

HONORS COLLEGIUM PROPOSAL - PERSONAL BRAIN MANAGEMENT
INSTRUCTOR: ROBERT BILDER

distinguish scientifically validated procedures from those that are not. Final lectures emphasize creative cognition and the concept of “flow”, focusing on what this actually may mean in terms of brain function.

Students are expected to gain a basic understanding of neuroplasticity as it pertains to everyday behavior and to appreciate the scientific, ethical, and philosophical issues that are emerging with maturation of the technologies and knowledge relevant to applied neuroscience.

Preliminary Syllabus and Readings

1: Course Introduction and Overview

- Personal Brain Management
 - why now?
 - how is it different from other „self-help“ methods?
- Brain orientation
 - quick summary of brain evolution
 - basic frontal-posterior (output-input) organization
 - mismatch detection, resonance and resonance failure
- Neurofeedback
 - General principles of biofeedback
 - Introduction to MyndPlay system software
- **Reading-Homework:**
 - YouTube video on PBM from TEDx San Diego, 2010: <http://youtu.be/rG494qden64>.
 - Gruzelier, J. (2009). "A theory of alpha/theta neurofeedback, creative performance enhancement, long distance functional connectivity and psychological integration." Cognitive Processing **10**(0): 101-109.
 - LaConte, S. M. (2011). "Decoding fMRI brain states in real-time." Neuroimage 56(2): 440-454.
 - Johnston, S. J., S. G. Boehm, et al. (2010). "Neurofeedback: A promising tool for the self-regulation of emotion networks." Neuroimage 49(1): 1066-1072.

2: Personal Predictive Modeling

- Predicting health outcomes from genes and biology
- Aging applications and face-aging software
- Predicting health outcomes from behavioral monitoring
- Predicting depression risk
- As easy as it looks?; assessing causal relations, probability calculus, counterfactuals
- **Reading-Homework:**
 - Saphire-Bernstein, S., B. M. Way, et al. (2011). "Oxytocin receptor gene (OXTR) is related to psychological resources."

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- Heylighen, F. and C. Vidal (2008). "Getting things done: the science behind stress-free productivity." Long Range Planning **41**(6): 585-605.
- Core Dump exercise from GTD

7: Mobile Health and Psychotherapy

- mHealth overview and future directions
- mHealth applications for brain health, psychological health
- Behavioral Activation and Cognitive Therapies
 - BAT: principles of aligning long-term goals & values with immediate actions
 - CBT: principles of re-evaluating one's own thoughts
- **Reading-Homework:**
 - Morris, M. E., Q. Kathawala, et al. (2010). "Mobile therapy: Case study evaluations of a cell phone application for emotional self-awareness." Journal of Medical Internet Research **12**(2): e10.
 - Estrin, D. and I. Sim (2010). "Open mHealth Architecture: An Engine for Health Care Innovation." Science **330**(6005): 759.
 - Newman, M. W., D. Lauterbach, et al. (2011). It's not that I don't have problems, I'm just not putting them on Facebook: Challenges and Opportunities in Using Online Social Networks for Health, ACM.
 - Eysenbach, G. (2011). "CONSORT-EHEALTH: Improving and Standardizing Evaluation Reports of Web-based and Mobile Health Interventions." Journal of Medical Internet Research **13**(4).

8: Buddhism & the Brain

- Developing mind control; the last few eons of experience
- Modern links of Buddhism & neuroscience
- Mindful awareness, brain function, and health
- The Yerkes-Dodson Law: inverted U curve relating anxiety or arousal to performance
- How to find the "sweet spot" of arousal with respect to your proficiency in a given task

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- **Reading-Homework:**
 - Lutz, A., H. A. Slagter, et al. (2008). "Attention regulation and monitoring in meditation." *Trends in Cognitive Sciences* 12(4): 163-169.
 - Treadway, M. T. and S. W. Lazar (2009). *The Neurobiology of Mindfulness. Clinical Handbook of Mindfulness.* F. Didonna, Springer New York: 45-57.
 - Ott, U., B. K. Hölzel, et al. (2011). *Brain Structure and Meditation: How Spiritual Practice Shapes the Brain.* Neuroscience, Consciousness and Spirituality. H. Walach, S. Schmidt and W. B. Jonas, Springer Netherlands. 1: 119-128.
 - Kaszniak, A. W. (2011). "Meditation, Mindfulness, Cognition, and Emotion: Implications for Community-Based Older Adult Programs." *Enhancing Cognitive Fitness in Adults*: 85-104.

9: Brain & Creativity

- Creativity defined: novelty & utility
- Big C and little c
- Dimensions of creative cognition: generation, working memory, response inhibition
- Persistence, Openness, and Dis-Agreeableness – plus the 10,000 hour effect
- Flow and the psychology of optimal experience
- **Reading-Homework:**
 - M. Csikszentmihalyi, *Creativity: Flow and the Psychology of Discovery and Invention*, "Enhancing Personal Creativity" (chapter)
 - Liane Gabora, *Revenge of the 'Neurds': Characterizing Creative Thought in terms of the Structure and Dynamics of Memory*, *Creativity Research Journal* (see <http://www.vub.ac.be/CLEA/liane/papers/neurds.htm>)
 - Dietrich, A. and R. Kanso (2010). "A review of EEG, ERP, and neuroimaging studies of creativity and insight." *Psychol Bull* 136(5): 822-848.
 - Arden, R., R. S. Chavez, et al. (2010). "Neuroimaging creativity: A psychometric view." *Behavioural Brain Research* 214(2): 143-156.
 - Seligman, M. E. P. and M. Csikszentmihalyi (2000). "Positive psychology: An introduction." *American Psychologist* 55(1): 5-14.

10: You And Your Machines

- Dialectic – Ray Kurzweil (The Singularity is Near) versus Jaron Lanier: You Are Not a Gadget
- Ethical implications of modifying brain function
- **Reading-Homework:**
 - excerpt from "You Are Not a Gadget" by Jaron Lanier
 - Newman, M. W., D. Lauterbach, et al. (2011). It's not that I don't have problems, I'm just not putting them on Facebook:

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Challenges and Opportunities in Using Online Social
Networks for Health, ACM.

Grading

(a) Participation in class discussion: 30%

(b) Paper on personal brain management – this can address any of the key topics covered in class (e.g., Predictive modeling; Science of behavior change; Buddhism & neuroscience; Ethics of brain management; topic must be approved in advance by instructor); Preliminary topic proposals are due by Week 3; final topic proposal is due Week 5; final paper is due week 10. Expected length approximately 5000 words (~10 pages @ 500-600 words per page); format for this assignment will be reviewed in the first class. 30%

(c) Personal experience logging and log of interactive brain training or neurofeedback experiences (approximately 1 hour to complete each log X 8 weekly logs, each contributes 5%; 40%

Disciplines/majors to which the course might be considered particularly relevant:

Psychology, other Life Sciences, Public Health, Medical Sciences

Proposed number of units:

5 units

Proposed enrollment:

30 students

Preferred Quarter that the course be offered (Fall, Winter, Spring):

Fall

Proposed class meeting schedule:

Seminar twice per week (Tu, Th); 2 hours/class

Indication of whether or not the course will require TA support:

No

Suggestion of whether the course should be upper or lower:

Lower division

One page Curriculum Vitae:

Robert M. Bilder, Ph.D., ABPP

RBILDER@MEDNET.UCLA.EDU

Education:

6/74 Deerfield Academy; Deerfield, MA

5/78 Columbia College, Columbia University - B.A.; Major, Biology/Psychology

9/84 City College, City University of New York, Department of Psychology - Ph.D.;

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Program/Track: Experimental Cognition/Human Neuropsychology
6/82 Division of Neuropsychology, New York State Neurological Institute,
Columbia-Presbyterian Medical Center; Internship in Clinical
Neuropsychology

Professional Experience:

9/08 – present Michael E. Tennenbaum Family Endowed Chair in Creativity Research, UCLA Department of Psychiatry & Biobehavioral Sciences

1/03 – present Professor (In Residence) of Psychiatry & Biobehavioral Sciences and Psychology, David Geffen School of Medicine, UCLA; and UCLA College of Letters & Science

1/03 – present Chief of Medical Psychology-Neuropsychology – Stewart & Lynda Resnick Neuropsychiatric Hospital at UCLA

5/96 – 12/02 Research Scientist; Associate Director for Human Research - Center for Advanced Brain Imaging, Nathan S. Kline Institute for Psychiatric Research

10/89 – 12/02 Assistant (89-94), to Associate (95-2002) Professor of Psychiatry - Albert Einstein College of Medicine of Yeshiva University

1/88 – 12/02 Chief of Clinical Neuropsychology, Assistant to Associate Attending Psychologist - Department of Psychiatry, Hillside Hospital Division of North Shore – Long Island Jewish Health System

1/87 - 12/02 Adjunct Assistant to Associate Professor - Department of Psychology, City College of the City University of New York

11/84 - 12/87 Instructor of Clinical Psychology - Department of Psychiatry, Columbia University College of Physicians & Surgeons

Selected Professional Activities:

American Academy of Clinical Neuropsychology (AACN); Member Board of Directors (2007-present)

American Psychological Association (APA); Division 40: Clinical Neuropsychology; Member (ex-officio) of Science Advisory Committee (SAC) (2007-2010); Division 40 Representative to APA Council of Representatives (Jan 2011-Dec 2014); Science Leadership Conference (2008, 2010)

Research Grants: Past – 37 awards, 21 from NIH; Current/Active – 10 awards, 8 from NIH

Publications: 174 **Invited Lectures:** 148 **Published Abstracts/Presentations:** 257

Psychology 1/23/86-9/30/03; New York, Reg. #8527 (inactive 9/30/03-

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Licensure: present)
1/30/03-present; California, PSY#18879

SELECTED HONORS AND SPECIAL AWARDS: Barmack Prize for doctoral thesis, City College of the City University of New York, 1984/1985; Young Investigator Award, International Congress on Schizophrenia Research, 1989; NARSAD - Young Investigator Award, 1992-1994; Winter Workshop on Schizophrenia - Young Scientist Award, 1994; Tennenbaum Family Creativity Initiative Award, 2003; American Psychiatric Institute for Research and Education, Mentor for Resident Research Scholar, 2005; David Geffen School of Medicine, Department of Psychiatry & Biobehavioral Sciences Teaching Award, Outstanding Research Mentor, 2009-2010.



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New Course Proposal

	Honors Collegium 3 Personal Brain Management
<u>Course Number</u>	Honors Collegium 3
<u>Title</u>	Personal Brain Management
<u>Short Title</u>	BRAIN MANAGEMENT
<u>Units</u>	Fixed: 5
<u>Grading Basis</u>	Letter grade or Passed/Not Passed
<u>Instructional Format</u>	Seminar - 4 hours per week
<u>TIE Code</u>	SEMT - Seminar (Topical) [T]
<u>GE Requirement</u>	No
<u>Major or Minor Requirement</u>	No
<u>Requisites</u>	Designed for College Honors students
<u>Course Description</u>	Seminar, four hours. Designed for College Honors students. Available psychotherapies, educational media, and drugs can alter our way of thinking. New wave of information technologies and biotechnologies is changing existing landscape. Survey of available tools that claim neuroplastic brain-changing effects, consideration of future developments, and engagement of students in discussion on ethical and philosophical implications of these developments. P/NP or letter grading.
<u>Justification</u>	This is an interdisciplinary course in neuroscience, psychology, and philosophy offered out of the Semel Institute and designed for students in College Honors. It is part of the series of Honors courses called the Honors Collegium. After some revisions on the (complex) readings, it has been unanimously approved by the Honors Faculty Advisory Committee, whose members come from disciplines across the campus, and by its Chair.
<u>Syllabus</u>	File 012Bildercollegiumfinal.docx was previously uploaded. You may view the file by clicking on the file name.
<u>Supplemental Information</u>	
<u>Grading Structure</u>	8 weekly logs of 2 - 3 pages interactive brain training: 5% each = 40% Interactive class discussion: 30% 10 - 12 page paper on brain management: 30%
<u>Effective Date</u>	Fall 2012

<u>Instructor</u>	Name	Title
	Bilder, Robert	Professor
<u>Quarters Taught</u>	<input checked="" type="checkbox"/> Fall <input type="checkbox"/> Winter <input type="checkbox"/> Spring <input type="checkbox"/> Summer	
<u>Department</u>	Honors Collegium	
<u>Contact</u>	Name	E-mail
	G JENNIFER WILSON	gjwilson@college.ucla.edu
<u>Routing Help</u>		

ROUTING STATUS

Role:	Registrar's Office
Status:	Processing Completed
Role:	Registrar's Publications Office - Hennig, Leann Jean (lhennig@registrar.ucla.edu) - 56704
Status:	Added to SRS on 7/23/2012 10:09:17 PM
Changes:	Description
Comments:	Edited course description into official version.
Role:	Registrar's Scheduling Office - Thomson, Douglas N (dthomson@registrar.ucla.edu) - 51441
Status:	Added to SRS on 7/2/2012 3:05:21 PM
Changes:	No Changes Made
Comments:	No Comments
Role:	FEC School Coordinator - Castillo, Myrna Dee Figurac (mcastillo@college.ucla.edu) - 45040
Status:	Returned for Additional Info on 7/2/2012 2:49:31 PM
Changes:	No Changes Made
Comments:	Routing to Doug Thomson in the Registrar's Office
Role:	FEC Chair or Designee - Meranze, Michael (meranze@history.ucla.edu) - 52671
Status:	Approved on 7/2/2012 2:47:29 PM
Changes:	No Changes Made
Comments:	No Comments
Role:	L&S FEC Coordinator - Castillo, Myrna Dee Figurac (mcastillo@college.ucla.edu) - 45040
Status:	Returned for Additional Info on 6/27/2012 11:05:16 AM
Changes:	No Changes Made
Comments:	Routing to Michael Meranze for FEC approval
Role:	Dean College/School or Designee - Friedmann, Manuela Christin (mfriedmann@college.ucla.edu) - 58510
Status:	Approved on 6/25/2012 2:45:07 PM
Changes:	No Changes Made
Comments:	This approval is being forwarded on behalf of Judith L. Smith, Dean and Vice Provost for Undergraduate Education.
Role:	L&S FEC Coordinator - Castillo, Myrna Dee Figurac (mcastillo@college.ucla.edu) - 45040
Status:	Approved on 6/13/2012 4:34:13 PM
Changes:	Grading Structure
Comments:	Per GJ Wilson, this course is approved by Robert Gurval, chaif of the Honors Collegium FAC. Routing to Manuela Friedmann for Dean Smith's approval.

Role:	Initiator/Submitter - Wilson, G Jennifer (gjwilson@college.ucla.edu) - 51752
Status:	Submitted on 6/12/2012 1:33:30 PM
Comments:	Initiated a New Course Proposal

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