

**18<sup>th</sup> 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**

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## 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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## ***Officers***

Raz Yirmiya (President)  
Rainer H. Straub (Past President)  
Monika Fleshner (President-Elect)  
Gayle Page (Secretary/Treasurer)  
Susan Solomon (Executive Director)

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Maggie Denny

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Chris Coe  
Firdaus Dhabhar  
Ron Glaser  
Mike Irwin  
Mark Laudenslager  
Susan Lutgendorf  
Andrew Miller  
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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 18<sup>th</sup> 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**

# Next Year's Meeting

## 19<sup>th</sup> Annual PNIRS Meeting San Diego, California June 6-9, 2012



- 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 9<sup>th</sup>. Poster Session 2 will be on Saturday, June 11<sup>th</sup>, 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.

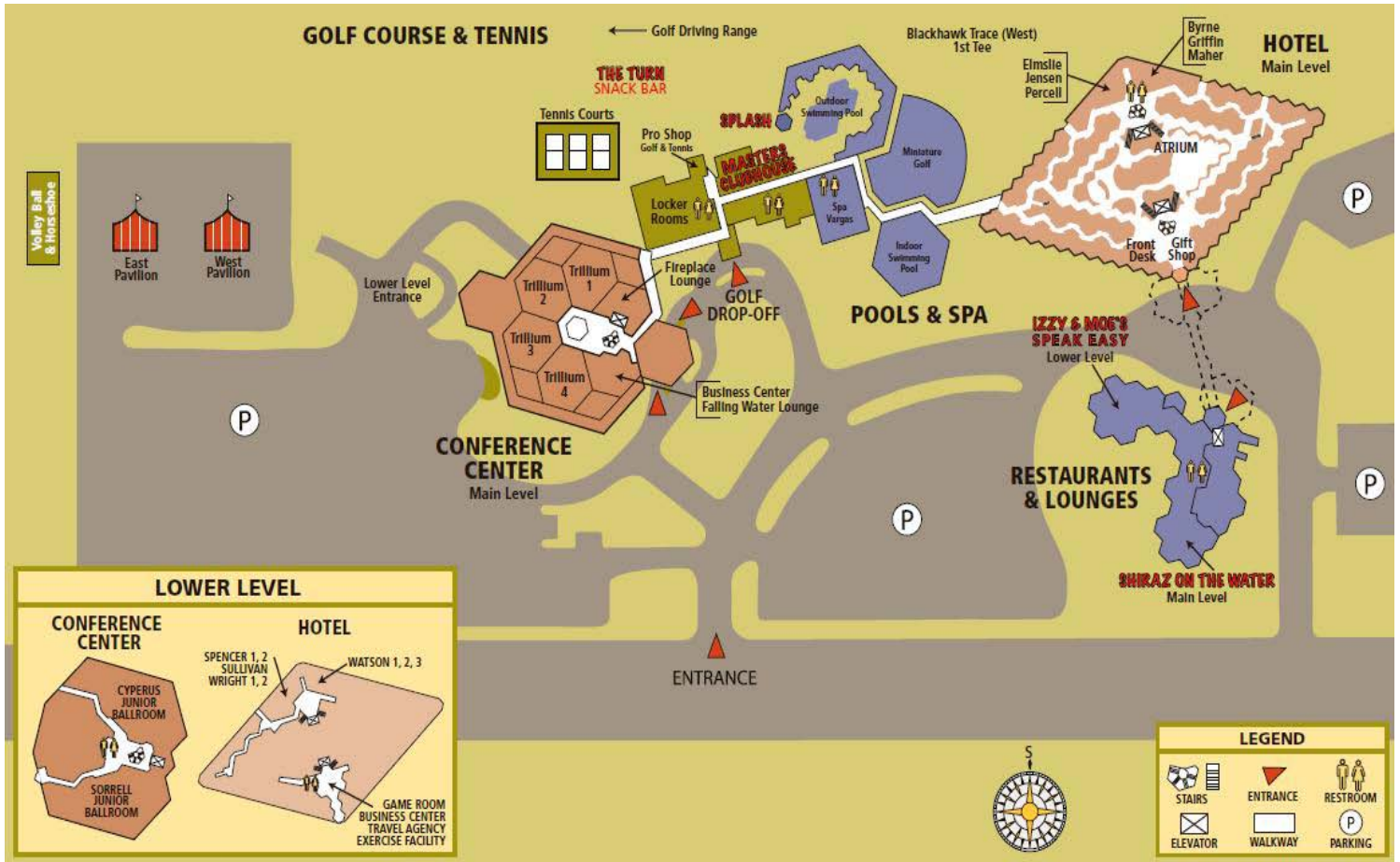
### Poster Data Blitz

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.

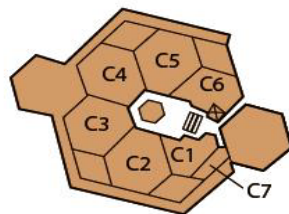
## 2012 COUSINS AND ADER AWARDS

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 11<sup>th</sup>.

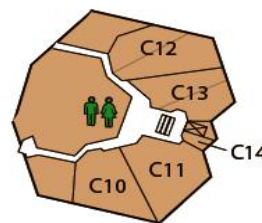
# Map of Indian Lakes Resort



## Conference Center



**Main Level**



**Lower Level**

Fireplace Lounge	C6	Sorrell I	C10
Trillium I	C5	Sorrell II	C11
Trillium II	C4	Cyperus I & II	C12
Trillium III	C3	Cyperus III & IV	C13
Trillium IV	C2	Hospitality Room	C14
Falling Waters Lounge	C1		
Banquet Office	C7		

### Legend

- Restrooms
- Stairs
- Elevator

## Norman Cousins Award Lecture



The Norman Cousins Award is the highest honor given by the PsychoNeuroImmunity 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 PsychoNeuroImmunity Research Society.

Previous Award Lecturers:

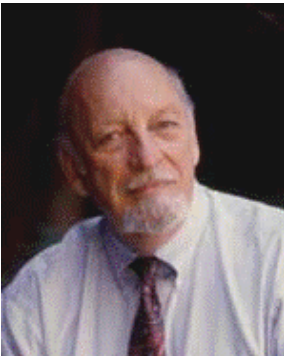
1991 – Robert Ader  
1993 – George F. Solomon  
1994 – Jean E. Merrill  
1996 – Hugo O. Besedovsky  
1997 – John F. Sheridan  
1998 – Janice K. Kiecolt-Glaser  
1999 – Cobi Heijnen  
2000 – Robert Dantzer  
2001 – Christopher Coe  
2002 – Steven Maier  
2003 – Keith Kelley  
2004 – Ronald Glaser  
2005 – Nicholas Cohen  
2006 – Linda Watkins  
2007 – Michael Irwin  
2008 – Andrew Miller  
2009 – Manfred Schedlowski  
2010 – Raz Yirmiya

### **2011 Norman Cousins Award Lecture** *The $\beta$ 2-adrenergic Receptor on T and B Lymphocytes: Do we understand it yet?*

**Virginia Sanders, Ph.D.**  
Professor  
The Ohio State University,  
Columbus, OH, USA.



## Robert Ader New Investigator Award



In honor of Dr. Robert Ader, a pioneer in the field of psychoneuroimmunology, the PsychoNeuroImmunity 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

<b>Byrne</b>	<b>Maher</b>	<b>Percell</b>	<b>Jensen</b>	<b>Elmslie</b>
<b>Faculty:</b> Ron Glaser Chris Coe	<b>Faculty:</b> Andrew Miller Susan Lutgendorf	<b>Faculty:</b> Virginia Sanders Mark Laudenslager	<b>Faculty:</b> Shamgar Ben- Eliyahu John Sheridan	<b>Faculty:</b> Mike Irwin Firdaus Dhabhar
Jennifer Felger	Maayan Levy	Thomas Maslanik	Marni Silverman	Caroline Padro
Brandt Pence	Eli Shueli	Auriel Willette	Luba Sominsky	Christopher Lucas
Martina Hughes	Liat Sorski	Katherine Nautiyal	Olivia Wynne	Eric Wohleb
Kimberly D'Anna	Ashley Fenn	Aric Prather	Sunmi Song	Angela Corona

***Congratulations to the 2011 Trainee Scholars!***

## Program at a Glance

Time	Wednesday June 8	Thursday June 9	Friday June 10	Saturday June 11	
8:30-9:00		<b>Oral Session 1</b> <i>Stress, Immunity, Wound Healing and Cancer</i>	<b>Oral Session 3</b> <i>Neuro-behavioral and Depressive Effects of Immune Activation</i>	<b>Oral Session 4</b> <i>Immune Modulation of Pain and Drug Addiction</i>	
9:00-9:30					<b>Oral Session 5</b> <i>Psychological Modulation of Immunity</i>
9:30-10:00				<b>Special Lecture</b> <i>Karen Bulloch</i>	
10:00-10:30					
10:30-11:00		<b>Break</b>	<b>Break</b> <i>Concurrently: Finance Comm. Meeting</i>	<b>Break</b> <i>Concurrently: Communications Comm. Meeting</i>	
11:00-11:30		<b>Presidential Symposium</b> <i>The PsychoNeuro-Immunological Basis of Neurological and Psychiatric Diseases</i>	<b>Symposium</b> <i>Transducing Social and Emotional Experience into Health Outcomes: Psychological Models and Biological Mechanisms</i>	<b>NCI Symposium</b> <i>PNI and Cancer: Role of the Tumor Macro(phage)-Environment</i>	
11:30-12:00					
12:00-12:30					
12:30-1:00					
1:00-1:30	<b>How to Publish in BBI</b> <i>K. Keith Kelly Editor, BBI</i>	<b>Lunch</b> <i>Concurrently: Board Meeting (Board members only)</i>	<b>Lunch</b> <i>(on own) Concurrently: BBI Board Meeting</i>	<b>Lunch</b> <i>Including Junior Faculty-Trainee Roundtable</i>	
1:30-2:00					
2:00-2:30	<b>Short Educational Course</b> <i>Stress, Immunity, and Disease</i>	<b>Poster Data Blitz 1</b>	<b>Keynote Address</b> <i>Kevin Tracey</i>	<b>Poster Data Blitz 2</b>	
2:30-3:00					<b>Poster Session 1</b>
3:00-3:30		<b>Break</b>	<b>Free Time</b>  <i>6:30-8:30 Optional Boat Cruise, buses leave from front of hotel at 4pm</i>	<b>Business Meeting</b>	
3:30-4:00					
4:00-4:30					
4:30-5:00					
5:00-5:30	<b>Peer-Review of NIH Proposals</b> <i>Mike Selmanoff, NIH</i>	<b>Oral Session 2</b> <i>Immune Modulation of Cognitive Functioning and Neural Plasticity</i>  <i>Including the Robert Ader New Investigator Lecture Jonathan Kipnis</i>	<b>Keynote Address</b> <i>Bruce McEwen</i>		
5:30-6:00	<b>Senior Faculty-Trainee Mentoring Colloquium</b>	<b>Norman Cousins Memorial Lecture</b> <i>Virginia Sanders</i>			
6:00-6:30					
6:30-7:00					
7:00-7:30					
7:30-		<b>Welcome Reception</b> <i>(Trainee Reception to follow at Ballydoyle's)</i>	<b>Dinner Banquet</b> <i>(Music and Dancing)</i>		

## ***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 Immunopotentialiation*  
M. T. Bailey, R. G. Allen, J. D. Galley, A. R. Hufnagle, M. Lyte

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- $\kappa$ B Pathway Activity in Women with Childhood Abuse-related Posttraumatic Stress Disorder*  
T. Pace, K. Wingefeld, 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?*  
S. Ben-Eliyahu, B. Levi, Y. Goldfarb, L. Sorski, R. Melamed, E. Rosenne

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 PsychoNeuroImmunological 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*  
T. Wirth, K. Ober, M. Vogelsang, G. Prager, S. Benson, O. Witzke, A. Kribben, H. Engler, M. Schedlowski

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*  
R. C. Hilsabeck, S. Narayana, C. Franklin, A. L. Webb, I. Poy, O. Ali, S. L. Stern, P. Fox, S. K. Ahuja

**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*  
M. N. Silverman, B. D. Revenis, J. H. Doran, B. E. Ballard, E. Belyavskaya, P. Mukhopadhyay, J. Tam, L. H. Tonelli, P. Pacher, E. M. Sternberg
- 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*  
A. K. Walker, G. Hawkins, L. Sominsky, D. M. Hodgson
- 9:15 *Cancer Induces Inflammation and Depressive-like Behavior in the Mouse: Exacerbation by Social Isolation*  
D. M. Lamkin, S. K. Lutgendorf, D. M. Lubaroff, A. K. Sood, T. G. Beltz, A. K. Johnson
- 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*  
K. L. D'Anna, M. C. Hoffman, M. Coussons-Read, R. G. Ross, M. L. Laudenslager

**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*  
M. Lekander, B. Karshikoff, M. Ingvar, E. Kosek, A. Soop, C. Olgart Höglund, J. Axelsson
- 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*  
H. Wang, C. J. Heijnen, N. Eijkelkamp, K. W. Kelley, R. Dantzer, A. Kavelaars
- 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)

# Poster Session 1

Thursday, June 9, 3:00-4:30pm

In Order by Poster Number (Posters 1-92)

‡ Denotes Participation in Data Blitz Session 1: 2:30-3:00pm

- 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. Hawkey, 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  
J. M. Knight, J. A. Moynihan, S. P. Messing, B. C. Hunter, L. Huang, R. O. Obi, D. Gaisser, J. L. Liesveld, O. Z. Sahler
- 8 ‡ Social Support and Socioeconomic Status Interact to Predict Epstein-Barr Virus Latency in Women Awaiting Diagnosis or Newly Diagnosed with Breast Cancer  
C. P. Fagundes, J. M. Bennett, C. M. Alfano, R. Glaser, S. P. Povoski, A. M. Lipari, D. M. Agnese, L. D. Yee, W. E. Carson III, W. B. Farrar, W. B. Malarkey, M. Chen, J. K. Kiecolt-Glaser
- 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  
A. Chavarría, J. Pérez-H, E. García, G. Ruiz-Mar, C. Carrillo-Salgado, R. Pérez-Tamayo
- 12 ‡ Chronic IFN-alpha administration reduces basal ganglia dopamine release in rhesus monkeys: preliminary results from in vivo microdialysis and neuroimaging  
J. C. Felger, H. L. Kimmel, C. R. Hernandez, J. Mun, J. A. Nye, M. M. Goodman, D. F. Drake, A. H. Freeman, D. B. Rye, L. L. Howell, A. H. Miller

- 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. Kosciak, 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.

Anderson, M. Voytko, J. Kemnitz, R. Weindruch, S. Johnson

- 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 antiinflammatory 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

- 41 Differential effects of environmental enrichment on microglia in the hippocampus and olfactory bulb  
R. Reshef, D. Beroukhim, R. Yirmiya
- 42 ‡ Attenuation of chronic neuroinflammation-induced depressive-like symptoms in mice by the antidepressant drug Imipramine  
M. Levy, T. Kreisel, R. Yirmiya
- 43 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
- 44 ‡ 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
- 45 Interferon-gamma stimulated microglia induce neurotoxicity - A role for the kynurenine pathway?  
E. M. Fagan, S. M. Gibney, T. J. Connor, A. Harkin
- 46 The serotonin transporter and monoamine oxidase A as novel pharmacological targets to inhibit microglial activation  
E. M. Fagan, S. M. Gibney, T. J. Connor, A. Harkin
- 47 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
- 48 Antidepressant treatment alters Tumor Necrosis Factor (TNF) expression and glutamate receptor function.  
R. Duseja, D. Stellwagen
- 49 ‡ 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
- 50 Role of Beta-Adrenergic Receptors in Chronic Stress-Induced Depression  
R. M. Camp, S. Nagabhushan, K. Gabella, J. L. Remus, Z. R. Zimomra, J. D. Johnson
- 51 Changes in the Noradrenergic System Following Chronic Stress: Implications for Brain Cytokine Production.  
V. Porterfield, K. M. Gabella, M. A. Simmons, J. D. Johnson
- 52 Activation of Brain Indoleamine 2,3-dioxygenase Activity is Sufficient to Induce Depression-like Behavior in Mice  
M. A. Lawson, J. C. O'Connor, K. W. Kelley, R. Dantzer
- 53 Small cerebral infarcts increase depressive-like behaviors and cause long-term neuroinflammation  
C. L. Nemeth, G. N. Neigh
- 54 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  
A. Halaris, N. Ontrop, E. Meresh, J. Fareed, D. Hoppensteadt, L. Al-Duwaisan, J. Sinacore, S. Kimmons
- 56 INFLAMMATION AND ENDOTHELIAL DYSFUNCTION IN DEPRESSION AND ANXIETY DISORDERS  
A. Halaris, E. Meresh, J. Fareed, D. Hoppensteadt, S. Kimmons, J. Sinacore, N. Ruys
- 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  
M. M. Kaczmarczyk, A. S. Machaj, S. Martin, M. M. Miller, T. Baynard, G. G. Freund
- 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

- 70 Behavioral alterations caused by Mycobacterium avium chronic infection are mouse strain dependent  
S. Roque, B. Rodrigues, S. Monteiro, C. Branco, N. Sousa, J. A. Palha, M. Correia-Neves
- 71 Aging and Stress Effects on Behavioral Outcomes and Tumor Growth in a Mouse Model of Prostate Cancer  
M. S. Dulcich, R. E. Hartman, P. Gifford, C. Molinaro, X. Luo-Owen, J. Kroh, D. S. Gridley, D. L. Bellinger
- 72 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
- 73 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
- 74 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
- 75 Association between immune genetic markers and alcohol dependence  
J. K. Collier, M. R. Hutchinson, A. K. Daly, J. M. White, A. A. Somogyi
- 76 Novel toll like receptor 4 (TLR4) involvement in drug reward  
A. Northcutt, C. Stregola, S. Bland, J. Amat, M. Hutchinson, N. Miles, R. Rosezke, M. Loeffler, S. Maier, K. Rice, L. Watkins
- 77 Relationship between neuropeptide gene expression and drug abuse using meta-analysis  
B. R. Southey, K. Porter, K. R. Delfino, J. V. Sweedler, S. L. Rodriguez-Zas
- 78 RTL551: A Potential Neuroimmune-Based Treatment for Methamphetamine Addiction  
M. S. Huckans, C. J. Wilhelm, J. Huan, A. A. Vandembark, J. M. Loftis
- 79 Harnessing pain heterogeneity and RNA transcriptome to explore chronic pain mechanisms  
P. M. Grace, P. E. Rolan, M. R. Hutchinson
- 80 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
- 81 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
- 82 Early-Life Programming of Body Weight Regulation and Neuroinflammation: Is There a Connection?  
J. L. Bolton, N. C. Huff, S. H. Smith, W. M. Foster, R. L. Auten, S. D. Bilbo
- 83 The pig as an animal model for early-life human neurodevelopment  
M. S. Conrad, R. N. Dilger, R. W. Johnson
- 84 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  
L. Sominsky, A. K. Walker, L. K. Ong, F. R. Walker, D. M. Hodgson
- 92 Chronically Reducing Sympathetic Activity Protects Sympathetic Nerves and Alters Beta-Adrenergic Signaling in the Aging F344 Rat Spleen  
D. L. Bellinger, S. D. Perez, C. Molinaro, C. Lubahn, D. Lorton

# Poster Session 2

Saturday, June 11, 3:00-4:30p.m.

In Order by Poster Number (Posters 1-91)

‡Denotes Participation in Data Blitz Session 2: 2:30-3:00pm

- 1 Higher levels of leptin is associated with poor self-rated health in men and women with type 2 diabetes  
A. Nixon Andreasson, A. C. Carlsson, P. Wändell
- 2 Evaluating patterns of cytokine expression in women undergoing chemotherapy for early-stage breast cancer: A factor analytic approach  
K. E. Stewart, R. Elswick, D. E. Lyon, N. L. McCain
- 3 Oxytocin and human inflammation: does oxytocin attenuate inflammatory cytokine production in human monocytes?  
K. M. Ross, G. McDonald-Jones, G. Miller
- 4 Visualizing Cellular Elements in Saliva to Study Oral Mucosal Immunity  
F. Hou, C. Tamsen, D. Lee, A. Dentino
- 5 Iron-related proteins in the CSF of early multiple sclerosis patients  
S. Monteiro, F. Marques, M. Correia-Neves, J. Cerqueira
- 6 Immunomodulatory activities of bloodroot extracts or isolated constituent alkaloids in human peripheral blood mononuclear cells  
D. Senchina, J. E. Hallam, N. B. Shah, N. A. Nguyen, M. A. Perera
- 7 Cytokine interactome to accelerate discovery in deciphering molecular interactions among psycho neuro immuno inflammo processes  
M. Ganapathiraju, T. P. Mohamed
- 8 Amphetamine modulates cellular recruitment and airway reactivity in a rat model of allergic lung inflammation  
J. Palermo-Neto, A. P. de Oliveira, A. Lino-dos-Santos-Franco, E. K. Hamasato, W. M. Quinteiro-Filho, C. Hebeda, A. S. Damazo, S. H. Farsky, W. Tavares-de-Lima
- 9 Cannabidiol produces a long-term anti-inflammatory effect in a murine model of acute lung injury  
A. Ribeiro, V. Ferraz-de-Paula, M. L. Pinheiro, W. M. Quinteiro-Filho, a. T. Akamine, V. I. Almeida, A. Zager, J. E. Hallak, A. W. Zuardi, J. A. Crippa, J. Palermo-Neto
- 10 Thymus-derived rather than tumor-induced regulatory T cells predominate in human and experimental mouse brain tumors  
D. A. Wainwright, S. Sengupta, Y. Han, M. S. Lesniak
- 11 Effects of moderate aerobic exercise training on inflammatory status of the colon during acute ulcerative colitis.  
M. Cook, S. Martin, J. A. Woods
- 12 Higher levels of depression prior to exercise and greater fatigue post-exercise are associated with a larger decrease in plasmacytoid dendritic cell IFN-alpha production  
J. Hallam, T. Noble, D. Senchina, M. Kohut

- 13 Effect of exercise on immunity and depression vary by body weight status and type of exercise  
M. Kohut, D. Senchina, D. Konopka, F. Macaluso, D. A. McCann, W. F. Franke, J. E. Cunnick, D. W. Russell
- 14 Elevated hippocampal corticosterone levels may be responsible for sensitizing microglia of healthy aged rats  
R. M. Barrientos, N. Y. Crysdale, J. Amat, M. G. Frank, L. R. Watkins, S. F. Maier
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- 18 Peripheral lymphocytes are altered in adult offspring following prenatal exposure to air pollution combined with maternal stress  
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- 20 ‡ Increased circulating myeloid derived suppressor cell population in aged mice is exaggerated after LPS injection  
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- 23 Nicotinic cholinergic nervous system blockade alters the anti-influenza immune response  
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- 24 The rhythm of spontaneous IL-1beta production in human monocytes  
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- 25 The Impact of Whole Body Proton Radiation on Immune-CNS Communication  
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- 26 Activation of IL-1R2 by acute hypoxia  
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- 28 Neuropeptide Y Y1 Receptor , IL-1 Receptor Type I, and Beta-Adrenergic Receptors Modulate P. gingivalis-Induced Inflammation  
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- 29 ‡ Beta2-adrenergic receptor engagement on a B cell regulates the level of IgE via cleavage of CD23 by ADAM proteins  
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- 30 Sympathetic Nervous System Regulation of Antigen Processing and Presentation by Myeloid-Derived Dendritic Cells: Consequences for Adaptive Immunity  
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- 31 Hypoxia induces tyrosine hydroxylase (TH) and modulates cytokine release in arthritis  
Z. Jenei-Lanzl, S. Capellino, R. Straub
- 32 Nerve fiber repulsion by semaphorins more redundancy than expected in the rheumatoid arthritis joint?  
S. Klatt, A. Fassold, R. H. Straub
- 33 FAAH inhibition reverses glucocorticoid effects in synovial fibroblasts  
T. Lowin, O. Wiesner, E. Neumann, U. Müller-Ladner, R. H. Straub
- 34 Increased density of sympathetic nerve fibers in metabolically activated fat tissue surrounding human synovium and mouse lymph nodes in arthritis  
C. Wolff, L. Rauch, T. Lowin, S. Klatt, R. H. Straub
- 35 Dendritic cells accumulate in and a lymphatic capillary capsule network exists in adrenal glands of arthritic rats  
C. Wolff, K. Krinner, R. H. Straub
- 36 Local and Systemic Glucocorticoid Concentrations in a Rat Model of Rheumatoid Arthritis  
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- 38 Effects of Social Stress-Induced Microenvironmental Changes on Activation and Inhibitory Phenotypes of Natural Killer Cells in the Absence of Infection  
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- 39 NEUROIMMUNE DEACTIVATION IS A RESPONSE TO FASTING  
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- 41 Sleep deprivation impairs proliferation and cytotoxicity of T and NKT cells in mice.  
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- 42 Sleep Deprivation reduces TCD8+ and NKT cell numbers and increases the metastatic lung  
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- 43 Poor sleep is associated with elevated inflammation in female but not male college students  
J. M. Wolf, S. J. Gray
- 44 Making the biological connection between sleep and preterm birth: A preliminary look  
M. Okun, J. Luther, S. Wisniewski, K. Wisner
- 45 Short natural sleep is associated with higher T cell and lower NK cell activities  
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- 46 Immune robustness of healthy young students to thirty hrs sleep deprivation and psychological stress  
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- 47 CCL2 Down-regulation from Macrophages by Stress-induced  $\beta$ -Adrenergic Receptor Activation is Protective in a Model of Malignant Melanoma  
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- 49 Isolating Mice Slows Wound Healing  
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- 50 Coping with chronic defeat: biological changes and effects of acute treatment with a 5-HT4 agonist (RS67333)  
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- 52 Heat stress impairs performance parameters, decreases IgA plasmatic levels and increases Salmonella enteritidis migration to spleen in broilers chickens  
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- 61 ELEVATED SALIVARY C-REACTIVE PROTEIN IN MALTREATED CHILDREN  
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- 63 Effects of a physical stressor on trafficking of proinflammatory monocytes in normotensive vs. prehypertensive humans  
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- 70 Sensation-Seeking and Gender in the Depression ? C-reactive Protein Link  
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- 71 ‡ Role of Negative Social Relationships and Hostility in Inflammatory Cytokine Response to a Laboratory Stressor  
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- 74 ‡ Neurobehavioral effects of TH2-mediated inflammation  
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