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Faculty of Medicine, Health and Human Sciences
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MACQUARIE University

ACADEMIC APPOINTMENTS

ASSOCIATE PROFESSOR (LEVEL D) — JAN 2020 - CURRENT
HEAD OF NEUROSCIENCE EDUCATION — JAN 2025 - CURRENT
School of Psychological Sciences, Macquarie University
Associate Investigator, Macquarie University Minds and Intelligences Research Centre — July 2025 - Current
Associate Investigator, Macquarie University Performance and Expertise Research Centre — July 2023 - Current
Centre for Language Sciences (CLaS) — May 2023 - Current
Associate Investigator, Perception in Action Research Centre (PARC) — Feb 2014 - July 2023
Associate Investigator, Centre for Elite Performance, Expertise, and Training (CEPET) — March 2019 - June 2023
Associate Investigator, ARC Centre of Excellence in Cognition and its Disorders (CCD) — Feb 2014 - Dec 2018

Senior Lecturer (Level C) — Feb 2016 - Dec 2019
Macquarie University
Department of Cognitive Science

Lecturer (Level B) — Feb 2014 - Jan 2016
Macquarie University
Department of Cognitive Science

Lecturer (Level B) — July 2013 - Jan 2014
Monash University
Department of Philosophy
School of Philosophical, Historical and International Studies

Postdoctoral Research Associate — September 2009 - May 2013
Washington University School of Medicine in St. Louis
Laboratory of Dr. Lawrence Snyder, M.D., Ph.D.
Department of Neuroscience

James S. McDonnell Postdoctoral Research Fellow — Aug 2007 - Aug 2009
Washington University in St. Louis
Philosophy-Neuroscience-Psychology Program

EDUCATION

Ph.D., 2007, Philosophy and Cognitive Neuroscience, Duke University.
B.A., 1997, Philosophy, University of California at San Diego.

AREAS OF SPECIALISATION

Motor Neuroscience, Systems Neuroscience, Philosophy of Neuroscience, Philosophy of Cognitive Science, General Philosophy of Science

PUBLICATIONS

JOURNAL ARTICLES

1. Higgins, W.C., Gillett, A.J., **Kaplan, D.M.**, Sutton, J., & Ross, R.M. (2026): Rethinking psychological measurement: Validity potential versus realised validity. *Studies in History and Philosophy of Science 116, 102123*. Special issue: Measuring the human. https://doi.org/10.1016/j.shpsa.2026.102123
2. Kaplan, D.M. (2025): Repurposing model organisms in neuroscience: What is the purpose?. *Biology & Philosophy* 40:27 https://doi.org/10.1007/s10539-025-09999-9
3. Crossley, M.J., Hewitson, C.L., & **Kaplan, D.M.** (2025): Context sensitivity versus aiming in motor learning under uncertainty when both feedforward and feedback control processes are engaged. *Journal of Motor Behavior* 12:1-9. doi: 10.1080/00222895.2025.2546692

4. Differential impact of sensory uncertainty in blocked versus trial-interleaved contexts when feedforward and feedback processes co-occur. (2025). Crossley, M.J., Hewitson, C.L., & **Kaplan, D.M.** *Human Movement Science*.
5. Alhasan, A., Karin,E., Caruana, N., Cross, E.S., **Kaplan, D.M**., & Richardson, M.J. (2025). Kinematics in context: Predicting other's action intentions entails the perception of affordances. *Cognition* 260:106122. https://doi.org/10.1016/j.cognition.2025.106122
6. **Kaplan, D.M.** (2025): Uncertainty about the impact of sensory uncertainty? Comment on Duffy et al. *Cortex* 185:1-3. doi: 10.1016/j.cortex.2025.01.008.
7. Higgins, W.C., **Kaplan, D.M.**, Deschrijver. E., & Ross, R.M. (2024): Why most research based on the Reading the Mind in the Eyes Test is unsubstantiated and uninterpretable: A response to Murphy and Hall. *Clinical Psychology Review* 115. https://doi.org/10.1016/j.cpr.2024.102530.
8. **Kaplan, DM.** (2024): Letter to the editor (Yanik et al. 2024). *Journal of Robotic Surgery* 18(1):302. DOI: 10.1007/s11701-024-02065-8
9. Hewitson, C.L., Crossley, M.J., Cartmill, J. & **Kaplan, D.M.** (2024): Sensorimotor challenges in minimally invasive surgery: A theoretically-oriented review. *Human Factors*. https://doi.org/10.1177/00187208241263684
10. Higgins, W.C., Gillett, A.J., **Kaplan, D.M.**, & Ross, R.M. (2024): Proxy failure and poor measurement practices in psychological science. *Behavioral and Brain Sciences* 47:e75. doi:10.1017/S0140525X2300287X
11. Higgins, W.C., **Kaplan, D.M.**, Deschrijver. E., & Ross, R.M. (2023) Construct validity reporting practices and the Reading the Mind in the Eyes Test: A systematic scoping review. *Clinical Psychology Review* 108:102378
12. Caruana, N., Nalepka, P., Perez, G., Inkley, C., Munro, C., Rapaport, H., Brett, S., **Kaplan, D.M.,** Richardson, M., & Pellicano, L. (2023): Autistic young people adaptively use gaze to facilitate joint attention during multigestural dyadic interactions. *Autism*:1565-1581. doi: 10.1177/13623613231211967.
13. Hewitson, C.L., **Kaplan, D.M.**, & Crossley, M.J. (2023): Error-independent effect of sensory uncertainty on motor learning when both feedforward and feedback control processes are engaged. *PLoS Computational Biology* 19(9):e1010526. doi: 10.1371/journal.pcbi.1010526
14. Higgins, W.C., Ross, R.M., Polito, V., & **Kaplan, D.M.** (2023): Three threats to the validity of the Reading the Mind in the Eyes test: A commentary on Pavlova and Sokolov. *Neuroscience and Biobehavioral Reviews* 147:105088. https://doi.org/10.1016/j.neubiorev.2023.105088
15. Gillett, A.J., Hewitson, C.L., Whyte, C., & **Kaplan, D.M**. (2022): Defending the use of the mutual manipulability criterion in the extended cognition debate. *Frontiers in Psychology: Theoretical and Philosophical Psychology*. Nov 18;13:1043747. doi: 10.3389/fpsyg.2022.1043747.
16. Kosourikhina, V., Kavanagh, D., Richardson, M., & **Kaplan, D.M.** (2022): Validation of deep learning-based markerless 3D pose estimation. *PLoS One*. e0276258. DOI: 10.1371/journal.pone.0276258
17. Gilmore, A., Cartmill, J., & **Kaplan, D.M.** (2022): Put your finger on it: The role of explicit cognitive strategy use in laparoscopic surgery. *Annals of Surgery*. (July 6, 2022). doi: 10.1097/SLA.0000000000005534
18. Nalepka, P., Caruana, N. **Kaplan, D.M**., Kallen, R.W., Pellicano, E., & Richardson, M.J. (2022): Neurodiverse Human-Machine Interaction and Collaborative Problem-Solving in Social VR. HAI '22: Proceedings of the 10th International Conference on Human-Agent Interaction, 293 - 295. https://doi.org/10.1145/3527188.3563933
19. Caruana, N., Inkley, C., Nalepka, P., **Kaplan, D.M.**, & Richardson, M.J. (2021): Gaze facilitates responsivity during hand coordinated joint attention. *Scientific Reports* 11, 21037. https://doi.org/10.1038/s41598-021-00476-3
20. Hewitson, C.L., Shukur, S.T., Cartmill, J., Crossley, M.J., & **Kaplan, D.M.** (2021) Camera realignment imposes a cost on laparoscopic performance. *Scientific Reports* 11, 17634. https://doi.org/10.1038/s41598-021-96965-6
21. Ramsey, R., **Kaplan, D.M**., & Cross, E.S. (2021). Watch and learn: The cognitive neuroscience of learning from others' actions. *Trends in the Neurosciences* 44(6): 478-491. https://doi.org/10.1016/j.tins.2021.01.007
22. Crossley, M.J., Hewitson, C.L., Cartmill, J., & **Kaplan, D.M.** (2021). Motor adaptation: An underappreciated aspect of technical surgical skill. *ANZ Journal of Surgery* 91(4): 489-490. doi: 10.1111/ans.16396
23. Hewitson, C.L., Crossley, M.J., & **Kaplan, D.M.** (2020): Enhanced visuomotor learning and generalization in expert surgeons. *Human Movement Science V*olume 71, June 2020, 102621. https://doi.org/10.1016/j.humov.2020.102621
24. Wehrman, J.J., **Kaplan, D.M.**, & Sowman, P.F. (2020): Local context effects in the magnitude-duration illusion: Size but not numerical value sequentially alters perceived duration. *Acta Psychologica*. Volume 204. https://doi.org/10.1016/j.actpsy.2020.103016
25. Caruana, N., Alhasan, A., Wagner, K., **Kaplan, D.M.**, Woolgar, A. & McArthur, G. (2020): The effect of non-communicative eye movements on joint attention. *Quarterly Journal of Experimental Psychology*. https://doi.org/10.1177/1747021820945604
26. Ritchie, J.B., **Kaplan, D.M.**, & Klein, C. (2019): Decoding the brain: Neural representation and the limits of multivariate pattern analysis in cognitive neuroscience. *British Journal for the Philosophy of Science* 00 :1-27. https://doi.org/10.1093/bjps/axx023
27. Hewitson, C. L., Sowman, P. F. & **Kaplan, D.M.** (2018): Interlimb generalization of learned bayesian visuomotor prior occurs in extrinsic coordinates. *eNeuro* 5(4):1-12 . e0183-18.2018. doi:10.1523/ENEURO.0183-18.2018
28. Hewitson, C., **Kaplan, D.M.**, & Sutton, J. (2018): Yesterday the earwig, today man, tomorrow the earwig? *Comparative Cognition & Behavior Reviews* 13:25-30. DOI: 10.3819/CCBR.2018.130003
29. Craver, C.F. & **Kaplan, D.M.** (2018/2020): Are more details better? On the norms of completeness for mechanistic explanations. *British Journal for the Philosophy of Science* 71(1):287–319. https://doi.org/10.1093/bjps/axy015
30. Carlson, T., Goddard, E., **Kaplan, D.M.**, & Klein, C. (2017): Ghosts in machine learning for cognitive neuroscience: moving

from data to theory. *Neuroimage.*180 (Part A):88-100. https://doi.org/10.1016/j.neuroimage.2017.08.019
31. de Wit, B., Badcock, N.A., Grootswagers, T., Hardwick, K., Teichmann, L., Wehrman, J., Williams, M., & **Kaplan, D.M**. (2017): Neurogaming technology meets neuroscience education: A cost-effective, scalable, and highly portable undergraduate teaching laboratory for neuroscience. *Journal of Undergraduate Neuroscience Education* 15(2).
32. Pritchard, S.C., Zopf, R., Polito, V., **Kaplan, D.M.,** & Williams, M. (2016): Non-hierarchical influence of visual form, touch and position cues on embodiment, agency and presence in virtual reality. *Frontiers in Psychology: Consciousness Research*. 25 October 2016 | http://dx.doi.org/10.3389/fpsyg.2016.01649
33. **Kaplan, D.M.** & Craver, C.F. (2016): A registration problem for functional fingerprinting. *Behavioral and Brain Sciences* 39:15-16. DOI: http://dx.doi.org/10.1017/S0140525X15000631
34. **Kaplan, D.M.** (2015): Moving Parts: The Natural Alliance Between Dynamical and Mechanistic Modeling Approaches. *Biology and Philosophy* 30(6):757-786. DOI: 10.1007/s10539-015-9499-6
35. Patel, G.H., **Kaplan, D.M.**, & Snyder, L.H. (2014): Topographic Organization in the Brain: Searching for General Principles. *Trends in Cognitive Sciences*. DOI: http://dx.doi.org/10.1016/j.tics.2014.03.008
36. **Kaplan, D.M.** (2013): The Complex Interplay Between Three-Dimensional Egocentric and Allocentric Spatial Representation. *Behavioral and Brain Sciences* 36(5): 553-554. DOI:10.1017/S0140525X13000423
37. **Kaplan, D.M.** & Snyder, L.H. (2012): The Need for Speed: Eye-Position Signal Dynamics in the Parietal Cortex. *Neuron* 76:1048-1051. DOI: 10.1016/j.neuron.2012.12.005
38. Kubanek, J. & **Kaplan, D.M.** (2012): Evidence for a Decision Variable in the Human Motor System. *The Journal of Neuroscience* 32(24):8110-8111. DOI: 10.1523/JNEUROSCI.1813-12.2012
39. **Kaplan, D.M.** (2012): How to Demarcate the Boundaries of Cognition. *Biology and Philosophy* 27(4): 545-570. DOI: 10.1007/s10539-012-9308-4
40. **Kaplan, D.M.** (2011): Explanation and Description in Computational Neuroscience. *Synthese* 183(3):339-373. DOI: 10.1007/s11229-011-9970-0
41. **Kaplan, D.M.** & Craver, C.F. (2011): The Explanatory Force of Dynamical and Mathematical Models in Neuroscience: A Mechanistic Perspective. *Philosophy of Science* 78(4):601-627. DOI: 10.1086/661755
42. **Kaplan, D.M.** & Bechtel, B. (2011): Dynamical Models: An Alternative or Complement to Mechanistic Explanations?. *Topics in Cognitive Science* 3:438–444. DOI: 10.1111/j.1756-8765.2011.01147.x
43. Goren, G., **Kaplan, D.M.**, Little, D.Y., Lankow, B., Sherwin, J., Suter, B., & Thaler, L. (2011): Towards an Integrated Framework for Perception and Action. *Frontiers in Systems Neuroscience* 5;20. DOI: 10.3389/fnsys.2011.00020 (*all authors made equal contributions)
44. Rosenberg, A. & **Kaplan, D.M.** (2005): How to Reconcile Physicalism with Antireductionism about Biology. *Philosophy of Science* 72:43–68. DOI: 10.1086/428389

BOOK CHAPTERS

45. Kaplan, D.M. (2026/27): Memory and Skill. In A. Sant'Anna & C.F. Craver (Eds.) *The Oxford Handbook of Philosophy of Memory*. Oxford, UK: Oxford University Press.
46. **Kaplan, D.M.** & Hewitson, C.L. (2020): Modelling Bayesian Computation in the Brain: Unification, Explanation, and Constraints. In M. Viola (Ed.) *New Challenges in Philosophy of Neuroscience*. Studies in Brain and Mind (Palgrave Macmillan).
47. **Kaplan, D.M.** (2017): Integrating Mind and Brain Science: A Field Guide. In D.M. Kaplan (Ed.) *Explanation and Integration in Mind and Brain Science*. Oxford, UK: Oxford University Press.
48. **Kaplan, D.M.** (2017): Neural computation, multiple realizability, and the prospects for mechanistic explanation. In Kaplan (Ed.) *Explanation and Integration in Mind and Brain Science*. Oxford, UK: Oxford University Press.
49. **Kaplan, D.M.** (2017): A bridge too far? Inference and extrapolation from model organisms in neuroscience. In J. Beck & K. Andrews (Eds.) *Routledge Handbook of Philosophy of Animal Minds.* Routledge. 448-458.
50. **Kaplan, D.M.** (2017): Mechanisms and dynamical systems. In S. Glennan & P. Illari (Eds.) *Routledge Handbook of Philosophy of Mechanisms.* Routledge. 267-280.
51. **Kaplan, D.M.** (2015): Explanation and Levels in Cognitive Neuroscience. In J. Clausen & N. Levy (Eds.) *Handbook of Neuroethics.* Springer. 9-29. DOI: 10.1007/978-94-007-4707-4_4
52. Craver, C.F. & **Kaplan, D.M.** (2011): Towards a Mechanistic Philosophy of Neuroscience. In (Eds.) S. French & J. Saatsi. *Continuum Companion to the Philosophy of Science.* London, UK: Continuum Press. 268-292.

BOOKS

53. **Kaplan, D.M.** (ed.) (2017): *Explanation and Integration in Mind and Brain Science.* Oxford, UK: Oxford University Press (Contributors: K. Aizawa, W. Bechtel, C. Craver, R. Cummins, F. Egan, D.M. Kaplan, D. Murphy, G. Piccinini, O. Shagrir, M. Strevens, D. Weiskopf, and J. Woodward).

BOOK REVIEWS AND ONLINE COMMENTARIES

54. **Kaplan, D.M.**, Sowman, P.F., Abel, L., Arbige, S., Bernard-Chandler, C., Chen, C., Chard, T., Higgins, W.C., Jones, S., Murray, L., Robinson, M., & Taylor, B. (2020): Review of *The Seven Deadly Sins of Psychology: A Manifesto for Reforming the Culture of Scientific Practice*. *Philosophical Psychology*. DOI: 10.1080/09515089.2020.1837360

55. **Kaplan, D.M.** (2014): Can Neuronal Reference Frames Really Explain Features of Conscious Visual Experience?, Commentary on Wayne Wu, "Against division: Consciousness, information, and the visual streams". Online *Mind and Language* Symposium at the *Brains Blog*. 8 September 2014. http://philosophyofbrains.com/2014/09/08/symposium-on-wayne-wu-against-division-consciousness-information-and-the-visual-streams-mind-language-29-4-383-406.aspx
56. **Kaplan, D.M.** (2012): Review of *Perception and Cognition: Essays in the Philosophy of Psychology*. *Philosophical Psychology* 25(3):463-468.
57. **Kaplan, D.M.** (2008): Review of *Cognition and Brain: The Philosophy and Neuroscience Movement*. *Philosophical Psychology* 21(5): 707-712.

TALKS AND PRESENTATIONS

1. How should we understand neural population dynamics in the motor cortex? Workshop on Dynamic Computation and Explanation. Wu Tsai Neurosciences Institute, Stanford University, CA. March 5-6 2026.
2. Memory masking versus overwriting in procedural category learning. Australasian Cognitive Neuroscience Society. M.J. Crossley, J. Mair, K.C. Rail, & **D.M. Kaplan**. Monash University/Deakin University. 27 November 2025.
3. Noise as signal in neuroscience. Australasian Society for Psychology and Philosophy. Monash University. November 25 2025.
4. Investigating the impact of visuomotor misalignments on operator performance in robotic-assisted minimal access surgery. Performance and Expertise Research Centre Conference 2025. Macquarie University. 11 November 2025.
5. When noise is the signal in biology. Information in Silicon and Neurons Workshop. Macquarie University. 5 November 2025.
6. What drives model organism selection? Accelerating Research Collaboration on Artificial and Natural Intelligences (ARCANI) Workshop, Macquarie University. 28 March 2024.
7. The role of behaviour in understanding neural computation and representation. Australasian Society for Psychology and Philosophy. Australian National University. 8 Dec 2023.
8. Uncertain about uncertainty in models of sensorimotor learning. Crossley, M.J., Hewitson, C.L., & **Kaplan, D.M.** Australasian Cognitive Neuroscience Society, University of Sydney. 30 Nov 2023.
9. The role of behaviour in understanding neural computation and representation. Sino-Australian Philosophy of Life Sciences Network Workshop. Manly, Australia. 23 Nov 2023.
10. Sensorimotor learning in variable and uncertain environments. ETH Zurich. 20 Sept 2023.
11. The role of behaviour in understanding neural computation and representation. Foundations of Computation Workshop. Australian National University. 21 July 2023.
12. Effects of error size on sensorimotor learning under uncertainty. Hewitson, C.L., **Kaplan, D.M.**, & Crossley, M.J. Society for Neuroscience Annual Meeting. San Diego, CA, USA. 15 Nov 2022. [Poster]
13. The effects of sensory uncertainty on motor learning when both feedforward and feedback control processes are engaged. MARCS Conference Series: Cognitive Neuroscience. MARCS Institute for Brain, Behaviour & Development, Western Sydney University. 7 Oct 2022.
14. Sensorimotor challenges in minimal access surgery: Initial findings and future directions. Factors Influencing Performance and Training in Minimal Access Surgery Workshop. CEPET/Macquarie Medical School, Macquarie University/MUH. 5 Sept 2022.
15. Noise as signal in neuroscience. Macquarie Philosophy Seminar. Department of Philosophy, Macquarie University. 21 Oct 2021.
16. Sensorimotor learning in minimally invasive surgeons. CEPET Annual Workshop. Medical Expertise Training and Sustaining Performance in Health and Medicine. Centre for Elite Performance, Expertise, and Training. Macquarie University. 20 Oct 2020.
17. Partitioning Feedforward from Feedback Components of Bayesian Sensorimotor Learning. Hewitson, C.L., Crossley, M.J., & **Kaplan, D.M.** CNS2020 Virtual Meeting. Cognitive Neuroscience Society. 5 May 2020.
18. Partitioning Feedforward from Feedback Components of Bayesian Sensorimotor Learning. Hewitson, C.L., Crossley, M.J., & **Kaplan, D.M**. Neuroscience 2019. Society for Neuroscience Annual Meeting. Chicago, IL, USA. 23 Oct 2019. [Poster]
19. Sensorimotor learning in complex environments. Centre for Elite Performance, Expertise, and Training Colloquium. Macquarie University. 21 May 2019.
20. Interlimb generalization of learned bayesian prior occurs in extrinsic coordinates. Hewitson, C.L., Sowman, P.F., & **Kaplan, D.M.** Neuroscience 2018. Society for Neuroscience Annual Meeting. San Diego, CA, USA. 5 Nov 2018. [Poster]
21. Exploring the limits of Bayesian integration in visuomotor learning. Hewitson, C.L. and Kaplan, D.M. CCD Annual Workshop, Bowral, 23-26 October 2018. [Poster]
22. Modelling Bayesian Computation in the Brain: Unification, Explanation, and Constraints. Neural Mechanisms Online Conference. 6 July 2018. https://neuralmechanismsonline.wordpress.com/about/
23. Neural encoding and decoding. CCD Work Experience Student Workshop. CCD, Macquarie University. 31 May 2018.
24. Modelling Bayesian Computation in the Brain: Explanation, Unification, and Constraints. Causation and Computation in Neuroscience Symposium. German-Israeli Foundation for Scientific Research and Development. Hebrew University, Jerusalem. 17 Dec 2017. https://philosophy-cognitive-science.com/index.html/symposium/index.html
25. Bayesian Modelling, Unification, and Constraints. Predictive Engines: Andy Clark and Predictive Processing Workshop, Macquarie University. 11 Dec 2017.

26. Why teaching is good: Terms and conditions apply. CCD Early Career Researcher Workshop, Macquarie University. 14 November 2017.
27. Learning about sensorimotor learning. Department of Cognitive Science Research Showcase. Macquarie University. 27 July 2017.
28. Interlimb generalization of Bayesian sensorimotor learning occurs in extrinsic coordinates. C.L. Hewitson, C.L., Sowman, P.F., & **Kaplan, D.M**. 6th Australasian Cognitive Neuroscience Society Conference, Shoal Bay, NSW, Australia. November 2016. [Poster]
29. "Explaining brains? A challenge for mechanistic integration in neuroscience", Mechanistic Integration and Unification in Cognitive Science Workshop, Polish Academy of Sciences, Warsaw, Poland. 25 June 2016. [Keynote Lecture] Invited.
30. "Neural computation and the structure of modelling tradeoffs in cognitive neuroscience", International Association for Computing And Philosophy Conference 2016, University of Ferrara, Italy, Symposium on Computation and Representation in Cognitive Neuroscience. 14 June 2016. Invited.
31. "Timescales in neuroscience: Some reflections", Problems of Scale Workshop, University of Wollongong, NSW, Australia. 10-11 March 2016. Invited.
32. "Career Pathways for Early Career Researchers and Students", CCD Annual Workshop, Special ECR/Student Session, Macquarie University, NSW, Australia. 19 Nov 2015. Invited.
33. "Using consumer-grade virtual reality to investigate body ownership and agency". CCD Annual Workshop, Macquarie University, NSW, Australia. (w/ Steven Pritchard, Regine Zopf, Vince Polito, & Mark Williams) 19 Nov 2015. [Poster]
34. "Neural Computation and the Structure of Tradeoffs in Mechanistic Model Building", Department of Philosophy, University of Adelaide, SA, Australia. 4 Sept 2015. Invited.
35. "Dynamical-Mechanistic Explanation: Rebutting the Challenges from Nonlinearity and Emergence", Australasian Association of Philosophy, Macquarie University, NSW, Australia. 8 July 2015.
36. "Mechanistic Explanation in Computational Neuroscience: The Challenge from Canonical Neural Computation", Australasian Society for Cognitive Science, Monash University, Melbourne, VIC, Australia. 10 Dec 2014.
37. "Neural Noise and the Data/Phenomena Distinction", Unit for the History and Philosophy of Science, University of Sydney, NSW, Australia. 13 Oct 2014. Invited.
38. "Can Neuronal Reference Frames Really Explain Features of Conscious Visual Experience?", Online Mind and Language Symposium at Brains blog on Wayne Wu, "Against division: Consciousness, information, and the visual streams". 8 September 2014. http://philosophyofbrains.com/2014/09/08/symposium-on-wayne-wu-against-division-consciousness-information-and-the-visual-streams-mind-language-29-4-383-406.aspx
39. "Sensorimotor Transformations in the Parietal Cortex: Knowns and Unknowns", CCD Annual Conference, Macquarie University, NSW, Australia. 21 Aug 2014. Invited.
40. "Planning to Move? Sensorimotor Integration and Planning in the Brain", Cognitive Science Research Fiesta, Department of Cognitive Science, Macquarie University, NSW, Australia. 23 May 2014.
41. "Re-Envisioning the Debate over Extended Cognition", Cognition in Context (CiC) 2014 Seminar Series. Workshop with Professor Fred Adams (University of Delaware); Dr. Karola Stotz (Macquarie University). Department of Cognitive Science, Macquarie University, NSW, Australia. 7 April 2014. Invited.
42. "Signals and Noise in Neuroscience", Experimentation in Neuroscience Conference, Center for Philosophy of Science, University of Pittsburgh, Pittsburgh, PA, USA. 22 Nov 2013. Invited.
43. "Explaining the Mind and Brain", Department of Philosophy, Macquarie University, NSW, Australia. 18 March 2013. Invited.
44. "Explanation, Embodiment, and Neural Representation". Department of Philosophy/ARC Center for Excellence in Cognition and Its Disorders, Macquarie University, NSW, Australia. 28 April 2011. Invited.
45. "Walking the Walk: An Interim Report on Cross-Disciplinary Collaboration in Cognitive Neuroscience", with Larry Snyder, Joint PNP/Med School Seminar, Washington University School of Medicine, St. Louis, MO, USA. 10 November 2010. Invited.
46. "Decomposition, Description, and Explanation in Visual Neuroscience", APA Pacific Division Meeting, San Francisco, CA, USA. 30 March 2010.
47. "Mechanism, Computation, and Explanation in Cognitive Neuroscience", International Society for History, Philosophy, and Social Science of Biology. University of Queensland, Brisbane, Australia. July 2009.
48. "On Deciding the Boundaries of Cognition and Perception", Metaphysics of Science Conference, University of Melbourne, Melbourne, Australia. July 2009.
49. "Reframing the Debate Over Embodied Perception", Society for Philosophy and Psychology, University of Indiana, Bloomington, Indiana, USA. June 2009.
50. "On the Proper Treatment of the Connection between Spatial Perception and Motor Behavior", Philosophy-Neuroscience-Psychology Program, Washington University in St. Louis, USA. 24 April 2008. Invited.
51. "Sensorimotor Dependence and Behavioral Space", Association for the Scientific Study of Consciousness, Oxford University, UK. June 2006. [Poster]
52. "The Relevance of Motor Neuroscience to Cognition", International Society for History, Philosophy, and Social Science of Biology, Perspectives on Cognition Session. University of Guelph, Canada. July 2005.
53. "Natural Scene Statistics, Vision, and Environmental Variability", Introduction and commentary for Dr. Dale Purves, Center for Cognitive Neuroscience, Duke University. Fourth Annual Conference on Recent Work in Biology and Philosophy: Evolution of Cognition: Niche Construction, Culture, and Environmental Complexity. Duke University, USA. April 2005.

54. “The Commitments of Computational Neuroscience”, International Society for the History, Philosophy, and Social Science of Biology; History and Philosophy of Neuroscience Session. University of Vienna, Austria. July 2003.

MEDIA/OUTREACH

1. Neuroscience philosopher: A profile of David Kaplan, PhD. Washington University School of Medicine in St. Louis Department of Neuroscience Newsletter. 15 November 2021. https://neuroscience.wustl.edu/profile-of-david-kaplan-phd/
2. Our people profile. The Pulse, MQ Health, Macquarie University. 31 July 2020. https://macquni.e-newsletter.com.au/pub/pubType/EO/pubID/zzzz5f06a77d80e79601/?aid=58b6085cdfc35a20&#58b6085cdfc35a20
3. “In good hands: a closer look at motor learning in keyhole surgery”, Radio Interview, RTR FM 92.1 (Perth, WA, Australia). 11 June 2020. https://rtrfm.com.au/story/in-good-hands-keyhole-surgery-research/
4. “Macquarie University researchers show that keyhole surgeons have more than just good hands — they have highly adaptable hands”. Macquarie University Newsroom. 4 June 2020. https://www.mq.edu.au/newsroom/2020/06/04/macquarie-university-researchers-show-that-keyhole-surgeons-have-more-than-just-good-hands-they-have-highly-adaptable-hands/ (with Matthew Crossley)
5. “Macquarie University researchers show that keyhole surgeons have more than just good hands — they have highly adaptable hands”. 2 June 2020. https://medicalxpress.com/news/2020-06-keyhole-surgeons-good-handsthey-highly.html
6. “Macquarie University researchers show that keyhole surgeons have more than just good hands — they have highly adaptable hands”. 4 June 2020. https://www.nationaltribune.com.au/researchers-show-that-keyhole-surgeons-have-more-than-just-good-hands-they-have-highly-adaptable-hands/
7. “Not good at multi-tasking? There’s hope for you yet.” *Macquarie University: This Week*. 6 September 2019. https://www.mq.edu.au/thisweek/2019/09/06/multi-tasking/ (with Matthew Crossley)
8. “Will there ever be a supercomputer that can think like HAL?”, *Macquarie University: The Lighthouse*. Published: 20 December 2019. https://lighthouse.mq.edu.au/article/please-explain/november/will-there-ever-be-a-supercomputer-that-can-think-like-hal (with Matthew Crossley)
9. “What is an Explanation?” Unsupervised Thinking Podcast (focus of the episode was Kaplan “Explanation and description in computational neuroscience”). http://unsupervisedthinkingpodcast.blogspot.com/2018/08/episode-36-what-is-explanation-part-1.html

GRANTS

1. Minds and Intelligences: A Diverse Intelligences Hub. Templeton World Charity Foundation, Inc. Barron, A., Downey, G. Menary, R., Moser, R., & **D.M. Kaplan**. **(A$1,209,456.60)**
2. Macquarie University Strategic Research Initiative (MQSRI) Scheme. 2025. Promoting Neuroplasticity through Exercise: The Role of Exercise Intensity and Duration on Motor Skill Learning. Wills, J., Kaplan, D.M., Poh, E., Crossley, M.J., & Doyle, T. **(65,283.82)**
3. Macquarie University Performance and Expertise Research Centre Seeding Grant, 2025. Infrastructure for investigating sensorimotor challenges impacting performance in laparoscopic minimally invasive surgery. Kaplan, D.M., Crossley, M.J., & Cartmill, J. **($1000)**
4. Macquarie University BioInnovation Hub Grant, 2024. Could a neuroscientist understand a microprocessor? Barron, A., **Kaplan, D. M**., McMullan, S., Chew, Y. L., & Takahashi, K.. **($50,000)**
5. Macquarie University Performance and Expertise Research Centre Seeding Grant, 2023. Interaction of motor memories developed through learning with explicit and implicit adaptive processes. Poh, E., Crossley.J., & **Kaplan, D.M. ($3,774)**
6. CEPET Seeding Grant, 2022. Understanding the novel sensorimotor challenges associated with robotic-assisted surgery. Kaplan, D.M., Crossley, M.J., & Cartmill, J. **($4,123)**
7. CAVE Grant, 2022. Measurement validity issues in social cognition: A case study. Ross, R., Higgins, W.C., Deschrijver, E., Gillett, A., Kaplan, **D.M.**, & Sutton, J. **($3,992)**
8. CEPET Seeding Grant, 2021. Effects of long-term laparoscopic training on visuomotor adaptation performance. Crossley, M.J. & Kaplan, D.M. **($5,000)**
9. Macquarie University Research Infrastructure Scheme (Small), 2020. Custom Apparatus for Visuomotor Adaptation and Motor Learning Experiments. Crossley, M.J., **Kaplan, D.M.**, Finkbeiner, M., Sowman, P. & Williams, M. (**$41,970**).
10. Macquarie University CCD Legacy Support Scheme, 2019. Using VR to understand different strategies of multiagent co-ordination in autistic and typically-developing adolescents and adults. Caruana, N., Nalepka, P., **Kaplan, D.M.**, Richardson, M., Kallen, R. & Pellicano, L. **($23,663.51)**
11. CEPET Seeding Grant, 2019. Online attention, decision-making and motor control in mountain biking: a pilot study. Kath Bicknell, K., **Kaplan, D.M.**, Sutton, J. **($4,424)**
12. Macquarie University Research Seeding Grant Scheme, Macquarie University, 2018-2019. Factors influencing sensorimotor learning and expertise in minimally invasive surgery. **Kaplan, D.M.**, Williams, M., Cartmill, J. & Gilmore, A. **($47,758)**
13. Macquarie University Research Infrastructure Scheme (Small), Macquarie University, 2018. KINARM eye-tracker to investigate sensorimotor integration and decision making. **Kaplan, D.M**., Sowman, P., Cartmill, J., Finkbeiner, M., Richardson, M. & Williams, M. **($69,181)**
14. Macquarie University Strategic Priority Grant Scheme, Macquarie University, 2018. Neurolab: Integrated digital platform for lab delivery and education in the cognitive and brain sciences. de Wit, B. & **Kaplan, D.M. ($146,628)**

15. Macquarie University Research Fellowship, Macquarie University, 2018-2021. Using Virtual Reality Technology to Understand and Improve Social Functioning in Autism. Caruana, N., McArthur, G. & **Kaplan, D.M. ($49,314)**
16. ARC CCD Neural Markers Training Scheme, 2018, "Investigating the neural mechanisms underlying Bayesian sensorimotor learning using transcranial magnetic stimulation." **Kaplan, D.M.**, Sowman, P., Sutton, J., & Hewitson, C. **($5,400)**
17. ARC CCD Neural Markers Training Scheme, Macquarie University, 2016, "Understanding differences in neural inhibitory processes between schizophrenia and neurotypical human visual cortex using fMRI and population receptive field mapping", Wardle, S., Seymour, K., **Kaplan, D.M.**, Langdon, R., Coltheart, M., & Clifford, C. **($20,500)**
18. Innovation and Scholarship Program Grant, Macquarie University, 2016, "A scalable, cost-effective, and highly immersive lab-based approach to undergraduate teaching in the cognitive and brain sciences", de Wit, B. & **Kaplan, D.M**. **($55,073)**
19. Research Development Grant, Macquarie University, 2016-2017, "The science of human responsibility: An interdisciplinary approach to understanding the sense of agency", Polito, V., Klein, C. **Kaplan, D.M.**, Langdon, R., Hitchens, M., Zopf, R., Carruthers, G., Woody, E. **($49,962)**
20. Research Infrastructure Block Grant, Macquarie University, 2015, "Using a robotic arm with virtual reality to better understand the temporal dynamics of human motor planning and decision making", Finkbeiner, M., Carlson, T., **Kaplan, D.M.**, Sowman, P. **($100,000)**
21. Faculty of Human Sciences Equipment Grant, 2015, "A large-format, 32-inch touchscreen and consumer-grade hand motion and gesture tracker", Pritchard, S. **Kaplan, D.M.**, Zopf, R., Polito, V., Williams, M. **($2,738)**
22. ARC CCD Cross Program Scheme, Macquarie University, 2015, "Investigating the effects of visual feedback information on body representation, sense of ownership and agency using next-generation virtual reality", Pritchard, S., **Kaplan, D.M.**, Polito, V., Zopf, R., Williams, M., Coltheart, M. **($38,000)**
23. New Staff Grant, Macquarie University, 2014, "Representation of limb position for reaching in the posterior parietal cortex", **Kaplan, D.M.** (**$20,000)**
24. Enhancement Program Grant, Macquarie University, 2014, "Building a problem-based and research-driven undergraduate program in Cognitive Science", **Kaplan, D.M. ($25,000)**
25. School of Philosophical, Historical, and International Studies (SoPHIS) Internal Research Grant, Monash University, 2013, "The Concept of Noise in Brain Science", **Kaplan, D.M. ($2,200)**
26. National Eye Institute (NEI) / National Institutes of Health (NIH) Grant (# 3R01EY012135-10A1S1), 2011-2013, "Visuomotor Transformations in Cortex", Snyder, L.H. & **Kaplan, D.M.**, Washington University in St. Louis School of Medicine. **($318,000)**
27. Small Project Grant, 2009, McDonnell Center for Systems Neuroscience, Washington University in St. Louis, "Context, Language, Action, and the Brain", **Kaplan, D.M. ($1,000)**

AWARDS , PROMOTIONS, & FELLOWSHIPS

- The Australian Research Report, Research Field Leader, Sept 2020. https://specialreports.theaustralian.com.au/1540291/20/
- Promotion, Level D (Associate Professor). Jan 2020.
- Promotion, Level C (Senior Lecturer). Nov 2016.
- Macquarie University Faculty of Human Sciences Dean's Citation for Innovation in Learning and Teaching, 2016, de Wit. B., Badcock, N., **D.M. Kaplan**, Williams, M, Richardson, C. "For implementing brain-imaging technology in first year Cognitive Science laboratory classes, providing an unprecedented learning experience that allows students to visualize their own brain activity."
- Macquarie University Faculty of Human Sciences Extra Mile Award, Macquarie University, 2015, **Kaplan, D.M.** "For exemplary effort, productivity, public service and innovation."
- Macquarie University Faculty of Human Sciences Extra Mile Award, Macquarie University, 2015, Lukin, A., Bishop, B., Hubbard, M., McKnight, L., Nicholas, M., Loveday, A., Robredo Moran, S., Moore, S., Murray, J., Barnes, S., Finkbeiner, M., Sutton, J., **Kaplan, D.M.**, Brooks, K., McMahon, C., Boag, S., Hayden, J., Hadley, F. Newall, C., Harrison, N. "For the faculty HDR administrative team for outstanding and effective customer service, as well as an ability to problem solve and provide support."
- Sante Fe Institute Visiting Fellowship, "Perception and Action: An Interdisciplinary Approach to Cognitive Systems Theory." Invited Workshop Participant, Sante Fe Institute, Sante Fe, New Mexico. September 14-16, 2010. Co-participants included Nihat Ay, Josh Bongard, Andy Clark, Carol Colby, Ray Guillery, Bruno Olshausen, Kevin O'Regan, Chris Moore, Murray Sherman, Marc Sommer, Fritz Sommer, among others.
- NSF Fellowship, Duke Center for the Philosophy of Biology, Duke University. 2005-2006.
- *CGS-AACU* Preparing Future Faculty Fellow, Duke University. 2005-2006.
- Duke University Conference Competitive Travel Award. ASSC 10, University of Oxford, UK. June 2005.
- Duke University Conference Competitive Travel Award. ISSHPSSB, University of Guelph, Canada. July 2005.
- McDonnell Project in Philosophy and the Neurosciences Fellowship, Early Career Researcher Workshop,California Institute of Technology, Pasadena, CA. June 2005.
- Summer Competitive PhD Dissertation Research Fellowship, Duke University. June-August 2005.
- Fellowship and Travel Grant, International Summer School on Biological and Cosmological Evolution, University of Vienna, Institute Vienna Circle. July 2003.

- Fellowship and Travel Grant, International Summer School on Mind and Computation. University of Vienna / Institute Vienna Circle. July 2002.
- Fellowship and Travel Grant, International Summer School on Unity and Plurality in Science. University of Vienna / Institute Vienna Circle. July 2001.
- PhD Fellowship, Department of Philosophy, Duke University. 2000-2007.

SUPERVISION

PRIMARY

- Wendy Higgins, PhD, School of Psychological Sciences, Macquarie University. PhD Thesis: A critical assessment of measurement practices in the psychological sciences. (Completion date: Oct 2024). Co-supervisor: Robert Ross. (Postdoc, University of Melbourne). *Awarded Vice Chancellor's Commendation for Postgraduate Research
- Russell Gore, PhD, Department of Philosophy, Macquarie University. (2022-ongoing). Co-supervisor: Richard Menary.
- Chris Hewitson, MRes/PhD, Department of Cognitive Science, Macquarie University. MRes thesis: Investigating Interlimb Generalisation of Bayesian Sensorimotor Learning. MRes (completion date): 2016-2018. PhD: 2018-2021. Associate supervisor: Paul Sowman. PhD thesis: Sensorimotor learning in complex and uncertain environments. Co-supervisor: Matthew Crossley. (Postdoc, Department of Psychology, Yale University) (Completion date: Oct 2021)
- Sandrine Hinrichs, MRes (Exchange), Department of Cognitive Science, Macquarie University. Completed date: Dec 2019. MRes thesis: Effect of variance of stochastic visuomotor rotations on adaptation and generalization. Associate supervisor: Matthew Crossley. (Progressed to Doctoral Program in Neuroscience (EDNE), EPFL, Geneva, Switzerland)

ASSOCIATE

- Ben Miller-Mills, PhD, School of Human Movement and Nutrition Sciences, University of Queensland.
- Christopher Whyte, Masters, University of Sydney, Department of Psychology. Project: Perceptual Expectation and the Feedforward-Feedback Representational Dynamics of Conscious Access. Commencement date: Jan 2019. Primary supervisor: Tom Carlson. (Progressed to PhD Program, MRC Cognition and Brain Sciences Unit, University of Cambridge)
- Jordan Wehrman, PhD, Macquarie University, Department of Cognitive Science. Project: (Subjective) times they are a changin': Experiments in time processing and illusory duration. Completion date: November 2020. Primary supervisor: Paul Sowman. (Progressed to Postdoc, University of Sydney)
- Mirko Farina, PhD, Macquarie University. Project: *Plasticity, Learning, and Cognition: an Integrative Approach to Sensory Substitution Devices and Embodied, Enculturated Skills*. Completion date: Nov 2015. Primary supervisor: John Sutton. (Progressed to postdoc, King's College London, London, UK)

SERVICE & OTHER PROFESSIONAL EXPERIENCE

SCHOOL/DEPARTMENT

- Course Director, Bachelor of Cognitive and Brain Sciences, School of Psychological Sciences, Aug 2020 - Dec 2024.
- Member, School of Psychological Sciences Educational Leadership Committee, Jan 2022-current.
- Deputy Head of Department, Department of Cognitive Science, Jan 2018 - July 2021.
- Director, Learning and Teaching, Department of Cognitive Science, Feb 2014 - July 2021.
- Member, Department of Cognitive Science Executive Committee, April 2015 - July 2021.
- Member, Department of Cognitive Science Facilities Committee, Jan 2019 - July 2021.
- Chair, Cognitive Science Learning and Teaching Committee, Department of Cognitive Science, Feb 2014 - July 2021.
- Co-chair, Cognitive Science Curriculum Steering Committee, Department of Cognitive Science, Feb 2014 - July 2021.
- Member, Department of Cognitive Science Search Committee, Jan - May 2018.
- Director, MRes Year 1, Department of Cognitive Science, Feb 2014 - March 2015.

FACULTY

- Head of Neuroscience Education, Faculty of Medicine, Health and Human Sciences, Jan 2025 - current.
- Member, FMHHS Neuroscience Major Planning Committee, Faculty of Medicine, Health and Human Sciences, April 2024 - current.
- Member, Curriculum Quality Standards Subcommittee (CQSS) , Faculty of Medicine, Health and Human Sciences, Jan 2021 - Dec 2024.
- Member, FMHHS Bachelor of Human Sciences Planning Committee, Faculty of Medicine, Health and Human Sciences, Jan 2021 - current.
- Member, FMHHS L&T Leadership Group, Faculty of Medicine, Health and Human Sciences, Jan 2020 - current.
- Representative, Faculty Education Committee (FEC), Faculty of Medicine, Health and Human Sciences, Jan 2020 - Jan 2022.
- Representative, Faculty Standards and Quality Committee (FSQC), Faculty of Human Sciences, Feb 2014 - Dec 2019.
- Representative, Faculty Learning and Teaching Committee (FLTC), Faculty of Human Sciences, Feb - Dec 2014.
- Member, Bachelor of Human Sciences Steering Committee.

- Member, PARC Executive Committee, April 2016 - current.

UNIVERSITY

- Member, Executive Leadership Committee, Macquarie Minds and Intelligences Research Centre, 2025 - current.
- Member, Executive Committee, Macquarie Minds and Intelligences Initiative, 2023-2025
- MQ UG Psychology Course Review, 9-11 May 2022.
- PIVOT, Pedagogy InnoVation Team, PVC L&T Portfolio, Nov 2020 - current.
- Vice Chancellor's Working Group on Innovation in Pedagogy, Sept - Nov 2020.
- Member, Senate Learning and Teaching Committee (SLTC), Aug 2016 - Aug 2020.

OTHER SERVICE

- Editorial Board Member, Journal of Neurophilosophy. 2022 - current.
- Founding Member, Australasian Society for Philosophy and Psychology. 2017-2018.
- Ad Hoc Reviewer, National Science Foundation (NSF), USA. 2014.
- Ad Hoc Reviewer, National Health and Medical Research Council, 2016.
- Journal Reviewer: *Acta Psychologica*, *Biology and Philosophy*, *British Journal for the Philosophy of Science*, *Cognitive Science*, *Cognitive Systems Research*, *Erkenntnis*, *European Journal for Philosophy of Science*, *Frontiers in Human Neuroscience*, *Journal of Motor Behavior*, *Journal of Neuroscience*, *Philosophical Psychology, Philosophy of Science*, *Studies in the History and Philosophy of Science*, *Synthese*.
- Book Reviewer: *Routledge.*
- Organiser, Factors Influencing Performance and Training in Minimal Access Surgery Workshop. CEPET/Macquarie Medical School, Macquarie University/MUH. 5 Sept 2022.

TEACHING

MACQUARIE UNIVERSITY — 2014 - CURRENT

- COGS1000:Introduction to Neuroscience 1 (Convenor and lecturer). S1 2016 - current.
- COGS1005: Introduction to Neuroscience 2 (Convenor and lecturer). S2 2020 - current.
- COGS2000: Cognitive Neuroscience (Lecturer). S1 2017- current.
- COGS3040: Space and Time in the Brain (Convenor Lecturer). S1 2020 - current.
- COGS301: Current Problems in Cognitive Science. (Convenor and lecturer). S2 2017.
- COGS700: Foundations of Cognitive Science. (Co-convenor and lecturer). S2 2017-2018.
- COGS702: Advanced Principles in Cognitive Science: Attention and Action. (Lecturer, Sensorimotor transformations module). S1 2015, 2017.
- PSY354: Clinical and Experimental Neuroscience. (Lecturer, Motor systems module). S1 2015-2016.
- MEDI704: Decoding the Brain. (Lecturer, Neurotechnology for understanding cognition and behaviour module). S1 2019.

MONASH UNIVERSITY — 2013

- Time, Self, and Mind: Introduction to Philosophy (Unit Convenor and lecturer), S2 2013.
- Philosophy of Mind (Unit Convenor and lecturer), S2 2013.

WASHINGTON UNIVERSITY IN ST. LOUIS — 2007-2011

POSTGRADUATE LEVEL

- Philosophy of Neuroscience, Spring 2011. (Co-taught with Carl Craver)
- Research Seminar: Spatial Representation, Spring 2009.
- Research Seminar: Perception and Action, Fall 2007.

UNDERGRADUATE LEVEL

- Inquiry in the Cognitive Sciences, Fall 2009.
- First-Order Logic, Fall 2009.
- Introduction to the Cognitive Sciences, Fall 2008.
- Problems in Philosophy, Spring 2008

DUKE UNIVERSITY — 2003-2006

UNDERGRADUATE LEVEL

- Special Topics in Philosophy of Cognitive Science: Mind, Brain, and Space, Fall 2006.
- Introduction to Philosophy: Metaphysics and Epistemology, Fall 2006.
- Introduction to Philosophy: Metaphysics and Epistemology, Fall 2005.
- Introduction to Philosophy: Metaphysics and Epistemology, Spring 2004.
- Introduction to Philosophy: Metaphysics and Epistemology, Fall 2003.
- Foundations of Artificial Intelligence, Duke University Talent Identification Program, Summer 2002.

PROFESSIONAL AFFILIATIONS

Society for Neuroscience; Cognitive Science Society; Australasian Cognitive Neuroscience Society; Australasian Association of Philosophy; Australasian Society for Philosophy and Psychology; Sino-Australian Philosophy of Life Sciences Network

REFERENCES

Professor Amanda Barnier
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Professor Carl Craver
Philosophy-Neuroscience-Psychology Program, Washington University in St. Louis
ccraver@artsci.wustl.edu

Professor Lawrence Snyder
Department of Neuroscience, Washington University School of Medicine
larry@eye-hand.wustl.edu