16th Annual Meeting of
The PsychoNeuroImmunology Research Society

PNI and Pathology:
Translation, Treatment, and Prevention

Cancer
Neuropsychiatric Disease
Inflammation
Autoimmunity
Infection

June 3-6, 2009
Breckenridge, Colorado
Beaver Run Resort and Conference Center
Announcements

The winners of the officer elections (President-Elect, Secretary-Treasurer-Elect, and Scientific Council) will be announced at the Business Meeting on Friday, June 5th.

The winners of the Norman Cousins Award Lecture and the Robert Ader New Investigator Award will be announced at the Closing Banquet on Saturday, June 6th.

Acknowledgements

Funding for the 2009 meeting was made possible in part by a conference grant (R13) from the National Cancer Institute. We also 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.

Special acknowledgements are extended to local organizers, Monika Fleshner and Mary Coussons-Read. Their dedication and commitment to making this meeting a success is greatly appreciated.

The views expressed in written conference materials and publications, or by speakers and moderators, do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.
**Officers**
Andrew Miller (President)
Margaret Kemeny (Past-President)
Rainer Straub (President-Elect)
Rodney Johnson (Secretary/Treasurer)
Susan Solomon (Executive Director)

**PNIRS Staff**
Lauren Redman
Katharine Strelitz
Brianne Loughridge

**PNIRS Trainee Scholars Program Coordinator**
Thaddeus Pace

**Senior Faculty Trainee Mentors**
Michael Irwin
Margaret Kemeny
Janice Kiecolt-Glaser
Andrew Miller
Mark Opp
Carmine Pariante
Virginia Sanders
Susan Segerstrom
Ed Suarez
Julian Thayer
Raz Yirmiya

**Scientific Affairs Committee**
Andrew Miller (President)
Margaret Kemeny (Past-President)
Rainer Straub (President-Elect)
Rodney Johnson (Secretary-Treasurer)
Mary Coussons-Read
Firdaus Dhabhar
Monika Fleshner
Michael Irwin
Mark Opp
Virginia Sanders
Raz Yirmiya

**Scientific Council**
Andrew Miller (Chair, President)
Margaret Kemeny (Past-President)
Rainer Straub (President-Elect)
Rodney Johnson (Secretary-Treasurer)
Michael Antoni
Lisa E Goehler
Deborah Hodgson
Susan Lutgendorf
Steven Maier
Paul Mills
Jan Moynihan
Mark Opp

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**Next Year’s Meeting**

17th Annual Meeting of The Psychoneuroimmunology Research Society
Dublin, Ireland
Trinity College Dublin Conference Center
June 2-5, 2010

“Psychoneuroimmunology: Crossing disciplines to combat disease”
REGISTRATION & INFORMATION CENTER
Name badges and meeting bags will be distributed at the registration desk in the Foyer of the Main Conference Center on the 3rd Floor. The registration & information center will be open during the following hours:

- Wednesday, June 3: Noon - 6:00 p.m.
- Thursday, June 4: 8:00 a.m. – 5:00 p.m.
- Friday, June 5: 8:00 a.m. – 5:00 p.m.
- Saturday, June 6: 8:00 a.m. – 5:00 p.m.

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 Information Center. Guests are not permitted in either the meeting rooms or poster rooms.

CELLULAR 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 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 10 minutes before the session starts to meet the moderators and to upload talks onto the laptop computers.

Computer presentation guidelines
To minimize the need for connecting multiple computers to the projectors, a laptop is provided. Talks can be uploaded via a flashdrive or CD. Both PC and Mac laptops 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 software. Please contact the Information Center if you are using a different program.

Poster Presenters
The Poster Sessions will be held in the Coppertop III on the 3rd Floor. The two Poster Sessions are organized by Poster Number (not by alphabetical order). Poster Session 1 will be from 5:30 – 7:30 p.m. on Friday, June 5th. Poster Session 2 will be on Saturday, June 6th, from 5:00 – 7:00 p.m. All posters can be mounted during the morning of your respective session. It is preferred that your poster be setup at least 1 hour before the session begins. 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 rooms. Please remove your posters at the end of the session. Remaining posters may be discarded if they are not taken down prior to the second Poster Session or the end of the meeting.

Data Blitz
30 minutes before each Poster Session, there will be a short oral presentation of a subset of posters on display. The Data Blitz talks will take place in Peaks 4 and 5 on the 3rd Floor of the Conference Center. 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 Blitz begins. After your presentations, please re-join everyone in the poster rooms.
The Norman Cousins Award Lecture

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

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

Norman Cousins Award Lecture 2009

The Learned Immune Response: Pavlov and Beyond
Manfred Schedlowski, M.D.
Division of Medical Psychology and Behavioral Immunobiology
University of Duisburg-Essen, Germany

Robert Ader New Investigator Award

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

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

2009 Robert Ader New Investigator Award
Microglial cell hyperactivity in aging
Jonathan Godbout, Ph.D.
Assistant Professor
Dept. of Molecular Virology, Immunolgy and Medical Genetics
The Ohio State University
<table>
<thead>
<tr>
<th>Peak 9</th>
<th>Peak 10</th>
<th>Peak 7/8</th>
<th>Peak 11</th>
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<tbody>
<tr>
<td>Faculty: Virginia Sanders &amp; Julian Thayer</td>
<td>Faculty: Carmine Pariante &amp; Raz Yirmiya</td>
<td>Faculty: Margaret Kemeny &amp; Susan Segerstrom</td>
<td>Faculty: Janice Kiecolt-Glaser &amp; Ed Suarez</td>
<td>Faculty: Michael Irwin &amp; Mark Opp</td>
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| Lorna Gleeson  
Trinity College  
Dublin  
Ireland | Ying An  
The Ohio State University  
USA | Krystal Buchanan  
The Ohio State University  
USA | Jayne Abraham  
University of Illinois at Urbana - Champaign  
USA | Kate Edwards  
University of California, San Diego  
USA |
| Mark Hanke  
The Ohio State University  
USA | Livia Carvalho  
Kings College  
London  
UK | Jean-Philippe Gouin  
The Ohio State University  
USA | Jennifer Felger  
Rockefeller University  
USA | Cornelia Kiank  
University of California, Los Angeles  
USA |
| Dana Kilroy  
Trinity College  
Dublin  
Ireland | Justin Eddy  
Loyola University  
Chicago  
USA | Katherine Nautilial  
Columbia University  
USA | Shamini Jain  
University of California, San Diego  
USA | KaMala Thomas  
University of California, Los Angeles  
USA |
| Hua Zhang  
University of Missouri - Kansas City  
USA | Mallory Frazier  
Texas A&M University  
USA | Anlys Olivera  
Emory University  
USA | Ariela Karasov  
University of Wisconsin - Madison  
USA | Alison Wagner  
The University of North Carolina at Chapel Hill  
USA |
| Zachary Zimomra  
Kent State University  
USA | Morgan Moon  
University of Illinois at Urbana - Champaign  
USA | Mercedes Szpunar  
University of Rochester  
USA | Marianne Kreither  
University of Colorado at Denver  
USA | Angela Wynne  
The Ohio State University  
USA |

Congratulations to the 2009 Trainee Scholars!
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<thead>
<tr>
<th>Time</th>
<th>Wednesday June 3</th>
<th>Thursday June 4</th>
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<td>Presidential Symposium</td>
<td>Symposium 2 Glucocorticoid Resistance: At the Interface between Psychological Events, Depression and Inflammation</td>
<td>NCCAM Symposium Complementary and Alternative Medicine Approaches to Health and Wellness</td>
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<tr>
<td>12:00 noon—12:30</td>
<td>Registration Open</td>
<td>Lunch Trainee Roundtable with NIH Staff; Council Meeting</td>
<td>Lunch BBI Editorial Board Meeting</td>
<td>Lunch Junior Faculty-Trainee Roundtable</td>
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<td>Symposium 1 T and B Lymphocytes at the interface of Brain-Immune Interactions</td>
<td>NCI Symposium PNI and Cancer: Mechanism of Psychosocial Effects on Disease Development</td>
<td>Oral Session 4 including the Ader Award Lecture PNI, Plasticity, and Mechanisms of Cytokine-Induced Sickness</td>
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<td>Cousins Memorial Lecture</td>
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<td>Closing Banquet</td>
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<td>Senior Faculty-Trainee Mentoring Colloquium</td>
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Wednesday, June 3

12:00  REGISTRATION OPEN
Foyer—Conference Center—3rd Floor

3:00 – 6:00  EDUCATIONAL SHORT COURSE: Inflammation and its Discontents
Peaks 11 & 12—2nd Floor
- The immunology of inflammation
  Monika Fleshner, Ph.D., University of Colorado Boulder
- Inflammation and cancer
  Firdaus S. Dhabhar, Ph.D., Stanford University
- The role of inflammation in cardiovascular disease
  Paul J. Mills, Ph.D., University of California, San Diego
- Inflammation, stress, and depression
  Charles L. Raison, M.D., Emory University

6:00 – 7:30  BREAK
Pizza and Refreshments for Trainee Scholars in Dr. Miller’s Suite

7:30 – 9:00  SENIOR FACULTY-TRAINEE MENTORING COLLOQUIUM
Peaks 2, 3, 7 & 8, 11, 12—2nd Floor

Thursday, June 4

7:30 – 8:30  BREAKFAST (Included in Registration Fee)
Foyer—Conference Center—3rd Floor

8:30 – 10:30  PRESIDENTIAL SYMPOSIUM: Cytokines and Neuroplasticity
Peaks 4 & 5—Conference Center—3rd Floor
8:30:  Peripheral immune cells control the state of mind, providing a new perspective on
psychoneuroimmunology
Michal Schwartz, Ph.D., Weizmann Institute, Israel
9:00:  Inhibition of interleukin-1 beta signaling blocks the antineurogenic and anhedonic actions
of chronic stress
Ronald Duman, Ph.D., Yale University
9:30:  Sympathetic nervous system activation and sterile inflammation: Impact on inflammatory
proteins and vascular plasticity
Monika Fleshner, Ph.D., University of Colorado at Boulder
10:00:  Interleukin-1: A central regulator of behavioral and neural plasticity
Raz Yirmiya, Ph.D., The Hebrew University, Jerusalem.

10:30 – 11:00  COFFEE BREAK

11:00 – 12:30  ORAL SESSION 1: Inflammation, Stress and Depression in Clinical Populations
Chair: Ed Suarez
Peaks 4 & 5—Conference Center—3rd Floor
11:00:  ADVERSE CHILDHOOD EXPERIENCES PREDICT ADULT RISK FACTORS FOR AGE-
RELATED DISEASE: DEPRESSION, INFLAMMATION, AND CLUSTERING OF
METABOLIC RISK MARKERS
A. Danese, T. E. Moffitt, H. Harrington, B. J. Milne, G. Polanczyk, C. M. Pariante,
R. Poulton and A. Caspi
11:15: ASSOCIATIONS OF VERY HIGH C-REACTIVE PROTEIN CONCENTRATION WITH PSYCHOSOCIAL AND CARDIOVASCULAR RISK FACTORS IN AN AGEING POPULATION
M. Hamer and Y. Chida

11:30: DEPRESSIVE SYMPTOMS PREDICT EXAGGERATED INFLAMMATORY RESPONSES TO AN IN VIVO IMMUNE CHALLENGE AMONG PREGNANT WOMEN

11:45: ACUTE PSYCHOSOCIAL STRESS INDUCES SHORT-TERM CATECHOLAMINE RESISTANCE OF TNF-ALPHA, BUT NOT OF IL-6 PRODUCTION IN HEALTHY YOUNG MEN
N. Rohleder, J. M. Wolf and C. Kirschbaum

12 noon: RELATIONSHIP OF MONOCYTE CELLULAR EXPRESSION OF IL-6 AND SLEEP ARCHITECTURE
K. S. Thomas, S. Motivala, R. Olmstead and M. R. Irwin

12:15: PATIENTS WITH POSTTRAUMATIC STRESS DISORDER SHOW DISTINCTIVE FEATURES IN SIGNAL TRANSDUCTION PATHWAYS CENTRAL TO THE ENDOCRINE-IMMUNE INTERPLAY

12:30 – 2:00 LUNCH (Included in Registration Fee)
Trainee Roundtable with NIH Staff
Breckenridge Ballroom—1st Floor (There will be reserved seating for the Roundtable Discussion Groups)

Council Meeting
Mercury Boardroom—Building 4

2:00 – 4:00 SYMPOSIUM 1: T and B Lymphocytes at the Interface of Brain-Immune Interactions
Co-Chairs: Steve Zalcman and Alexander Kusnecov
Peaks 4 & 5—Conference Center—3rd Floor

2:00: Brain to immune system: Do not overreact! Immunosuppressive neuropeptides to the rescue
Doina Ganea, Ph.D., Temple University

2:25: Mechanisms by which norepinephrine increases the Th2-dependent IgE response to promote lung inflammation
Virginia Sanders, Ph.D., The Ohio State University

2:50: Impact of T cell superantigens on brain and behavior
Alexander W. Kusnecov, Ph.D., Rutgers University

3:15: Role of T cells in cognition and neural plasticity
Jonathan Kipnis, Ph.D., University of Virginia

3:40: Discussant
Steve Zalcman, Ph.D., University of Medicine and Dentistry of New Jersey

4:00 – 4:30 COFFEE BREAK

4:30 – 5:30 2009 NORMAN COUSINS MEMORIAL LECTURE
Peaks 4 & 5—Conference Center—3rd Floor

• The Learned Immune Response: Pavlov and Beyond
Manfred Schedlowski, M.D., University of Duisburg-Essen, Germany

5:30 – 6:00 BREAK

6:00 – 8:00 WELCOME RECEPTION
Imperial Ballroom—4th Floor
Friday, June 5

7:30 – 8:30 BREAKFAST (Included in Registration Fee)
Foyer—Conference Center—3rd Floor

8:30 – 10:30 SYMPOSIUM 2: Glucocorticoid Resistance: At the Interface between Psychosocial Events, Depression and Inflammation
Co-Chairs: Carmine Pariante and Steve Cole
Peaks 4 & 5—Conference Center—3rd Floor
8:30: Glucocorticoid resistance in major depression: Clinical relevance and modulation by antidepressants
Carmine M. Pariante, M.D., King’s College of London
8:55: Brain molecular mechanisms of glucocorticoid resistance
Thaddeus Pace, Ph.D., Emory University
9:20: Polymorphisms in the glucocorticoid receptor gene: Consequences for gene function, neuroendocrine responses to stress and mood disorder vulnerability Genetic regulation of glucocorticoid receptor sensitivity
Stephan Claes, M.D., Ph.D., University of Leuven, Belgium
9:45: Genomic approaches to glucocorticoid resistance
Steve Cole, Ph.D., UCLA
10:10: Discussant
Andrew H. Miller, M.D., Emory University

10:30 – 11:00 COFFEE BREAK

11:00 – 12:30 ORAL SESSION 2: Immunologic and Genetic Mechanisms in PNI
Chair: Virginia Sanders
Peaks 4 & 5—Conference Center—3rd Floor
11:00: EPIGENETIC MECHANISM OF IMMUNE DYSREGULATION
H. Mathews and L. Janusek
11:15: PROLONGED RESTRAINT AFFECTS MICROBIAL RICHNESS IN THE INTESTINES AND ENHANCES COLONIZATION BY THE MURINE PATHOGEN CITROBACTER RODENTIUM
M. T. Bailey, S. E. Dowd, J. D. Galley and M. Lyte
11:30: IRON BIOLOGY AND ANEMIA: UNAPPRECIATED MEDIATORS IN PNI PATHWAYS
C. L. Coe and G. R. Lubach
11:45: INTERFERON-GAMMA, SONIC HEDGEHOG SIGNALING AND GRANULAR NEURON PRECURSOR PROLIFERATION
J. Wang, L. Sun and Z. Tian
12 noon: BRAIN DENDRITIC CELLS IN ISCHEMIC STROKE.
12:15: EFFECTS OF LYCIUM BARBARUM ON BASAL AND LPS-INDUCED CYTOKINE PRODUCTION.
D. M. Nance, H. Amagase and G. Luczy-Bachman

12:30 – 2:00 LUNCH ON OWN
BBI Editorial Board Meeting

2:00 – 4:00 NCI SYMPOSIUM: PNI and Cancer: Mechanisms of Psychosocial Effects on Disease Development
Co-Chairs: Mike Antoni & Firdaus Dhabhar
Peaks 4 & 5—Conference Center—3rd Floor
2:00: Bi-directional effects of stress on susceptibility to skin cancer
Firdaus Dhabhar, Ph.D., Stanford University
2:30: Stress management effects on biobehavioral processes in breast cancer
Michael Antoni, Ph.D., University of Miami

3:00: Biobehavioral influences on angiogenesis and invasion in ovarian cancer
Susan Lutgendorf, Ph.D., University of Iowa

3:30: A clinically feasible approach to reduce postoperative immune perturbations and increase recurrence-free survival in cancer patients
Shamgar Ben-Eliyahu, Ph.D., Tel Aviv University, Israel.

4:00 – 4:30 COFFEE BREAK

4:30 – 5:00 DATA BLITZ SESSION 1
Peaks 4 & 5—Conference Center—3rd Floor

5:00 – 5:30 BUSINESS MEETING

5:30 – 7:30 POSTER SESSION 1
Coppertop III—3rd Floor

Finance Committee Meeting
Mercury Boardroom—Building 4

7:30 – 8:00 BREAK

8:00 TRAINEE RECEPTION
Coppertop II—2nd Floor

Saturday, June 6

7:30 – 8:30 BREAKFAST (INCLUDED IN REGISTRATION FEE)
Foyer—Conference Center—3rd Floor

8:30 – 10:30 NCCAM SYMPOSIUM: Complementary and Alternative Medicine Approaches to Health and Wellness
Chair: Michael Irwin
Peaks 4 & 5—Conference Center—3rd Floor

8:30: Immunological correlates of yoga practice
Janice Kiecolt-Glaser, Ph.D., The Ohio State University, College of Medicine

8:55: Meditation, consternation and inflammation: The effect of compassion-focused mind training on physiological and behavioral responses to psychosocial stress
Charles Raison, M.D., Emory University

9:20: Curcumin inhibits tumor growth and angiogenesis in ovarian carcinoma by targeting the nuclear factor-κB Pathway
Anil Sood, M.D., MD Anderson Cancer Center

9:45: Mindfulness, stress, and immunity in HIV
David Creswell, Ph.D. Carnegie Mellon University

10:10: Discussant
Michael R. Irwin, M.D., UCLA

10:30 – 11:00 COFFEE BREAK

11:00 – 12:30 ORAL SESSION 3: PNI at the Translational Interface
Chair: Susan Segerstrom
Peaks 4 & 5—Conference Center—3rd Floor
11:00: CANCER CHEMOTHERAPY AGENTS INDUCE SICKNESS AND BRAIN ACTIVATION PATTERNS THAT ARE SIMILAR TO IMMUNE CHALLENGES IN RATS
L. E. Goehler and R. P. Gaykema

11:15: CHRONIC STRESS ENHANCES DISTANT METASTASIS FROM PRIMARY BREAST CANCER
E. Sloan, S. Yu, J. Arevalo and S. Cole

11:30: BIOBEHAVIORAL MARKERS IN CAREGIVERS OF BLOOD OR MARROW TRANSPLANT (BMT) RECIPIENTS: PRELIMINARY OBSERVATIONS

11:45: BASELINE CARDIOVASCULAR REACTIVITY PREDICTS SIGNIFICANTLY LOWER PRODUCTION OF HIV ENTRY INHIBITING β−CHEMOKINES AT 24-MONTH FOLLOW-UP
L. Temoshok, S. J. Synowski, R. L. Wald and A. Garzino-Demo

12 noon: DISTINCTIVE RELATIONSHIPS BETWEEN INTERLEUKIN-6, ITS SOLUBLE RECEPTOR, AND BONE HEALTH IN AGING MEN AND WOMEN
A. O. Karasov, B. A. Fischer, C. L. Coe, N. C. Binkley and C. D. Ryff

12:15: SUBJECTIVE HEALTH IS SENSITIVE TO RESTRICTED SLEEP AND RELATES TO INCREASED LEVELS OF IL-6
M. Lekander, A. Andréasson, T. Åkerstedt and J. Axelsson

12:30 – 2:00 LUNCH (INCLUDED IN REGISTRATION FEE)
Junior Faculty-Trainee Roundtable
Breckenridge Balroom—1st Floor (There will be reserved seating for the Roundtable Discussion Groups)

2:00 – 4:00 ORAL SESSION 4: PNI, Plasticity, and Mechanisms of Cytokine-Induced Sickness
Co-chairs: John Johnson and Ning Quan
Peaks 4 & 5—Conference Center—3rd Floor

2:00: MICROGLOIAL CELL HYPERACTIVITY IN AGING
J. Godbout, Ader New Investigator Award Lecture

2:30: LEARNING-INDUCED INCREASES IN IMMUNE AND PLASTICITY-RELATED GENES: MODULATION BY CYTOKINES AND EARLY-LIFE INFECTION.
S. D. Bilbo

2:45: PRENATAL EXPOSURE TO LIPOPOLYSACCHARIDE ALTERS FEBRILE RESPONSE TO BACTERIA IN ADULT WISTAR RATS
T. Nakamura and D. M. Hodgson

3:00: DEPRESSIVE-LIKE BEHAVIORS INDUCED BY LIPOPOLYSACCHARIDE ARE ASSOCIATED WITH INCREASED BRAIN KYNURENINE METABOLISM
J. C. O’Connor, M. A. Lawson, R. Dantzer and K. W. Kelley

3:15: PROINFLAMMATORY CYTOKINES MEDIATE ACUTE STRESS-INDUCED LOSS OF INTESTINAL BARRIER FUNCTION IN THE TERMINAL ILEUM WHICH ENHANCES TRYPTOPHAN CATABOLISM IN BALB/C MICE
C. Kiank, S. Voss, A. Starke, J. Zeden, G. Domanska, G. Fusch, C. Schuett and Y. Taché

3:30: IMMUNOTOXIC DEPLETION OF HYPOTHALAMIC NORADRENERGIC/ADRENERGIC INPUT AMELIORATES THE EFFECTS OF PERIPHERAL LPS CHALLENGE ON SICKNESS BEHAVIOR

3:45: LOCATION-SPECIFIC ACTIVATION OF THE PVN BY CASEIN-INDUCED LOCAL INFLAMMATION
K. C. Buchanan, N. Belevych and N. Quan

4:00 – 4:30 COFFE BREAK

4:30 – 5:00 DATA BLITZ SESSION 2
Peaks 4 & 5—Conference Center—3rd Floor
5:00 – 7:00  POSTER SESSION 2  
Coppertop III—3rd Floor

7:00  CLOSING BANQUET (Included in Registration Fee)  
Cocktails, Dinner and Dancing  
Breckenridge Ballroom—1st Floor

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**Poster Session 1**

Friday, June 5, 5:30 – 7:30 p.m.  
In Order by Poster Number  
- Denotes Participation in Data Blitz Session 1

1. **DIETARY SUPPLEMENTATION WITH RESVERATROL ATTENUATES LIPOPOLYSACCHARIDE INDUCED BEHAVIORAL AND COGNITIVE DEFICITS AND HIPPOCAMPAL IL-1β MRNA EXPRESSION IN AGED MICE**  
   J. Abraham and R. W. Johnson

2. **DIRECT ACTION OF INTERLEUKIN-1 ELICITS DISTINCT EFFECTS FROM MICROGLIA, ASTROCYTES, AND BRAIN ENDOTHELIAL CELLS**  
   Y. An and N. Quan

3. **THE EFFECTS OF VOLUNTARY WHEEL RUNNING ON INFECTION-INDUCED MEMORY DEFICITS AND HIPPOCAMPAL BDNF MRNA IN AGING RATS.**  

4. **ALPHA-1-ADRENERGIC RECEPTORS ARE A RELEASING SIGNAL FOR ENDOGENOUS EXTRACELLULAR HEAT SHOCK PROTEIN 72 IN INTESTINAL EPITHELIAL CELLS**  
   L. A. Beninson and M. Fleshner

5. **METHAMPHETAMINE SENSITIZATION ATTENUATES THE FEBRILE AND NEUROINFLAMMATORY RESPONSE TO A SUBSEQUENT PERIPHERAL IMMUNE STIMULUS**  
   J. B. Buchanan, N. L. Sparkman and R. W. Johnson

6. **IMMUNE CELLS PRODUCE CATECHOLAMINES DURING ARTHRITIS: NEW ASPECTS OF NEURO-IMMUNOLOGICAL RESPONSE**  

7. **EPINEPHRINE CAUSES MOBILIZATION OF CYTOTOXIC LEUKOCYTES IN VIVO AND THEIR DETACHMENT FROM CULTURED ENDOTHELIUM IN VITRO**  
   S. Dimitrov, J. Born and T. Lange

8. **TEMPORAL CYTOKINE EXPRESSION PATTERNS IN SERUM AND BRAIN FOLLOWING CHRONIC OR ACUTE TREATMENT WITH LIPOPOLYSACCHARIDE**  
   M. Erickson and W. Banks

9. **PRIOR EXPOSURE TO SOCIAL STRESS SENSITIZES VIRUS-INDUCED CYTOKINE EXPRESSION DURING ACUTE THEILER’S VIRUS INFECTION**  
   M. A. Frazier, E. G. Vichaya, E. E. Young, C. J. Welsh and M. W. Meagher

10. **NORADRENALINE RE-UPTAKE INHIBITION INFLUENCES NEUROINFLAMMATORY AND DEGENERATIVE CHANGES ASSOCIATED WITH THE EXCITOTOXIN KAINIC ACID**  
    L. C. Gleeson, T. J. Connor and A. Harkin
11 BRAIN RESPONSES TO INTRAPERITONEAL AND SUBCUTANEOUS TUMORS IN RATS
L. E. Goehler, R. P. Gaykema and B. Mravec

12 ■ ANXIETY-LIKE BEHAVIOR, NEURONAL ACTIVATION AND INFLAMMATION INDUCED BY SOCIAL STRESS IS DECREASED BY BETA-ADRENERGIC RECEPTOR ANTAGONISM
M. L. Hanke, L. Stiner, N. Powell, M. T. Bailey, J. P. Godbout and J. F. Sheridan

13 A MURINE MODEL OF ACUTE AND CHRONIC BRONCHOPULMONARY INFECTION WITH MYCOBACTERIUM TUBERCULOSIS: DELAYED AND PERSISTENT ACTIVATION OF SEROTONERGIC NEURONS WITHIN THE BRAINSTEM RAPHE COMPLEX

14 EFFECTS OF REPEATED CANNABIDIOL ADMINISTRATION ON SPLENIC LYMPHOCYTE SUBSETS DISTRIBUTION AND NATURAL KILLER CELLS CYTOTOXICITY IN RATS
B. M. Ignatowska-Jankowska, M. Jankowski, W. Glac and A. H. Swiergiel

15 STRESS REGULATION OF CYTOKINES IN THE HYPOTHALAMUS
R. Jankord, R. Zhang and J. P. Herman

16 ■ THE BETA2-ADRENOCEPTOR AGONIST SALMETEROL INHIBITS THROMBIN-INDUCED INFLAMMATION IN PRIMARY GLIAL CELLS: A ROLE FOR PKA AND EPAC ACTIVATION BY CAMP
D. Kilroy and T. J. Connor

17 INTRACRANIAL SELF-STIMULATION (ICSS) MEASUREMENT OF ANHEDONIA AFTER INFLAMMATION IN MICE
D. M. Lamkin, T. G. Beltz, S. K. Lutgendorf and A. K. Johnson

18 HIV-1 TAT PROTEIN INDUCES SICKNESS BEHAVIOR FOLLOWED BY DEVELOPMENT OF DEPRESSIVE-LIKE BEHAVIOR
M. A. Lawson, K. W. Kelley and R. Dantzer

19 MULTIPLE TRANSCRIPTION START SITE CLUSTERS OF MOUSE IL-1R1 GENE
Q. Li, L. Zhu, H. Zhang, Q. Chen and N. QUAN

20 SIGNIFICANT REDUCTION OF EAE SYMPTOMS IN ENDOTHELIAL IL-1R1 KNOCKDOWN MICE
Q. Li, H. Zhang, Q. Chen and N. Quan

21 CYTOKINE-INDUCED DEPRESSION: EFFECTS OF INTERLEUKIN-1 BETA AND CORTICOTROPIN-RELEASING FACTOR ANTAGONISM ON BIOCHEMICAL AND BEHAVIORAL INDICATORS OF “DEPRESSION” IN THE RAT
J. M. Loftis, A. Murphy-Crews, D. J. Menasco, M. S. Huckans and M. Strater

22 THE IMPACT OF STRESSOR EXPOSURE ON INNATE IMMUNITY: A GENE EXPRESSION ANALYSIS
T. Maslanik, I. Bernstein-Hanley, B. Helwig and M. Fleshner

23 EFFECTS OF IN VITRO ADMINISTRATION OF IL-1BETA ON PC-12 CELLS
K. A. McLinden, A. J. Tarr, G. W. Boehm and G. Akkaraju

24 TEMPERAMENT-ASSOCIATED DIFFERENCES IN IMMUNE RESPONSES BETWEEN NEOPHOBIC AND NEOPHILIC RATS.
K. C. Michael, R. H. Bonneau and S. A. Cavigelli

25 ■ MICE LACKING THE INFLAMMASOME COMPONENT CASPASE-1 ARE RESISTANT TO CENTRAL LIPOPOLYSACCHARIDE-INDUCED DEPRESSIVE-LIKE BEHAVIOR
M. L. Moon, R. H. McCusker, M. A. Lawson, R. Dantzer and K. W. Kelley

26 DETERMINING THE TISSUE SOURCE OF HSP72: AN APPROACH TO UNDERSTANDING ITS ENDOGENOUS FUNCTIONS
K. Naegeli, T. Maslanik and M. Fleshner
27 **BRAIN MAST CELLS AFFECT NEUROGENESIS TO IMPACT EMOTIONALITY.**
K. M. Nautiyal, A. Iyer and R. Silver

28 **NEUROIMMUNE SENSITIVE LRP-1 CONTROLS THE BRAIN-TO-BLOOD EFFLUX OF MOUSE PRION AT THE BLOOD-BRAIN BARRIER.**
M. L. Niehoff, W. A. Banks, A. Urayama and C. Soto

29 **A SYSTEMIC LPS CHALLENGE DOES NOT ALTER CENTRAL BETA2-ADRENOCETOR EXPRESSION OR REPONSIVENESS**
K. M. Ryan, A. Harkin and T. J. Connor

30 **DIETARY SOLUBLE FIBER ALTERS TH1/TH2 BALANCE IN C57BL/6J MICE IMPROVING LPS-INDUCED FEVER AND ANOREXIA**

31 **TIMING OF PRENATAL INFLUENZA INFECTION MATTERS: BRAIN DEVELOPMENT AFTER MID- AND LATE-GESTATION VIRUS EXPOSURE IN RHESUS MONKEYS**
S. J. Short, C. L. Coe, G. R. Lubach, M. Styner and J. H. Gilmore

32 **AGE AFFECTS SENSITIVITY TO LPS-INDUCED SICKNESS BEHAVIOR IN A SPECIES-TYPICAL BEHAVIOR**
A. J. Tarr, K. A. McLinden, D. Kranjac and G. W. Boehm

33 **SELECTIVE PRESENCE OF PROINFLAMMATORY MEDIATORS IN THE HIPPOCAMPUS OF HIV-1 TRANSGENIC RATS.**
A. F. Wagner, L. J. Jannach, R. L. Bigler and D. T. Lysle

34 **EPGENETIC TRANSMISSION OF ANXIETY-LIKE BEHAVIOUR TO SECOND GENERATION OFFSPRING FOLLOWING NEONATAL LPS EXPOSURE**
A. K. Walker, G. Hawkins, M. Hunter and D. M. Hodgson

35 **EXPOSURE TO LIPOPOLYSACCHARIDE DURING EARLY LIFE IMPAIRS SEXUAL DEVELOPMENT AND BEHAVIOUR IN THE WISTAR RAT.**
A. K. Walker, S. A. Hiles and D. M. Hodgson

36 **THE MECHANISMS BY WHICH PERIPHERALLY ADMINISTERED ENDOTOXIN (LPS) ALTERS BEHAVIORAL, NEUROCHEMICAL, AND ENDOCRINE RESPONSES IN RATS.**
M. Wieczorek and A. J. Dunn

37 **ASSOCIATIONS OF SYSTEMIC INTERLEUKIN-6 ON AGE-INDUCED NEURAL ATROPHY AND ITS MITIGATION BY CALORIC RESTRICTION IN RHESUS MONKEYS**

38 **DECREASED MICROGIAL FRACTALKINE RECEPTOR (CX3CR1) EXPRESSION IS ASSOCIATED WITH MICROGIAL ACTIVATION**
A. M. Wynne, Y. Huang, C. J. Henry, A. Cleland and J. P. Godbout

39 **ACUTE HYPOXIA CAUSES ANHEDONIA AND WEIGHT LOSS IN MICE, WHICH IS ABSENT AFTER A SECOND HYPOXIC EXPOSURE.**

40 **AGGRAVATED ANXIETY-LIKE BEHAVIOR BY IFN-ALPHA (IFN-A) IN LUPUS-PRONE MICE ACCOMPANIED WITH ENHANCED CEREBRAL EXPRESSION OF IFN-STIMULATED GENES**
H. Zhang and J. Wang

41 **CATECHOLAMINE REGULATION OF INFLAMMATORY CYTOKINES IN MICROGLIA**
Z. R. Zimomra, J. D. Johnson, M. Chema and T. Darlington

42 **STRESS-INDUCED INCREASES IN BACTERIAL KILLING ARE P38 DEPENDENT**
R. Allen, D. A. Padgett, J. F. Sheridan and M. T. Bailey
EFFECTS OF PROTON RADIATION ON IMMUNE AND SNS RESPONSE

UBS109, A NOVEL CURCUMIN ANALOG, IS A POTENT INHIBITOR OF NUCLEAR FACTOR-KAPPA B ACTIVITY IN MOUSE RAW264.7 MACROPHAGES
A. Olivera, F. Hu, A. H. Miller and T. W. Pace

CHARACTERIZATION OF TOXIN-INDUCED GLUCOCORTICOID-RESISTANCE IN AN ANIMAL MODEL

SALIVARY CORTISOL RESPONSES TO MENTAL STRESS ARE ASSOCIATED WITH CORONARY ARTERY CALCIFICATION
M. Hamer, K. O'Donnell and A. Steptoe

SLEEP DISTURBANCES IN EARLY GESTATION ARE ASSOCIATED WITH ELEVATED CONCENTRATIONS OF CYTOKINES ACROSS PREGNANCY
M. Okun, J. Catov, J. M. Roberts and T. D. Patrick

INTERACTION WITH FELLOW STUDENTS PREDICTS BETTER MUCOSAL IMMUNITY DURING FINAL EXAMS IN THE FIRST YEAR OF UNIVERSITY
A. J. Wawrzyniak and M. C. Whiteman

NORADRENALINE AND THE BETA2-ADRENOCEPTOR AGONIST SALBUTAMOL SUPPRESS INNATE, BUT NOT T-CELL-DERIVED, IFN-GAMMA PRODUCTION FROM MOUSE SPLEEN CELLS
N. M. Curtin, K. H. Mills and T. J. Connor

LIPOPOLYSACCHARIDE-INDUCED EXPRESSION OF INDOLEAMINE 2,3-DIOXYGENASE IN MURINE ORGANOYTPIC HIPPOCAMPAL SLICE CULTURES IS BLOCKED BY AN INHIBITOR OF P38 MITOGEN-ACTIVATED PROTEIN KINASE
X. Fu, R. Dantzer and K. W. Kelley

METHAMPHETAMINE ADMINISTRATION CAUSES INCREASED NEUROINFLAMMATION ACCOMPANIED BY PERIPHERAL IMMUNOSUPPRESSION IN MICE
J. M. Loftis, M. S. Huckans and A. Williams

STRAIN DIFFERENCES IN RESTRAINT STRESS INDUCED BRAIN IL-1, IL-6, COX2
V. M. Porterfield, Z. R. Zimomra and J. D. Johnson

BETA-ADRENERGIC RECEPTOR (BETA-AR) SIGNALING DIFFERS BETWEEN THE HUMAN BREAST CANCER CELL LINE MB-231 AND ITS BRAIN-METASTASIZING VARIANT MB-231BR
K. S. Madden, M. J. Szpunar and E. B. Brown

HETEROGENEITY OF β-ADRENERGIC RECEPTOR (β-AR) SIGNAL TRANSDUCTION AND VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) PRODUCTION BY BREAST CANCER CELL LINES
M. J. Szpunar, K. S. Madden and E. B. Brown

THE INFLUENCE OF ACCELERATED BIOLOGIC AGING, CHRONIC STRESS, AND INFLAMMATORY RESPONSE ON OUTCOMES FOLLOWING TRAUMA
E. G. NeSmith, J. D. Catravas, A. L. Marsland, S. A. Alexander, M. L. Hawkins and R. S. Medeiros

PERSONALITY AND PLACEBO RESPONSES
K. Kelly, B. Baker and E. Kauffman
Poster Session 2
Saturday, June 6, 5:00 – 7:00 p.m.
In Order by Poster Number
- Denotes Participation in Data Blitz Session 2

1 MOLECULAR MECHANISMS OF SRC ACTIVATION IN CHRONIC STRESS-INDUCED CANCER GROWTH
G. N. Armaiz-Pena, G. J. Villares, L. Y. Han, Y. G. Lin, A. M. Sanguino, M. T. Deavers, G. E. Gallick, M. Bar-Eli,

2 DO CYTOKINES TGF-ALPHA AND NEUREGULIN-1 SUPPRESS CIRCADIAN CLOCK OUTPUT? A MODEL
FOR CANCER-RELATED FATIGUE
M. Harrington, M. Olsen, L. Casiraghi and D. Guild

3 EFFECTS OF BIOFIELD VS. MOCK HEALING ON FATIGUE, DEPRESSION, CYTOKINES, AND CORTISOL
VARIABILITY IN BREAST CANCER SURVIVORS
S. Jain, D. Pavlik, J. Distefan and P. J. Mills

4 STRESS, IMMUNITY AND CANCER: EPGENETIC MECHANISMS
L. W. Janusek and H. L. Mathews

5 COGNITIVE BEHAVIORAL STRESS MANAGEMENT AMONG WOMEN AT ELEVATED RISK FOR BREAST
CANCER.

6 IL-10 GENETIC VARIANTS AND HEPATITIS C PATIENTS’ SYMPTOMS OF DEPRESSION AND FATIGUE
BEFORE AND DURING INTERFERON-ALPHA TREATMENT
Aitchison, A. Cleare, A. Miller and C. M. Pariante

7 COULD COX-2 INHIBITORS AND BETA-BLOCKERS IMPROVE POSTOPERATIVE SURVIVAL RATES IN
CANCER PATIENTS?

8 EFFECTS OF MASSAGE ON AML TREATMENT-RELATED SYMPTOMS AND HEALTH-RELATED QOL
A. G. Taylor, A. E. Snyder and C. M. Bourguignon

9 SERUM STNF-R1 AND IL-6 ARE ASSOCIATED WITH SEVERITY OF SYMPTOM BURDEN CAUSED BY
CONCURRENT CHEMORADIATION THERAPY FOR PATIENTS WITH LUNG AND GASTROINTESTINAL
CANCERS
X. Wang, V. Johnson, L. A. Williams, L. Mao, Z. Liao, P. Liu and C. Cleeland

10 ACUTE AND LONG TERM ADAPTATION OF THYROTROPIN (TSH) AND PROLACTIN TO RESTRICTED
SLEEP AND RECOVERY
J. Axelsson, K. Brismar, T. Akerstedt and M. Lekander

11 ADAPTATION OF A TRADITIONAL BEHAVIORAL ASSAY OF LEARNING AND MEMORY TO NEONATAL
PIGLETS
R. N. Dilger and R. W. Johnson

12 MODULATION OF HPA-AXIS RESPONSIVENESS BY LABORATORY STRESS OR SHIPMENT OF MICE
ALTERS EXPERIMENTAL DATA

13 DIFFERENTIAL EPGENETIC EFFECTS OF SHORT AND LONG TERM GLUCOCORTICOID TREATMENT
ON NATURAL KILLER CELL EFFECTOR GENES
J. L. Eddy, K. N. Krukowski, T. L. Konley, K. Loster, L. Witek-Janusek and H. L. Mathews
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<td>MULTIPLE STRESS-RELATED MECHANISMS MEDIATE IN VIVO SUPPRESSION OF IL-12 SERUM LEVELS IN RATS</td>
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<td>E. G. Vichaya, E. E. Young and M. W. Meagher</td>
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<td>S. Brannon, W. Gozansky, W. Donahoo, E. Melanson, C. Cage and M. Coussons-Read</td>
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<td>K. M. Edwards, B. Sheu, S. Hong, A. H. Penn, G. W. Schmid-Schonbein and P. J. Mills</td>
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<td>M. M. Kaczmarczyk, D. Lavin, M. Miller and G. Freund</td>
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<td>LIPOPOLYSACCHARIDE INDUCES MARKERS OF INFLAMMATION IN PERIVASCULAR FAT IN MALE FISCHER 344 RATS: EVIDENCE FOR THE “OUTSIDE-IN” VASCULAR INFLAMMATORY HYPOTHESIS</td>
<td>K. D. Marshall, P. Strong, T. Maslanik and M. Fleshner</td>
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<td>K. J. Speaker, B. N. Greenwood and M. Fleshner</td>
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<td>ANTIDEPRESSANTS, BUT NOT ANTIPSYCHOTICS, INHIBITS GLUCOCORTICOID RECEPTOR FUNCTION IN VITRO - INVOLVEMENT OF P38 MAPK</td>
<td>L. Carvalho, B. Garner and C. M. Pariante</td>
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<td>PREGNANCY-SPECIFIC STRESS AND SUPPORT AFFECT INFLAMMATORY CYTOKINES AND BIRTH OUTCOME IN LATINAS</td>
<td>M. Coussons-Read, M. Lobel, M. Kreither, S. Hale, C. Brandt and C. Cage</td>
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<td>HIGHER ACCULTURATION AND LOWER PREGNANCY-SPECIFIC STRESS IS CORRELATED WITH LOWER INCIDENCE OF PREGNANCY COMPLICATIONS IN LATINAS</td>
<td>M. Kreither, C. Cage, S. Cole, C. Brandt, M. Lobel and M. E. Coussons-Read</td>
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<td>CORTISOL AND EPINEPHRINE CONTROL OPPOSING DIURNAL RHYTHMS IN T-CELL SUBSETS</td>
<td>S. Dimitrov, J. Born and T. Lange</td>
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<td>DETERMINANTS OF INFLAMMATION IN A NATIONAL SAMPLE: THE MIDUS STUDY</td>
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31  THE ASSOCIATION BETWEEN DISTRESS AND SALIVARY CORTISOL IN CAREGIVERS OF HOSPICE PATIENTS
K. Kilbourn, J. Kutner, K. DeRoche, D. Anderson, A. Costenaro, S. Madore and M. Laudenslager

32  PREGNANCY-RELATED STRESS INFLUENCES MATERNAL CORTICOTROPIN-RELEASING FACTOR AND ESTRIOL CONCENTRATIONS AFFECTING BIRTH OUTCOME
C. R. Cage, M. Kreither, M. Coussons-Read, S. Cole, C. Brandt and M. Lobel

33  DECREASES IN SOLUBLE CD40 LIGAND ARE ASSOCIATED WITH IMPROVEMENTS IN SEVERITY OF INSOMNIA IN HIV INFECTED PATIENTS: A PILOT STUDY
E. C. Suarez, H. Goforth, T. Omunawa and A. Krystal

34  COMBAT STRESS INJURIES: TOWARD A PSYCHONEUROIMMUNOLOGICAL MODEL FOR RESEARCH, TREATMENT, AND PREVENTION
C. R. Figley, N. Hall and W. P. Nash, MD

35  SALIVARY BIOMARKERS IN LAW ENFORCEMENT OFFICERS ENGAGED IN STRESSFUL VIRTUAL SIMULATED TRAINING SCENARIOS
M. Groer, R. Murphy, K. Salomon, D. Diamond, J. Van Eepoel, C. Bykowski and K. White

36  PREDICTING CRP LEVELS IN YOUNG- AND MIDDLE-AGED WOMEN EXPERIENCING INTIMATE PARTNER VIOLENCE
S. J. Woods, R. J. Hall, K. E. Foster and G. G. Page

37  ACUTE PAIN AND SKIN BARRIER WOUND RECOVERY: THE ROLE OF DEPRESSED MOOD AND ANXIETY
J. E. Graham, S. Song, R. Glaser, W. B. Malarkey and J. K. Kiecolt-Glaser

38  THE ROLE OF INFLAMMATION IN OBSESSIVE-COMPULSIVE DISORDER: CAN SWEAT TELL US SOMETHING ABOUT IT?

39  CHRONIC PSYCHOLOGICAL STRESS IN MICE: INTERFERENCE OF IMPULSIVE OVERREACTION WITH DEPRESSION-LIKE BEHAVIORAL ALTERATIONS
D. Muschter, G. Domanska, W. Otten, C. Schuett and C. Kiank

40  DYSREGULATED SECRETION OF SRAGE IN SCHIZOPHRENIC PATIENTS

41  ANXIETY AND DEPRESSION IN ADOLESCENTS WITH ATOPIC DERMATITIS
M. J. Slattery, S. Hetzel and M. J. Essex

42  None

43  GLOBAL ACETYLATION PATTERNS AND IMMUNE DYSREGULATION ASSOCIATED WITH PSYCHOLOGICAL STRESS
K. Krukowski, J. Eddy, T. Konley, K. Loster, L. Witek-Janusek and H. Mathews

44  LONG-DURATION REVERSAL OF NEUROPATHIC PAIN VIA SUSTAINED RELEASE OF SPINAL INTERLEUKIN-10 IS MEDIATED BY ADENOSINE 2A RECEPTOR ACTIVATION
2009 Meeting Registrants
(as of June 2, 2009)

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