

Jim Davies

Director, Science of Imagination Laboratory
Institute of Cognitive Science
2205 Dunton Tower, 1125 Colonel By Drive
Carleton University
Ottawa, Ontario, Canada K1S 5B6
1 (613) 520-2600 x1109 Tel
1 (613) 520-3985 Fax

jim@jimdavies.org
http://www.jimdavies.org/

EDUCATION

- 2004 **Ph.D., Computer Science**
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
- 1997 **M.S., Psychology**
GEORGIA INSTITUTE OF TECHNOLOGY
Title: Correlation and Consistent Contrast Biases Shown in Free Sort Categorization
Advisor: Prof. Dorrit O. Billman
Committee: Dr. Tony J. Simon, Prof. Timothy A. Salthouse
- 1993 **B.A., Philosophy**
STATE UNIVERSITY OF NEW YORK COLLEGE AT OSWEGO

PROFESSIONAL ACADEMIC EXPERIENCE

- Fall 2006- **Carleton University, Institute of Cognitive Science** Ottawa, Ontario
ASSOCIATE PROFESSOR
- Fall 2004-2006 **Queen's University, School of Computing** Kingston, Ontario
POSTDOCTORAL FELLOW
Applied visual analogy techniques to bioinformatics
Supervisor: Prof. Janice Glasgow
- Fall 2001-2004 **Georgia Institute of Technology** Atlanta, GA
GRADUATE RESEARCH ASSISTANT - College of Computing
Studied learning and cognition in biomedical engineering laboratories using ethnographic
observation and interviews
Supervisors: Profs. Nancy J. Nersessian and Wendy C. Newstetter
- 1997-1998 **Georgia Institute of Technology** Atlanta, GA
GRADUATE RESEARCH ASSISTANT - EduTech Institute
Designed evaluative rubrics and coded student work in a Learning-by-Design curriculum
creation project
Supervisor: Prof. Janet L. Kolodner

1995-1996 **Georgia Institute of Technology** Atlanta, GA
 GRADUATE RESEARCH ASSISTANT - Department of Psychology
 Designed and ran experiments researching categorization biases
 Supervisor: Prof. Dorrit O. Billman

INDUSTRIAL AND GOVERNMENTAL RESEARCH EXPERIENCE

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

Summer 1996 **Los Alamos National Laboratory** Los Alamos, NM
 GRADUATE RESEARCH ASSISTANT - Nonproliferation and International Security Division
 (NIS), Space Data Systems Group (NIS-3)
 System administrated and conducted neural network research
 Supervisor: Dr. Mark Galassi

1994-1995 **Los Alamos National Laboratory** Los Alamos, NM
 GRADUATE RESEARCH ASSISTANT - Computer Research and Applications Group (CIC-3)
 Conducted full-text information retrieval of physics documents using an *n-gram* method
 Supervisor: Dr. Timothy J. Thomas

RESEARCH THEME

Minds create imagined visual scenes by using a combination of pieced-together parts of visuospatial memory and explicitly-understood rules. My research focuses on how perceptual regularities predict imagined scenes.

PUBLICATIONS

FORMALLY REFEREED JOURNAL ARTICLES

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 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.

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.

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., 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

Accepted For Publication

Gagné, J. & **Davies, J.** (in press). Visuo: A model of visuospatial instantiation of quantitative magnitudes. *Knowledge Engineering Review. Special Issue on Visual Reasoning*.

Under Revision or Review

Cockbain, J. & **Davies, J.** (under review). Creative imagination is stable across technological media: The Spore Creature Creator versus pencil and paper. Submitted to *The Journal of Creative Behavior*.

Davies, J., & Matheson, D. (under review). The cognitive importance of testimony. Submitted to *Principia: The International Journal of Epistemology*.

FORMALLY REFEREED CONFERENCE AND WORKSHOP PAPERS

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. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society (CogSci 2010)*, (pp. 1553–1558). Austin, TX: Cognitive Science Society.

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.

Davies, J. & Gagné, J. (2009). Analogical estimation of quantitative magnitudes. *New Frontiers of Analogy Research: Proceedings of Analogy 09*, 155–164, Sofia, 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. *International Joint Conference on Artificial Intelligence Workshop on Grand Challenges For Reasoning From Experiences*. 1-6 July 11, Pasadena, California.

Davies, J., Glasgow, J. & Kuo, T. (2007). Protein structure prediction with visuospatial analogy. In T. Barkowsky, M. Klnauff, G. Ligozat, & D. R. Montello (Eds.) *Lecture Notes in Artificial Intelligence 4387 Spatial Cognition V: Reasoning, Action, Interaction (LNAI 4387)* 127–139.

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. Poster paper 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 Twenty-fifth 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. Alterman & D. Kirsh (Eds.) *Proceedings of the Twenty-fifth 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 Seventeenth 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*. 53–56.

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.

FORMALLY REFEREED ABSTRACTS

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)*.

REFEREED PRESENTATIONS

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.

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.

Davies, J., Schoenherr, J.R., & Bell, J. (2009). Psychological Dimensions of Graphical Representation of Science. *2009 Annual Convention of the Canadian Psychological Association*, Ottawa, Ontario, March 22, p151.

Schoenherr, J.R., **Davies, J.**, Burch, H., & Thomson, R. (2009). The believability of anthropomorphic explanations. Poster presentation at the 31st Annual Conference of the *Société Québécoise Pour La Recherche En Psychologie (SQRP09)*. 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.

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*.

BOOKS

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.

INVITED BOOK CHAPTERS

Goel, A. K. & **Davies, J.** (2011). Artificial Intelligence. in S. B. Kaufman and R. Sternberg (Eds.) *Cambridge Handbook of Intelligence* (3rd Edition), 468–482.

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.

REFEREED BOOK CHAPTERS

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. Tselves, (Eds.), *Knowledge in the New Technologies*. Peter Lang: Berlin: 167–195.

INVITED TALKS

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

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*. Rensselaer Polytechnic Institute, Cognitive Science Issues Colloquium, August 31.

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

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.

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

Davies, J. (2007). *A.I.: Past and Future*. Institute on Biotechnology and the Human Futures (IBHF) Conference, *The Spotless Mind? Policy, Ethics & the Future of Human Intelligence*, February 16. 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.

Davies, J. (2004). *Constructive adaptive visual analogy*.
 School of Information Science & Learning Technologies, University 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.

GRANTS AND CONTRACTS

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

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

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.

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

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

OTHER PRESENTATIONS

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

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.

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 <http://granny.carleton.ca/media/edc/jimdavies.mp4>

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., 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*.

Schoenherr, J. R., **Davies, J.**, & Bell, J. (2009). Graphical Representation of Science: Decoding Accuracy and Preference Ratings. Poster and Member abstract in the *Proceedings of the Cognitive Science Society*.

Schoenherr, J. R., Burch, H., **Davies, J.**, & Thompson, R. (2009). The Believability of Anthropomorphic Explanations of Natural Phenomena. Poster and Member abstract in the *Proceedings of the Cognitive Science Society*.

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

Davies, J. (2006) *Visualization in Human Imagination*. Cognitive Science Colloquium Series. Carleton University. October 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. (2004). Constructive adaptive visual analogy. *Cognitive Science Student Conference*. Georgia Institute of Technology. April 23.

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, E. & Malone, K. (2002) Biomedical Engineering Thinking and Learning: Phase 1–Reasoning in the lab. National Science Foundation presentation.

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

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. p750.

DEMONSTRATIONS

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*.

RESEARCH-RELATED WEB SITES

Davies, J. (Ed.) *Cognitive Science Summaries*.
Internet webpage: <http://www.jimdavies.org/summaries/>

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., 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. Atlanta, Georgia.

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. 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, Massachusetts.

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.

AWARDS

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

TEACHING EXPERIENCE

CGSC 1001	Mysteries of the Mind INSTRUCTOR Fall 2011	Carleton University
CGSC 5102	Computational Methods INSTRUCTOR Fall 2010, 2011	Carleton University
CGSC 3001	Honours Seminar in Cognitive Science I INSTRUCTOR (ONE-HALF) Fall 2009, 2010, 2011	Carleton University
CGSC 4001	Artificial Intelligence for Cognitive Science INSTRUCTOR Winter 2009, 2010	Carleton University
CGSC 6800	Proseminar in Cognitive Science INSTRUCTOR Winter 2007, 2008, Fall 2008, 2009, 2010	Carleton University
CGSC 5001	Artificial Intelligence for Cognitive Science INSTRUCTOR Fall 2008, 2009	Carleton University
CGSC 2002	Theories and Methods in Cognitive Science INSTRUCTOR Winter 2007, 2008, 2009, 2010, 2011	Carleton University

CGSC 4001/5001	Artificial Intelligence for Cognitive Science INSTRUCTOR Fall 2006, 2007, Winter 2011	Carleton University
CISC 453	Advanced Artificial Intelligence INSTRUCTOR (ONE-THIRD) Spring 2006	Queen's University
CS 4000	Computing and Society TEACHING ASSISTANT Faculty: Dr. Colin Potts Summer 2001	Georgia Tech
CS/PSY/ISyE 6795	Introduction to Cognitive Science TEACHING ASSISTANT Faculty: Dr. Alexander Kirlik Spring 2001	Georgia Tech
CS 6010	Principles of Design TEACHING ASSISTANT Faculty: Dr. Wendy C. Newstetter, Michael McCracken, Dr. Ashok K. Goel Fall 2000	Georgia Tech
CS/PSY/ISyE 6795	Introduction to Cognitive Science TEACHING ASSISTANT Faculty: Dr. Dorrit O. Billman Spring 2000	Georgia Tech

STUDENT RESEARCH SUPERVISION

PH.D. SUPERVISION

Sterling Somers. Ph.D. student at Carleton University. Fall 2007 - Present.

MASTER'S SUPERVISION

Karl Lambert. MCogSc student at Carleton University. Fall 2011 - Present.

HONOURS THESIS SUPERVISION

Alexander Richards. 2011-present.

Josh Wilson. 2010-2011. *How humans predict spatial magnitudes of an inexperienced object by using spatial knowledge of a similar object.* Psychology Major, co-supervised with Amedeo D'Angiulli.

Peter Welch. 2009-2010. *Developing an understanding of the biological emergence of mind; an analysis of the distributed information processing of the superorganism* Integrated Science Major.

Geoffrey Johnson. 2008 - 2010. *The expansion of Galatea to include L12, L11, and L13.* Cognitive Science Major.

Connor Smith 2009 - 2010. *The retrieval of images using spatial relationship detectors.* Cognitive Science Major.

Jessica Cockbain 2009 - 2010. *What if Da Vinci had a computer? Investigating the influence of technology on creativity.* Cognitive Science Major.

Nicolas Di Noia. Spring 2007 - Winter 2010. *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.* Cognitive Science Major.

Alexander Miller. 2008 - 2009. *Rethinking Machine Ethics: Functionally Defined Artificial Intelligent Agent Ethics.* Cognitive Science Major.

Jonathan Gagné. 2007 - 2008. *Analogical Inference of Visual Properties* Cognitive Science Major.

Tyler Mair. 2007 - 2008. *Finding Fun: Examining the Source of Fun in Games* Cognitive Science Major.

MASTER'S THESES EXAMINED

Jake Dole. Film Studies. 2010. *The Curious Eye: Symmetry, Neo-Baroque Aesthetics and the Hollywood Spectacle.*

Michael Henighan. Psychology. 2008. *Working Memory and Arithmetic.*

Jordan Schoenherr. Psychology. 2008. *The Dependency of Confidence Processing on Working Memory*

Joey Theberge. Psychology. 2008. *A Distributional Analysis of Reaction Times in Mental Rotation*

PROFESSIONAL SERVICE

Editorial Board Membership
The Open Artificial Intelligence Journal

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

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

DEPARTMENTAL SERVICE

Technical Report Manager (2009-Present)

Graduate Committee (2009-present)

Ontario Graduate Scholarship Appraisal Committee (2009)

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

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

Cognitive Science / Psychology Promotion Committee (2008-2009)

Cognitive Science / Linguistics Promotion Committee (2008-2009)

Faculty calls to high school students, Carleton University (2008-present)

Coordinator, Cognitive Science Distinguished Lecture Series, Carleton University (2006-9). Under my tenure supported talks by (2009) Mark Ashcraft, Frank Ritter, Daniel Dennett, Daniel Ansari, Liane Gabora, (2008) Képa Korta, Terry Stewart, (2007) Michael L. Anderson, Alison Gopnik, Wayne Gray, Gary Libben, (2006) William Bechtel, and David Stork

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

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

Member, Faculty of Arts and Social Sciences Tenure Review Committee, Carleton University (2007)

Speaker, Pitch to high school students, Carleton University (2007, 2008, 2009)

Cognitive Science Student Representative, Georgia Institute of Technology (1995, 1996, 1997, 1998)

PROFESSIONAL SOCIETY MEMBERSHIP

American Association for Artificial Intelligence (AAAI, lifetime member)

Cognitive Science Society

Canadian Society for Brain, Behavior, and Cognitive Science (CSBBCS)