

Cousins Center for Psychoneuroimmunology and Mindful Awareness Research Center

2011-12 Annual Progress report

Faculty

Michael Irwin, MD

Director, Cousins Center for Psychoneuroimmunology, Semel Institute for Neuroscience
Director, Mindful Awareness Research Center, Semel Institute for Neuroscience
Norman Cousins Professor, Department of Psychiatry and Biobehavioral Sciences and Department of Psychology, UCLA

Julie Bower, PhD

Associate Professor, Department of Psychology, Department of Psychiatry and Biobehavioral Sciences, UCLA

Steve Cole, PhD

Professor, Department of Medicine, Department of Psychiatry and Biobehavioral Sciences, UCLA

Perry Nicassio, PhD

Clinical Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA

Richard Olmstead, PhD

Associate Research Psychologist, Department of Psychiatry and Biobehavioral Sciences, UCLA

Erica Sloan, PhD

Adjunct Assistant Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA
Senior Lecturer, Monash University, Department of Pharmaceutical Biology

Annette Stanton, PhD

Professor, Department of Psychology, Department of Psychiatry and Biobehavioral Sciences, UCLA

New faculty appointments 2011:**Marvin Belzer, PhD**

Associate Director, Mindful Awareness Research Center, UCLA Semel Institute for Neuroscience & Human Behavior
Associate Adjunct Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA

George Slavich, PhD

Assistant Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA

Eun Lee, MD, PhD (2012-13 Visiting Researcher, Seoul, Korea)

Associate Professor, Department of Psychiatry, Yonsei University College of Medicine, Seoul, Korea
Visiting Associate Researcher, Department of Psychiatry and Biobehavioral Sciences, UCLA

Departing faculty:**Sarosh Motivala, PhD**

Clinical Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA

Mary-Frances O'Connor, PhD

Assistant Professor, Department of Psychology, University of Arizona

PNI Fellows

PNI Fellows:

Judith Carroll, PhD
Donald Lamkin, PhD
David Black, PhD
Fabio Catao, PhD
Michael Jarcho, PhD

Previous PNI Fellows (last 10 years only):

Roberta Mancuso, PhD	Assistant Professor, Department of Psychology, Occidental College
Alicia Collado-Hidalgo, PhD	Research Scientist, National Genetics Institute
Sarosh Motivala, PhD	Clinical Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA
Leah Fitzgerald, PhD	Assistant Professor, School of Nursing, UCLA
Mary-Frances O'Connor, PhD	Assistant Professor, Department of Psychology, University of Arizona
Naomi Eisenberger, PhD	Assistant Professor, Department of Psychology, UCLA
David Creswell, PhD	Assistant Professor, Department of Psychology, Carnegie Mellon University
KaMala Thomas, PhD	Assistant Professor, Department of Psychology, Pitzer College
Erica Sloan, PhD	Adjunct Assistant Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA Senior Lecturer, Monash University, Department of Pharmaceutical Biology Research Track, Psychiatry Residency at UCLA
Hyong Jin Cho, MD, PhD	
Lavinia Fiorentino, PhD	Postdoctoral Fellow at the UC San Diego Geriatric Mental Health T32 Fellowship Department of Psychiatry, UCSD
Mary Hamby, PhD	Postdoctoral Scholar, Department of Neurobiology, UCLA
George Slavich, PhD	Assistant Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA

Faculty Awards and Recognition

Michael Irwin, MD	President, American Psychosomatic Society
Julie Bower, PhD	Guest Editor of Named Series, Brain, Behavior, and Immunity
Steve Cole, PhD	Fellow of the American Association for the Advancement of Science Collier Lecturer, University of Rochester
Annette Stanton, PhD	ASB Visiting Professor, University of Auckland, Faculty of Medical and Health Sciences, New Zealand President-Elect of Division 38 (Health Psychology; approximately 3000 members) of the American Psychological Association

Center Extramural Support:

Ongoing Grant support 2011-2012

Total annual amount administered by the Center: **\$7,437,297** direct costs

Total annual amount in collaboration with Center / Affiliated Faculty: **\$20,322,395** direct costs

New Grants funded in 2011-2012

Title: Aging: Sleep and Inflammatory Mechanisms in Depression Prevention

PI: (Irwin)

Goal: This study examines whether treatment of sleep disturbance can prevent depression recurrence in older adults with a history of major depression. This research study also aims to evaluate the role of inflammatory mechanisms in mediating recurrence of depression.

Title: Mechanisms of Sleep Disturbance Hyperalgesia

PI: (Irwin-Smith; Co-PI)

Goal: This project provides a systematic investigation of the mechanisms by which sleep disruption incites hyperalgesia with a focus on opiodergic- and inflammatory mechanisms.

Title: UCLA Clinical and Translational Science Institute

PI: (Dubinett, PI; Irwin, Co-Leader of CTRC)

Goal: The Clinical Translational Research Center (CTRC) provides infrastructure support for clinical research programs throughout the UCLA medical campus.

Title: Chronic Moderate Sleep Restriction in Older Long and Older Average Sleepers (USC)

PI: (Youngstedt-Irwin, Multiple PI's)

Goal: The risks associated with long sleep have scarcely been experimentally examined, though epidemiologic data suggest sleep restriction might promote health/longevity in long sleepers. The proposed clinical trial will provide the most comprehensive Phase 1 assessment of risks and benefits of chronic moderate TIB restriction ever conducted.

Title: Biobehavioral predictors of fatigue in newly-diagnosed breast cancer patients

PI: (Bower, PI; Irwin, Co-I)

Goal: The primary goal of this prospective, longitudinal study is to identify risk factors for the development and persistence of post-treatment fatigue, with intensive evaluation of potential mechanisms in women newly diagnosed with early-stage breast cancer.

Title: Inflammatory Biology Core: Older Americans Independence Center

PI: (Reuben, PI; Irwin, Inflammatory Biology Core leader)

Goal: The goal of this Center is to expand the scientific knowledge that will lead to better ways to maintain or restore independence in older adults. The Inflammatory Biology Core provides intellectual and technical support for the analysis of inflammatory dynamics in Center research programs.

Title: Adrenergic regulation of tumor inflammation and metastatic dissemination

PI: (Sloan)

Goal: These studies will define the molecular and cellular mechanisms by which chronic stress modulates metastatic progression—from systemic dissemination from a clinically-relevant primary tumor to arrest in distant organs

Cousins Center Awarded Seed Grants 2011 - 2012

Title: Neural and Immunological Mechanisms Linking Social Rejection and Depression

PI: **Naomi Eisenberger, PhD;** Assistant Professor, Department of Psychology, UCLA

Title: Late Life Social Isolation, Sleep Disturbance and Telomerase Activity

PI: **Teresa Seeman, PhD;** Professor, Department of Medicine and Epidemiology, UCLA and **Judith Carroll, PhD;** Post-doctoral fellow, Cousins Center for PNI, UCLA

Title: PNI and Brain Imaging Biomarkers of ECT Response in Major Depression

PI: **Katherine Narr, PhD;** Assistant Professor, Department of Neurology, UCLA and **Randall Espinoza, MD, MPH;** Clinical Professor in the Division of Geriatric Psychiatry, Department of Psychiatry and Biobehavioral Sciences, UCLA

Title: Proinflammatory Cytokines and Upstream Signaling in Early-Onset Bipolar Disorder

PI: **David Miklowitz, PhD;** Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA

Title: Complicated Grief and gene expression in human leukocytes

PI: **Mary Frances O'Connor, PhD;** Assistant Professor, Department of Psychology, University of Arizona

Title: Predictors of inflammation in a community sample of young adults: Stress, depression, and inflammatory risk genes

PI: **Julienne Bower, PhD;** Associate Professor, UCLA Departments of Psychology and Psychiatry and Biobehavioral Sciences, UCLA

Selected Publications 2012

[Social neuroscience and health: neurophysiological mechanisms linking social ties with physical health.](#)

Eisenberger NI, Cole SW. *Nat Neurosci.* 2012 Apr 15;15(5):669-74. doi: 10.1038/nn.3086. PMID: 22504347

[Early life stress and inflammatory mechanisms of fatigue in the Coronary Artery Risk Development in Young Adults \(CARDIA\) study.](#)

Cho HJ, Bower JE, Kiefe CI, Seeman TE, Irwin MR. *Brain Behav Immun.* 2012 Apr 25. [Epub ahead of print] PMID: 22554493

[Chronic stress enhances progression of acute lymphoblastic leukemia via \$\beta\$ -adrenergic signaling.](#)

Lamkin DM, Sloan EK, Patel AJ, Chiang BS, Pimentel MA, Ma JC, Arevalo JM, Morizono K, Cole SW. *Brain Behav Immun.* 2012 May;26(4):635-41. Epub 2012 Jan 25. PMID: 22306453

[Cognitive-behavioral stress management reverses anxiety-related leukocyte transcriptional dynamics.](#)

Antoni MH, Lutgendorf SK, Blomberg B, Carver CS, Lechner S, Diaz A, Stagl J, Arevalo JM, Cole SW. *Biol Psychiatry.* 2012 Feb 15;71(4):366-72. Epub 2011 Nov 16. PMID: 22088795

[Sleep loss exacerbates fatigue, depression, and pain in rheumatoid arthritis.](#)

Irwin MR, Olmstead R, Carrillo C, Sadeghi N, Fitzgerald JD, Ranganath VK, Nicassio PM. *Sleep.* 2012 Apr 1;35(4):537-43. PMID: 22467992

[A pilot study of yogic meditation for family dementia caregivers with depressive symptoms: effects on mental health, cognition, and telomerase activity.](#)

Lavretsky H, Epel ES, Siddarth P, Nazarian N, Cyr NS, Khalsa DS, Lin J, Blackburn E, Irwin MR. *Int J Geriatr Psychiatry.* 2012 Mar 11. doi: 10.1002/gps.3790. [Epub ahead of print] PMID: 22407663

[Diurnal cortisol in Complicated and Non-Complicated Grief: slope differences across the day.](#)

O'Connor MF, Wellisch DK, Stanton AL, Olmstead R, Irwin MR. *Psychoneuroendocrinology.* 2012 May; 37(5):725-8. Epub 2011 Sep 16. PMID: 21925795

[What happens now? Psychosocial care for cancer survivors after medical treatment completion.](#)

Stanton AL. *J Clin Oncol.* 2012 Apr 10;30(11):1215-20. Epub 2012 Mar 12. PMID: 22412133

[Quality of life, fertility concerns, and behavioral health outcomes in younger breast cancer survivors: a systematic review.](#)

Howard-Anderson J, Ganz PA, Bower JE, Stanton AL. *J Natl Cancer Inst.* 2012 Mar 7;104(5):386-405. Epub 2012 Jan 23. Review. PMID: 22271773

[Gratitude when it is needed most: social functions of gratitude in women with metastatic breast cancer.](#)

Algoe SB, Stanton AL. *Emotion.* 2012 Feb;12(1):163-8. Epub 2011 Jun 27. PMID: 21707160

[Expressing emotions in stressful contexts: Benefits, moderators, and mechanisms.](#)

Stanton, A. L., & Low, C. A. (2012). *Current Directions in Psychological Science*, 21, 124-128.

[Dispositional and stressor-related emotion regulation in the context of a chronic, life-limiting stressor.](#)

Stanton, A. L., & Low, C. A. (2012). *Journal of Personality*, 80, 287-311.

2011

[Reciprocal regulation of the neural and innate immune systems.](#) Irwin MR, Cole SW. Nat Rev Immunol. 2011 Aug 5;11(9):625-32. doi: 10.1038/nri3042. PMID: 21818124

[Inflammation selectively enhances amygdala activity to socially threatening images.](#) Inagaki TK, Muscatell KA, Irwin MR, Cole SW, Eisenberger NI. Neuroimage. 2012 Feb 15;59(4):3222-6. Epub 2011 Nov 4. PMID: 22079507

[Inflammation and behavioral symptoms after breast cancer treatment: do fatigue, depression, and sleep disturbance share a common underlying mechanism?](#) Bower JE, Ganz PA, Irwin MR, Kwan L, Breen EC, Cole SW. J Clin Oncol. 2011 Sep 10;29(26):3517-22. Epub 2011 Aug 8. PMID: 21825266

[Yoga for persistent fatigue in breast cancer survivors: A randomized controlled trial.](#) Bower JE, Garet D, Sternlieb B, Ganz PA, Irwin MR, Olmstead R, Greendale G. Cancer. 2011 Dec 16. doi: 10.1002 / cncr.26702. [Epub ahead of print] PMID: 22180393

[Inflammation and behavioral symptoms after breast cancer treatment: do fatigue, depression, and sleep disturbance share a common underlying mechanism?](#) Bower JE, Ganz PA, Irwin MR, Kwan L, Breen EC, Cole SW. J Clin Oncol. 2011 Sep 10;29(26):3517-22. Epub 2011 Aug 8. PMID: 21825266

[Fatigue and gene expression in human leukocytes: increased NF- \$\kappa\$ B and decreased glucocorticoid signaling in breast cancer survivors with persistent fatigue.](#) Bower JE, Ganz PA, Irwin MR, Arevalo JM, Cole SW. Brain Behav Immun. 2011 Jan;25(1):147-50. Epub 2010 Sep 18. PMID: 20854893

[A randomized controlled trial of emotionally expressive writing for women with metastatic breast cancer.](#) Low CA, Stanton AL, Bower JE, Gyllenhammer L. Health Psychol. 2010 Jul;29(4):460-6. PMID: 20658835

[Antagonistic pleiotropy at the human IL6 promoter confers genetic resilience to the pro-inflammatory effects of adverse social conditions in adolescence.](#) Cole SW, Arevalo JM, Manu K, Telzer EH, Kiang L, Bower JE, Irwin MR, Fuligni AJ. Dev Psychol. 2011 Jul;47(4):1173-80. PMID: 21639625

[Mitigating Cellular Inflammation in Older Adults: A Randomized Controlled Trial of Tai Chi Chih.](#) Irwin MR, Olmstead R. Am J Geriatr Psychiatry. 2011 Sep 19. [Epub ahead of print] PMID: 21934474

[Complementary use of tai chi chih augments escitalopram treatment of geriatric depression: a randomized controlled trial.](#) Lavretsky H, Alstein LL, Olmstead RE, Ercoli LM, Riparetti-Brown M, Cyr NS, Irwin MR. Am J Geriatr Psychiatry. 2011 Oct;19(10):839-50. doi: 10.1097/JGP.0b013e31820ee9ef. PMID: 21358389

[Fatigue and gene expression in human leukocytes: increased NF- \$\kappa\$ B and decreased glucocorticoid signaling in breast cancer survivors with persistent fatigue.](#) Bower JE, Ganz PA, Irwin MR, Arevalo JM, Cole SW. Brain Behav Immun. 2011 Jan;25(1):147-50. Epub 2010 Sep 18. PMID: 20854893

[Inflammation-induced anhedonia: endotoxin reduces ventral striatum responses to reward.](#) Eisenberger NI, Berkman ET, Inagaki TK, Rameson LT, Mashal NM, Irwin MR. Biol Psychiatry. 2010 Oct 15;68(8):748-54. Epub 2010 Aug 16. PMID: 20719303

[The contribution of pain and depression to self-reported sleep disturbance in patients with rheumatoid arthritis.](#) Nicassio PM, Ormseth SR, Kay M, Custodio M, Irwin MR, Olmstead R, Weisman MH. Pain. 2012 Jan;153(1):107-12. Epub 2011 Nov 1. PMID: 22051047

[Early parental loss and depression history: associations with recent life stress in major depressive disorder.](#) Slavich GM, Monroe SM, Gotlib IH. J Psychiatr Res. 2011 Sep;45(9):1146-52. Epub 2011 Apr 5. PMID: 21470621

[The sympathetic nervous system induces a metastatic switch in primary breast cancer.](#) Sloan EK, Priceman SJ, Cox BF, Yu S, Pimentel MA, Tangkanangnukul V, Arevalo JM, Morizono K, Karanikolas BD, Wu L, Sood AK, Cole SW. *Cancer Res.* 2010 Sep 15;70(18):7042-52. Epub 2010 Sep 7. PMID: 20823155

[Computational identification of gene-social environment interaction at the human IL6 locus.](#) Cole SW, Arevalo JM, Takahashi R, Sloan EK, Lutgendorf SK, Sood AK, Sheridan JF, Seeman TE. *Proc Natl Acad Sci U S A.* 2010 Mar 23;107(12):5681-6. Epub 2010 Feb 22. PMID: 20176930

[Physical and psychosocial recovery in the year after primary treatment of breast cancer.](#) Ganz PA, Kwan L, Stanton AL, Bower JE, Belin TR. *J Clin Oncol.* 2011 Mar 20;29(9):1101-9. Epub 2011 Feb 7. PMID: 21300931

[Quality of life among Latina breast cancer patients: A systematic review of the literature.](#) Yanez, B. Thompson, E. H., & Stanton, A. L. (2011). *Journal of Cancer Survivorship*, 5, 191-207.

Education

Cousins Center for PNI Lecture Series

2011 – 2012

- September 1, 2011** **Shamgar Ben-Eliyahu**, Professor, Department of Psychology, Tel Aviv University; Chair, Department of Psychology, Neuroimmunology Research Unit
- October 12, 2011** **"Surgery and stress as risk factors for tumor progression: Mediating mechanisms and potential prophylactic measures"**
Pete Gianaros, PhD; Associate Professor, Departments of Psychiatry and Psychology, University of Pittsburgh
- January 23, 2012** **"Brain-Body Pathways to Cardiovascular Disease Risk"**
Co-Sponsorship with UCLA Dept. of Neurology
Gayle Page, DNSc, RN, FAAN; Professor and Director, Center for Nursing Research and Scholarship, Johns Hopkins University
- Feb. 16, 2012** **"Modeling Biobehavioral Consequences and Predictors of Pain and Stress"**
Co-Sponsorship with UCLA School of Nursing
Lari Wenzel, PhD; Professor and Associate Dean for Faculty Development, School of Medicine, University of CA, Irvine
- April 10, 2012** **"Psychosocial Counseling for Cervical Cancer Survivors: Biobehavioral Considerations"**
Co-Sponsorship with UCLA JCCC
Matthew Walker, PhD; Assistant Professor, Department of Psychology, University of California, Berkeley
- May 9, 2012** **"Sleep, Memory and Emotion"**
Co-Sponsorship with Psychiatry Grand Rounds
Viola Vaccarino, MD, PhD; Professor, Rollins School of Public Health, Department of Epidemiology, Emory University
- "Depression and Ischemic Heart Disease: Evidence and Mechanistic Pathways"**
Co-Sponsorship with UCLA Dept. of Public Health, Kaiser Permanente Center for Health Equity

Mindful Awareness Research Center

2011 – 2012

- Community Programs
- Certification in Mindfulness Facilitation (CMF)
- Teen mindfulness retreat
- Mindfulness courses for children

1. Ongoing Community Programs

MARC continues to develop the programs that have been built over the past five years, offering courses and workshops for the Los Angeles community that teach approximately 1,500 people annually. MARC offers signature introductory online courses, Maps I and Maps II, and offers free guided meditations available on its website. There are also free guided “drop-in” meditation sessions on the UCLA campus and in the community, including the immensely popular Thursday sessions at the Hammer Museum, which draw 70-100 people each week.

Personnel made approximately 50 community presentations on campus, in the Los Angeles region, and nationally in 2011. Within the David Geffen School of Medicine at UCLA, MARC continues to offer training in mindfulness to third-year medical students and presents ongoing programs for Psychiatry and Psychology residents and interns. Additionally, mindfulness is taught to incoming medical students participating in a special program designed to encourage commitment to healthcare for the underserved. MARC also is involved in the instruction of mindfulness in research studies with diverse populations including teens, breast-cancer survivors, insomniacs, and recovering addicts

2. Certificate in Mindfulness Facilitation (CMF) scholarships

In January 2011, MARC launched a year-long training program in Mindfulness Facilitation designed for health professionals, educators, corporate personnel, and other professionals who wish to implement the practice effectively into their work. MARC received 50 strong applications from around the world and accepted 15 individuals into the program. It hopes to expand the CMF program by offering scholarships to people who are prepared for the training, but cannot afford to pay the tuition. These students also would learn in the context of teaching underserved populations.

3. Teen retreat scholarships

Diana Winston and Dr. Marvin Belzer, the two primary MARC instructors, are well-known for their mindfulness instruction with teens, especially the week-long teen mindfulness retreats they helped create 20 years ago. The first UCLA Teen Mindfulness retreat was in summer 2011, the second is planned for summer 2012, and several retreats will be held in summer 2013.

There has been tremendous interest in these retreats (both among teens and adults who want to volunteer); however, financial sustainability is a challenge because they require a low teen/adult- staff ratio (less than 3/1), and volunteers need room and board covered, and the retreats should be widely accessible to teens independent of income. MARC uses an innovative sliding-scale price structure. The cost is one percent of gross annual family income, with a maximum expected payment of \$2,000. No teen is turned away for lack of funds. This model worked in 2011 to bring in several teens from Compton who could not afford what resulted in a transformative experience.

MARC intends to expand on this model with donor support.

4. Research on youth mindfulness

Small preliminary studies indicate that in the week-long retreats, teens have showed significant improvements in areas of greater positive and less negative emotion and in greater life satisfaction, self-esteem, acceptance, relatedness, and other indicators of positive emotional regulation. MARC intends to pilot several research projects over the next three years to test the efficacy of the retreats as a platform for a National Institutes of Health grant application. It is seeking funding to support these studies.

5. Youth Mindfulness Education in Central Los Angeles.

MARC also would like to offer mindfulness education at the Robert F. Kennedy Community Schools in collaboration with the UCLA Global Center for Children and Families (another program of the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA). The two entities have begun this collaboration by offering youth mindfulness classes at their Santa Monica wellness center. MARC seeks funding to continue this endeavor.