CURRICULUM VITAE

Jim Davies

jim@jimdavies.org
Institute of Cognitive Science, 2201 Dunton Tower
Carleton University, Ottawa, Ontario, Canada K1S 5B6

EDUCATION

Ph.D., Computer Science (2004)
Georgia Institute of Technology
Title: *Visual Analogical Problem Solving*
Advisors: Profs. Ashok K. Goel and Nancy J. Nersessian
Committee: Profs. Ronald W. Ferguson, Richard Catrambone
Certificate: Cognitive Science

M.S., Psychology (1997)
Georgia Institute of Technology
Title: *Correlation and Consistent Contrast Biases Shown in Free Sort Categorization*
Advisor: Dr. Dorrit O. Billman
Committee: Dr. Tony J. Simon, Prof. Timothy A. Salthouse

B.A., Philosophy (1993)
State University of New York College at Oswego

EMPLOYMENT

Academic employment

Fall 2006 – Present
Carleton University, Institute of Cognitive Science
Associate Professor

Fall 2004 – 2006
Queen's University, School of Computing
Postdoctoral Fellow
Supervisor: Prof. Janice Glasgow

Industrial employment

Summer 2011
Z2Live, Seattle, WA, USA
Consultant
Researched spending encouragement for freemium games

Summer 2000
Mitsubishi Electric Research Labs, Cambridge, MA
Research Intern
Designed a tutorial extension to the COLLAGEN collaborative agent software
Supervisor: Dr. Charles Rich

CURRENT RESEARCH INTERESTS

My current research focuses on regularities in human imagination. I approach cognitive science through artificial intelligence: I create computer models of visualization. My goal is to create a computer program that imagines visual scenes the same way people do, with the same content in the same places.

PUBLICATIONS

Books

Davies, J. (forthcoming, August 5, 2014). *Riveted: The Science of Why Jokes Make us Laugh, Movies Make Us Cry, and Religion Makes Us Feel One with the Universe.* Palgrave Macmillan.

Galassi, M., **Davies, J.**, Theiler, J., Gough, B., Jungman, G., Booth, M., & Rossi, F. (2001, 2003) *Gnu Scientific Library Reference Manual*. First and Second Editions. Network Theory Ltd.

Chapters in edited books

Nersessian, N. J., Kurz-Milcke, E. & **Davies, J.** (2005). Ubiquitous computing in science and engineering labs: A case study of a biomedical engineering lab. In G. Kouzelis, M. Pournari, M. Stoeppler and V. Tselfes, (Eds.), *Knowledge in the New Technologies*. Peter Lang: Berlin: 167-195.

Articles in refereed journals

Cockbain, J., Vertolli, M. & **Davies, J**. (in press). Creative imagination is stable across technological media: The Spore Creature Creator versus pencil and paper. *The Journal of Creative Behavior*.

Gagné, J. & **Davies, J.** (2013). Visuo: A model of visuospatial instantiation of quantitative magnitudes. *Knowledge Engineering Review. Special Issue on Visual Reasoning*, 2(28).1–20.

Davies, J., & Matheson, D. (2012). The cognitive importance of testimony. *Principia: The International Journal of Epistemology*. 16(2), 297-318.

Davies, J., Atance, C. & Martin Ordas, G. (2011). A framework and open questions on imagination in adults and children. *Imagination, Cognition, and Personality*, Special issue on mental imagery in children. 31:1-2, 143-157.

Davies, J., Goel, A. K., & Nersessian, N. J. (2009). A Computational Model of Visual Analogies in Design. *Cognitive Systems Research: Special Issue on Analogies*, 10, 204-215.

Davies, J., Goel, A. K. & Yaner, P. W. (2008). Proteus: Visuospatial analogy in problem-solving. *Knowledge-Based Systems.* 27(7), 636-654.

Davies, J., & Goel, A. K. (2008). Visual representations and re-representation in analogical reasoning. *The Open Artificial Intelligence Journal*, 2, 11-20.

Davies, J., & Goel, A. K. (2007). Transfer of Problem-Solving Strategy Using Covlan. *Journal of Visual Languages and Computing*: 18, 149-164.

Glasgow, J., Kuo, T. & **Davies, J.** (2006). Protein structure from contact maps: A case-based reasoning approach. *Information Science Frontiers, Special Issue on Knowledge Discovery in High-Throughput Biological Domains*. 8: 29-36

Davies, J., Glasgow, J. & Kuo, T. (2006). Visio-spatial case-based reasoning: A case study in prediction of protein structure. *Computational Intelligence*, 22:3/4, 194-207.

Davies, J., Nersessian, N. J. & Goel, A. K. (2005). Visual models in analogical problem solving. *Foundations of Science, Special Issue on Model-Based Reasoning: Visual, Analogical, Simulative*. L. Magnani & N. J. Nersessian (Eds.) 10, 133-152.

Billman, D. O. & **Davies, J.** (2005). Consistent contrast and correlation in free sorting. *American Journal of Psychology*. 118(3) 353-383.

Formally Refereed Abstracts

Ouellet, S., Lang, H., MacQuarrie, L., McManus, M., & **Davies, J.** (2012). 3D SPACE: 3D spatial prepositions analysis and comprehension engine. *Psychology Outside the Box 2012*. Abstract 47.

Abelson, A., **Davies, J.**, Fraser, R., Kuo, T., Zuviria, E. & Glasgow, J. (2005). Protein structure from contact maps: An hierarchical approach. Intelligent Systems for Molecular Biology (ISMB05).

Articles in Refereed Conference Proceedings

Davies, J. (2013). Don't waste student work. Proceedings of the *Cognition and Exploratory Learning in Digital Age* conference (CELDA-13). Fort Worth, Texas. October 22-24, 2013.

Breault, V., Ouellet, S., Somers, S. & **Davies, J.** (2013). SOILIE: A computational model of 2D imagination. In R. West & T. Stewart (eds.), *Proceedings of the 12th International Conference on Cognitive Modeling*, Ottawa: Carleton University. 95—100.

Davies, J. (2013). The role of artificial intelligence research methods in cognitive science. In R. West & T. Stewart (eds.), *Proceedings of the 12th International Conference on Cognitive Modeling*, Ottawa: Carleton University. 439—444.

Ouellet, S., Somers, S., & **Davies, J.** (2013). High-level representation of 3D models of buildings. In R. West & T. Stewart (eds.), *Proceedings of the 12th International Conference on Cognitive Modeling*, Ottawa: Carleton University. 408—413.

Ouellet, S. & **Davies, J.** (2013). Using prepositions to describe three-dimensional scenes: A model of spatial relation apprehension and interference. In R. West & T. Stewart (eds.), *Proceedings of the 12th International Conference on Cognitive Modeling*, Ottawa: Carleton University. 209—214.

Vertolli, M. O. & **Davies, J.** (2013). Visual imagination in context: Retrieving a coherent set of labels with Coherencer. In R. West & T. Stewart (eds.), *Proceedings of the 12th International Conference on Cognitive Modeling*, Ottawa: Carleton University. 263—268.

Li, H., Mould, D. & **Davies, J.** (2013): Structure and aesthetics in non-photorealistic images. In *Proceedings of Graphics Interface 2013*, Regina, Saskatchewan, pp 181-188.

Davies, J. & Fortney, M. (2012). The menton theory of boredom and engagement. *Proceedings of the First Annual Conference on Advances in Cognitive Systems.* 131–143.

Somers, S., Gagné, J., Astudillo, C., & **Davies, J.** (2011). Using semantic similarity to predict angle and distance of objects in images. *The ACM Conference on Creativity & Cognition, 2011*. 217-222.

Stapleton, C., & **Davies, J.** (2011). Imagination: The third reality to the virtuality continuum. *2011 IEEE International Symposium on Mixed and Augmented Reality.* (ISMAR-2011). 53-60. Basel, Switzerland.

Schoenherr, J., Thomson, R. & **Davies, J.** (2011). What makes an explanation believable?: Mechanistic and anthropomorphic explanations of natural phenomena. *The Thirty-Third Annual Meeting of the Cognitive Science Society* (COGSCI-11), 1424-1429.

Davies, J. & Gagné, J. (2010). Estimating quantitative magnitudes using semantic similarity. *Conference of the American Association for Artificial Intelligence workshop on Visual Representations and Reasoning* (AAAI-10-VRR) 14--19.

Davies, J. & Yaner, P. W. (2010). Analogical mapping through visual abstraction. *The Annual Conference of the Cognitive Science Society* (CogSci 2010), 1553—1558.

Bell, J. & **Davies, J.** (2010). Pixel graphs are better at representing large quantities of information than pie graphs. *Theory and Application of Diagrams* (Diagrams-2010), 288-291.

Smith, C., Van Bentham, K., Nuttall, J., Musca, J., MacDougall, K., Miller, X., Li, J., Fitzpatrick, J., Di Noia, N., Cybulskie, A., & **Davies, J.** (2010). Modeling English spatial preposition detectors. *Theory and Application of Diagrams* (Diagrams-2010), 328—330.

Gagné, J. & **Davies, J.** (2009). Analogical estimation of quantitative magnitudes. *New Frontiers of Analogy Research: Proceedings of Analogy 09*, 155-164, Sophia, Bulgaria.

Thomson, R. & **Davies, J.** (2009). Distance estimation as a process of generating Ad-Hoc Metrical Systems. *Proceedings of the Thirty-First Annual Conference of the Cognitive Science Society.* 2932-2937.

Davies, J. (2009). Experience-based reasoning as the basis of a general artificial intelligence architecture. *IJCAI Workshop on Grand Challenges for Reasoning from Experiences.* 1-6. Pasadena, California, July 11, 2009.

Davies, J., Glasgow, J. & Kuo, T. (2007). Protein structure prediction with visuospatial analogy. In T. Barkowsky, C. Freksa, M. Klnauff, & B. Krieg-Bruckner (Eds.) *Proceedings of Spatial Cognition 2006*, 127-139, Bremen, Germany.

Davies, J., Goel, A. K. & Nersessian, N. J. (2005). Transfer of problem-solving strategy using the Cognitive Visual Language. *Proceedings of the International Workshop on Visual Languages and Computing (VLC05)*. 293-298.

Davies, J., Goel, A. K. & Nersessian, N. J. (2005). Transfer in visual case-based problem-solving. In H. Munoz-Avila & F. Ricci (Eds.) *Proceedings of the 6th International Conference on Case-Based Reasoning*. LNAI 3620. Springer-Verlag. Berlin Heidelberg. 163-176.

Davies, J., Goel, A. K. & Nersessian, N. J. (2005). A Cognitive Model of visual analogical problem-solving transfer. In L. P. Kaelbling & A. Saffioti (Eds.) *Proceedings of the Nineteenth Annual International Joint Conference on Artificial Intelligence*. Professional Book Center, Denver, Colorado. 1556-1557.

Nersessian, N. J., Kurz-Milke, E., Newstetter, W. C. & **Davies, J.** (2004). Research laboratories as evolving distributed cognitive systems. In A. Markman & L. Barsalou (Eds.) *Proceedings of the 25th Annual Conference of the Cognitive Science Society*. Erlbaum. Hillsdale, New Jersey. 857-862.

Davies, J. & Goel, A. K. (2003). Representation Issues in visual analogy. In R. Alternam & D. Kirsh (Eds.) *Proceedings of the 25th Annual Conference of the Cognitive Science*

Society. Erlbaum. Hillsdale, New Jersey. 300-305.

Davies, J., Goel, A. K., & Nersessian, N. J. (2003). Visual re-representation in creative analogies. In A. Cardoso & J. Gero (Eds.) *The Third Workshop on Creative Systems, International Joint Conference on Artificial Intelligence*. 1-12.

Davies, J. & Goel, A. K. (2003). Visual case-based reasoning I: Transfer and adaptation. *Proceedings of the First Indian International Conference on Artificial Intelligence*. Hyderabad, India.

Nersessian, N. J., Newstetter, W. C., Kurz-Milcke, E. & **Davies, J.** (2002). A Mixed-method Approach to Studying Distributed Cognition in Evolving Environments. *Proceedings of the International Conference on Learning Sciences*. 307-314.

Davies, J., & Goel, A. K. (2001). Visual analogy in problem solving. *Proceedings of the International Joint Conference on Artificial Intelligence*. 377-382. Morgan Kaufmann publishers.

Davies, J. R., Lesh, N., Rich, C., Sidner, C. L., Gertner, A. S., & Rickel, J. (2001). Incorporating tutorial strategies into an intelligent assistant. Proceedings of the 2001 *International Conference on Intelligent User Interfaces*. 53-65.

Davies, J. R., Nersessian, N.J. & Goel, A.K. (2001). The role of visual analogy in scientific discovery. *Model-Based Reasoning: Scientific Discovery, Technological Innovation, Values.* Pavia Italy.

Murdock, W. J., Simina, M., **Davies, J.**, & Shippey, G. (1998). Modeling Invention by Analogy in ACT-R. *Proceedings of the Twentieth Annual Conference of the Cognitive Science Society*, Madison, WI. 740-745.

Articles Under Review

Davies, J. & Bicknell, J. (under review). Imagination and belief: The microtheories model of hypothetical thinking.

McManus, M., Vertolli, M. & **Davies, J.** (under review). The effects of specific physical features on perceived intelligence.

Encyclopedia entries

Davies, J. (2013). Imagination. *Encyclopedia of Creativity, Invention, Innovation, and Entrepreneurship.* 899—902.

Technical reports

Davies, J. (2009). Don't waste student work: Using classroom assignments to contribute to online resources. Carleton University Cognitive Science Technical Report 2009-01, http://www.carleton.ca/ics/TechReports

Davies, J. (2004). *Constructive Adaptive Visual Analogy*. Doctoral Dissertation. College of Computing, Georgia Institute of Technology. Technical Report Number: GIT-COGSCI-2004/3

Davies, J., Nersessian, N. J., & Goel, A. K. (2001). Visual models in analogical problem solving. Georgia Institute of Technology Cognitive Science technical report GIT-COGSCI-2001/03.

Davies, J. R., Lesh, N., Rich, C., Sidner, C. L., Gertner, A. S., & Rickel, J. (2000). Incorporating tutorial strategies into an intelligent assistant. Mitsubishi Electric Research Labs. Technical report TR-2000-30. Cambridge, MA.

Davies, J. R., Goel, A. K., Murdock, J. W., Simina, M., & Shippey, G. (2000). Three Cognitive Models. Georgia Institute of Technology Cognitive Science Report Series GIT-COGSCI-2000/03. Atlanta, Georgia.

Davies, J. (1998) Correlation and consistent contrast biases shown in free sort categorization. Georgia Institute of Technology Cognitive Science Report Series GIT-COGSCI-98/02. Atlanta, Georgia.

Other Publications

Davies, J. (2013). Iron curtain of the mind—Our tangles thoughts on geography. *Nautilus* December 6 blog entry.

Davies, J. (2013). Explaining the Unexplainable: When Logic Fails, Stories and Superstitions Prevail. *Nautilus* Magazine Article.

Davies, J. (2013). Education Is a Waste of Effort—But It Doesn't Have to Be. *Nautilus* November 26 blog entry.

Davies, J. (2013). Informal Assessment and Asking Questions in Class. Guest blog post on the Carleton University Educational Development Blog. October 28.

Davies, J. (2013). Fame is a magnet that reveals our weak hold on reality. Nautilus, September 5 blog entry.

Davies, J. (2013). Why people get lost in good books. *Nautilus* July 15 blog entry.

Davies, J. (2013). Why do we get transported by stories we know are false? *Nautilus*, July 16 blog entry.

Davies, J. (2012). Academic obfuscations: The psychological attraction of postmodern nonsense. *Skeptic* 17:4, 44-47.

Editor of *Cognitive Science Summaries* website:
URL: http://www.jimdavies.org/summaries/

Editor of *Brain Areas Mnemonics Wiki* website:
URL: http://brainareas.pbwiki.com/

EDITORIAL RESPONSIBILITIES

Reviewing for Journals

8th Annual ACM Conference on Creativity & Cognition (2011)
Journal of Cognitive Systems Research
Software Practice and Experience
Journal of Digital Information
Journal of Human-Computer Interaction
Conference on the Cognitive Science Society
IJCAI Workshop on Grand Challenges for Experience-Based Reasoning
Journal of Consciousness Studies
The Open Artificial Intelligence Journal

Reviewing For Conferences

Annual Conference of the Cognitive Science Society
Program committee member for Diagrams 2010

Editorial Board Membership

The Open Artificial Intelligence Journal
Editorial Board Member

Program committee membership

8th Annual ACM Conference on Creativity & Cognition (2011)
Publicity Chair
Diagrams 2010
Graduate Symposium Chair
International Joint Conference on Artificial Intelligence Workshop on Visual Reasoning and Representations 2011
Organizing Committee
Diagrams 2012
Analogy 09

INVITED PAPERS PRESENTED

To learned societies

Davies, J. (forthcoming). *The Science of Imagination*. Keynote presentation at Techfest, Mumbai, India.

Davies, J. (2013). *Imagination and Artificial Intelligence.* The Conference on Canadian Content in Speculative Arts and Literature. (CANCON2013). October 5.

Davies, J. (2013). *Metaphor in visualization and interaction design.* Canadian Visual Analytics Summer School (CANVAS2013), July 17.

Davies, J. (2013c). *Don't Waste Student Work.* Teaching Showcase of the Fall 2013 Carleton Faculty Orientation.

Davies, J. & Hellemans, K. (2013). *Peer Instruction: Concept Questions Workshop*. Carleton Univeristy Educational Development Centre.

Davies, J. (2013). Don't Waste Student Work. *Canadian Network for Innovation in Education (CNIE-2013)*. May 1–3, Ottawa, Ontario.

Davies, J. (2012). *Riveted: Why We Love Art, Products, and Ideas*. Pecha Kucha Ottawa #5, June 12.

Davies, J. (2011). *Don't Waste Student Work*. TEDxOttawa, October 22.

Davies, J. (2010). *The Science of Imagination.*
Pacific Northwest National Laboratories, August 16.
Google (Mountain View Campus), August 3.
TEDxCarletonU, March 30.

Davies, J. (2010). *A Vision for the Science of Imagination*. A. Louis Medin Modeling & Simulation Seminar Series and Cognitive Sciences Student Association at the University of Central Florida Visiting Scholar Series. Talk, panel discussion, student forum. February 16.

Davies, J., & Gagné, J. (2010). *Visuo: A Model of Visuospatial Instantiation of Quantitative Magnitudes.* National Research Council Canada Featured Speaker. January 22.

Davies, J. (2009). *Using Assignments for Web Educational Materials.* Part of the Carleton University Educational Development Centre Classroom Strategies: "One Cool Thing I'm Doing..." December 8.

Davies, J. (2009). Don't waste student work: Using class assignments to further research and wider educational goals. Carleton University Educational Development Centre *Teaching Technology Roundtable*, September 25. Talk available online at

OTHER PAPERS PRESENTED

To learned societies

Schoenherr, J. R. & **Davies, J.** (2009). Complexity Effects in Judgments of Maps of Science. *The 12th International Conference on Scientometrics and Infometrics.* Rio de Janiero, Brazil.

Schoenherr, J. R., **Davies, J.**, Burch, H., Thomson, R. (2009). The believability of anthropomorphic explanations. Poster presentation at the 31st Annual Conference of the *Societe Quebecoise Pour La Recherche En Psychologie (SQRP09).* Ottawa, Ontario, March 22, p151.

Davies, J., Schoenherr, J. R., Thompson, R. & Burch, H. (2009). Visuospatial Imagination of Geometric Shape: Regularities and Inconsistencies. Poster and Member abstract in the *Proceedings of the Cognitive Science Society.*

Davies, J., Schoenherr, J. R., & Bell, J. (2009). Psychological Dimensions of Graphical Representation of Science. *2009 Annual Convention of the Canadian Psychological Association*, June 11 – 13, Montréal, Québec.

Schoenherr, J. R., **Davies, J.**, & Burch, H. (2009). Regularities in Human Visuospatial Imagination. *2009 Annual Convention of the Canadian Psychological Association,* June 11 – 13, Montréal, Québec.

Burch, H., **Davies, J.**, & Schoenherr, J.R. (2009). The believability of anthropomorphic explanations. *2009 Annual Convention of the Canadian Psychological Association,* June 11 – 13, Montréal, Québec.

Davies, J., Nersessian, N. J. & Goel, A. K. (2001). Visual analogy in scientific discovery. *Cognitive Studies of Science and Technology Workshop*, University of Virginia, March 24-27.

Davies, J.R., Lesh, N., Rich, C., Sidner, C. L., Gertner, A. S., & Rickel, J. (2001). Demonstration of collaborative interface agents using COLLAGEN. The 2001 *International Conference on Intelligent User Interfaces.*

Davies, J. (1999). An evaluation of SIRRINE2 as a cognitive architecture based on a model of human arithmetic. Twenty-first Annual Conference of the Cognitive Science Society, Vancouver, BC.

Galassi, M., **Davies, J.**, Theiler, J., Gough, B., Priedhorsky, R., Jungman, G., & Booth, M. (1999). The GNU scientific library. October 1999, *Open Source/Open Science Conference,* Brookhaven National Laboratory.

Billman, D., Davila, D. & **Davies, J.** (1996). Hierarchy and consistent contrast aid supervised and unsupervised concept learning. November 1996, Accepted talk, *Conference of the Psychonomics Society*.

Davies, J. & Billman D. (1996) Hierarchical categorization and the effects of contrast inconsistency in an unsupervised learning task. *Proceedings of the Eighteenth Annual Conference of the Cognitive Science Society.* Lawrence Erlbaum, Mahwah, NJ. p.750.

To Other Academic Bodies

Davies, J. (2013). *The Cognitive Importance of Testimony.* Carleton University Cognitive Science Colloquium Series. September 26.

Davies, J. (2011). *Spatial Terms in Visual Imagination.* Cornell University, Cognitive Science Colloquium Series. October 14.

Davies, J. (2011). *Using data to drive imagination modeling.* Rensselear Polytechnic Institute, Cognitive Science Issues Colloquium. August 31.

Davies, J., Stapleton, C. (2011). *Imagination: The Third Reality to the Virtuality Continuum.* Carleton University Cognitive Science Colloquium Series. September 15.

Davies, J. (2011). *Using Student Projects to Generate Educational Resources on the Web.* Teaching and Learning in a Networked Era (conference). Ottawa, Ontario, April 6.

Davies, J., Bicknell, J. (2010). *The Microtheory Model of Belief Quarantine*. Carleton University Cognitive Science Colloquium Series. January 21.

Davies, J., Matheson, D. (2010). *The Cognitive Importance of Testimony*. Carleton University Philosophy Department Public Lecture. January 15.

Schoenherr, J. & **Davies, J.** (2009). *Dissociating perceptual complexity in graphical representations of science.* Carleton University Cognitive Science Colloquium Series, October 22.

Davies, J., & Gagné, J. (2009). *Visuo: A Model of Visuospatial Instantiation of Quantitative Magnitudes*. Carleton University Cognitive Science Colloquium Series, October 8.

Davies, J. (2007). A.I. past and future. *Institute on Biotechnology and the Human Future's (IBHF) Conference, "The Spotless Mind? Policy, Ethics & the Future of Human Intelligence,"* February 16: The National Press Club, Washington, D.C.

Davies, J. (2006). *The role of visual reasoning in analogical problem solving*.
University of California at Merced. February 16.
Institute of Cognitive Science, Carleton University. February 13.

Abelson, A., **Davies, J.**, Fraser, R., Kuo, T., Zuviria, E. & Glasgow, J. (2006). Protein structure from contact maps: An hierarchical approach. Poster at First Canadian Student Conference on Biomedical Computing (CSCBC06). Kingston, Ontario.

Davies, J. (2006) Visualization in Human Imagination. HOT Lab presentation. Carleton University. December 1.

Davies, J. (2006) Visualization in Human Imagination. Carleton University Cognitive Science Colloquium Series. October 13.

Davies, J. (2004). *Constructive adaptive visual analogy.* Cognitive Science Student Conference. Georgia Institute of Technology. April 23.

Davies, J. (2004). *Constructive adaptive visual analogy*.
School of Information Science & Learning Technologies, U of Missouri. May 19.
School of Computing, Queen's University. May 13.
University College Dublin. April 27.
University of Wisconsin at Green Bay. March 24.

Nersessian, N. J., Newstetter, W. C., Kurz-Milcke, E., **Davies, J.** & Malone, K. (2003) *Laboratory learning: Cognition and learning in biomedical engineering labs.* National Science Foundation Presentation.

Newstetter, W. C., Nersessian, N. J., **Davies, J.**, Kurz-Milke, E. & Malone, K. (2002) Biomedical Engineering Thinking and Learning: Phase 1--Reasoning in the lab. National Science Foundation Presentation.

Conference Panel Participation

Davies, J. (2013). *AI in Science and in Fiction.* Panel discussion between myself, Robert J. Sawyer, and David Hartwell. The Conference on Canadian Content in Speculative Arts and Literature. (CANCON2013). October 5.

Invited Book Chapters

Goel, A. K. & **Davies, J.** (2011). Artificial Intelligence. In S. B. Kaufman and R. Sternberg (Eds.) *The Cambridge Handbook of Intelligence* (3rd Edition).

Davies, J. R. (2001). Ocelots are endangered South American wild cats. In J. Ohler (Ed.) *Future Courses: A Compendium of Thought About the Future of Technology and Education.* Technos Press. 79-83.

Short Stories Published

Davies, J. (2013). So Human, So Beautiful. *Nautilus* December 11 blog entry.

Poetry Published

Davies, J. (2007-2008) This City Was Made For Us. *Bywords* Quarterly Journal, Winter, 2007-2008.

RESEARCH GRANTS

Government or extra-university

Davies, J. (2011). *Spatial Relationship Detectors for Virtual Environments.* NSERC Engage Grant Program. Industry Partner: CAE Professional Services Canada. $25,000 CAD.

Davies, J. (2009). *Visuospatial Scene Generation.* National Science and Engineering Research Counsel (NSERC) Discovery Grant. $95,000 CAD ($19,000 per year for five years).

Davies, J. (2008). *Graphical Representations of Scientific Inter-relationships*. SciTech Strategies, Inc. grant. $10,765 USD.

Ferres, L. & Davies, J. (2006). Interaction between Linguistic & Visual Cues During Graph Comprehension Tasks. Statistics Canada. $18,000 CDN.

Davies, J., Essa, I., & Maple, T. (1998-1999) The Primatech project: An interactive simulation of a signing orangutan. Seed Grant. GVU, Georgia Institute of Technology.

University

Davies, J. (2013). *Phenomenology of Virtual Spaces: Digital Archeology and the Underground Cities of Cappadocia.* Carleton University Dean of Faculty of Arts and Social Sciences Research Fund. $5,000 CAD.

Davies, J. (2010). *Quanty Game.* Carleton University Foundry Program. $5,000 CAD.

Davies, J. (2008). *Toward a Theory of Visual Instantiation.* Carleton University Internal Research Grant from the NSERC General Research Fund. $7,000 CAD.

Davies, J. (2007). *Toward a Theory of Visual Instantiation.* Carleton University Internal Research Grant from the NSERC General Research Fund. $5,000 CAD.

Media Appearances

Print appearances:

(no author) (2013). Jim Davies—Professor Profile. *Online Focus*. Carleton University

Online XIII(2). October. p1.

Radio appearances:
Advice for Students. CBC 1 with Meg Wilcox. September 5, 2013.

The Psychology of Willpower and New Year's Resolutions. Ottawa Morning on CBC 1 with Robyn Bresnahan. January 7, 2013.

Bicycle Helmets. Ottawa Morning on CBC 1 with Robyn Bresnahan. June, 2012.

Science of Imagination. Peer Review Radio on CUHO 89.1FM in Ottawa. February, 2012.

Calligraphy. In Town and Out on CBC 1 with Giacomo Panico. September, 2010.

Pac-Man art. All in a Day on CBC 1 with Alan Neal. June 17, 2010.

Chinatown Remixed. Friday Special Blend. CKCU 93.1 with Vanessa Davies, May 2010.

Science of Imagination TEDxCarletonU talk. All in a Day on CBC 1 with Alan Neal. March 29, 2010.

Podcast Appearances:
Cycling Helmets and Risk. The Reality Check. Episode #221. With Darren McKee.

SERVICE TO THE PROFESSION

Awards

Excellence in Teaching With Technology Award. Educational Development Centre, Carleton University, 2012.

Best Reviewer Award. *The ACM Conference on Creativity & Cognition*, 2011.

ACADEMIC RESPONSIBILITIES

Graduate courses taught

[CGSC 5102] Computational Methods
Carleton University
Instructor
Fall 2010, 2011, 2013

[CGSC 6800] Proseminar in Cognitive Science
Carleton University
Instructor

Winter 2007, 2008, Fall 2008, 2009, 2010

[CGSC 5001] Artificial Intelligence for Cognitive Science
Carleton University
Instructor
Fall, 2008, 2009

[CGSC 4001/5001] Artificial Intelligence for Cognitive Science
Carleton University
Instructor
Fall 2006, 2007, Winter 2011, 2012

Undergraduate courses taught

[CGSC 1001] Mysteries of the Mind
Carleton University
Instructor
Fall 2011, 2013

[CGSC 3001] Honours Seminar in Cognitive Science I
Carleton University
Instructor (one half)
Fall 2009, 2010, 2011

[CGSC 4001] Artificial Intelligence for Cognitive Science
Carleton University
Instructor
Winter 2009, 2010

[CGSC 2002]
Theories and Methods in Cognitive Science
Carleton University
Instructor
Winter 2007, 2008, 2009, 2010, 2011, 2012

[CISC 453] Advanced Artificial Intelligence
Queen's University
Instructor (one-third)
Spring 2006

Teaching Record

Year	**Undergraduate**	**Graduate**
2011 – 2012	CGSC 1001, CGSC 3001**, CGSC 4001/5001, CGSC 2002	CGSC 5102
2010 – 2011	CGSC 3001**, CGSC 2002, CGSC 4001/5001	CGSC 5102
2009 – 2010	CGSC 4001, CGSC 3001**, CGSC 2002	CGSC 6800*, CGSC 5001
2008 – 2009	CGSC 4001, CGSC 2002	CGSC 6800*, CGSC 5001
2007 – 2008	CGSC 4001/5001, CGSC 2002	CGSC 6800*
2006 - 2007	CGSC 4001/5001, CGSC 2002	CGSC 6800*

*Taught for 1 term (two term course).
** Shared course with another instructor

Supervision

Years	**Student**	***Thesis/Project Title***
Ph.D. Dissertation Supervision		
2013-	Drew Blackmore	*In progress*
2007-	Sterling Somers	*In progress*
Master's Supervision		
2012-	Vincent Breault	*MCogSc. In progress*
2012-	Michael O. Vertolli	*MCogSc. In progress*
2013	Natalie Daphne Shalmon	*MDes. in Industrial Design- The Element of Play in Design*
Honours Thesis Supervision		
In Progress	Maryanna Guillet	*Enhancing Creative Design With Infrequently-Used Attributes*
In progress	Gorkem Guduk	*Genetic Distance and Attractiveness Measures*
In progress	Branden Lynch	*An Information Processing Account of Metaphor*
2013	Meaghan McManus	*The Effects of Specific Physical Features on Perceived Intelligence*
2013	Sebastien Ouellet	*Automated and Cognitively Plausible Descriptions of Three-Dimensional Scenes*
2012	Marcel Campbell	*Analogy and Case-Based Reasoning: A Comparison*
10-11	Josh Wilson	*How humans predict spatial magnitudes of an inexperienced object by using spatial knowledge of a similar object* (co-supervised with Amedeo D'Angiulli)
09-10	Peter Welch	*Developing an understanding of the biological emergence of mind; an analysis of the distributed information processing of the superorganism*
09-10	Geoffrey Johnson	*The Expansion of Galatea to Include L12, L11, and L13*

09-10	Connor Smith	*The Retrieval of Images Using Spatial Relationship Detectors*
09-10	Jessica Cockbain	*What if Da Vinci Had A Computer? Investigating the Influence of Technology On Creativity*
08-10	Nicolas Di Noia	*The Categorical Similarity Mapping Engine (CSME), The Abstract Relation Mapping Engine (ARME), and the Direct Structure Mapping Engine (DSME): Investigating Category-based Approaches To Analogy Mapping*
08-09	Alexander Miller	*Rethinking Machine Ethics: Functionally Defined Artificial Intelligent Agent Ethics*
07-08	Jonathan Gagne	*Analogical Inference of Visual Properties*
07-08	Tyler Mair	*Finding Fun: Examining the Source of Fun in Games*

Master's Theses Examined for other Departments at Carleton University

Date	Department	Student	Title
2013, Sept 5	Neuroscience	Matthew Runge	*Validating Phenomenological Aspects of the Mental Imagery Experience through MetaAnalysis: Beyond Global Assessment of Imagery Ability*
2012, Sept 4	English	Thomas Sorensen	*Mimesis, Metarepresentation, and the Transformation of the Menal Object in the Aesthetic Attitude.*
2010, Sept 3	Film Studies	Jake Dole	*The Curious Eye: Symmetry, Neo-Baroque Aesthetics and the Hollywood Spectacle*
2008, Jan 28	Psychology	Michael Henighan	*Working Memory and Arithmetic*
2008, Jan 9	Psychology	Jordan Schoenherr	*The Dependency of Confidence Processing on Working Memory*
2008, May 20	Psychology	Joey Theberge	*A Distributional Analysis of Reaction Times in Mental Rotation*

Ph.D. Dissertations Examined for other Departments at Carleton University

Date	Department	Student	Title
2013	Computer Science	Hua Li	*Perception-Assisted High-Quality Stylization*

ADMINISTRATIVE RESPONSIBILITIES

Departmental Service

Technical Report Manager (2009-Present)

Graduate Committee (2009-present)

Ontario Graduate Scholarship Appraisal Committee (2009)

Member, Institute of Cognitive Science Faculty Hiring Committee (2008-2009)

Member, Institute of Cognitive Science Graduate Admissions Committee (2009-present)

Cognitive Science / Psychology Promotion Committee (2008-2009)

Cognitive Science / Linguistics Promotion Committee (2008-2009)

Faculty calls to high school students (2008-present)
Member, Faculty of Arts and Social Sciences Tenure Review Committee (2007)

Member, Institute of Cognitive Science Director Search Committee (2007)

Cognitive Science Distinguished Lecture Series, coordinator, (Fall 2006 – Summer, 2009)

Faculty of Arts and Social Sciences Service

Member, Faculty of Arts and Social Sciences Promotion Review Committee (2008)

Other

Director, Science of Imagination Laboratory, Carleton University
Founder, Creative Automated Design of Experience Group (CADOE)
Co-Founder, VSIM Computational Cognitive Science Laboratory (with R. West)

Membership in Professional Societies

American Association for Artificial Intelligence (lifetime member, since 2006)
Cognitive Science Society (since 1996)
Canadian Network for Innovation in Education (Since 2012)
American Psychological Association (since 2013)
International Association for the Cognitive Science of Religion (since 2013)
Canadian Science Writers' Association (since 2013)