Curriculum Vitae

Britt Anderson

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1 Address

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2 Education

- 2005 PhD, Brain Science Program, Brown University, Providence, RI; Jointly advised by: David Sheinberg, Ph.D (Neuroscience) & Elie Bienenstock, Ph.D. (Applied Mathematics and Neuroscience)
- 1988 Completed residency in Neurology, UT Southwestern School of Medicine, Dallas, TX
- ${\bf 1984}\,$ MD, University of Southern California School of Medicine, Los Angeles, CA
- 1980 BS, Biology, with High Honors, University of Arizona, Tucson, AZ

3 Positions

- 2012 present Associate Professor, Dept. of Psychology and core member of Centre for Theoretical Neuroscience, Univ. Waterloo, Waterloo ON Canada
- 2007-2012 Assistant Professor, Dept. of Psychology and core member of Centre for Theoretical Neuroscience, Univ. Waterloo, Waterloo ON Canada
- 2005-2007 Postdoctoral Associate, David L. Sheinberg, Dept. of Neuroscience, Brown University, Providence RI
- 1998-2000 Secondary Appointment, Psychology, University of Alabama at Birmingham, Birmingham, AL
- 1998-2000 Associate Professor, Neurology, University of Alabama at Birmingham, Birmingham, AL
- 1997-2000 Deputy Chairman, Department of Neurology, University of Alabama at Birmingham, Birmingham, AL
- 1994-2000 Chief, Neurology Service, Birmingham VA Medical Center, Birmingham, AL
- 1993-2000 Director, Clinical Core, University of Alabama at Birmingham Alzheimer's Disease Research Center, Birmingham, AL
- 1991-1998 Assistant Professor, Neurology, University of Alabama at Birmingham, Birmingham, AL
- 1988-1991 Chief, Neurology Service, Keesler Technical Training Medical Center, Keesler AFB, MS

4 Publications

4.1 Books

[1] Britt Anderson. Computational Neuroscience and Cognitive Modelling. A student's introduction to methods and procedures. Sage Publishing, 2014, p. 240.

4.2 Articles

- [1] Eva Rafetseder et al. "Epistemic Perspective Taking Predicts Earlier Updating in a Picture Morphing Task". In: *Child Development* (under review).
- [2] Alex Filipowicz et al. "Rejecting Outliers: Surprising Changes Do Not Always Improve Belief Updating". In: *Decision* (revise and resubmit).

- [3] Syaheed Jabar and Britt Anderson. "Not All Probabilities Are Equivalent: Evidence From Orientation Versus Spatial Probability Learning." In: Journal of Experimental Psychology: Human Perception and Performance (minor revisions).
- [4] Britt Anderson, Albulena Shaqiri, and James Danckert. "Statistical Learning Impairments As a Consequence of Stroke". In: (in submission).
- [5] Alex Filipowicz et al. "Plinko: A Probabilistic Learning Task To Measure Belief Updating." In: (in submission).
- [6] Britt Anderson. "Attention Effects on Phenomenological Appearances: How They Change With Task Instructions and Measurement Methods". In: PLoSONE 11 (2016), e0152353. DOI: 10.1371/journal.pone.0152353.
- [7] Alex Filipowicz, Britt Anderson, and James Danckert. "Adapting To Change: the Role of the Right Hemisphere in Mental Model Building and Updating." In: Canadian Journal of Experimental Psychology 70 (2016), pp. 201–218. DOI: 10.1037/cep0000078.
- [8] Britt Anderson et al. "Control Over the Strength of Connections Between Cognitive Modules: A Double Dissociation Between Stimulus Format and Task Revealed By Granger Causality Mapping in fMRI". In: Frontiers in Psychology: Cognitive Science 6 (2015). DOI: 10.3389/fpsyg.2015.00321.
- [9] James Danckert and Britt Anderson. "Updating Representations of Temporal Intervals". In: *Experimental Brain Research* 233.12 (2015), pp. 3517–3526. DOI: 10.1007/s00221-015-4422-6.
- [10] Christie R. M. Haskell and Britt Anderson. "Attentional Effects on Orientation Judgements Are Dependent on Memory Consolidation Processes". In: Quarterly Journal of Experimental Psychology (2015). DOI: 10.1080/17470218.2015.1105830.
- [11] Syaheed B. Jabar and Britt Anderson. "Probability Re-Weights Between Perceptual Modes: A Study in Orientation Estimation". In: Journal of Experimental Psychology: Human Perception and Performance 41 (2015), pp. 1666–1679. DOI: 10.1037/xhp0000121.
- [12] Elisabeth Stöttinger et al. "A Cortical Network That Marks the Moment When Conscious Representations Are Updated". In: Neuropsychologia 79.nil (2015), pp. 113–122. DOI: 10.1016/j.neuropsychologia. 2015.10.037.
- [13] Derick Valadao, Britt Anderson, and James Danckert. "Examining the Influence of Working Memory on Updating Mental Models". In: *Quarterly Journal of Experimental Psychology* (2015), pp. 1442–1456. DOI: 10.1080/17470218.2014.989866.
- [14] Britt Anderson. "Probability and the Changing Shape of Response Distributions for Orientation". In: *Journal of Vision* 14.13 (2014), p. 15. DOI: 10.1167/14.13.15.

- [15] Alex Filipowicz, Britt Anderson, and James Danckert. "Learning What From Where: Effects of Regularity on Non-Spatial Sequence Learning and Updating". In: *Quarterly Journal of Experimental Psychology* 67 (2014), pp. 1447–1456. DOI: 10.1080/17470218.2013.867518.
- [16] Nazanin Mohammadi Sepahvand et al. "Sequential Decisions: A Computational Comparison of Observational and Reinforcement Accounts". In: *PloS one* 9.4 (2014), e94308. URL: http://www.plosone.org/article/info:doi/10.1371/journal.pone.0094308.
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- [21] Albulena Shaqiri and Britt Anderson. "Priming and Statistical Learning in Right Brain Damaged Patients". In: *Neuropsychologia* 51 (2013), pp. 2526–2533. DOI: 10.1016/j.neuropsychologia.2013.09.024.
- [22] Albulena Shaqiri, Britt Anderson, and James Danckert. "Statistical Learning As a Possible Tool for Rehabilitation in Spatial Neglect". In: Frontiers in Human Neuroscience; Special Issue: Novel Insights in Rehabilitation of Neglect 7.224 (2013), pp. 1–15. ISSN: 1662-5161. DOI: 10.3389/fnhum. 2013.00224.
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- [34] Mark Mennemeier et al. "Biases in Attentional Orientation and Magnitude Estimation Explain Crossover: Neglect Is a Disorder of Both". In: *J. Cogn. Neurosci.* 17.8 (2005), pp. 1194–1211. URL: http://jocn.mitpress.org/cgi/content/abstract/17/8/1194.
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- [62] Britt Anderson. "Rat Reasoning: a Reliability and Validity Study". In: Psychobiology 20 (1992), pp. 238–242.
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- [65] Britt Anderson. "Benvenuto Cellini and Reiter's Disease". In: Sexually Transmitted Diseases 16 (1989), pp. 47–48.
- [66] E. D. Ross, B. Anderson, and A. Morgan-Fisher. "Crossed Aprosodia in Strongly Dextral Patients". In: Archives of Neurology 46 (1989), pp. 206– 209.
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- [68] Britt Anderson. "Is alpha-MSH Deficiency the Cause of Alzheimer's Disease". In: Medical Hypotheses 19 (1986), pp. 379–385.
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4.3 Chapters

- [1] J. D. Danckert, E. Stöttinger, and B. Anderson. "Neglect as a Disorder of Representational Updating". In: *Psychology of Neglect*. Nova Science Publishing, 2012, pp. 1–28.
- [2] B. Anderson and D.L. Sheinberg. "Neurophysiology of Temporal Attention". In: *Attention in Time*. Ed. by A. Nobre and J. Coull. Oxford University Press, 2010, pp. 407–417.
- [3] B. Anderson. "Brain imaging and g". In: The Scientific Study of General Intelligence. Ed. by H. Nyborg. Pergamon, 2003, p. 669.
- [4] C. A. Marzi, E. Natale, and B. Anderson. "Mapping spatial attention with reaction time in neglect patients". In: *The Cognitive and Neural Bases of Neglect.* Ed. by H.-O. Karnath, A. D. Milner, and G. Vallar. Oxford University Press, 2002, pp. 275–288.
- [5] L. B. Nabors and B. Anderson. "Neurology". In: Cecil Review of Internal Medicine. Ed. by P.G. Pappas. W. B. Saunders, 2001, pp. 194–206.
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4.4 Some Recent Posters

- [1] A. Filipowicz et al. "Right Brain Damage Updating Impairments May Be Caused By Inefficient Exploration". In: Poster at: The Neuroscience of Decision Making, Montreal (2016). URL: https://brittlab.uwaterloo.ca/assets/conferences/Filipowicz_NDM_2016.pdf.
- [2] C. Haskell and B. Anderson. "Viewing Time Account of Spatial Cueing and Performance-Based Rewards". In: Poster at the Vision Science Society, St. Pete's Beach, FL (2016). URL: https://brittlab.uwaterloo.ca/assets/conferences/VSS2016poster_crm.pdf.
- [3] S. Jabar and B Anderson. "Spatial Probability Improves Detection, Orientation Probability Improves Precision: Modelling As Neural Gain Versus Tuning". In: Poster at the Vision Science Society, St. Pete's Beach, FL (2016). URL: https://brittlab.uwaterloo.ca/assets/conferences/sj_vss2016_final.pdf.
- [4] E. Stöttinger et al. "The Picture Morphing Task an Efficient and Quick Means To Measure Updating". In: Poster at the Vision Science Society, St. Pete's Beach, FL (2016). URL: https://brittlab.uwaterloo.ca/assets/conferences/VSS_Stoettinger%20et%20a1%20(2016).pdf.
- [5] Britt Anderson. "Exogenous Cues Differentially Affect Selection and Discrimination of Contrast". In: Poster at: Canadian Society for Brain and Behavioral Sciences (2015). URL: https://brittlab.uwaterloo.ca/assets/conferences/Anderson_2015.pdf.
- [6] Britt Anderson and R. M. Haskell Christie. "Reward Shape Effects on the Precision of Perceptual Decisions". In: Poster at: Society for the Biology of Decision Making (SBDM), Paris, France (2015). URL: https://brittlab.uwaterloo.ca/assets/conferences/sbdm2015.pdf.
- [7] Vince Di Lollo and Britt Anderson. "What Does Attention Explain?" In: Presentation at: Psychonomic Society, Chicago, US (2015).
- [8] Alex Filipowicz et al. "Updating Impairments Following Brain Damage: A Problem of Exploration?" In: Poster at: Canadian Society for Brain and Behavioral Sciences, Ottawa, Canada (2015). URL: https://brittlab.uwaterloo.ca/assets/conferences/Filipowicz_SBDM_2015.pdf.
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- [11] Syaheed Jabar and Britt Anderson. "Influence of Spatial Versus Orientation Probability on Perceptual Estimations". In: Poster at: Canadian Society for Brain and Behavioral Sciences, Ottawa, Canada (2015). URL: https://brittlab.uwaterloo.ca/assets/conferences/Syaheed_CSBBCS2015_Handout.pdf.
- [12] Britt Anderson et al. "Decision Making and Updating Impairments in Right and Left Hemisphere Damaged Patients." In: *Poster at: Interna*tional Symposium on "Biology of Decision Making", Paris, France (2014).
- [13] Alex Filipowicz, James Danckert, and Britt Anderson. "Mental Model Updating Depends on the Saliency of Environmental Changes." In: Poster at: International Symposium on "Biology of Decision Making", Paris, France (2014).
- [14] Alex Filipowicz et al. "Measuring the Influence of Prior Beliefs on Probabilistic Estimations". In: Poster at: Cognitive Science Society (2014). URL: https://brittlab.uwaterloo.ca/assets/conferences/alexpostercss2014.pdf.
- [15] Alex Filipowicz et al. "Plinko: A Spatial Probability Task To Measure Learning and Updating". In: Poster at: Vision Sciences Society (2014). URL: https://brittlab.uwaterloo.ca/assets/conferences/alexvss2014ah.pdf.
- [16] Christie Rose Marie Haskell and Britt Anderson. "Attention Improves Precision While Short-Term Memory Load Increases Guessing". In: *Poster at: Vision Sciences Society* (2014). URL: https://brittlab.uwaterloo.ca/assets/conferences/crmvss2014-supp-final.pdf.
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- [20] Elisabeth Stoettinger et al. "Normative Data for Forty, Morphing, Line Drawn Picture Sets". In: Poster at: Vision Sciences Society (2014). URL: https://brittlab.uwaterloo.ca/assets/conferences/elisvss2014.pdf.

- [21] Elisabeth Stöttinger et al. "Neural Correlates of Updating Mental Models in a Picture Morphing Task." In: Poster at: Canadian Society for Brain and Behavioral Sciences (2014). URL: https://brittlab.uwaterloo.ca/assets/conferences/stoettinger_et_al_2014_csbbcs_handout.pdf.
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- [23] B. Anderson and J. Danckert. "Updating Mental Models: What Is the Role of the Right Hemisphere?" In: *Poster at: Interdisciplinary Kollege 2013* (2013). URL: https://brittlab.uwaterloo.ca/assets/conferences/anddanckpost.pdf.
- [24] D. Besner et al. "A Double Dissociation Between Alphabetic/logographic Formats and Tasks (reading Aloud/ Parity) As Revealed By Granger Analysis of Fmri Data". In: Poster at: Canadian Society for Brain and Behavioural Sciences (2013). URL: https://brittlab.uwaterloo.ca/assets/conferences/bads-csbbcs-poster-1.pdf.
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- [26] E. Stoettinger, J. Danckert, and B. Anderson. "Right Brain Damage Failures of Perceptual Updating in Ambiguous Figures." In: *Poster at: Vision Science Society* (2013). URL: https://brittlab.uwaterloo.ca/assets/conferences/poster_vss_stoettinger_et_al_2013_.pdf.
- [27] Elisabeth Stöttinger et al. "Right Hemisphere Involvement in Updating and Theory of Mind." In: Canada-Israel Symposium on Brain Plasticity, Learning, and Education; London Ontario, CANADA (2013). URL: https://brittlab.uwaterloo.ca/assets/conferences/poster_london_stoettinger_et_al_2013_pdf.pdf.
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- [31] Nazanin Mohammadi Sephavand and Britt Anderson. "A Computational Model of Strategy Learning". In: Poster at: 28th Center for Visual Science Symposium (2012).

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- [33] Michela Stinson and Britt Anderson. "Statistical Representations in a Target Search". In: Poster at: 42nd Ontario Psychology Undergraduate Thesis Conference (2012).
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- [36] Britt Anderson and Michael Druker. "Matching Judgments for High Probability Orientations Are More Precise, But Only on the Side of the Responding Hand". In: Poster at: 34rd European Conference on Visual Perception (2011).
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- [38] Amanda Tkaczyk et al. "Updating Temporal Representations". In: *Poster at: Vision Sciences Society, Naples, FL* (2011).
- [39] Britt Anderson and James Danckert. "A Deficit in Situational Updating: Playing 'rock, Paper, Scissors' With Parietal Patients". In: *Poster at: Society for Neuroscience, San Diego, CA* (2010).
- [40] Britt Anderson and Michael Druker. "Spatial Probability Aids Visual Target Discrimination". In: Poster at: 33rd European Conference on Visual Perception (2010).
- [41] Albulena Shaqiri and Britt Anderson. "Spatial Probability in Hemispatial Neglect". In: *Poster at: 33rd European Conference on Visual Perception* (2010).

5 Recent Presentations

- What Is Attention? Presenter and Co-organizer; International Workshop, Carnegie Mellon University, April 2017.
- Probability, Perception, & Attention Presentation Brain Mind Institute, EPFL, Lausanne Switzerland, July 2016.
- Attention: Idol of the Tribe Plenary Talk at "Cognition, Brain, and Computation" IIT Gandhinagar, India, December 2015.

- Attention: Idol of the Tribe Presentation Dirk Kerzel Laboratory, Université de Géneve, December 2015.
- An Overview of the Anatomy and Function of the Brain Presentation at the Third Age Learning Guelph "The Human Brain and all it's Dimensions" lecture series, Guelph, Canada, September 2015.
- Attention Alters AppearanceS Presentation at Workshop on Attention and Conscious Perception, York University, Toronto, Canada, May 2015.
- Attention: Probability, Precision, and Perception Presentation at the Nengo Summer School, Waterloo Canada, June 2014.
- Attention: Probability, Precision, and Perception Presentation to the Herzog Lab Group at EPFL, Lausanne, Switzerland, Feb 2014.
- **Deep and HyperAttention** A panel presentation at the Society for Literature, Science and the Arts, 25th Annual Meeting, Sept. 22 25, 2011.
- Attention: Seeing Through a Spotlight Darkly Invited lecture at Wilfred Laurier University Psychology Department Graduate Colloquium, Nov 22, 2010.
- A Bayesian Decision (BD) Process of Attention A platform talk at the Summer Workshop on Attention and Performance, June 18, 2009 McMaster University, Hamilton, Ontario, Canada.
- Statistical Modeling and Data Analysis for Neural Coding I co-chaired this invited paper meeting with Elie Bienenstock. The IPM took place in August 2009 in Durban, South Africa at the International Statistics Institute's Biannual Meeting.
- Neurophysiological Correlates of Temporal Attention in Monkey IT A presentation as part of: Temporally Selective Attention, a symposium of the Cognitive Neurosciene Society, 2008.

6 Teaching

- 6.1 Supervision
- 6.1.1 Undergraduate NSERC Research Award Supervision

Carolyn Guay Spring 2016

Sarah Gibbon Winter 2014

6.1.2 Undergraduate Honor's Theses

Caidence Paleske 2016 - ongoing

Effects of tDCS on Updating Sequence Learning

Ryan Yeung 2015-2016

Does Attention Alter Appearance: Including a Third Option

Yana Kuzma 2014-2015

PLINKO As A Measure of Updating Mental Models: An investigation into the order effect of surprise.

Tomas Szuchewycz 2013/14

Interaction of Visual and Auditory Cues on Orientation Estimates

Aaron Kim 2012/13

Probabilistic Influences on the Attentional Blink

Andry Struik 2012/13

Probabilistic Influences on Perceptual Experiences

Michelle Johnson 2012/13

Computational Models of Memory

Michaela Stinson 2012

Probability Cues and Visual Search

Amanda Tkaczyk 2012

The Efficacy of Sub-second Temporal Cues on a Continuous Spatial Orientation Task

Alan Angold 2011

Dual Route Reading Model Co-supervised with Derek Besner. Mr. Angold's Honours Thesis won a departmental thesis award.

Michael Druker 2009

Spatial Probability Cuing of Covert Visual Attention

Andrew Abela 2009

Biocoherence Analysis of Local Field Potential Signals From Monkey Inferior Temporal Cortex: An analysis of phase coupling.

6.1.3 Graduate Students Supervised

- Michael Druker MA Psychology (completed Feb 2012)
- Bryan Cort MA Psychology (completed August 2013)
- Alex Filipowicz MA Psychology, (co-supervised with James Danckert completed May 2013)
- Syaheed Jabar MA Psychology, completed August 2014
- Nazanin Sepahvand MA Candidate Psychology (completed Aug 2013)
- Albulena Shaqiri PhD Candidate, Psychology (completed Jan 2014)
- Christie Haskell PhD Candidate Psychology (completed May 2016)
- Alex Filipowicz PhD Candidate Psychology
- Syaheed Jabar PhD Candidate Psychology

6.1.4 Thesis Committees

- 1. PhD Committee Member
 - Wynn Legon (Kinesiology) -completed 2009
 - Serje Robidoux (Psychology) defended November, 2010
 - Marc Hurwitz (Psychology) defended December, 2010
 - Bruce Bobier (Systems Design Engineering) completed 2011
 - Shannon O'Malley (Psychology) completed 2011
 - \bullet Graydon Solmon (Psychology) completed 2012
 - Carla Arasanz (Kinesiology) defends Dec 2012
 - Kevin Barton (Psychology) completed Sept 2015
 - Deltcho Valtchanov (Psychology) completed 2013
 - Adam Palanica (Psychology) completed 2014
 - \bullet William Marshall (Statistics and Actuarial Sciences) completed 2014
 - Daniel Rasmussen (Computer Science) completed 2014
 - Jason Locklin (Psychology) completed Aug 2015
 - \bullet Tyler Bancroft (Psychology Wilfred Laurier Univ.) completed 2016
 - Omid Rezai (Systems Design Engineering) ongoing
 - Derick Valadao (Psychology) ongoing
- 2. Masters Thesis Reader

- Grayden Solmon (2009 Psychology UWaterloo)
- Kevin Barton (2009 Psychology UWaterloo)
- Daniel Rasmussen (2010 CTN UWaterloo)
- Jessie Langstaff (2011 Psychology UWaterloo)
- Adam Palanica (2011 Psychology UWaterloo)
- Iman Janemi (2011 Neuroscience U Western Ontario)
- Michelle Bale (2011 Neuroscience U Western Ontario)
- Sushant Malhotra (2013 Systems Design/Biology, UWaterloo)
- Brandon Ralph (2014 Psychology UWaterloo)
- Pierre Boucher (2014 Psychology UWaterloo)
- Omid Rezai (2015 Systems Design Engineering UWaterloo)
- Karissa Parkington (2016 Psychology UWaterloo)

6.1.5 Prior Supervision

During my service at the University of Alabama at Birmingham (1991-2000) I was a member of the doctoral thesis committees for: Stephen Donaldson (Computer Science) and Christopher Pierce (Psychology).

My medical faculty position required that I teach medical students during their clinical neurology rotation and that I supervise physicians training for the specialty of neurology (interns and residents). This was an ongoing part of my daily activities and responsibilities for the nine years I was at the University of Alabama at Birmingham.

6.2 Courses

6.2.1 Course Details

 ${\bf PSYCH~420/792~(orig~463)} \ \ {\bf Introduction~to~Methods~in~Computational~Neuroscience}$

I wrote my own textbook for this course, which strives to make computing and programming accessible to students without a technical background (which includes many psychology students). This course is taught as a mixture of seminar and learning by doing.

The course starts by reviewing some of the motivations and goals of computational neuroscience, and progresses through modules that expose students to the use of differential equations, probability, and linear algebra in modeling neural and cognitive phenomena. The only requirement for the exercises is the use of a spreadsheet program, though students are encouraged and supported in their efforts to try some of the exercises in a more traditional computing language (e.g. Python). Neural and cognitive topics include single neuron spiking (Integrate and Fire and Hodgkin-Huxley), and memory and decision making processes.

Winter 2009, Winter 2010, Fall 2010, Fall 2011, Winter 2012, Winter 2013, Winter 2014, Winter 2017

PSYCH 380 (orig 363) History of Psychology

This course reviews the major developments of modern psychology, through readings and discussions of historical materials. The course begins with a brief consideration of the major philosophical movements that informed the founding of an experimental philosophy devoted to consciousness, and then follows on with the developments of psychopyhysics, functionalism, behaviorism, and Gestaltism to see how we have ended up where we are today. I rely a great deal on readings from Archive.org and other online resources, such as the Virtual Laboratory which gives the students direct access to original texts and materials. We do some simple in-class experiments drawn from Titchner's manual, and we present on classic instruments. Students also produce videos for the course (some are here: youtube page). I am also in the very early stages of trying to generate an on-line textbook for this course. The goal is to allow the book to be "cloned" from github by other professors to be adapted or amended, while at the same time making a conventional printable book available in various formats. The "stub" version is here.

Fall 2008, Fall 2009, Fall 2011, Fall 2013, Fall 2014, Winter 2015, Winter 2017

PSYCH 784 Human Neuroanatomy, Neuropathology

This is a required course for the graduate students in the Cognitive Neuroscience graduate programs, and is a core course for those seeking the diploma in Theoretical Neuroscience (which includes mostly CompSci and Engr graduate students). The course meets weekly for three hours. At least one of the sessions take place at the Gross Anatomy lab and the remainder are lectures, many presented by the students on anatomy relevant for their research concentrations. Discussions of contemporary literature and new techniques are also important course components.

Fall 2008, Fall 2009, Fall 2010, Fall 2012, Fall 2014, Fall 2016

PSYCH 461 Phi: A novel approach to consciousness

This course used Guilio Tononi's "novel" Phi as the basis for a seminar class on the neuropsychological correlates of consciousness, issues in the philosophy of mind, and tools for scientific communication. The course involved weekly readings with discussion, one student led lecture per week, a final project, and an oral examination.

Winter 2015

Psych 392 Perception

I taught this course during another faculty member's sabbatical. As expected, it involves learning how environmental stimuli are transduced into

our subjective "sense impressions" and perceptual reports. My unique amending of the standard lecture format, was to develop a series of weekly tutorial sessions that gave students hands-on experience with a variety of short experiments and demonstrations, and that formed the basis for interactive discussions.

Winter 2012, Winter 2013

PSYCH 670 Special Topics

 Directed Readings on Psychological and Computational Aspects of Intelligence

This was a graduate seminar course (organized at student request) where each week we read and discussed two to three papers on an aspect of intelligence. The series of papers spanned the range from studies of the anatomical correlates of g to swarm intelligence to a computational analysis of the Raven's matrices.

Winter 2009,

• Explorations in Neural Modeling

Again a response to a student request, this course explored through hands on study three neural modeling methods/software implementations: Neuron (used for modeling individual neurons and channels in excruciating detail). Emergent (which is the current implementation of PDP++, and gives a view of traditional neural network approaches), and ACT-R (which implements a production rule system for modeling rational cognitive systems in a traditional AI approach). The organization of the course uses a team centered approach in

The organization of the course uses a team centered approach in which the students themselves guide the learning process. For each module one student team takes the lead by introducing the model and computer software, leading in class exercises and providing a challenge problem to be worked on outside of class.

Winter 2012

• Data Visualization with R

Responding to the curiousity of a core of Psychology graduate students, I organized a course to introduce R and RStudio as the basis for a weekly lecture and tutorial for using different graphical techniques from the R language. In addition to standard plot and ggplot2 libraries we looked at tools for time series plotting, geographical data, and circular plotting tools. Additional discussion was devoted to developing guidelines for effective graphical presentations, which were used in a "poster" competition that concluded the course.

Winter 2014

PSYCH 677a Fundamentals of Cognitive Neuroscience

This is a required course for all our graduate students. It involves a weekly seminar where particular research methods are demonstrated, lectured on, and discussed. The course mix varies from year to year, but typically includes sections on eye movement measurement and analysis, VR environments, EEG/ERP, and fMRI.

Fall 2015

6.2.2 Miscellaneous

Clinical Skills Training Neurological Examination Techniques I had the opportunity in November 2009 to oversee four weekly three hour sessions of clinical skills training for the medical students at McMaster Medical School's Waterloo campus.

Fall 2009, Fall 2010, Fall 2011

6.2.3 Guest Lectures

From time to time, I lecture in other courses. In the last year I have lectured to Fundamentals of Behavioral Neuroscience PSYCH 677 and Graduate Seminar in Cognitive Science COGSCI 600.

7 Medical

Before I went back to school for my PhD, I taught neurology to medical students. Some of that teaching is documented here:

7.1 Medical: Teaching

- 2009-2012 Clinical Skills Training in Neurological Examination. McMaster Medical School, Kitchner, Ontario. Comment: This is a series of four three hour sessions devoted to teaching neurological examination skills to second year medical students. I have done this each of the last four years.
- 1991-2000 Ongoing practical lectures, conferences, and clinical supervision. Neurology Residency Training Program, University Alabama School of Medicine, UAB, Birmingham, AL. Comment: I was one of the neurology faculty for our residency training program, I was twice honored by the residents as the best teaching faculty.
- 1991-2000 Annual lectures on dementia, aphasia, or clinical pathological conferences for Year 1 medical students, University of Alabama Medical School, UAB, Birmingham, AL.
- 1991-2000 Miscellaneous lectures on Alzheimer's Disease diagnosis and treatment,

Various continuing medical education programs.

1994-1997 Overview of Neurology. Lecture for American

College of Physicians Internal Medicine Board Review Courses, Birmingham, AL.

- 1988-1991 Neurology lectures for internal medicine residents, Keesler Technical Training Center, Keesler Air Force Base, MS. Comment: Intermittent formal lectures on neurology topics for the Internal Medicine Residency Training Program where I was an affiliated faculty.
- 1987 Overview of Neuroanatomy, Semester long course for Physical and Occupational Therapy Students, Texas Women's University, Dallas Texas. Comment: This was a standard weekly lecture course. I was responsible for lecture preparation, delivery, and all quiz/tests.

7.2 Medical: Honors

- $\bf 1997~\&~1999~Best$ Teaching Faculty, Department of Neurology, UAB, Birmingham, AL
- 1995, 1996 Best Lecturer, Neurology-American College of Physicians Internal Medicine Board Review Courses Comment: National award based on class ratings of all neurology lecturers for the ACP Board ReviewCourses for the calendar year.

7.3 Medical: Committee

During my service at UAB (1991-2000) I was on several administrative committees including: Pharmacy and Therapeutics (VA), Research (Neurology Dept.), Executive (Neurology Dept.), Animal Care and Use (VA) as well as dissertation committees: Stephen Donaldson (Computer Science), Christopher Pierce (Psychology).

7.4 Medical: Memberships

- Licensed for practice in Rhode Island, USA
- Board Certified, General Neurology, American Board of Psychiatry and Neurology
- Member, American Neurological Association

8 Ad Hoc Reviewing

8.1 Journals

8.1.1 Associate Editor

Perception Science (Frontiers in Neuroscience & Frontiers in Psychology)

8.1.2 Ad Hoc Reviews

Neurology, Archives of Neurology, Annals of Neurology, Brain, Brain & Cognition, Neurocase, Neuropsychologia, Journal of the American Geriatrics Society, Human Heredity, NeuroImage, Intelligence, Journal of Cognitive Neuroscience, Experimental Brain Research, Neuropsychology, Journal of Clinical and Experimental Neuropsychology, Journal of Vision, Vision Research, Frontiers in Human Neuroscience, Perception/iPerception,Psychonomic Bulletin & Review,Attention Perception & Psychophysics, Canadian Journal of Psychology, Scientia Iranica, PeerJ, Brain & Language, Cerebral Cortex.

8.2 Textbooks

Wiley-Blackwell, SAGE, Oxford, Routledge.

8.3 Grants

2016 Latvia Grants for the EU Structural and Cohesion Fund 2014-2020 (Ad hoc review two grants)

2016 CIHR New Investigator Salary Awards

2015 Israeli National Science Foundation (Ad hoc review of individual psychology grant)

2014 STRATEGMED (Strategic Program) National Center for Research and Development, Poland

2012,2013 CIHR Post-Doctoral Fellowship Program

2009,2010,2011,2012 Ad hoc review NSERC Discovery Program

2008 http://www.bbsrc.ac.uk/BBSRC of the United Kingdom