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POSITION (2012-CURRENT)

ASSISTANT PROFESSOR OF PSYCHIATRY, CENTER FOR HEALTH AND COMMUNITY, SCHOOL OF MEDICINE,
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO.

EDUCATION

DEPARTMENT OF PSYCHIATRY, SCHOOL OF MEDICINE, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

- 2011 – 2012 Postdoctoral Fellowship in Dynamic Systems Engineering & Medicine
- 2009 – 2011 Postdoctoral Fellowship in Psychology & Medicine

UNIVERSITY OF WASHINGTON MEDICAL CENTER/HARBORVIEW MEDICAL CENTER

- 2008 – 2009 Internship in Behavioral Medicine & Psychology

JOINT DOCTORAL PROGRAM, UNIVERSITY OF CALIFORNIA SAN DIEGO & SAN DIEGO STATE UNIVERSITY

- 2009 Doctorate in Clinical Psychology, Behavioral Medicine Track
- 2006 Master of Science in Clinical Psychology

BROWN UNIVERSITY, ROYCE SCHOLAR

- 1998 Bachelor of Arts, Music Composition & Theory

PERSONAL RESEARCH STATEMENT

Patients with comorbid mental health concerns and chronic disease contribute disproportionately to the skyrocketing costs of medical care. However, successful reduction in mental health symptoms through behavioral treatment does not reliably lead to improvements in biomarkers of chronic disease, in part because these pathways are poorly understood, and hence, they are not precisely targeted. Hence, understanding the mechanisms and systems underlying these comorbidities is critical, in order to develop more effective behavioral and pharmaceutical treatments and reduce the burden of chronic disease. My research focuses on understanding the contribution of stress-arousal systems in metabolic and cardiovascular disease, with a specific focus on the Hypothalamic-Pituitary-Adrenal axis, systemic inflammatory responses, and purported progenitor cells involved in vascular health and plasticity. My work has shown novel bidirectional pathways linking chronic stress, trauma, and depression with cardiovascular disease, obesity, metabolic risk and immunological aging. My approach to understanding stress physiology integrates theory and analytic methods from control systems engineering/systems biology; however, the focus of my work is clinical and translational in nature. Most recently, I received a career development award from the NIH to explore how chronic stress, stress-reduction interventions and metabolic pathways impact key cell populations involved in vascular regeneration and repair.

HONORS & AWARDS

- 2012 Society for the Psychological Study of Social Issues Award
- 2012 Research Fellow, The Institute for Integrative Health

- 2011 UCSF Program for Breakthrough Biomedical Research Award
- 2010 Best Paper Prize, Ben-Zvi and Aschbacher, International Conference on Modeling, Identification and Control
- 2008 Graduate International Research Award, San Diego State University
- 2008 Citation Award, Meritorious Student Poster, Annual Society of Behavioral Medicine Conference
- 2007 American Psychological Association Dissertation Research Award
- 2007 Evidence-Based Practice Award, Clinical Co-facilitator, Rapid Relaxation program, Veteran's Administration National Office of Nursing
- 2003 1st Place Behavioral and Social Sciences Research Award, Annual California State University Student Research Competition
- 1996 Royce Society Scholar, Brown University
- 1994 Summer Undergraduate Research Fellow, Neuroscience, California Institute of Technology

INVITED TALKS

- 2014 Invited Speaker, American Psychosomatic Society, San Francisco
- 2013 Invited International Speaker, National University Hospital, Singapore
- 2013 Invited Keynote & Symposium Speaker, International Stress Management Association, Association for Applied Psychophysiology and Biofeedback, Portland OR
- 2013 Invited Speaker, Society for Behavioral Medicine, San Francisco, CA
- 2013 Invited Speaker, UCSF Diabetes and Obesity Retreat, Santa Cruz, CA
- 2013 Invited Speaker, Hill Physicians, Employee Wellness Program, San Ramon, CA
- 2012 Invited Speaker, Oregon Health Science University, Dept. of Engineering, Portland, OR
- 2012 Invited Speaker, The Mind & Body Lecture Series, UCSF Center for Health & Community, San Francisco, CA
- 2012 International Symposium Speaker, American Psychosomatic Society, Greece
- 2011 Invited Speaker, Living Well with Lupus, UCSF, San Francisco, CA
- 2011 Invited Speaker, Samuelli Institute, Alexandria, VA
- 2011 Invited Speaker, The Institute for Integrative Health, Baltimore, MD
- 2011 Invited Speaker, UCSF Osher Center for Integrative Medicine, San Francisco, CA
- 2011 Invited Speaker, Alliant University, San Francisco, CA
- 2009 Invited International Speaker, Dept. of Chemicals and Materials Engineering, University of Alberta, Canada

PUBLICATIONS OF GREATEST RELEVANCE TO THE FIELD

1. **Aschbacher K**, Rodriguez-Fernandez M, van Wietmarchsen H, Tomiyama A.J., Jain S, Epel E, Doyle, F.J., van der Greef, J. (2014). The Hypothalamic-Pituitary-Adrenal (HPA)-Leptin Axis and Metabolic Health: A Systems Approach to Resilience, Robustness and Control, *Journal of the Royal Society Interface Focus*, under revision.
2. **Aschbacher K**, Kornfeld S, Picard M, Puterman E, Havel P, Stanhope K, Lustig R, Epel E, (2014). Chronic Stress Increases Vulnerability to Diet-Related Abdominal Fat, Oxidative Stress, and Metabolic Risk, *Psychoneuroendocrinology*, under revision.
3. **Aschbacher K**, O'Donovan A, Wolkowitz OM, Dhabhar F, Epel E, (2013). Good stress, bad stress and oxidative stress: Insights from anticipatory cortisol reactivity, *Psychoneuroendocrinology*, 38(9), 1698-708.
4. **Aschbacher K**, Adam E, Crofford LJ, Kemeny ME, Demitrack MA, Ben-Zvi A. (2012). Linking disease symptoms and subtypes with personalized systems-based phenotypes: A proof of concept study, *Brain, Behavior & Immunity*, 26(7), 1047-56.
5. **Aschbacher K & Chen Q** (co-first), Varga M, Haddad D, Yeghiazarians Y, Epel E, Wolkowitz OM, Springer ML. (2012). Higher fasting glucose levels are associated with reduced circulating angiogenic

cell migratory capacity among healthy individuals, *American Journal of Cardiovascular Disease*, 2, 12-19.

PUBLICATIONS

6. Pinnamaneni K, Sievers RE, Sharma R, Selchau AM, Gutierrez G, Nordsieck EJ, Su R, An S, Chen Q, Wang X, Derakhshandeh R, **Aschbacher K**, Heiss C, Glantz SA, Schick SF, Springer ML. (2013). Brief Exposure to Secondhand Smoke Reversibly Impairs Endothelial Vasodilatory Function, *Nicotine and Tobacco Research*, in press.
7. Puterman E, Epel E, O'Donovan A, Prather A, **Aschbacher K**, Dhabhar FS. (2013). Anger is associated with increased IL-6 stress reactivity in women, but only among those low in social support, *International Journal of Behavioral Medicine*, epub [Dec 20, 2013].
8. **Aschbacher K**, Epel E, Wolkowitz OM, Prather A, Puterman E, Dhabhar F. (2012). Maintenance of a positive outlook during acute stress protects against pro-inflammatory reactivity and future depressive symptoms, *Brain, Behavior, and Immunity*, 26, 346-352.
9. Ben-Zvi A, **Aschbacher, K**. (2011). Asymptotic parameter sensitivity for polynomial dynamical systems, *International Journal of Advanced Mechatronic Systems*, 3(1), 54-64.
10. Roepke SK, Mausbach BT, Patterson TL, von Känel R, Ancoli-Israel S, Harmell AL, Dimsdale JE, **Aschbacher K**, Mills PJ, Ziegler MG, Allison MA, Grant I. (2011). Effects of Alzheimer caregiving on allostatic load, *Journal of Health Psychology*, 16, 58-69.
11. **Aschbacher K**, Kemeny ME. (2010). New directions in linking the dynamics of affective and stress-arousal systems, *Brain, Behavior, and Immunity*, 25, 232-8.
12. **Aschbacher K**, Roepke SK, von Känel R, Mills PJ, Mausbach BT, Patterson TL, Dimsdale JE, Ziegler MG, Ancoli-Israel S, Grant I. (2009). Persistent versus transient depressive symptoms in relation to platelet hyperactivation: A longitudinal analysis of dementia caregivers, *Journal of Affective Disorders*, 116, 80-87.
13. Mills PJ, Ancoli-Israel S, von Känel R, Mausbach BT, **Aschbacher K**, Patterson TL, Ziegler MG, Dimsdale JE, Grant I. (2009). Effects of caregiver gender and spousal dementia rating on sleep and inflammation, *Brain Behavior and Immunity*, 23(5), 605-610.
14. Bormann J, **Aschbacher K**, Wetherell JL, Roesch S, Redwine L. (2009). Effects of faith/assurance on cortisol levels are enhanced by a spiritual mantram intervention: A randomized trial, *Journal of Psychosomatic Research*, 66(2), 161-71.
15. **Aschbacher K**, von Känel R, Mills PJ, Hong S, Patterson TL, Roepke SK, Mausbach BT, Ziegler MG, Dimsdale JE, Ancoli-Israel S, Grant I. (2008). Effects of depressive and anxious symptoms on norepinephrine and platelet p-selectin responses to acute psychological stress among elderly caregivers. *Brain Behavior & Immunity*, 22(4), 493-502.
16. **Aschbacher K**, von Känel R, Mills PJ, Roepke SK, Hong S, Dimsdale JE, Mausbach BT, Patterson TL, Ziegler MG, Ancoli-Israel S, Grant I. (2008). Longitudinal platelet reactivity to acute psychological stress among older men and women, *Stress*, 12(5), 426-33.
17. Groessl E, Weingart KR, **Aschbacher K**, Pada L, Baxi S. (2008). Yoga for veterans with chronic low back pain, *Journal of Alternative and Complementary Medicine*, 14(9), 1123-9.
18. Mausbach BT, von Känel R, Patterson TL, Dimsdale JE, Depp CA, **Aschbacher K**, Mills PJ, Ancoli-Israel S, Grant I. (2008). The moderating effect of personal mastery on the relations between stress and plasminogen activator inhibitor-1 (PAI-1) antigen. *Health Psychology*, 27(2), S172-9.
19. Roepke SK, Mausbach BT, **Aschbacher K**, Ziegler MG, Dimsdale JE, Mills PJ, von Känel R, Ancoli-Israel S, Patterson TL, Grant I. (2008). Personal mastery is associated with reduced sympathetic arousal in stressed Alzheimer's caregivers, *American Journal of Geriatric Psychiatry*, 16, 310-317.
20. von Känel R, Mausbach BT, Patterson TL, Dimsdale JE, **Aschbacher K**, Mills PJ, Ziegler MG, Ancoli-Israel S, Grant I. (2008). Increased Framingham coronary heart disease risk score in dementia caregivers relative to non-caregiving controls. *Gerontology*, 54, 131-137.

21. Mausbach BT, **Aschbacher K**, Mills PJ, Roepke SK, von Känel R, Patterson TL, Dimsdale JE, Ziegler, M.G., Ancoli-Israel S, Grant I. (2008). A 5-year longitudinal study of the relationships between stress, coping, and immune cell β_2 -Adrenergic receptor sensitivity. *Psychiatry Research*, 160(3), 247-55.
22. **Aschbacher K**, von Känel R, Mills PJ, Hong S, Patterson TL, Roepke SK, Mausbach BT, Ziegler MG, Dimsdale JE, Ancoli-Israel S, Grant I. (2007). Combined effects of hormone replacement therapy and caregiving stress on prolonged platelet aggregation among post-menopausal women. *Psychosomatic Medicine*, 69(9), 910-7.
23. Mausbach BT, Mills PJ, Patterson TL, **Aschbacher K**, Dimsdale JE, Ancoli-Israel S, von Känel R, Grant I. (2007). Stress-related reduction in personal mastery is associated with reduced immune cell B2-adrenergic receptor sensitivity. *International Psychogeriatrics*, 19(5), 935-946.
24. Mausbach BT, von Känel R, **Aschbacher K**, Roepke SK, Dimsdale JE, Ziegler MG, Mills PJ, Patterson TL, Ancoli-Israel S, Grant I. (2007). Spousal caregivers of Alzheimer's patients show longitudinal increases in plasma level of tissue-type plasminogen activator (t-PA) antigen. *Psychosomatic Medicine*, 69(8), 816-22.
25. Mausbach BT, **Aschbacher K**, Patterson TL, von Känel R, Dimsdale JE, Mills PJ, Ancoli-Israel S, Grant I. (2007). Effects of placement and bereavement on psychological well-being and cardiovascular risk in Alzheimer's caregivers: a longitudinal analysis. *Journal of Psychosomatic Research*, 62, 439-445.
26. von Känel R, Hepp U, Buddeberg C, Keel M, Mica L, **Aschbacher K**, Schnyder U (2006). Altered blood coagulation in patients with posttraumatic stress disorder. *Psychosomatic Medicine*, 68, 598-604.
27. Mausbach BT, Ancoli-Israel S, von Känel R, Patterson TL, **Aschbacher K**, Mills PJ, Ziegler MG, Dimsdale J, Calleran S, Grant I. (2006). Sleep disturbance, norepinephrine, and D-dimer are all related in elderly caregivers of people with Alzheimer disease. *Sleep*, 29(10), 1347-52.
28. **Aschbacher K**, von Känel R, Dimsdale JE, Patterson TL, Mills PJ, Mausbach BT, Allison MA, Ancoli-Israel S, Grant I. (2006). Increasing dementia of the care receiver predicts procoagulant response in Alzheimer caregivers. *American Journal of Geriatric Psychiatry*, 14(8), 694-703.
29. Mausbach BT, **Aschbacher K**, Patterson TL, Ancoli-Israel S, von Känel R, Mills PJ, Dimsdale JE, Grant I (2006). Avoidant coping partially mediates the relationship between patient problem behaviors and depressive symptoms in spousal Alzheimer caregivers. *American Journal of Geriatric Psychiatry*, 14(4), 299-306.
30. **Aschbacher K**, Patterson TL, von Känel R, Dimsdale JE, Mills PJ, Adler KA, Ancoli-Israel S, Grant I. (2005). Coping processes and hemostatic reactivity to acute stress in dementia caregivers. *Psychosomatic Medicine*, 67(6), 964-971.

BOOK CHAPTERS

Prather A, **Aschbacher K**, Epel E. (2013). Immunosenescence: Behavioral and Psychosocial Determinants, Chapter: Obesity and Immunosenescence: Psychological, Behavioral and Biochemical Pathways, Publisher: Springer, Editors: Bosch, Philips, Lord.

SPECIALIZED TRAINING IN BIOINFORMATICS & RESEARCH METHODS

- 2012 Methods for developing adaptive interventions: Getting SMART (Sequential Multiple Assignment Randomized Trial), Methods Work LLC., Chicago, IL
- 2011 Scholarship Recipient, RAND Summer Institute
- 2010 Scholarship Recipient, Institute on Systems Science and Health (ISSH) Systems Dynamics Track, National Institutes of Health (NIH) & Centers for Disease Control and Prevention (CDC)
Columbia University, Mailman School of Public Health

SERVICE TO PROFESSIONAL PUBLICATIONS

2011 – 2013 Ad hoc referee for PLoS ONE
 2010 – 2013 Ad hoc referee for Psychoneuroendocrinology
 2007 – 2013 Ad hoc referee for Brain, Behavior and Immunity
 2007 – 2009 Ad hoc referee for Psychosomatic Medicine
 2006 – 2008 Ad hoc referee for Journal of Psychosomatic Research

NEWS ARTICLES & COMMENTARIES ON PUBLICATIONS BY ASCHBACHER ET AL.

2013 *San Francisco Chronicle*, Drew Joseph, “A mild case of nerves can have benefits.”
 2013 *New Scientist*, Jo Marchant, “Stress has unexpected health benefits – sometimes.”
 2012 *Brain, Behavior & Immunity*, Published invited commentary on Aschbacher et al., BBI, 2012

TEACHING EXPERIENCE

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

2013 Fall Guest Instructor on “Effects of Stress on Metabolism, Eating, and Obesity” for the UCSF Medical School Course, entitled, “Nutrition, Health, and the World”
 2012-2014 Co-chair of Dissertation Committee and mentor for Sarah Kornfeld, Ph.D. applicant at Alliant University
 2013 Spring Facilitator, Social Behavioral Sciences Course for Medical Students at UCSF
 2012 Summer Co-Instructor for Informal Statistics Course for Center Staff
 2010-2012 Trained Clinical Research Staff in the administration of the Structured Clinical Interview for Diagnosis (SCID) & a brief neuropsychological battery

SAN DIEGO STATE UNIVERSITY

2007 Fall Instructor, *Statistical Methods in Psychology*
 2007 Fall Guest Lecturer, *Health Psychology*
 2007 Fall/ Spring Teaching Assistant, *Multivariate Statistics*
 2007 Spring Guest Lecturer, *Abnormal Psychology*

LICENSES, CERTIFICATION

2013 LICENSED CLINICAL PSYCHOLOGIST, PSY26005

CLINICAL EXPERIENCE

2009-2012 PSYCHOMETRICIAN & POSTDOCTORAL PRACTICUM: Clinical Diagnosis & Assessment, Stress & Depression Study, University of California San Francisco.
 I conducted and trained team members to conduct Structured Clinical Interviews for Diagnosis (SCIDs), the Life Events and Difficulties assessment (LEDs), and a brief cognitive battery.

2008-2009 REHABILITATION PSYCHOLOGY RESIDENT/INTERN: Rehabilitation, Pediatric and Burn Units, Harborview Medical Center/ University of Washington Medical Center.
 I addressed psychosocial issues related to acute trauma and adjustment to injury with adults, children and families on inpatient units, and also conducted brief neuropsychological screens as part of the rehabilitation team. I additionally conducted long-term psychotherapy on an outpatient basis for patients with disabilities secondary to traumatic injuries.

2006-2007 PSYCHOLOGY PRACTICUM: The Firm Primary Care Clinic & The Substance Abuse Mental Illness Program (SAMI), Veterans Affairs San Diego Healthcare System

I led behavioral medicine therapy groups and conducted individual therapy for patients with mood, anxiety and substance use disorders. I also conducted bone marrow/kidney/liver transplant assessments, interferon evaluations and brief neuropsychological screening tests.

- 2005-2006 PSYCHOLOGY PRACTICUM: The Special Treatment Evaluation Program (STEP) Clinic, Veterans Affairs San Diego Healthcare System
I co-led groups in Cognitive Behavioral Therapy (CBT) for depression and bipolar disorder, as well as dual diagnosis patients with substance use disorders. I also administered semi-structured intakes for triaging purposes and participated in weekly seminars with a treatment team. I additionally participated in a Dialectical Behavior Therapy (DBT) training program, involving group and individual therapy sessions.
- 2004-2005 PSYCHOLOGY PRACTICUM: Scripps Family Medicine Clinic
I provided individual therapy for patients with comorbid mental and physical health concerns in a primary care setting.
- 2004-2005 PSYCHOLOGY PRACTICUM: San Diego State University Clinic
I provided individual therapy and marital counseling for university students and community members, and I administered brief assessments to track weekly functioning.

ONGOING RESEARCH SUPPORT

1. K23 HL112955-01 (PI) 04/2012– 03/2017 10 Cal Mos
NIH / NHLBI
Effects of Psychosocial Stress on Endothelial Progenitor Cells
This research investigates whether psychosocial stress (using a maternal caregiving model among premenopausal women), impairs the function of purported progenitor cell populations, involved in vascular regeneration/tissue preservation, wound-healing and protection against cardiovascular disease or vascular complications in diabetes. Further, this study will investigate whether preventative stress-management interventions are associated with beneficial changes in the number or function of these same cell populations. (Role: PI).
2. Fellow Award (PI) 09/2011 – ongoing 2 Cal Mos
The Institute of Integrative Health (TIIH)
Dynamic Systems Analysis of Cardiovascular Reactivity During Acute Stress & Relaxation
The major goal of this project is to construct a dynamic systems model and phenotype of autonomic nervous system inputs to the heart in response to: 1) an acute laboratory stress task and 2) a brief relaxation intervention. The project will evaluate whether the resulting systems-based phenotype is associated with circulating angiogenic cell (i.e., early endothelial progenitor cell) function in cell culture models.
3. Early Investigator Award (PI) 09/2013 – ongoing wos
The Institute of Integrative Health (TIIH)
Are the Adverse Health Effects of Trauma Reversible?
We will obtain genomics measures from women receiving Child-Parent-Psychotherapy (CPP), a validated form of family treatment for trauma, and will investigate whether trauma-treatment is associated with beneficial changes in various transcriptional control pathways associated with inflammation, angiogenesis, oxidative stress and stress-hormone regulation.