral sessions in the meeting focus on the involvement of PNI mechanisms in various medical conditions, including neurodegenerative, psychiatric and autoimmune diseases, cancer, pain, drug addiction, chronic fatigue, chronic stress, birth complications, and wound healing.

In accordance with our tradition of fostering the society's trainees, we provide travel awards to trainees whose abstracts were selected by the Program Committee, based on their particularly high scientific merit. We also organized many events specifically for trainees, including the Educational Short Course, the sessions on "how to publish in BBI" and "peer-review of NIH proposals", the senior faculty–scholar award trainee mentoring colloquium, the trainee reception on Thursday, and the Junior-Faculty Trainee Roundtable on Saturday.

Our society has always been unique in the superb personal social relationships among its members, which are so important for the establishment of scientific collaborations that cross the boundaries of countries and disciplines. In this meeting we shall facilitate these personal interactions during the opening reception, the lakefront boat tour of the world famous Chicago skyline, and the farewell dinner banquet with music and dancing on Saturday night.

I wish you all an interesting, informative, inspiring and enjoyable meeting, and hope that you will both offer and receive valuable knowledge, insights, novel methodologies and brilliant research ideas.

Raz Yirmiya, Ph.D.
President, PNIRS
19th Annual PNIRS Meeting
San Diego, California
June 6-9, 2012

Manchester Grand Hyatt on beautiful San Diego bay

- 5 minutes from the airport
- Downtown: walk to 100s of restaurants, bars, etc.
- 5-minute walk to USS Midway museum aircraft carrier
- 5 minutes to world-famous San Diego Zoo
- 15 minutes to Sea World & beaches
- Torrey Pines Golf Course
- Wild Animal Park
General Information

REGISTRATION & INFORMATION CENTER
Name badges and meeting bags will be distributed at the registration desk in the Falling Waters Lounge of the Conference Center. The registration & information desk will be open during the following hours:

- Wednesday, June 8: 12:00 noon - 7:30 pm
- Thursday, June 9: 7:30 am – 5:00 pm
- Friday, June 10: 8:00 am – 3:00 pm
- Saturday, June 11: 8:00 am – 3:00 pm.

ACCOMPANYING PERSONS
Individuals (guests) accompanying registrants are welcome to attend the Opening Reception and Banquet as long as they have registered. Guest tickets for both events can be purchased at the Registration Desk. Guests are not permitted in either the lecture theatres, poster rooms during sessions or PNIRS.

MOBILE PHONES
As a courtesy to others, please turn off mobile devices during all sessions.

INSTRUCTIONS TO PRESENTERS

Chairs
Chairs of the sessions should be in the designated room at least 10 minutes before the session starts in order to assist the speakers. In the event of a talk cancellation, the order and timing of the session is at the discretion of the chairs, but every effort should be made to keep the session on schedule for individuals attending specific talks within the session.

Speakers
Speakers should go to the designated room a minimum of 20 minutes before the session starts to upload their talk onto the computer, make sure it works, and meet the moderators. Speakers must strictly adhere to the allocated time and moderators will be in place to ensure promptness.

Computer presentation guidelines
To minimize the need for connecting multiple computers to the projectors, house computers are provided in the lecture theatres. Talks can be uploaded via a flashdrive (memory stick). Both PC and Mac systems are available in the event that your presentation will work with only one type of operating system. Unless our computers do not work, please do not use your own personal laptop. It is assumed that all presentations will use PowerPoint or Adobe Acrobat. Contact the Registration Desk if you are using a different program.

Poster Presenters
The Poster Sessions will be held in the Trillium 3 (just next door to the main lecture room Trillium 4). Poster Session 1 will be from 3:00 – 4:30 p.m. on Thursday, June 9th. Poster Session 2 will be on Saturday, June 11th, from 3:00 – 4:30 p.m. All posters can be mounted during the morning of your respective session, but no later than 10:00am. Poster boards are 8 ft long x 4 ft high, and will accommodate most poster sizes. Push pins for mounting the posters will be provided. Look for your poster number in this Program Book or on a list that will be posted in the poster area. Please remove your posters at the end of your session. Remaining posters may be discarded if they are not taken down promptly.

Poster Data Blitz
30 minutes before each Poster Session, there will be a short oral presentation of some posters. The Poster Data Blitz talks will take place in Trillium 4. All Data Blitz participants will give a 3-minute oral presentation with a maximum of 2 slides. Given their brevity, please upload all files in advance before the 30-minute Data Blitz begins. After your presentations, please re-join everyone in the poster rooms.

2012 COUSINS AND ADER AWARDS
The winners of the 2012 Norman Cousins Award Lecture and the Robert Ader New Investigator Award will be announced at the Closing Banquet on Saturday, June 11th.
Map of Indian Lakes Resort

Conference Center

**Main Level**
- Fireplace Lounge C6
- Trillium I C5
- Trillium II C4
- Trillium III C3
- Trillium IV C2
- Falling Waters Lounge C1
- Banquet Office C7

**Lower Level**
- Sorrell I C10
- Sorrell II C11
- Cyperus I & II C12
- Cyperus III & IV C13
- Hospitality Room C14

**Legend**
- Restrooms
- Stairs
- Elevator
**Norman Cousins Award Lecture**

The Norman Cousins Award Lecture 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.

Previous Award Lecturers:
- 1991 – Robert Ader
- 1993 – George F. Solomon
- 1994 – Jean E. Merrill
- 1996 – Hugo O. Besedovsky
- 1997 – John F. Sheridan
- 1999 – Cobi Heijnen
- 2000 – Robert Dantzer
- 2001 – Christopher Coe
- 2002 – Steven Maier
- 2003 – Keith Kelley
- 2004 – Ronald Glaser
- 2005 – Nicholas Cohen
- 2006 – Linda Watkins
- 2007 – Michael Irwin
- 2008 – Andrew Miller
- 2009 – Manfred Schedlowski
- 2010 – Raz Yirmiya

**2011 Norman Cousins Award Lecture**

The β2-adrenergic Receptor on T and B Lymphocytes: Do we understand it yet?

**Virginia Sanders, Ph.D.**

Professor

The Ohio State University,

Columbus, OH, USA.

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**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.

Previous recipients of the Ader award:
- 2001 – Firdaus Dhabhar
- 2002 – Annemieke Kavelaars
- 2003 – Kurt Ackerman
- 2004 – Lucille Capuron
- 2005 – Susan Lutgendorf
- 2006 – Marian Kohut
- 2007 – Julienne Bower
- 2008 – Suzanne Segerstrom
- 2009 – Jonathan Godbout
- 2010 – Staci Bilbo

**2011 Robert Ader New Investigator Award**

Beneficial Aspects of Immunity on Cognition and Beyond: Implications for Neurodevelopmental Disorders

**Jonathan Kipnis, Ph.D.**

Assistant Professor

Department of Neuroscience,

University of Virginia,

Virginia, USA
# PNIRS Senior Faculty-Trainee Colloquium

Sponsored by an R13 grant (CA159754-01) from the NCI at NIH

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**Congratulations to the 2011 Trainee Scholars!**
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**Wednesday, June 8**

12:00-7:30 **REGISTRATION OPEN**  
(Falling Waters Lounge, Conference Center Main Level)

1:00-2:00 **HOW TO PUBLISH IN BBI**  
(Trillium 4, Conference Center Main Level)  
K. Kelley, University of Illinois, USA; Editor-in-Chief, BBI

2:00-5:00 **SHORT EDUCATIONAL COURSE:**  
**Stress, Immunity, and Disease**  
Chair: Jan Moynihan  
(Trillium 4, Conference Center Main Level)

2:00 *Neurobiology of Stress and its Implications for PNI*  
Steve Maier, University of Colorado, USA

2:30 *Stress and Immunity in Humans*  
Janice Kiecolt-Glaser, The Ohio State University, USA

3:00 *Stress and Immunity in Experimental Animal Models*  
Monika Flesher, University of Colorado, USA

3:30 BREAK

4:00 *Stress and Experimental Models of Cancer*  
Shamgar Ben-Eliyahu, Tel Aviv University, Israel

4:30 *Stress, Cytokines, Neuroplasticity, and Depression*  
Raz Yirmiya, The Hebrew University of Jerusalem, Israel

5:00-5:30 **PEER-REVIEW OF NIH PROPOSALS**  
(Trillium 4, Conference Center Main Level)  
Mike Selmanoff, SRO, Center for Scientific Review, National Institutes of Health, USA

5:30-7:30 **SENIOR FACULTY - SCHOLAR AWARD TRAINEE MENTORING COLLOQUIUM**  
(Byrne, Maher, Percell, Jensen, Elmslie, Inside Hotel)
Thursday, June 9

7:30-5:00  REGISTRATION OPEN
(Falling Waters Lounge, Conference Center Main Level)

8:30-10:30  ORAL SESSION 1:
Stress, Immunity, Wound Healing and Cancer
Co-Chairs: Ron Glaser and Alex Kusnecov
(Trillium 4, Conference Center Main Level)

8:30  Novel Role for the Intestinal Microbiota in Stressor-Induced Immunopotentiation

8:45  The Gut Microbiota is Necessary to Release Dual-Signal Requiring Cytokines. A Role for PAMPs and DAMPs?
T. M. Maslanik, M. Fleshner, K. Tannura, L. Mahaffey, L. Beninson

9:00  Effect of Stress on The Regulation of Toll-like Receptor 4 Pathway by MicroRNAs during Wound Healing.
S. D. Tymen, Z. Fang, P. T. Marucha

9:15  Effects of Exercise on Wound Healing and Wound Tissue Inflammation in Obese Mice
B. D. Pence, S. A. Martin, J. A. Woods

9:30  Role of Cortisol in Stress-related Cell Trafficking - Primary Adrenal Insufficiency as a Human Model
J. C. Knudsen, J. Feldkamp, C. Kirschbaum, J. M. Wolf

9:45  Increased Peripheral NF-kB Pathway Activity in Women with Childhood Abuse-related Posttraumatic Stress Disorder
T. Pace, K. Wingenfeld, G. Meinlschmidt, I. Schmidt, D. H. Hellhammer, C. M. Heim

10:00  Stress Disrupts the Beneficial Effects of the Immunostimulatory Agents IL-12 and CpG-C: Are There Potential Clinical Ramification?

10:15  Prior Life Adversity, Inflammation, and Behavioral Symptoms in Women with Breast Cancer
L. W. Janusek, D. Tell, V. Bednar, K. Fische, H. L. Mathews

10:30-11:00  BREAK
(Fireplace Lounge, Conference Center Main Level)
11:00-1:00 PRESIDENTIAL SYMPOSIUM: The PsychoNeuroImmunoImmunological Basis of Neurological and Psychiatric Diseases
Chair: Raz Yirmiya
(Trillium 4, Conference Center Main Level)

11:00 Neuroinflammatory Processes in Parkinson’s Disease
J. Hong, NIH, USA

11:30 A Role for Systemic Inflammation in Chronic Neurodegeneration
T. Wyss-Coray, Stanford University, USA

12:00 Modeling an Environmental Risk Factor for Schizophrenia and Autism in Mice Leads to Permanent Immune Activation in the Offspring
P. H. Patterson, California Institute of Technology, USA

12:30 Inflammation and Treatment Resistance in Major Depression: A Perfect Storm
A. H. Miller, Emory University, USA

1:00-2:30 LUNCH
Included in Registration Fee
(Trillium 2, Conference Center Main Level)

Concurrently: PNIRS Board Meeting, Board members only
(Cyperus 4, Conference Center Lower Level)

2:30-3:00 POSTER DATA BLITZ 1
Chair: Jonathan Godbout
(Trillium 4, Conference Center Main Level)

3:00-4:30 POSTER SESSION 1
(Trillium 3, Conference Center Main Level)

4:30-5:00 BREAK
(Fireplace Lounge, Conference Center Main Level)

5:00-6:30 ORAL SESSION 2: Immune Modulation of Cognitive Functioning and Neural Plasticity
Co-Chairs: Manfred Schedlowsky and Staci Bilbo
(Trillium 4, Conference Center Main Level)

5:00 Mast Cells Contribute Serotonin to the Hippocampus and Influence Physiology and Behavior.
K. M. Nautiyal, C. Dailey, J. L. Jahn, J. V. Sweedler, R. Silver

5:15 Behaviorally Conditioned Immunosuppression in Rodents and Humans can be Repeatedly Recalled
5:30 The Roles of Disease Stage and COX-1-Dependent Prostaglandins in Delirious Episodes During Neurodegeneration
D. Skelly, C. Murray, C. Cunningham

5:45 Brain Glucose Metabolism and Cognitive Performance after 12 weeks of Interferon-alpha Therapy for Hepatitis C

6:00 Robert Ader New Investigator Award Lecture:
Beneficial Aspects of Immunity on Cognition and Beyond: Implications for Neurodevelopmental Disorders
Jonathan Kipnis, University of Virginia, USA

6:30-7:30 2011 NORMAN COUSINS MEMORIAL LECTURE
(Trillium 4, Conference Center Main Level)

The Beta2-Adrenergic Receptor on T and B Lymphocytes: Do We Understand It Yet?
Virginia Sanders, The Ohio State University, USA

7:30-10:00 WELCOME RECEPTION
(Master's Patio East, Outside near pool; indoors TBD if rain)

The Trainee Reception will follow at Ballydoyle's in the Stratford Square Mall
(about 1 mile from the conference hotel)
Friday, June 10

8:00-3:00 REGISTRATION OPEN
(Falling Waters Lounge, Conference Center Main Level)

8:30-10:30 PARALLEL SESSIONS: ORAL SESSIONS 3 AND 4

PARALLEL SESSION - ORAL SESSION 3:
Neurobehavioral and Depressive Effects of Immune Activation
Co-Chairs: Robert Dantzer and Steve Zalcman
(Trillium 4, Conference Center Main Level)

8:30 Peripheral Lipopolysaccharide (LPS) Injection Causes Amplified Microglial Activation, Enhanced Macrophage Trafficking to the Brain, and Prolonged Sickness Behavior in Socially Defeated Mice
E. S. Wohleb, A. M. Fenn, J. P. Godbout, J. F. Sheridan

8:45 Impaired Glucocorticoid Receptor Dimerization Exacerbates LPS-induced Sickness Behavior and Inflammation in Mice

9:00 Transgenerational Effects of Anxiety-like Behavior in Rats Exposed to a Bacterial Mimetic During Neonatal Life: Implications for Male and Female Germ Lines

9:15 Cancer Induces Inflammation and Depressive-like Behavior in the Mouse: Exacerbation by Social Isolation

9:30 Central Administration of Insulin-like Growth Factor-I Peptides Inhibit Depression-like Inflammation-induced Behavior of Mice
R. H. McCusker, S. Park, R. Dantzer, K. W. Kelley

9:45 What have Microglia Got to do With it? New Directions in the Neurobiology of Depression
F. R. Walker, R. Tynan, T. Day, A. Ng, M. Hinwood

10:00 Ex vivo IL-6 Release and Dexamethasone Suppression in Mononuclear Cell Cultures from Postpartum Women
M. Groer

10:15 Interactions Between the Hypothalamic Pituitary-axis and Immune System Predict Maternal Depression During Pregnancy
PARALLEL SESSION - ORAL SESSION 4: Immune Modulation of Pain and Drug Addiction
Co-Chairs: Steve Maier and Deborah Hodgson
(Sorrell 1, Conference Center Lower Level)

8:30 Diagnostic Value of Cytokine Profiling in Chronic Pain Disorders and as a Biomarker of Induced Pain after Capsaicin.
C. L. Coe, M. Backonja, M. S. Wallace

8:45 Sickness Hurts: Human Pain Sensitivity in Response to Experimental Inflammatory Stimulation

9:00 Intravenous Neural Stem Cells Abolish Hypersensitivity in the Mouse Chronic Constriction Injury Neuropathic Pain Model: Focus on Cytokines and Nerve Repair
S. Franchi, D. Ferrari, E. Borsani, P. Procacci, A. Vescovi, A. E. Panerai, M. Colleoni, P. Sacerdote

9:15 GRK2 in Sensory Neurons Regulates Epinephrine-induced Signaling and Duration of Mechanical Hyperalgesia

9:30 MOR Activation Modulates TLR4 in Murine Macrophages
P. Sacerdote, S. Franchi, S. Moretti, M. Castelli, D. Lattuada, A. E. Panerai

9:45 Early-Life Experience Decreases Potential Abuse Liability of Morphine via Microglial-Specific Epigenetic Programming of Anti-Inflammatory IL-10 Expression
J. M. Schwarz, M. R. Hutchinson, S. D. Bilbo

10:00 Rethinking CNS Innate Immune Responses: Sex, Pain and Drugs of Abuse
L. Watkins, A. Northcutt, L. Loram, S. Lewis, M. Hutchinson, K. C. Rice, S. F. Maier

10:15 Contributions Of Innate Immune Signaling to Opioid & Alcohol Responses
M. R. Hutchinson, Y. Wu, E. J. Jaehne, L. Liu, K. R. Diener, J. D. Hayball, K. C. Rice, L. R. Watkins, A. A. Somogyi

10:30-11:00 BREAK
(Fireplace Lounge, Conference Center Main Level)

Concurrently: Finance Committee Meeting
(Check at the registration desk for location)
11:00-1:00  SYMPOSIUM:
Transducing Social and Emotional Experience into Health Outcomes:
Psychological Models and Biological Mechanisms
Chair: Margaret Kemeny
(Trillium 4, Conference Center Main Level)

11:00  *Positive Emotions, Inflammatory Response, the Common Cold, and Mortality: What Really Matters, the Valence or Activating Properties of Emotion?*
Sheldon Cohen, Carnegie Mellon University, USA

11:40  *Social Isolation and Health: Biological Mechanisms.*
Louise Hawkley, University of Chicago, USA

12:20  *Troubled Personal Relationships, Immunity, and Health: The Long Shadows of the Past.* Janice Kiecolt-Glaser, The Ohio State University, USA

1:00-2:30  LUNCH
(On Your Own)

Concurrently: BBI Board Meeting
(Cyperus 4, Conference Center Lower Level)

2:30-3:30  KEYNOTE ADDRESS:
The Neurology of the Immune System: Neural Reflexes Regulate Immunity
(Trillium 4, Conference Center Main Level)
Kevin Tracey, Feinstein Institute for Medical Research, North Shore Health System, USA

3:30-  FREE TIME
(On Your Own)
6:30-8:30  Optional Boat Cruise: Buses will leave the conference hotel (Indian Lakes) at 4pm sharp
Enjoy a two hour tour of the world famous Chicago skyline. We will tour the lakefront on the Evening Star and have the boat completely to ourselves, along with an open premium bar, some light food, and live music. A true part of the Chicago experience.
Saturday, June 11

8:00-3:00  REGISTRATION OPEN  
(Falling Waters Lounge, Conference Center Main Level)

8:30-10:00  PARALLEL SESSIONS: ORAL SESSIONS 5 AND 6

PARALLEL SESSION - ORAL SESSION 5:  
Psychological Modulation of Immunity  
Co-Chairs: Michael Irwin and Andrea Danese  
(Trillium 4, Conference Center Main Level)

8:30  *Chronic Fatigue in Patients with Sarcoidosis-in-Clinical-Remission is Associated with Specific Cytokine Profiles*  
I. Korenromp, J. Grutters, J. M. van den Bosch, P. Zanen, A. Kavelaars, C. J. Heijnen

8:45  *Social Factors Affect the Composition of the Intestinal Microbiome*  
A. Kapoor, M. Bailey, S. Dowd, C. Coe

9:00  *Gender Differences in the Prospective Associations of Sleep Quality with Markers of Systemic Inflammation: Findings from the Heart and Soul Study*  
A. A. Prather, E. S. Epel, M. A. Whooley

9:15  *Predictors of Immune Recovery Following Hematopoietic Stem Cell Transplantation*  
E. S. Costanzo, M. B. Juckett, D. Sheerar, T. L. Becker, A. M. Nelson, K. Schell, P. Hematti, C. L. Coe

9:30  *Aging, Resources, and Natural Killer Cell Senescence*  
S. C. Segerstrom, C. T. Lutz

9:45  *Elevated Distress and Inflammatory Markers Early in Pregnancy are Predictive of Preterm Birth and Pregnancy Complications*  
M. Coussons-Read, M. Lobel, C. Brandt, S. Cole, J. C. Carey, M. Kreither

PARALLEL SESSION - ORAL SESSION 6:  
Neuro-immune Interactions  
Co-Chairs: Rainer Straub and Ning Quan  
(Sorrell 1, Conference Center Lower Level)

8:30  *Mimicking Disruption of the Brain – Immune System – Joint Communication Results in Expression of Collagen Type II Arthritis in Non-Susceptible PVG Rats*  
C. Wolff, J. Wildmann, H. O. Besedovsky, A. del Rey, R. H. Straub

8:45  *The Sympathetic Neurotransmitter Norepinephrine Inhibits Proinflammatory IL-7R+ B Cells in Arthritis*  
G. Pongratz, J. Anthofer, R. H. Straub
9:00  *Prohibitins and the Cytoplasmic Domain of CD86 are Necessary to Mediate CD86 Signaling in B Lymphocytes*
     C. R. Lucas, V. M. Sanders

9:15  *Soluble IL-6 Receptors Induce Behavior Activating Effects and Co-Localize with gp130 in the Striatum and Motor Cortex.*
     A. Patel, D. Zhang, E. V. Kuzhikandathil, A. Siegel, S. S. Zalcman

9:30  *Active Microglia from Aged Mice are Less Sensitive to Anti-inflammatory Feedback from IL-4*
     A. M. Fenn, C. J. Henry, Y. Huang, J. P. Godbout

9:45  *Effects of Influenza Infection on Microglial activation and Neuron Morphology in the Mouse Hippocampus*
     H. A. Jurgens, K. Amancherla, R. W. Johnson

10:00-10:30  **SPECIAL LECTURE:**
     *Dendritic Cells in the Brain: Distribution and Function*
     (Trillium 4, Conference Center Main Level)
     Karen Bulloch, The Rockefeller University, USA

10:30-11:00  **BREAK**
     (Fireplace Lounge, Conference Center Main Level)

Concurrently: **Communications Committee Meeting**
     (Check at the registration desk for location)

11:00-1:00  **NCI SYMPOSIUM:**
     *PNI and Cancer: Role of the Tumor Macro(phage)-Environment*
     Chair: Steve Cole
     (Trillium 4, Conference Center Main Level)

11:00  *Macrophages Mediate SNS-enhanced Breast Cancer Metastasis*
     Erica K. Sloan, Monash University, Australia and UCLA School of Medicine, USA

11:30  *Stromal Influences of Stress in Cancer: The Role of Macrophages*
     Susan K. Lutgendorf and Anil K. Sood, University of Iowa and M.D. Anderson Cancer Center. USA

12:00  *Social Stress Enhances the Generation, Egress and Trafficking of Inflammatory Myeloid Progenitor Cells*
     John F. Sheridan, The Ohio State University, USA

12:30  *The Psychobiology of Social Adversity in Humans: Studies of Functional Glucocorticoid Resistance*
     Gregory E. Miller, University of British Columbia, Canada

1:00-2:30  **LUNCH**
     Included in Registration Fee
     (Trillium 2, Conference Center Main Level)
Concurrently: Junior Faculty-Trainee Roundtable  
(Trillium 2, Conference Center Main Level)

2:30-3:00 POSTER DATA BLITZ 2  
Chair: Suzi Hong  
(Trillium 4, Conference Center Main Level)

3:00-4:30 POSTER SESSION 2  
(Trillium 3, Conference Center Main Level)

4:30-5:00 BREAK  
(Fireplace Lounge, Conference Center Main Level)

5:00-6:00 BUSINESS MEETING  
(Sorrell 1, Conference Center Lower Level)

6:00-7:00 KEYNOTE ADDRESS:  
Protective and Damaging Effects of Mediators of Stress and Adaptation: Central Role of the Brain  
(Sorrell 1, Conference Center Lower Level)  
Bruce McEwen, The Rockefeller University, USA

7:00-7:30 BREAK  
(On Your Own)

7:30-1am DINNER BANQUET, MUSIC AND DANCING  
(Dinner outdoors at East Pavilion; Music & dancing Trillium 3)
1 The Relationship Between Inhibited Temperament and Leukocyte Sensitivity to Glucocorticoids in Rhesus Macaques  
K. Chun, L. A. Miller, J. P. Capitanio

2 Inverse association of subjective social status with peripheral inflammation in female but not male college students  
J. A. He, N. Rohleder

3 Molecular dissection of the circulating leukocyte pool: Which leukocytes get lonely?  
S. Cole, L. C. Hawkley, J. M. Arevalo, J. T. Cacioppo

4 A Community-Based Twin Study to Test Causation and Moderation Regarding Proinflammatory Cytokines, Physical Vitality, and Depression Symptoms  
E. Strachan, E. Dansie, D. Buchwald

5 ‡ Social Inequalities, Anger, and Inflammation: Does Minority Status Matter?  
J. A. Morozink, T. T. Lewis, C. L. Coe, C. D. Ryff

6 Stable Individual Differences in Emotional and Physiological Regulation Significantly Predict HIV 4-Year Clinical Status Indicators and Suggest Immune Mediators  
L. Temoshok, J. A. Wiley

7 Psychosocial Factors Predict CD8+ T Cell Recovery Following Hematopoietic Stem Cell Transplantation  

8 ‡ Social Support and Socioeconomic Status Interact to Predict Epstein-Barr Virus Latency in Women Awaiting Diagnosis or Newly Diagnosed with Breast Cancer  

9 Fibromyalgia: The Learning of an Illness and its PNI Correlates  
M. E. Martinez

10 Relationships, Autonomy, and IL-6 in Older Adults  
T. Eisenlohr-Moul, S. Segerstrom

11 Silymarin effect on dopamine preservation in a murine model of Parkinson’s disease  

12 ‡ Chronic IFN-alpha administration reduces basal ganglia dopamine release in rhesus monkeys: preliminary results from in vivo microdialysis and neuroimaging  
13 Newly discovered protein-protein interactions of schizophrenia associated genes and their biomedical significance
M. Ganapathiraju, R. A. Sweet, T. P. Mohamed

14 Exploring the interaction between Interleukin-6 and Neuregulin-1 mutations in the pathophysiology of schizophrenia: A potential link through gp130
P. Snikeris, X. Huang, E. Frank

15 Genetic modifiers of Insulin resistance and its impact on brain and cognition in middle-aged adults at risk for Alzheimer's disease
A. Willette, B. Bendlin, G. Xu, E. Kastman, E. Jonaitis, R. Koscik, A. La Rue, B. Hermann, M. Sager, S. Johnson

16 A comparison of executive function in newly-diagnosed systemic lupus erythematosus (SLE) patients and controls: a functional magnetic resonance imaging (fMRI) study
R. C. Ho, R. Tao, A. Mak

17 Seasonal influenza virus vaccination as a model to assess in vivo inflammatory responses among pregnant women
L. M. Christian, R. Glaser, J. D. Iams

18 CHOLINERGIC HYPOFUNCTION IN DELIRIUM DURING DEMENTIA? THE ROLE OF THE BASAL FOREBRAIN CHOLINERGIC SYSTEM
R. Field, A. Gossen, A. O'Connor, C. Cunningham

19 The impact of systemic Tumour Necrosis Factor Alpha on CNS function and inflammation.
E. Hennessy, C. Cunningham

20 The impact of corticosterone and progesterone on inflammatory changes in brain evoked by stress
C. M. Hueston, T. Deak

21 The Beta2-adrenoceptor agonist, salbutamol, induces GDNF expression in glia and increases the viability of cortical neurons
J. S. Day, D. Kilroy, S. M. Gibney, T. J. Connor

22 IMMUNOMODULATORY EFFECTS OF THE BETA2-ADRENOCEPTOR AGONIST CLENBUTEROL IN AN ACUTE BRAIN INJURY MODEL
É. W. Griffin, D. C. Anthony, T. J. Connor

23 Stimulation of central beta2-adrenoceptors suppresses NF-kappaB activity in hippocampus and cortex: a role for IkappaB
K. J. Ryan, É. W. Griffin, J. D. Yssel, K. M. Ryan, A. Harkin, T. J. Connor

24 Defects in cytokine-mediated neuroprotective glial responses to excitotoxic hippocampal injury in senescence-accelerated mouse
S. Hasegawa-Ishii, S. Takei, A. Shimada

25 ‡ Calorie restriction abrogates the influence of glucoregulatory dysfunction on brain volume in aged rhesus monkeys
A. Willette, B. Bendlin, R. Colman, E. Kastman, A. Field, A. Alexander, A. Sridharan, D. Allison, R.
26 THE INDUCTION OF COX-2 IN DIFFERENT CELL TYPES PLAYS DIFFERENT ROLES IN EXCITOTOXIC NEURONAL CELL DEATH
Y. An, N. Bevelych, Y. Wang, N. Quan

27 Stress-induced brain IL1beta is not dependent on intact gut microbiota
J. E. Hellwinkel, T. M. Maslanik, B. N. Greenwood, K. J. Speaker, L. Mahaffey, K. Tannura, M. Fleshner

28 Compartmentalized Immune Response in the Barrel Field of the Mouse Primary Somatosensory Cortex.
A. Chavarría, J. Pérez-H, P. Carrillo-Mora, A. Santamaría, G. Gutiérrez-Ospina, R. Pérez-Tamayo

29 Effect of TNF blockade therapy on serotonin and dopamine transporters in inflammatory arthritis
R. Krishnadas, N. Puri, S. Pimlott, J. Patterson, D. Hadley, I. McInnes, J. Cavanagh

30 TNF-alpha mediated corticostriatal plasticity regulates the development of haloperidol-induced orofacial dyskinesia
G. Lewitus, M. St-Hilaire, D. Stellwagen

31 Astrocyte-derived adenosine modulates increased sleep pressure during inflammatory response
A. Nadjar, T. Butstein, S. Laye, P. G. Haydon

32 The putative JAK-STAT inhibitor AG490 exacerbates LPS-fever, reduces sickness behavior, and alters the expression of pro- and anti-inflammatory genes in the rat brain.
J. Damm, L. Harden, R. Gerstberger, J. Roth, C. Rummel

33 Systemic parthenolide treatment attenuates LPS-induced fever, circulating cytokines and markers of brain inflammation in rats.
C. Rummel, R. Gerstberger, J. Roth, T. Hübschle

34 Systemic challenge with synthetic double-stranded RNA or lipopolysaccharide induces a STAT1-dependent stimulation of IFN-regulated genes in the brain
J. Wang, H. Zhang, Z. Tian

35 Peripheral Inflammation & Chronic Stress Result in Changes to the Serotonergic System
Y. Couch, T. Strekalova, B. W. Festoff, Q. Xie, T. Sharp, N. R. Sibson, D. C. Anthony

36 Exposure to environmental mold causes hippocampal inflammation and memory loss
C. F. Harding, K. Ryberg, A. Biegon

37 Age-related increase in microglia proliferation in the hippocampus
R. A. Kohman, E. K. DeYoung, J. S. Rhodes

38 IL-1beta and IL-6 differentially regulate human hippocampal neurogenesis
P. A. Zunszain, C. Anacker, S. Choudhury, S. Thuret, J. Price, C. M. Pariante

39 Kisspeptin is a physiological behavior regulator with therapeutic potential
M. Cardon, G. M. Lewitus, M. Schwartz

40 The role of astrocytic glucose uptake in the effect of the inflammatory cytokine Interleukin-1-beta on hippocampal-dependent memory
E. Shmueli, O. Ben-Menchem-Zidon, S. B. Park, R. Yirmiya
Differential effects of environmental enrichment on microglia in the hippocampus and olfactory bulb
R. Reshef, D. Beroukhim, R. Yirmiya

‡ Attenuation of chronic neuroinflammation-induced depressive-like symptoms in mice by the antidepressant drug Imipramine
M. Levy, T. Kreisel, R. Yirmiya

Activation of the Canonical Nuclear Factor Kappa B Signaling Pathway Mediates the Effects of Lipopolysaccharide and HIV-1 Tat on Cytokine and Indoleamine 2,3 Dioxygenase Expression in Murine Organotypic Hippocampal Slice Cultures
X. Fu, K. W. Kelley, R. Dantzer

‡ Comparison of kynurenine pathway activation and tryptophan depletion induced by activation of human T-cells and innate immune cells
M. M. Hughes, D. M. McLoughlin, A. Harkin, T. J. Connor

Interferon-gamma stimulated microglia induce neurotoxicity - A role for the kynurenine pathway?

The serotonin transporter and monoamine oxidase A as novel pharmacological targets to inhibit microglial activation

The association between overall abdominal pain but not sole epigastric pain and poor self-rated health is explained by depressive symptoms
A. Nixon Andreasson, L. Agréus

Antidepressant treatment alters Tumor Necrosis Factor (TNF) expression and glutamate receptor function.
R. Duseja, D. Stellwagen

‡ POLY I:C-INDUCED ACTIVATION OF THE INNATE IMMUNE RESPONSE IS ACCOMPANIED BY SYMPTOMS OF DEPRESSION AND ANXIETY
S. Gibney, B. McGuinness, C. Prendergast, A. Harkin, T. J. Connor

Role of Beta-Adrenergic Receptors in Chronic Stress-Induced Depression

Changes in the Noradrenergic System Following Chronic Stress: Implications for Brain Cytokine Production.
V. Porterfield, K. M. Gabella, M. A. Simmons, J. D. Johnson

Activation of Brain Indoleamine 2,3-dioxygenase Activity is Sufficient to Induce Depression-like Behavior in Mice

Small cerebral infarcts increase depressive-like behaviors and cause long-term neuroinflammation
C. L. Nemeth, G. N. Neigh

Garden rehabilitation stabilises INF-gamma and IL-2 levels but does not relieve depressive-symptoms
C. Bay-Richter, L. Träskman-Bendz, P. Grahn, L. Brundin
55  VASCULAR ENDOTHELIAL GROWTH FACTOR: A BIOMARKER OF DEPRESSION MAY PREDICT ANTIDEPRESSANT RESPONSE  

56  INFLAMMATION AND ENDOTHELIAL DYSFUNCTION IN DEPRESSION AND ANXIETY DISORDERS  

57  Maintenance of positive affect and cognitions during acute stress protects against pro-inflammatory reactivity and future depressive symptom increases  
K. Aschbacher, E. Epel, O. M. Wolkowitz, A. Prather, F. Dhabhar

58  Chronic Inflammation in the Elderly is Associated with Increased Tryptophan Catabolism and Altered Phenylalanine Turnover: Relevance for Neuropsychiatric Morbidity  
L. Capuron, P. Barberger-Gateau, S. Layé, D. Fuchs

59  Elevated levels of IL-6 is related to clinical depression and anxiety in adolescent girls  
E. Henje Blom, E. Serlachius, M. Lekander, F. Mobarrez, M. Ingvar

60  Exploratory factor analysis of depressive symptoms in patients with inflammatory arthritis  
R. Krishnadas, V. Mallon, G. Singleton, I. McInnes, J. Cavanagh

61  Chronic intake of selective serotonin reuptake inhibitors leads to variations in the expression of 5-HTT, IFN-gamma, and IL-2 genetic message in major depression patients  
L. Pavon, M. E. Hernández, L. E. Becerril, M. Pérez-Tapia, M. Castañon, M. Martinez

62  Thyroid Peroxidase antibody status is associated with depressive symptoms in pregnancy and the postpartum  
M. Groer, J. Heckel

63  Potential relationships of cytokines, cortisol and prenatal depression and stress  
M. Groer, M. Shelton

64  Individual differences in cytokine concentrations and depressive-like behavior are associated with tumor onset in a mammary tumor model  
L. M. Pyter, B. J. Prendergast

65  STRESS, AUTONOMIC NERVOUS SYSTEM IMBALANCE AND PSYCHOPATHOLOGY  
A. Halaris, E. Meresh, J. Fareed, S. Kimmons, J. Sinacore, N. Ruys

66  The effect of a short course high-fat diet on bio-behaviors in juvenile mice  

67  Modeling the biobehavioral effects of pediatric obesity  
L. K. McNeil, J. Bray, G. G. Freund

68  Inhibition of interleukin-6 trans-signaling in the brain inhibits lipopolysaccharide-induced sickness behavior  
M. D. Burton, N. L. Sparkman, R. W. Johnson

69  ‡ THE ROLE OF TYPE-I INTERFERONS IN POLY I:C INDUCED SICKNESS BEHAVIOUR  
C. Murray, E. O’Loughlin, C. Cunningham
Behavioral alterations caused by Mycobacterium avium chronic infection are mouse strain dependent

Aging and Stress Effects on Behavioral Outcomes and Tumor Growth in a Mouse Model of Prostate Cancer

Characterization of Sickness Behavior Induced by Oxaliplatin and 5FU, a Colorectal Chemotherapy Agent
S. Maldonado Bouchard, E. N. Young, E. G. Vichaya, J. Cook, M. W. Meagher

Role of Dopamine D1 and D2 Receptors in the Development and Expression of IL-2-Induced Repetitive Stereotyped Movements.
A. Patel, E. V. Kuzhikandathil, S. S. Zalcman

Characterization of Sickness Behavior Induced by Oxaliplatin and 5FU, a Colorectal Chemotherapy Agent
S. Maldonado Bouchard, E. N. Young, E. G. Vichaya, J. Cook, M. W. Meagher

Spontaneous and Stressor-Induced Hyperactivity and Increased Sensitivity to the Stereotypy-Inducing Effects of Cocaine in TNF Receptor Deficient Mice.
A. Patel, A. Siegel, S. S. Zalcman

Association between immune genetic markers and alcohol dependence
J. K. Coller, M. R. Hutchinson, A. K. Daly, J. M. White, A. A. Somogyi

Novel toll like receptor 4 (TLR4) involvement in drug reward

Relationship between neuropeptide gene expression and drug abuse using meta-analysis

RTL551: A Potential Neuroimmune-Based Treatment for Methamphetamine Addiction
M. S. Huckans, C. J. Wilhelm, J. Huan, A. A. Vandenbark, J. M. Loftis

Harnessing pain heterogeneity and RNA transcriptome to explore chronic pain mechanisms
P. M. Grace, P. E. Rolan, M. R. Hutchinson

Low GRK2 in microglia/macrophages prevents silencing of spinal cord microglia and promotes transition to chronic pain.
H. L. Willemen, C. J. Heijnen, N. Eijkelkamp, R. Dantzer, K. W. Kelley, A. Kavelaars

Pain in Older Men is Associated with Interleukin (IL)-6 Change Across Time Following a Mindfulness-Based Stress Reduction Intervention
K. L. Heffner, N. L. Talbot, M. S. Krasner, J. A. Moynihan

Early-Life Programming of Body Weight Regulation and Neuroinflammation: Is There a Connection?

The pig as an animal model for early-life human neurodevelopment
M. S. Conrad, R. N. Dilger, R. W. Johnson

Disrupted attachment: Allostatic load one day post weaning.
D. M. Muller, C. P. Szabo, N. Pitts
85 ‡ Sex differences in the effect of neonatal infection and adult re-infection on hippocampal corticosterone receptors and stress response outcomes.
O. Wynne, J. C. Horvat, R. Y. Kim, L. Ong, R. Smith, P. M. Hansbro, V. L. Clifton, D. M. Hodgson

86 Enduring consequences of neonatal infection on adult neuronal survival and activation in the dentate gyrus
L. L. Williamson, S. D. Bilbo

87 Sleep and Cytokines in Early Gestation: Possible Mechanisms for Adverse Pregnancy Outcomes
M. Okun

88 Prenatal LPS determines the Effect of Anandamide on Behaviour and Endocrine Functions in Adulthood.
O. Wynne, A. R. Bromley, H. R. Dunstan, D. M. Hodgson

89 Effects of Maternal Immune Activation in Late Gestation on Behavioral Sensitization to Amphetamine in Male Mice Offspring
A. Zager, A. Ribeiro, J. Palermo-Neto

90 Prophylactic Effect of Perinatal Maternal Probiotic intervention in Brain-Gut Axis Alterations Provoked by Early Life Stress
J. Barouei, M. Adams, D. Hodgson

91 Postnatal exposure to a bacterial mimetic increases microglial activation and histone H3 acetylation in rats

92 Chronically Reducing Sympathetic Activity Protects Sympathetic Nerves and Alters Beta-Adrenergic Signaling in the Aging F344 Rat Spleen
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Preliminary findings showing sensitization of acute stress-induced inflammation in HPA axis non-habituators

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