

PsychoNeuroImmunology Research Society's  
20th Annual Scientific Meeting  
June 5-8, 2013  
Stockholm, Sweden



# Message from the President of the PNIRS



I am happy to welcome you to the 20th Annual Meeting of the PsychoNeuroImmunology Research Society (PNIRS) in Stockholm, Sweden. The program committee, Mats Lekander and his team as local organizer, and I have made every effort to put together an exciting, high-quality and well-balanced scientific program as well as a stimulating social program. We are pleased and proud that we have been successful in recruiting some most distinguished researchers as lecturers for the two keynote addresses, the three symposia, and the satellite symposium on Wednesday. The high quality of submitted abstracts made it quite difficult to select presentations for the oral sessions, which in addition to quality criteria were also selected to cover the topics of various sub-disciplines of PNI.

The social highlights of this conference will be the traditional Welcome Reception on Thursday evening, a reception at the famous Stockholm City Hall with the possibility of a subsequent sightseeing trip in a nice old ship from 1913, with a stunning view of Stockholm's waterfront on Friday afternoon as well as the Dinner Banquet in the Vasa Museum on Saturday evening.

My special thanks go to the colleagues who all worked hard to make this meeting a great success: Dr. Adriana del Rey for organizing the Educational Short Course with excellent topics and speakers and Dr. Jan Moynihan for recruiting the senior scientists involved in the PNIRS Faculty-Trainee Colloquium, with both events continuing the important responsibility of our Society to provide educational and training opportunities to young scientists interested in PNI research. Many thanks also to our Secretary/Treasurer Dr. Gayle Page and Mrs. Maggie Brewer and the financial management of Mrs. Susan K. Solomon, for their continuous support and feedback. I also gratefully acknowledge the financial support of the many sponsors contributing to the high quality scientific and social program. Last, but not least, I am deeply grateful for the cooperation and hard work of Dr. Mats Lekander and his team from the Karolinska Institute and Stockholm University in organizing this conference.

I very much look forward meeting you in a beautiful located venue and hope you will enjoy the excellent science in Stockholm in June, right in time for the "white nights" of the early summer 2013.

Manfred Schedlowski, PhD  
PNIRS President 2012-2013

## Officer Meetings

### **Board of Directors Meeting (Lunch)**

Thursday, June 6  
1:00-3:00pm  
(Location: Norrviken)

### **Finance Committee Meeting**

Friday, June 7  
7:30-8:30am  
(Location: Korgmakaren)

### **BBI Board Meeting (Lunch)**

Friday, June 7  
1:00-2:30pm  
(Location: Norrviken)

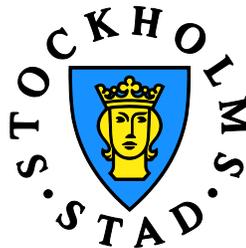
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# Acknowledgements and Sponsors



Special thanks are extended to local organizer Mats Lekander, and his team, for their dedication and commitment to making this meeting a success.



# **About PNIRS**

The PsychoNeuroImmunology Research Society is an international organization for researchers in a number of scientific and medical disciplines, including psychology, neurosciences, immunology, physiology, pharmacology, psychiatry, behavioral medicine, infectious diseases, endocrinology and rheumatology, who are interested in interactions between the nervous and immune systems, and the relationship between behavior and health. An important goal is to conduct basic research that can be translated into clinically relevant health applications.

The PsychoNeuroImmunology Research Society (PNIRS) was incorporated in the state of Pennsylvania in 1993 after a meeting in April of that year and is a nonprofit organization. During the meeting the founding members determined that the purpose of the Society is to promote the study of interrelationships among behavioral, neural, endocrine and immune processes and to encourage collaborations among immunologists, neuroscientists, clinicians, health psychologists and behavioral neuroscientists.

## **Officers**

Manfred Schedlowski (President)  
Monika Fleshner (Past President)  
Rodney Johnson (President-Elect)  
Gayle Page (Secretary/Treasurer)  
Jan Moynihan (Secretary/Treasurer-Elect)  
Susan Solomon (Executive Director)

## **PNIRS Staff**

Maggie Brewer

## **PNIRS Trainee Scholars Program Coordinator**

Jan Moynihan

## **Training Committee**

Colm Cunningham  
Jonathan Godbout  
Jonathan Kipnis  
Mats Lekander  
Bianka Karshikoff

## **Scientific Affairs Committee**

Manfred Schedlowski (President)  
Monika Fleshner (Past-President)  
Rodney Johnson (President-Elect)  
Gayle Page (Secretary-Treasurer)  
Staci Bilbo  
Steve Cole  
Firdaus Dhabhar  
Gregory Freund  
Lisa Goehler  
Cobi Heijnen

## **Board of Directors**

Manfred Schedlowski (President)  
Monika Fleshner (Past President)  
Rodney Johnson (President-Elect)  
Gayle Page (Secretary/Treasurer)  
Staci Bilbo  
Firdaus Dhabhar  
Jonathan Godbout  
Suzi Hong  
Jonathan Kipnis

# 2014 Meeting



PsychoNeuroImmunology  
Research Society

21st Annual Scientific Meeting  
Philadelphia, Pennsylvania, USA



May 28-31, 2014

# General Information

## Registration Desk

The registration desk is located in the Conference Center. Please check in to receive your name badge and conference materials. Name badges are required at all times in order to obtain access sessions and events.

The registration & information desk will be open during the following hours:

Tuesday, June 4: 3:00 pm – 6:00 pm  
Wednesday, June 5: 7:30 am – 5:00 pm  
Thursday, June 6: 7:30 am – 5:00 pm  
Friday, June 7: 8:00 am – 3:00 pm  
Saturday, June 8: 8:00 am – 3:00 pm

## Guests

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.

## Phones

As a courtesy to presenters, speakers, and attendees, please switch cell phones to silent mode during all sessions and speakers. Please leave the session when answering calls.

## Lost and Found

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

## Abstracts

Abstracts are available for reviewing in the "Abstract Booklet". The number in brackets [nnnn] indicates the abstract number in the booklet.

## Certificates of Attendance and Participation

Please e-mail [pnirs@pnirs.org](mailto:pnirs@pnirs.org) to request a certificate. It will be e-mailed to you after the conference.

## Key

	Trainee Scholar ONLY Event
	Trainee Scholar Abstract
	Pre-Registration Required

## Chairs/Co-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 and check for names badges. Every effort should be made to keep the session on schedule.

## Oral Session Speakers

Speakers should go to the designated room a minimum of 10 minutes before the session starts to upload their talk onto the computer, make sure it works, and meet the Chairs. Speakers must strictly adhere to the allocated time.

## Computer Presentation Guidelines

House computers are provided. Talks can be uploaded via a flashdrive (memory stick). 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 rooms *Repslagaren/Segelmakaren*. All posters can be mounted during the morning of your respective session. Push pins for mounting the posters will be provided. Look for your poster number in this Program Book. 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

The Poster Data Blitz talks will take place in *Haga Magasinet*. 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 *Repslagaren/Segelmakaren*.

## ***Norman Cousins Award Lecture***



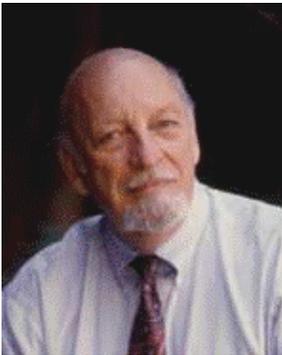
The Norman Cousins Award is the highest honor given by the *PsychoNeuroImmunity Research Society* to an individual for outstanding contributions to research in psychoneuroimmunology. Norman Cousins was an articulate spokesman and advocate for psychoneuroimmunology, whose support and generosity has facilitated 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*.

### **2013 Norman Cousins Award Lecture**

*Anatomy of an Illness: Control from a caregiver's perspective*

Mark Laudenslager  
University of Colorado Denver, 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.

### **2013 Robert Ader New Investigator Award Lecture**

*The Toll of Central Immune Signaling: Implications for pain and reward behaviours*

Mark Hutchinson, PhD  
University of Adelaide, Australia

### **2014 COUSINS AND ADER AWARDS**

The winners of the 2014 Norman Cousins Award Lecture and the Robert Ader New Investigator Award will be announced at the Closing Banquet on Saturday, June 8<sup>th</sup>.

## ***PNIRS Faculty-Trainee Colloquium***

<b>Room 1</b>	<b>Room 2</b>	<b>Room 3</b>	<b>Room 4</b>
<b>Faculty:</b> Staci Bilbo & Deborah Hodgson	<b>Faculty:</b> Shamgar Ben-Eliyahu & Mark Laudenslager	<b>Faculty:</b> Annemieke Kavelaars & Suzanne Segerstrom	<b>Faculty:</b> Jonathan Godbout & Jeffrey Woods
<b>Trainees:</b> Sanae Hasegawa-Ishii	<b>Trainees:</b> Gabriel Chiu	<b>Trainees:</b> Dominic Plant	<b>Trainees:</b> Peter Grace
Ashley Ingiosi	Eric Wohleb	Julie Lasselin	Pini Matzner
Ashley Fenn	Jennifer Remus	Naghme Nikkheslat	Luciana Besedovsky
Marielle Weintraub	Karen Krukowski	Diana Norden	Luba Sominsky
	Matthew Conrad		

***Congratulations to our  
2013 Trainee Scholars!***

# Schedule at a Glance

Time	Wednesday June 5	Thursday June 6	Friday June 7	Saturday June 8	
7:30-8:00			<b>Finance Committee Meeting</b> <i>Korgmakaren</i>		
8:00-8:30					
8:30-9:00		<b>Oral Session 1</b>  Stress, Sleep, and Early Development  <i>Haga Magasinet</i>	<b>Oral Session 3</b>  Pain and Sickness Response  <i>Haga Magasinet</i>	<b>Oral Session 4</b>  NeuroImmune Regulation  <i>Haga Magasinet</i>	
9:00-9:30					
9:30-10:00					
10:00-10:30	<b>Satellite Symposium</b>  <i>Karolinska Institute (offsite)</i>				
10:30-11:00		<b>Break</b> <i>The Manor House</i>	<b>Break</b> <i>The Manor House</i>	<b>Break</b> <i>The Manor House</i>	
11:00-11:30		<b>Presidential Symposium</b>  Neurobiology of Placebo/Nocebo Responses  <i>Haga Magasinet</i>	<b>Symposium</b>  Sleep, Brain, & Immunity  <i>Haga Magasinet</i>	<b>Symposium</b>  Host Defense & Psychiatric Disorders  <i>Haga Magasinet</i>	
11:30-12:00					
12:00-12:30					
12:30-1:00					
1:00-1:30	<b>Educational Short Course</b>  Neuro-Endocrine-Immune Interactions: Some hot points in inflammation  <i>Repslagaren</i>	<b>Lunch</b> <i>Dining Room (upstairs in Conference Center)</i>	<b>Lunch</b> <i>Dining Room (upstairs in Conference Center)</i>	<b>Lunch</b> <i>Dining Room (upstairs in Conference Center)</i>	
1:30-2:00					
2:00-2:30				<b>Poster Data Blitz 2</b> <i>Haga Magasinet</i>	
2:30-3:00			<b>Poster Data Blitz 1</b> <i>Haga Magasinet</i>	<b>Keynote Address Dr. Bruce Beutler</b> <i>Haga Magasinet</i>	<b>Poster Session 2</b> <i>Repslagaren/Segelmakaren</i>
3:00-3:30			<b>Poster Session 1</b> <i>Repslagaren/Segelmakaren</i>		
3:30-4:00				<b>Free Time</b>  4:00pm - Free Reception at the Stockholm City Hall  5:45pm - Free Boat Trip	<b>Break</b> <i>Conference Cafe</i>
4:00-4:30					<b>Keynote Address Dr. Elizabeth Blackburn</b> <i>Haga Magasinet</i>
4:30-5:00			<b>Business Meeting</b> <i>Haga Magasinet</i>		
5:00-5:30	<b>Faculty-Trainee Colloquium</b>  <i>Breakout Rooms 1-4</i>	<b>Oral Session 2</b>  Featuring the Robert Ader and Norman Cousins Lectures  <i>Haga Magasinet</i>		<b>Break</b>	
5:30-6:00					
6:00-6:30					
6:30-7:00					
7:00-7:30					
7:30-8:00		<b>Welcome Reception</b> <i>Dining Room (upstairs in Conference Center)</i>		<b>Closing Banquet</b> <i>Vasa Museum</i>	
8:00-8:30	<b>Trainee Reception</b> <i>Café Bojan (offsite)</i>				
9:00-					

## Tuesday, June 4

3:00-6:00pm

**REGISTRATION OPEN**  
(Conference Center)

## Wednesday, June 5

7:30-5:00pm

**REGISTRATION OPEN**  
(Conference Center)

10:00-12:00pm

**SATELLITE SYMPOSIUM**

(Nobel Forum, Nobels väg 1, Karolinska Institute- offsite)

Pre-Registration Required

Chair: Mats Lekander



10:00 *Welcome and tribute to Bernard Osher*

Anders Hamsten (president of Karolinska Institute) and  
Harriet Wallberg-Henriksson (former president of Karolinska Institute)

10:20 *Conscious and unconscious placebo/nocebo*

Martin Ingvar, Karolinska Institute, Sweden

10:40 *Imaging the patient-provider relationship*

Karin Jensen, Beth Israel Deaconess Medical Center and Harvard Medical  
School, USA, and Karolinska Institute, Sweden

11:00 *Placebo in acupuncture*

Anna Enblom, Karolinska Institute, Sweden

11:20 *Antidepressants and the placebo effect*

Irving Kirsh, Beth Israel Deaconess Medical Center and Harvard Medical  
School, USA, and Plymouth University, UK

1:00-5:00pm

**EDUCATIONAL SHORT COURSE**

(Repslagaren)

*All registered attendees are encouraged to attend.*

**Neuro-Endocrine-Immune Interactions: some hot points in inflammation**

1:00 Introduction

*Immune-Neuro-Endocrine interactions: the concept behind*

Adriana del Rey

Dept. Immunophysiology, Marburg, Germany

1:20 *Inflammasomes, agonists, and downstream molecular responses*

Steven Applequist

Center for Infectious Medicine, Stockholm, Sweden

2:00 *Epigenetics in inflammation*

Maja Jagodic

Dept. of Clinical Neuroscience, Stockholm, Sweden

2:40 Break

3:10 *Inflammation and depression in metabolic disorders*  
Sophie Layé  
Nutrition and Integrative Neurobiology, Bordeaux, France

3:50 *Inflammation, emotions and cognition: where in the brain?*  
Mats Lekander  
Stress Research Institute, Stockholm, Sweden

4:30 *Publishing science from a publisher's and an editor's point of view*  
Toby Charkin (Elsevier, Brain, Behavior and Immunity)  
Keith Kelley (Editor, Brain, Behavior and Immunity)

**5:00-7:00pm**

**FACULTY-TRAINEE COLLOQUIUM**

*(Breakout Rooms 1-4)*



See page 7 for mentor and room assignments

**8:00pm-**

**TRAINEE RECEPTION** (Included)

*(Café Bojan, at Stockholm University- offsite)*

Pick up directions at the registration desk.

*All registered trainees (member and non-member) are encouraged to attend*

# Thursday, June 6

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**7:30-5:00 REGISTRATION OPEN**  
(Conference Center)

**8:30-10:30 ORAL SESSION 1**  
(Haga Magasinet)

**Stress, Sleep, and Early Development**

Co-chairs: Staci Bilbo and Shamgar Ben-Eliyahu

8:30 *Applying the p curve to PNI: Are effects of stress on immunity real or incidental?*  
S. C. Segerstrom, G. E. Miller [1073]



8:45 *Re-exposure to social defeat initiated anxiogenic macrophage recruitment into the brain of sensitized mice.*  
E. S. Wohleb, Y. Huang, D. T. Shea, D. B. McKim, A. J. Tarr, N. D. Powell, J. F. Sheridan, J. P. Godbout [1234]

9:00 *The role of dynamic microglial alterations in stress-induced depression and suppressed neurogenesis.*  
T. Kreisel, M. G. Frank, T. Licht, R. Reshef, M. V. Baratta, S. F. Maier, R. Yirmiya [1112]

9:15 *Circadian rhythms of human T cell subsets.*  
T. Lange, L. Besedovsky, E. Schmidt, J. Born [1151]

9:30 *Sleep regulates hematopoietic stem cell trafficking.*  
A. Rolls, W. Pang, I. Ibarra, D. Colas, P. Bonnavion, H. C. Heller, I. L. Weissman, L. de Lecea [1080]



9:45 *Early-life viral infection causes neuroinflammation, cognitive deficits, and changes in neurogenesis in the neonatal piglet.*  
M. S. Conrad, M. R. Elmore, M. D. Burton, J. L. Rytch, R. W. Johnson [1090]

10:00 *Prenatal diet programs altered expression of immune and epigenetic related genes in the offspring brain.*  
N. Grissom, T. M. Reyes [1143]



10:15 *Modulation of inflammatory signaling pathways in the ovary by immune challenge in early life.*  
L. Sominsky, A. P. Sobinoff, V. Pye, E. A. McLaughlin, D. M. Hodgson [1066]

**10:30-11:00 BREAK**  
(The Manor House)

**11:00-1:00 PRESIDENTIAL SYMPOSIUM**  
(Haga Magasinet)

**Neurobiology of Placebo/Nocebo Responses**

Chair: Martin Ingvar

11:00 *Different placebo responses involve different neurotransmitters*  
Fabrizio Benedetti

11:40 *The contribution of placebo mechanisms to active treatments and implications for drug therapy*  
Ulrike Bingel  
Department of Neurology, University Medical Center Hamburg Eppendorf, Germany

12:15 *Teach the T cells: Learned placebo effects on immune functions*  
Manfred Schedlowski  
Institute of Medical Psychology and Behavioral Immunobiology, University of Duisburg-Essen, Germany

12:50 Final Discussions

**1:00-2:30** **LUNCH** (Included)  
(Dining Room, upstairs in the Conference Center)

**Concurrently: PNIRS BOARD MEETING**  
(Norrviken)

**2:30-3:00** **POSTER DATA BLITZ 1**  
(Haga Magasinet)  
Chair: Harald Engler

-  2:30 *An animal model of recurrent depression: Sensitized depression-like behavior when rats are re-exposed to chronic mild stress*  
J. L. Remus, D. Jamison, J. D. Johnson [1070]  
Poster # 14
-  2:33 *Glucocorticoid receptor signaling is responsible for the circadian decline in naïve T cell numbers and increase in CXCR4 expression in the morning hours*  
L. Besedovsky, J. Born, T. Lange [1154]  
Poster # 59
-  2:36 *Decreased functional recovery after SCI in aged mice corresponds with impaired IL-4Ra upregulation on microglia and reduced IL-4-dependent repair*  
A. M. Fenn, J. C. Hall, J. C. Gensel, Y. Huang, P. G. Popovich, J. P. Godbout [1222]  
Poster # 62
- 2:39 *Forced treadmill exercise training exacerbates inflammation and causes mortality while voluntary wheel training is protective in a mouse model of colitis*  
J. A. Woods, M. D. Cook, S. A. Martin, C. Williams, K. Whitlock, M. Wallig, B. A. Pence [1138]  
Poster # 48
- 2:42 *Neurobehavioral consequences of acute mTOR inhibition*  
M. Hadamitzky, A. Herring, K. Keyvani, R. Doenlen, H. Engler, U. Krügel, K. Bösche, K. Orłowski, M. Schedlowski [1149]  
Poster # 56
- 2:45 *Chronic stress induces profound structural atrophy of astrocytes within the prefrontal cortex: an emerging story in glial remodeling in response to stress*  
R. Walker, R. Tynan, S. Beynon, M. Nilsson [1144]  
Poster # 53

- 2:48 *Threat sensitivity is independently associated with elevated inflammation in posttraumatic stress disorder: Data from the Mind Your Heart Study*  
A. O'Donovan, T. C. Neylan, A. J. Ahmadian, B. E. Cohen [1097]  
Poster # 23
- 2:51 *The spatial energy expenditure configuration and possible applications in an experimental model of arthritis*  
S. Klatt, R. H. Straub [1111]  
Poster # 32
- 2:54 *Development and preliminary validation of the Sickness Questionnaire (SicknessQ)*  
A. N. Andreasson, R. Wicksell, B. Karshikoff, K. Lodin, J. Axelsson, C. Olgart Höglund, M. Lekander [1122]  
Poster # 37

**3:00-4:30 POSTER SESSION 1**  
(Repslagaren/Segelmakaren)

**4:30-5:00 BREAK**  
(Conference Cafe)

**5:00-5:30 ORAL SESSION 2**  
(Haga Magasinet)  
Co-Chairs: Cobi Heijnen and Manfred Schedlowski



- 5:00 *The use of the newly developed synthetic TLR-4 agonist as an immuno-therapeutic agent in a cancer model.*  
P. Matzner, L. Shaashua, L. Sorski, B. Levi, R. Melamed, E. Rosenne, A. Benbenishty, M. Horowitz, N. Gotlieb and S. Ben-Eliyahu [1173]



- 5:15 *INFLAME-BEAT: Insufficient glucocorticoid signalling and elevated inflammation in heart disease patients with depression.*  
N. Nikkheslat, P. A. Zunszain, I. Barbosa, J. Parker, A. Tylee, L. A. Carvalho, C. M. Pariante [1155]

**5:30-7:30 THE 2013 ROBERT ADER NEW INVESTIGATOR AND NORMAN COUSINS MEMORIAL LECTURES**  
(Haga Magasinet)

**5:30 Robert Ader New Investigator Lecture**  
Introduction: Manfred Schedlowski

*The toll of central immune signaling: Implications for pain and reward behaviours*  
Mark Hutchinson, University of Adelaide, Australia

**6:30 Norman Cousins Memorial Lecture**  
Introduction: Manfred Schedlowski

*Anatomy of an illness: Control from a caregiver's perspective*  
Mark Laudenslager, University of Colorado, USA

**7:45- 10:00 WELCOME RECEPTION (Included)**  
(Dining Room, upstairs in the Conference Center)

# Friday, June 7

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**8:00-3:00 REGISTRATION OPEN**  
(Conference Center)

**7:30-8:30 FINANCE COMMITTEE MEETING**  
(Korgmakaren)

**8:30-10:30 ORAL SESSION 3**  
(Haga Magasinet)

## **Pain and Sickness Response**

Co-Chairs: Lucile Capuron and Raz Yirmiya

8:30 *Peripheral monocytes/macrophages promote resolution of acute inflammatory pain via an IL-10 dependent pathway.*

H. L. Willemen, N. Eijkelkamp, A. Garza Carbajal, H. Wang, M. Mack, J. Zijlstra, C. J. Heijnen, A. Kavelaars [1135]



8:45 *Repeated morphine enhances peripheral nerve injury-induced allodynia via central immune mechanisms.*

P. M. Grace, L. I. Greene, K. A. Strand, K. C. Rice, S. F. Maier, L. R. Watkins [1077]



9:00 *Contribution of peripheral immune cells to chemotherapy-induced neuropathy.*

K. Krukowski, N. Eijkelkamp, H. Wang, M. Qi-Lang, R. Dantzer, C. J. Heijnen, A. Kavelaars [1176]

9:15 *Afferent immune-to-brain communication in human pain: A brain imaging study on experimental endotoxemia in a visceral pain model.*

S. Benson, A. Wegner, J. S. Kullmann, J. Kleine-Borgmann, J. S. Grigoleit, M. Schedlowski, S. Elsenbruch [1133]

9:30 *Acute inflammation modulates substantia nigra responses to stimulus novelty and may underpin effects on exploratory behaviour.*

N. A. Harrison, E. Cooper, V. Voon, H. D. Critchley [1179]

9:45 *Polymorphisms in both immune and behavioural genes affect mood as part of the acute sickness response to infection.*

U. Vollmer-Conna, B. Piraino, A. R. Lloyd [1088]



10:00 *Adiposity-related low-grade inflammation and working memory alterations in obese patients before and after bariatric surgery.*

J. Lasselin, S. Dexpert, A. Aubert, C. Beau, P. Ledaguenel, E. Magne, S. Laye, L. Capuron [1217]

10:15 *The influence of cohabitation with a sick cage mate on pulmonary allergic inflammatory response in mice.*

E. K. Hamasato, A. P. Ligeiro de Oliveira, G. J. Alves, J. Palermo-Neto [1134]

**10:30-11:00 BREAK**  
(The Manor House)

**11:00-1:00 SYMPOSIUM**

*(Haga Magasinet)*

**Sleep, Brain & Immunity**

Co-Chairs: Mark Opp and John Axelson

11:00 *Cytokines, Inflammation and Sleep: What we have learned from animal models*

Mark R Opp

Department of Anesthesiology & Pain Medicine, University of Washington, USA

11:30 *Cytokines in local network use-dependent initiation of sleep*

James M Krueger

Department of Medical Sciences, Washington State University – Spokane, USA

12:00 *Sleep and adaptive immunity in humans*

Jan Born

Department of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Germany

12:30 *Sleep, cytokines and infection: Studies in human*

John Axelson

Department of Clinical Neuroscience, Karolinska Institutet, Sweden

**1:00-2:30 LUNCH (Included)**

*(Dining Room, upstairs in the Conference Center)*

**Concurrently: BBI BOARD MEETING**

*(Norrviken)*

**2:30-3:30 KEYNOTE ADDRESS**

*(Haga Magasinet)*

Chair and Introduction: Keith Kelley

*Deciphering immune function by random germ line mutagenesis*

Bruce Beutler

Regental Professor and Director, Center for Genetics of Host Defense, UT Southwestern Medical Center, USA

The innate immune response to molecules of microbial origin is autonomous to the extent that isolated macrophages (and other cells) respond to LPS, polyI:C, and other mimetics of infection. On the other hand, the response is modulated by cytokines and perhaps by signals originating in cell-to-cell contact, and much remains to be understood concerning this modulation. The adaptive immune response by its very nature entails communication among cells: interactions between dendritic cells and T cells, for example, and then between T cells and B cells. Collectively the immune system may be seen as a “machine” distributed throughout the body in the form of many interacting cells. It is sometimes best to analyze such a machine in situ, without removing its assorted elements from the body in which it functions. Germline mutagenesis offers a means of doing this, and in recent years, it has become possible to analyze germline mutations more rapidly than ever before. Approximately 90 coding changes can be sampled in the average pedigree. Approximately 1/5 of these will have deleterious consequences for the protein in question. About 30 pedigrees examined each week, so that about 70% of the mutations are interrogated in homozygous form. Therefore, nearly 400 genes can be tested weekly for non-redundant functions in the immune response. As this process is carried out over time, a comprehensive list of essential genes can be assembled. Some may be detectable only in the context of an intact, functioning organism.



# Saturday, June 8

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**8:00-3:00 REGISTRATION OPEN**

(Conference Center)

**8:30-10:30 ORAL SESSION 4**

(Haga Magasinet)

**NeuroImmune Regulation**

Co-Chairs: Annemieke Kavelaars and Lisa Goehler

- 8:30 *Intranasal mesenchymal stem cell transplantation restores brain damage, improves sensori-motor function and reverses depressive-like behavior in a model of subarachnoidal hemorrhage in rats.*  
E. Kooijman, C. van Velthoven, C. H. Nijboer, E. Vichaya, A. Kavelaars, J. Kesecioglu, C. J. Heijnen [1228]
-  8:45 *Selective localization of bone marrow-derived ramified cells in the brain adjacent to the attachments of choroid plexus.*  
S. Hasegawa-Ishii, A. Shimada, M. Inaba, M. Li, M. Shi, S. Takei, S. Ikehara [1076]
-  9:00 *Selective contributions of neuronal and astroglial interleukin-1 receptor 1 to behavioral immune responses.*  
A. M. Ingiosi, M. R. Opp [1225]
-  9:15 *The role of astrocytes in IL-10 mediated regulation of inflammation within the CNS.*  
D. M. Norden, A. M. Fenn, J. P. Godbout [1230]
- 9:30 *Bacterial lipopolysaccharide-induced systemic inflammation alters cerebral blood flow: relationship to prostaglandin and NO production.*  
J. C. Delpech, F. Villéga, M. Griton, J. M. Franconi, S. Miraux, J. P. Konsman [1197]
- 9:45 *Increased microglial activation in anxious inbred mouse strains before and after systemic LPS stimulation.*  
Z. Li, L. Ma, L. Tian [1181]
- 10:00 *Microglia and their CX3CR1 signaling are involved in hippocampal- but not olfactory bulb-related memory and neurogenesis.*  
R. Reshef, T. Kreisel, D. Beroukhim, S. Jung, R. Yirmiya [1113]
- 10:15 *The endocannabinoid anandamide modulates adhesion, proliferation and the production of inflammatory mediators in rheumatoid arthritis synovial fibroblasts by activating CB1, TRPV1 and non-cannabinoid targets.*  
T. Lowin, A. Graeber, R. H. Straub [1102]

**10:30-11:00 BREAK**

(The Manor House)

**11:00-1:00 SYMPOSIUM**

*(Haga Magasinet)*

**Host Defense & Psychiatric Disorders**

Co-Chairs: Andrew Miller and Urs Meyer

11:00 *Professional and nonprofessional phagocytes: From developmental disorders to depression*

Jonathan Kipnis

Department of Neuroscience, Center for Brain Immunology and Glia, University of Virginia, USA

11:30 *Neuroimmune-stress interactions in neurodevelopmental psychiatric disorders*

Urs Meyer

Laboratory of Physiology & Behavior, Swiss Federal Institute of Technology, Switzerland

12:00 *The microbiome and human psychiatric disorders*

Robert H. Yolken

Stanley Neurovirology Laboratory, Johns Hopkins School of Medicine, USA

12:30 *Testing the cytokine hypothesis of depression: Trials and tribulations*

Andrew H. Miller

Department of Psychiatry and Behavioral Sciences, Emory University School of Medicine, USA

**1:00-2:00 LUNCH (Included)**

*(Dining Room, upstairs in the Conference Center)*

**2:00-2:30 POSTER DATA BLITZ 2**

*(Haga Magasinet)*

Chair: Jeff Woods



2:00 *Adenosine impairs locomotor activity and food intake via the A2A/PKA/KATP channel-dependent activation of caspase 1*

G. S. Chiu, P. T. Darmody, J. P. Walsh, K. A. Kwakwa, G. G. Freund [1087]

Poster # 1



2:03 *Imatinib methanesulfonate reduces hippocampal amyloid-beta and restores cognitive function following repeated endotoxin exposure*

M. K. Weintraub, C. M. Bisson, J. N. Nouri, B. T. Vinson, D. Kranjac, M. J. Eimerbrink, G. W. Boehm, M. J. Chumley [1084]

Poster # 3



2:06 *Exposure to depression in utero predicts adulthood inflammation*

D. T. Plant, S. Pawlby, C. M. Pariante [1126]

Poster # 4

2:09 *Pain sensitivity during experimentally induced systemic inflammation in humans*

B. Karshikoff, M. Lekander, C. Olgart Höglund, J. Axelsson [1200]

Poster # 30

2:12 *Dissociation between learning and memory impairment and other sickness behaviours during simulated central Mycoplasma infection in rats*

T. L. Baartman, T. Swanepoel, R. M. Barrientos , H. P. Laburn, T. Dukhan, D. Mitchell,  
L. M. Harden [1206]  
Poster # 35

2:15 *Glucocorticoid-mediated recruitment of inflammatory myeloid cells correlates with colitis during exposure to chronic psychosocial stress*  
D. Schmidt, D. Peterlik, S. O. Reber, D. N. Männel, A. Lechner [1203]  
Poster # 33

2:18 *The hippocampal miRNome in the chronic corticosterone model of depression*  
K. M. Ryan, A. Harkin, D. M. McLoughlin [1207]  
Poster # 36

2:21 *Indoleamine 2,3 dioxygenase (IDO1) is a key regulator of depressive-like behavior but not of mechanical hyperalgesia in the spared nerve injury model of neuropathic pain*  
W. Zhou, Q. Mao-Ying, C. J. Heijnen, R. Dantzer, A. Kavelaars [1209]  
Poster # 38

2:24 *Fatigue, affective symptom burden and altered tryptophan and phenylalanine metabolism in colorectal cancer patients undergoing chemotherapy*  
X. Wang, R. Dantzer, D. Fuchs, C. Eng, K. Y. Jing, K. Kurz, M. Sailors, C. Cleeland [1216]  
Poster # 44

**2:30-4:00**     **POSTER SESSION 2**  
(Repslagaren/Segelmakaren)

**4:00-4:30**     **BREAK**  
(Conference Café)

**4:30-5:30**     **KEYNOTE ADDRESS**  
(Haga Magasinet)  
Chair and Introduction: Firdaus Dhabhar

*Chromosome ends, chronic stress and comorbid psychiatric and other diseases*  
Elizabeth Blackburn  
University of California, San Francisco

Chromosome ends (called telomeres, the DNA-protein complexes that protect the tips of chromosomes) can be replenished by the enzyme telomerase. Telomerase can at least partially counteract the processes causing telomere length to dwindle down throughout life, although to ensure continued healthy functioning of cells, telomerase expression levels must be kept in a delicate "just right" balance. The net length attrition of telomeres serves as a unique and informative biomarker of human aging. Genetically determined telomerase deficiency syndromes in people are characterized by premature aging across tissues and earlier disease onset and mortality. Telomere shortness is a mechanism for cellular and organismal aging in the general population as well, and can contribute to a wide array of diseases of aging. Normal variations in telomere length anticipate and predict earlier onsets of such chronic diseases in many epidemiological studies.

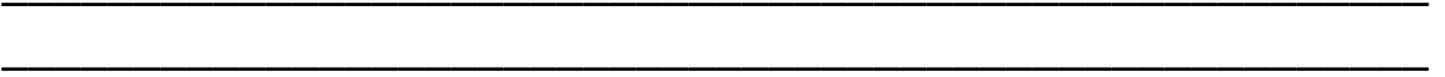
Across populations, people vary widely in their rates of this type of cell aging, which is in part genetically determined but also influenced by common behavioral, and psychological factors. Stress exacerbates telomere shortening. With the role of telomere shortening in chronic diseases becoming more established, it is important to understand how it might be associated with mental health and social stressors, and to determine mechanisms underlying the comorbidity between chronic diseases and psychiatric morbidity.











## Poster Session 1: Thursday, June 6

‡ Indicates participation in the Data Blitz; Number in brackets is abstract number in abstract booklet.

1	MDD Symptoms in Relation to Monocyte Activation L. Sumaski, T. K. Birkenhäger, H. A. Drexhage and V. Arolt [1050]
2	TNF-alpha mediates depressive-like behavior induced by chronic mild stress through upregulation of indoleamine 2,3-dioxygenase in mice Y. Liu, C. Jiang, L. Liu, Y. Peng, Y. Wang [1051]
3	The Mild Encephalitis Subgroup of Schizophrenia – An Update K. Bechter [1052]
4	Lewis and Sprague Dawley, but not Fischer 344 Rats, Exhibit Sustained Paclitaxel-Induced Mechanical Hypersensitivity S. L. Kozachik, G. G. Page [1056]
5	CSF outflow along spinal nerves – a neuroradiological documentation K. Bechter, B. Schmitz [1058]
6	Osteoclast progenitors induce catecholaminergic-to-cholinergic transition of sympathetic nerve fibers under healthy conditions H. Stangl, D. Muschter, S. Graessel, R. H. Straub [1059]
7	Palmitic acid induces anxiety-like behavior and neurotransmitter alterations M. L. Moon, M. A. Lawson, J. J. Joesting, G. S. Chiu, S. J. Gainey, G. G. Freund [1060]
8	Inadequate glucocorticoid secretion in experimental arthritis in rats is closely linked to impaired mitochondria and reduced lipid breakdown in the adrenal cortex C. Wolff, K. Krinner, R. Zechner, J. Schröder, R. H. Straub [1061]
9	Integrative medicine used for the treatment of viral myopericarditis: A case presentation of an immunocompetent 22 year-old male with stress-induced reactivation of Epstein barr virus (EBV) with cardiac involvement M. L. Lara-Marquez MD, PhD, H. O. Ventura MD, FACC, FACP [1062]
10	Prediction pathways for innate immune pathology, IBS, anxiety and depression in a general population (the PopCol study) A. N. Andreasson, M. P. Jones, M. M. Walker, N. J. Talley, H. Nyhlin and L. Agréus [1265]
11	The Influence of Pain, Executive Functions, and Inflammation in Predicting Chronic Disease Score in Older Adults I. A. Boggero, T. Eisenlohr-Moul, S. C. Segerstrom [1067]
12	Strenuous exercise alters gene expression of Th1/Th2 imbalance in human peripheral blood mononuclear cells of marathon participants L. Xiang, K. E. Rehm, G. D. Marshall, Jr. [1068]
13	Anti-inflammatory role of L-NG-Nitroarginine Methyl Ester in a chronic model of depression S. DEEP, A. Sharma, I. Baitharu, V. Jain, D. Prasad, S. B. Singh [1069]
‡ 14	An Animal Model of Recurrent Depression: Sensitized Depression-like Behavior When Rats are Re-exposed to Chronic Mild Stress J. L. Remus, D. Jamison, J. D. Johnson [1070]
15	Does gene regulation make it complicated? Differences in gene expression responses to Complicated Grief and Non-Complicated Grief. C. R. Schultze-Florey, M. O'Connor, M. R. Irwin and S. W. Cole [1248]
16	Environmental conditions perceived by the brain alter CD4 T cell responses through an adiponectin-dependent mechanism N. Glaichenhaus, M. Canali, J. Soria, E. Murriss, J. Chabry, A. Petit-Paitel, A. Guyon, N.Zsurger, E. Mougneau [1081]
17	Evaluation of dendritic cells of mice subjected to restraint stress A. N. Lima, D. G. da Cruz, C. M. Salles Gomes [1082]

## Poster Session 1: Thursday, June 6

‡ Indicates participation in the Data Blitz; Number in brackets is abstract number in abstract booklet.

18	Cortisol increases DNA damage in lymphocytes in vitro, but is not associated with telomere shortening C. F. Bull, H. Christensen, M. F. Fenech [1085]
19	Interleukin-1-R1 restore: a powerful genetic model for studying cell type-specific interleukin-1 mediated central nervous system effects N. Quan, X. Liu, Q. Chen, V. Coppola, J. Zuo [1089]
20	Anti-inflammatory effects of tyrosine-hydroxylase (TH) -positive catecholamine producing cells in chronic arthritis Z. Jenei-Lanzl, S. Capellino, F. Kees, R. H. Straub [1092]
21	Can napping protect against negative inflammatory and health effects of poor sleep? J. K. Devine, S. J. Gray, A. He, J. M. Wolf [1095]
22	Psychosocial factors, endocannabinoids, and inflammatory molecules in hematopoietic stem cell transplant recipients J. M. Knight, C. J. Hillard, H. Zhao, A. Szabo, J. M. Lyness, O. Z. Sahler, J. L. Liesveld, J. A. Moynihan [1096]
‡ 23	Threat sensitivity is independently associated with elevated inflammation in posttraumatic stress disorder: Data from the Mind Your Heart Study A. O'Donovan, T. C. Neylan, A. J. Ahmadian, B. E. Cohen [1097]
24	Neuroendocrine modulation of the immune system by repeated anticipation in domestic pigs J. Brietzke, S. Jaskulke, E. Kanitz, M. Tuchscherer, W. Otten, P. C. Schön, A. Tuchscherer, G. Manteuffel, U. Gimsa [1100]
25	Impact of Placebo on Plasma IL-18: relation to Placebo Analgesia and Central $\mu$ -Opioid Receptor Activation A. R. Prossin, M. J. Kaplan, S. S. Zalcman, A. E. Koch, P. L. Campbell, J. K. Zubieta [1101]
26	Blockade of the neuropilin-2/plexin A2 receptor – new small peptides found by phage display. J. Kunath, M. Szardenings, R. H. Straub [1104]
27	The Effect of Antidepressants, Polyunsaturated Fatty Acids and Glucocorticoid Pre-Treatment on Inflammation in Human Hippocampal Stem Cells M. A. Horowitz, C. Anacker, J. Wertz, C. Pariante, P. Zunszain [1105]
28	Evaluation of exosomal microRNA expression following exposure to acute stress L. A. Beninson, P. N. Brown, A. Hills, W. Craig, H. Yin, M. Fleshner [1107]
29	Vagus nerve activity, a good night's sleep, and recovery from acute infection. U. Vollmer-Conna, U. Gunawardane, V. Patel, E. Cvejic, A. R. Lloyd [1108]
30	Peripheral administration of D-cycloserine, but not norepinephrine, restores appropriate cognitive function following systemic bacterial endotoxin exposure D. Kranjac, K. M. Koster, M. S. Weintraub, M. J. Eimerbrink, B. M. Womble, B. G. Cooper, M. J. Chumley, G. W. Boehm [1109]
31	Brain changes in the expression of adrenergic receptors and inflammatory cytokines in response to chronic social stress in mice: individual differences and implications for the study of stress-related psychopathologies. J. Perez Tejada, A. Arregi, A. Azpiroz, E. Gomez-Lazaro, G. Beitia, O. Vegas, L. Garmendia [1110]
‡ 32	The Spatial Energy Expenditure Configuration and Possible Applications in an Experimental Model of Arthritis S. Klatt, R. H. Straub [1111]
33	Frequency of Prolonged Social-Evaluative Threat and Cytokine Activity: A Field Experiment L. Frimanson, I. Anderzén, M. Lekander [1114]

## Poster Session 1: Thursday, June 6

‡ Indicates participation in the Data Blitz; Number in brackets is abstract number in abstract booklet.

34	Cytokines in Human Milk from Preterm Mothers M. W. Groer, T. Ashmeade, A. Radford, J. Zaritt, S. N. Williams, B. Kane, S. Roberts [1115]
35	Immune Recovery from Pregnancy across the Postpartum: Ex vivo Cytokine Synthesis and Dysphoric Moods M. Groer [1120]
36	Neuropeptides as Cell Gene Therapy in Experimental Autoimmune Encephalomyelitis D. Ganea, M. Toscano, F. Emig, K. Hooper [1121]
‡ 37	Development and preliminary validation of the Sickness Questionnaire (SicknessQ) A. N. Andreasson, R. Wicksell, B. Karshikoff, K. Lodin, J. Axelsson, C. Olgart Höglund, M. Lekander [1122]
38	Monoacylglycerol lipase inhibition reduces inflammation in a murine model of acute lung injury C. Costola-de-Souza, A. Ribeiro, V. Ferraz-de-Paula, A. S. Calefi, T. P. Aloia, M. L. Pinheiro, J. Palermo-Neto [1123]
39	The impact of obesity and leptin on age-dependent changes of systemic inflammation in the rat S. Koenig, G. N. Luheshi, T. Wenz, R. Gerstberger, J. Roth, C. Rummel [1124]
40	Effect of unilateral cervical vagotomy on the phenotype and function of dendritic cells generated from bone marrow precursor cells D. G. Cruz, A. N. Lima, P. B. Silva, J. Palermo-Neto, C. Massoco [1125]
41	Nuclear factor interleukin 6 deficient mice show reduced locomotor activity and dose dependant alterations in fever and recruitment of neutrophil granulocytes to the brain during LPS-induced systemic inflammation J. Schneiders, F. Fuchs, J. Damm, R. Gerstberger, D. Soares, J. Roth, C. Rummel [1127]
42	The role of the liver in E. coli-induced memory impairments in aged rats R. M. Barrientos, T. H. Arnold, L. C. Loram, M. G. Frank, N. Y. Crysdale, L. R. Watkins, S. F. Maier [1129]
43	Ketamine abrogates lipopolysaccharide-induced depressive-like behavior in C57Bl/6J mice by increasing AMPA receptor-mediated glutamatergic neurotransmission over NMDA receptor-mediated neurotransmission. A. K. Walker, D. P. Budac, S. Bisulco, A. W. Lee, R. A. Smith, B. Beenders, K. W. Kelley, R. Dantzer [1130]
44	Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infections perceived as Conversion disorder. A Case Study of a young woman. S. Bejerot, E. Hesselmark, H. Wallén, F. Mobarrez, M. Landén, L. Schwieler, R. Nybom, L. Wetterberg [1131]
45	Systemic inflammatory responses to stress and its impact on cognition in subjects with Mild Cognitive Impairment R. Sussams, W. Schlotz, H. Perry, C. Holmes [1132]
46	Cancer Impairs Dermal Wound Healing in Mice L. M. Pyter, H. Calero, P. T. Marucha, C. G. Engeland [1136]
47	Heat stress impairs performance parameters, immunity and increases Salmonella enteritidis migration to spleen of broilers chickens J. Palermo-Neto, A. S. Calefi, T. P. Aloia, A. V. Gomes, M. L. Pinheiro, A. Ribeiro, V. Ferraz-de-Paula, C. S. Astolfi-Ferreira, A. J. Ferreira, S. Sharif, W. M. Quinteiro-Filho [1137]
‡ 48	Forced Treadmill Exercise Training Exacerbates Inflammation and Causes Mortality While Voluntary Wheel Training is Protective in a Mouse Model of Colitis J. A. Woods, M. D. Cook, S. A. Martin, C. Williams, K. Whitlock, M. Wallig, B. A. Pence [1138]

## Poster Session 1: Thursday, June 6

‡ Indicates participation in the Data Blitz; Number in brackets is abstract number in abstract booklet.

49	Catecholamine and glucocorticoid modulation of stress-induced inflammatory cytokines and Hsp72 in subcutaneous adipose tissue S. Cox, K. Speaker, W. Craig, M. Paton, M. Fleshner [1139]
50	Intrathecal administration of microRNA-124 alleviates both neuropathic pain and depression-like behavior in mice X. Huo, Q. Mao-Ying, W. Zhou, R. Dantzer, C. J. Heijnen, A. Kavelaars [1140]
51	Aggressive and impulsive personality traits and inflammatory markers in cerebrospinal fluid and serum: are they interconnected? S. Bromander, C. Wass, R. Anckarsater, H. Zetterberg, K. Blennow, H. Anckarsater, T. Nilsson, M. Kristiansson [1141]
52	Reduction of Hair Glucocorticoid Levels in an Animal Model of Post-Traumatic Stress Disorder (PTSD) M. Groer, S. Wolfe, C. R. Park, B. Kupchak, J. Volek, D. M. Diamond [1142]
‡ 53	Chronic stress induces profound structural atrophy of astrocytes within the prefrontal cortex: an emerging story in glial remodeling in response to stress R. Walker, R. Tynan, S. Beynon, M. Nilsson [1144]
54	Surprise, surprise: Glucocorticoids have a minor role compared to catecholamines and prostaglandins in mediating stress and surgery-induced In vivo suppression of NK activity S. Ben-Eliyahu, E. Rosenne, L. Sorski, L. Shaashua, E. Neeman, P. Matzner, B. Levi, N. Gotlieb [1147]
55	Immunohistochemical demonstration of enhanced prostaglandin F2alpha production following kainic acid-induced seizures in rat hippocampus. S. Takei, S. Hasegawa-Ishii, D. F. Woodward, K. Watanabe, A. Shimada [1148]
‡ 56	Neurobehavioral consequences of acute mTOR inhibition M. Hadamitzky, A. Herring, K. Keyvani, R. Doenlen, H. Engler, U. Krügel, K. Bösche, K. Orłowski, M. Schedlowski [1149]
57	Recent stressful events contribute to the development of fatigue and depression in patients receiving Interferon-alpha treatment. A. Borsini, N. Heggul, V. Mondelli, T. Chalder, C. Pariante [1150]
58	Sleep loss and subjective health T. Sundelin, M. Lekander, A. N. Andreasson, J. Axelsson [1153]
‡ 59	Glucocorticoid receptor signaling is responsible for the circadian decline in naïve T cell numbers and increase in CXCR4 expression in the morning hours L. Besedovsky, J. Born, T. Lange [1154]
60	Mood and cognitive disturbances in seasonal allergic rhinitis: Association with parameters of disease and inflammation K. Trikojat, J. Schmitt, A. Rösen-Wolff, H. Luksch, A. Buske-Kirschbaum [1156]
61	Nutritional n-3 polyunsaturated fatty acid deficiency impairs microglial cell activity in the developing brain C. Madore, C. Portal, A. Aubert, A. Sere, A. Nadjar, C. Joffre, S. Laye [1159]
‡ 62	Decreased Functional Recovery after SCI in Aged Mice Corresponds with Impaired IL-4Ra Upregulation on Microglia and Reduced IL-4-dependent Repair A. M. Fenn, J. C. Hall, J. C. Gensel, Y. Huang, P. G. Popovich, J. P. Godbout [1222]

## Poster Session 1: Thursday, June 6

‡ Indicates participation in the Data Blitz; Number in brackets is abstract number in abstract booklet.

63	Can we predict visceral pain sensitivity? An experimental study in healthy women S. Benson, T. E. Lacourt, J. H. Houtveen, L. J. van Doornen, J. S. Grigoleit and S. Elsenbruch [1261]
64	Socioeconomic Factors and Leukocyte Telomere Length in a Sample of African American Men J. M. Schrock, N. E. Adler, E. S. Epel, A. M. Nuru-Jeter, J. Lin, E. H. Blackburn and D. H. Chae [1266]
65	Epigenetic Alterations and an Increased Frequency of Micronuclei in Women With Fibromyalgia D. Lyon, V. Menzies, K. Archer, J. R. Brumelle, K. H. Jones, G. Gao, R. K. Elswick, Jr., T. York and C. Jackson-Cook [1253]
66	Somatic pain sensitivity during experimentally-induced inflammation in humans A. Wegner, S. Elsenbruch, J. Maluck, M. Schedlowski, and S. Benson [1255]

## Poster Session 2: Saturday, June 8

‡ Indicates participation in the Data Blitz; Number in brackets is abstract number in abstract booklet.

‡ 1	Adenosine impairs locomotor activity and food intake via the A2A/PKA/KATP channel-dependent activation of caspase 1 G. S. Chiu, P. T. Darmody, J. P. Walsh, K. A. Kwakwa, G. G. Freund [1087]
2	Lipopolysaccharide exposure reduces maternal serum Zn, Mg, Se and Mn concentrations in rats T. B. Kirsten, S. Bernardes, J. E. Sarkis, M. M. Bernardi, L. F. Felício [1079]
‡ 3	Imatinib Methanesulfonate Reduces Hippocampal Amyloid-beta and Restores Cognitive Function Following Repeated Endotoxin Exposure M. K. Weintraub, C. M. Bisson, J. N. Nouri, B. T. Vinson, D. Kranjac, M. J. Eimerbrink, G. W. Boehm, M. J. Chumley [1084]
‡ 4	Exposure to depression in utero predicts adulthood inflammation D. T. Plant, S. Pawlby, C. M. Pariante [1126]
5	IFN-alpha and IL-6 reduce glucocorticoid sensitivity in murine microglia: A role for FKBP5? E. M. Fagan, C. Dempsey, E. Tallon, T. J. Connor [1161]
6	Chorein – connection between a neurodegenerative disease and platelet function E. Schmidt, E. Schmid, P. Münzer, A. Hermann, S. Gu, M. Schaller, O. Borst, M. Föller, M. Gawaz, L. Schöls, A. Storch, C. Stournaras, F. Lang [1165]
7	Variation in cytokine expression levels in different immune compartments, and organ-specific effects of stress L. Sorski, R. Melamed, L. Shaashua, P. Matzner, N. Gotlieb, S. Ben-Eliyahu [1166]
8	Cohabiting with a sick mate: Relevance of olfactory contact to innate immune activity J. Palermo-Neto, G. J. Alves [1168]
9	Whole blood, as opposed to washed blood, is resistant to suppression of NK cell cytotoxicity by stress factors: Do behavioral stressors directly suppress activity of circulating NK cells in vivo? N. Gotlieb, E. Rosenne, L. Sorski, L. Shaashua, P. Matzner, S. Ben-Eliyahu [1169]
10	Neuroendocrine mediators regulate production of B cell activating factor of the tumor necrosis factor family (BAFF) in human synovial fibroblasts G. Pongratz, D. Deniffel, M. Melzer, R. H. Straub, T. Lowin [1170]
11	Sleep Variability is Associated with Inflammatory Cytokines in Pregnant Women M. Okun [1177]
12	Inflammation control augments antidepressant response in bipolar depression A. Halaris, E. Meresh, A. Sharma, N. Alvi, J. Sinacore [1178]
13	Control standard endotoxin as a potential tool to reduce the variability observed with lipopolysaccharide A. W. Lee, D. P. Budac, E. Charych, S. Bisulco, H. Zhou, T. Moller, B. Campbell [1180]
14	Antidepressants change social reactivity in LPS treated dominant mice D. W. Cohn, I. Gabanyi, D. Kinoshita, T. P. Aloia, T. M. Reis, L. Namazu, A. S. Calefi, J. Palermo Neto [1182]
15	Subclinical Inflammation Measured by Sedimentation Rate and Brain Structures in Recent Onset Schizophrenia. A. L. Sutterland, S. R. Offerhaus, L. Koenders, M. Koeter, M. Machielsen, L. de Haan [1183]
16	Anti-depressants and kynurenine pathway inhibition: A therapeutic strategy for neuroprotection in vitro? E. M. Fagan, S. M. Gibney, T. J. Connor [1184]

## Poster Session 2: Saturday, June 8

‡ Indicates participation in the Data Blitz; Number in brackets is abstract number in abstract booklet.

17	Impact of psychological stress on the adaptive immune system and disease progression in a triple negative breast and a transgenic ovarian cancer mouse model R. Budiu, A. Vlad, L. Nazario, C. Bathula, K. Cooper, E. Esther, M. S. Flint [1185]
18	Circulating C-Reactive Protein and daily feelings of fatigue among parents of children with an autism spectrum disorder. J. Gouin, S. Scarcello, C. Paquin, A. Thaw, E. Barker [1186]
19	Stress, allergy and the skin: altered cytokine profile may be linked to the non-neuronal cholinergic system (NNCS) F. R. Rommel, A. Michenko, J. Kupfer, S. Tumala, B. Raghavan, U. Gieler and E. M. Peters [1259]
20	Correlation of elevated MIF and tyrosine plasma levels in pregnancy R. R. Wilbur, N. Hall and M. Groer [1262]
21	Effects of waking drug, modafinil on cognitive function and neuro-immune interaction in mice with sleep deprivation D. Kim [1189]
22	Serum chemokine concentrations are associated with pain and anxiety after acute injury. L. Parkitny, J. H. McAuley, T. Stanton, F. Di Pietro, G. L. Moseley [1190]
23	Prenatal Stress, Depression, and Herpes Viral Reactivation P. Hsu, M. W. Groer, S. Wang, S. N. Williams, B. P. Kane [1191]
24	Statins, depression and the inflammatory hypothesis of depression: A meta-analysis of randomized controlled trials S. A. Hiles, A. L. Baker, T. Handley, T. de Malmanche, J. Attia [1192]
25	The inflammatory hypothesis of depression in the context of physical health: Depression and inflammatory markers in cardiovascular hospitalisations S. A. Hiles, A. L. Baker, T. de Malmanche, J. Attia [1193]
26	Effects of partial sleep deprivation on self-rated health and sickness G. Nilsson, S. Tamm, P. d'Onofrio, J. Schwarz, G. Kecklund, T. Åkerstedt, H. Fischer, M. Lekander [1195]
27	Behavioural and somatic mal-adaptations after chronic psychosocial stress: Reversal by chronic oxytocin? S. Peters, D. Slattery, N. Uschold, I. D. Neumann, S. Reber [1196]
28	Self-rated health is associated with fatigue, but not inflammatory cytokines or fraction of exhaled nitric oxide in men and women with allergic asthma K. Lodin, J. Syk, A. Undén, K. Alving, M. Lekander, A. Nixon Andreasson [1198]
29	Enhanced kynurenic acid levels and cytokine-induced production of 3-hydroxykynurenine in fibroblasts from bipolar or schizophrenic patients A. Johansson, B. Owe-Larsson, L. Asp, T. Kocki, M. Adler, J. Hetta, R. Gardner, G. Lundkvist, E. Urbanska, H. Karlsson [1199]
‡ 30	Pain sensitivity during experimentally induced systemic inflammation in humans B. Karshikoff, M. Lekander, C. Olgart Höglund, J. Axelsson [1200]
31	Childhood trauma and depression are associated with a dysregulated inflammatory profile M. M. Hughes, A. Carballado, D. M. McLoughlin, T. Frodl, T. J. Connor [1201]
32	The pig ( <i>Sus scrofa</i> ) as a suitable non-rodent model system: enabling the quantification of number and affinity of glucocorticoid receptors in porcine leukocytes L. Engert, V. Stefanski, S. Schmucker [1202]
‡ 33	Glucocorticoid-mediated recruitment of inflammatory myeloid cells correlates with colitis during exposure to chronic psychosocial stress D. Schmidt, D. Peterlik, S. O. Reber, D. N. Männel, A. Lechner [1203]

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34	Inflammation induced changes in Anterior Cingulate Cortex Glutamate is associated with Depression and Fatigue E. Haroon, A. E. Wilson, H. Udelson, X. Chen, B. Woolwine, S. Parekh, X. Hu, J. R. Spivey, A. H. Miller [1204]
‡ 35	Dissociation between learning and memory impairment and other sickness behaviours during simulated central Mycoplasma infection in rats T. L. Baartman, T. Swanepoel, R. M. Barrientos, H. P. Laburn, T. Dukhan, D. Mitchell, L. M. Harden [1206]
‡ 36	The hippocampal miRNome in the chronic corticosterone model of depression K. M. Ryan, A. Harkin, D. M. McLoughlin [1207]
37	Self-rated Health in Response to Experimental Manipulations of Inflammation is mediated by Sickness Behavior as assessed by the Sickness Questionnaire L. Lidberg, A. N. Andreasson, B. Karshikoff, J. Axelsson, C. Olgart Höglund, M. Lekander [1208]
‡ 38	Indoleamine 2,3 dioxygenase (IDO1) is a Key Regulator of Depressive-like Behavior but not of Mechanical Hyperalgesia in the Spared Nerve Injury Model of Neuropathic Pain W. Zhou, Q. Mao-Ying, C. J. Heijnen, R. Dantzer, A. Kavelaars [1209]
39	Immune-to-Brain Interactions in Metabolic Disorders L. Capuron, S. Layé [1210]
40	Does disease avoidance form a functional basis for stigmatisation towards the elderly? N. A. Harrison, E. Cooper, H. D. Critchley [1212]
41	Chronic psychosocial stress promotes tumor growth by the mobilization of MDSC into peripheral organs D. Schmidt, S. O. Reber, D. N. Männel, A. Lechner [1213]
42	Innate versus Adaptive Immune Contributions to Prefrontal Cortex Dysfunction in the Maternal Poly I:C Model of Neurodevelopmental Disorders K. C. Michael, J. Brooks, P. O'Donnell, J. Sand, A. Nagaraju, L. Tonelli [1214]
43	Evaluating the role of neuroinflammation in head and neck cancer-related symptoms E. G. Vichaya, D. W. Vermeer, J. M. Molkenhine, Q. Mao-Ying, X. Huo, K. A. Mason, J. H. Lee, A. Kavelaars, R. Dantzer [1215]
‡ 44	Fatigue, Affective Symptom Burden and Altered Tryptophan and Phenylalanine Metabolism in Colorectal Cancer Patients Undergoing Chemotherapy X. Wang, R. Dantzer, D. Fuchs, C. Eng, K. Y. Jing, K. Kurz, M. Sailors, C. Cleeland [1216]
45	Effect of inflammation on clinical outcomes in first episode-psychosis A. E. Russell, S. Ciufolini, A. Giordano, T. R. Marques, H. Taylor, C. Morgan, R. M. Murray, P. Dazzan, C. M. Pariante, V. Mondelli [1221]
46	Cytomegalovirus Antibody Elevation: A Potential Bio-Marker of Impulsivity in Bipolar Disorder A. R. Prossin, R. H. Yolken, S. S. Zalcman, M. G. McInnis [1227]
47	Oral Mucosal Wound Healing: Sex Differences and Inflammation C. G. Engeland, P. T. Marucha, M. P. Manos [1229]
48	Relationships between hair cortisol and marital status in female veterans A. R. Duffy, M. Groer, B. Kane, S. Williams [1231]
49	Eufllammation: Induction of robust inflammation without sickness behavior A. J. Tarr, Q. Chen, X. Liu, Y. Wang, N. S. Reed, C. P. DeMarsh, J. F. Sheridan, N. Quan [1232]
50	Pregnancy Specific Anxiety and Distress is Related to Increased IL-6 During the Second Trimester of Pregnancy K. J. Fische, D. Tell, H. L. Mathews, L. Witek Janusek [1235]

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51	Caloric restriction modulates the intestinal IgA levels in mice under acute exercise A. Resendiz-Albor, I. Arciniega-Martinez, J. Pacheco-Yepez, R. Campos-Rodriguez [1237]
52	Immunological predicament of obesity: Is low-grade inflammation a culprit of immunosuppression? S. I. Dimitrov, T. Cheng, F. Shaikh, C. Pruitt, M. Green, K. Wilson, N. Beg, S. Hong [1238]
53	Effects of stress acute in the secretion and transport of IgA in the ileum of Balb/c mice A. Resendiz-Albor, I. Arciniega-Martinez, J. Pacheco-Yepez, R. Campos-Rodriguez [1239]
54	Does migration of immune cells into the CNS play a role in HIV-associated neurocognitive impairment during antiretroviral therapy? S. Hong, R. D. Schrier, Y. Kao, F. Vaida, M. Cherner, M. Crescini, R. Ellis, S. Letendre [1240]
55	Effect of the sympathectomy on the transport and secretion of IgA in the small intestine of Balb/c mice under acute stress A. Resendiz-Albor, I. Arciniega-Martinez, J. Pacheco-Yepez, R. Campos-Rodriguez [1241]
56	Neonatal endotoxin exposure alters inflammatory pain sensitivity and HPA axis activity in a sex and age-dependent manner. I. Zouikr, J. Barouei, A. F. Ahmed, K. W. Beagley, V. L. Clifton, R. F. Thorne, D. M. Hodgson [1242]
57	Increased sleep duration is associated with early day elevated salivary alpha-amylase: a potential biomarker for increased sleep drive. K. P. Pitts, S. J. Gray, N. Rohleder, J. M. Wolf [1243]
58	First Demonstration of the Neuroimmune Link in Humans Using IV Endotoxin and Intradermal Capsaicin in the Face and Arm M. R. Hutchinson, M. Buijs, A. Nilsen, D. Williams, M. Gentgall, S. Tuke, P. E. Rolan [1245]
59	Effect of the acute stress on B and T cells of gut-associated lymphoid tissue A. Resendiz Albor, I. Arciniega- Martinez, M. Martinez-Reculez and R. Campos-Rodriguez [1268]
60	Immune-cell products from mice with an autoimmune disease affect apoptosis, proliferation and metabolism of PC12 cells, a model of sympathetic neurons H. O. Besedovsky, A. Wagner, and A. del Rey [1263]
61	Neuroinflammation: An Animal Model of Fatigue Induced Through Interleukin-1 Beta D. Bonsall, P. C. Molyneux and M. E. Harrington [1256]
62	Acute Bipolar Disorder Depression Is Associated with Immune Activation F. Dickerson and R. Yolken [1251]
63	Translocator protein (TSPO) as a biomarker of microglia activation: PET imaging using [11C]PBR28 in Parkinson's disease A. Jucaite, Z. Cselényi, A. Varrone, K. Varnäs, P. Johnström, C. Halldin, H. Salter, M. J. McLoughlin, J. Rinne, P. Svenningsson, R. Alexander, A. Kugler and L. Farde [1246]
64	Effects of Maternal Immune Activation on Embryonic Hypothalamic Development C. M. Marsters, D. M. Kurrasch and Q. J. Pittman [1249]

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65	HPA axis function is altered by cutaneous allergic inflammation in mice in a neuropeptide- and neurotrophin-dependent manner E. M. Peters, C. Liezmann, S. Pavlovic, A. Örsal, M. Rose and J. Kruse [1264]
66	Cortisol Reactivity and Body Mass Index in Pre-Adolescent Children M. J. Slattery, N. A. Miller and A. J. Grieve [1258]

## Maps & Floor Plans

- 1: Hotel and Conference Center
- 2: Haga Magasinet
- 3: Manor House



