STEPHEN DAVIES

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EDUCATION:

University of Colorado, Boulder. Ph.D. Computer Science, December 2005. Dissertation: *The Efficacy of Personal Knowledge Bases for Materializing Mental Impressions.*

Graduate Teacher Program, University of Colorado, Boulder. Graduate Teacher Certification, October 2005.

University of Colorado, Boulder. M.S. Electrical Engineering, May 1996. Thesis: *Digital Signal Processing Techniques for the Automated Recognition of Musical Tones.*

Rice University, Houston, Texas. B.S. Electrical Engineering, graduated *cum laude*, May 1992. President's Honor Roll 1989-1991.

PROFESSIONAL EXPERIENCE:

University of Mary Washington, Associate Professor, Fredericksburg, Virginia.
Teach undergraduate coursework in computer science and related fields; advise students on career and academic-related pursuits; conduct undergraduate-focused research on a broad range of topics, including scientific modeling and simulation, computational social science, and computer science pedagogy. August 2006 – present.

WD30 Corporation, Principal Software Engineer, Broomfield, Colorado.
Performed onsite software consulting and development; outsourced product implementation and support. May 2000 – July 2006. Projects include:

- *The Encyclopedia of Life,* an enterprise Web application sponsored by the Smithsonian Institution whose aim is to aggregate all known information about all species of life on earth. (June 2004 – March 2005.)

- *Fresno*, a distributed data collection and editing system developed for the Pediatric Rehabilitation Department at Children's Hospital in Denver, CO. (July 2003 – March 2004.)

- *Horizon Expert Documentation*, a patient care and medication charting system, developed for and in conjunction with McKesson Corporation in Louisville, CO. (April 2002 – January 2003.)

- *Polaris*, a specialized buyer-side application for commercial marine

procurement, developed exclusively for Marine Provider, inc. in Oslo, Norway. (October 2001 – January 2002.)

- *Quote Comparator*, a web-based procurement tool that presents complex comparisons of multi-line-item quotes, developed for Marine Provider, inc. (October 2001 – January 2002.)

- *Epicenter*, an object-oriented, Java-based Linux gateway to translate outbound RPC traffic, developed exclusively for Storage Technology, Inc., in Louisville, CO. (October 2000 – August 2001.)

- *BizCast*, a web-based electronic billing and presentment solution, developed for and in conjunction with Solant, inc. (later acquired by Avolent.) (May 2000 – October 2000.)

Azika Corporation, Principal Software Engineer, Boulder, Colorado.
Developed startup company's flagship product: a web-based marketing automation solution, with both design-time and publish-time elements. June 1999 – May 2000.

Storage Technology, Inc., (since acquired by Oracle and Sun Microsystems), Senior Software Engineer, Python Development Group, Louisville, Colorado.
Designed next generation library management software to drive automated robotic tape libraries. Emphasis on devising a long-term, extensible architecture that would be capable of supporting advanced features such as dynamic reconfiguration, near-continuous operations, and hot-pluggable integration with a wide variety of clients and platforms. November 1996 – May 1999.

PUBLICATIONS:

- Crawford, M., **Davies, S.**, Griffith, A., "Predicting Metapopulation Responses of a Tidal Wetland Annual to Environmental Stochasticity and Water Dispersal Through an Individual-based Model," under editorial review, *Ecological Modelling*.
- Ruud, R., **Davies, S.**, "Modeling Decentralized Price Fluctuations Through Agent-Based Recognition of Scarcity." Presented at the 89th Annual Conference of the Western Economic Association International (WEIA), Denver Colorado, June 2014.
- Crawford, M., **Davies, S**., Griffith, A., "Estimating the Effects of Heterogeneous Competition in an Agent-based Ecological Model Using GIS Raster Color." (peer-reviewed research poster) *Proceedings of the 45th Winter Simulation Conference* (WSC13), Washington, D.C., December 2013.
- Polack, J., **Davies, S.**, and Anewalt, K. "A Snapshot of Current Languages Used in Industry." *Proceedings of the 42nd Annual Frontiers in Education Conference* (FIE 2012), pp.148-153, Seattle, Washington, October 2012.
- **Davies, S.**, Aylor-Seal, S., Hatfield, J. "Cinefile: A Category-Based Analytic Browser." *IEEE Computer*, **vol. 45**, issue 8, pp.62-69, August 2012.
- Parlante, N., Zelenski, J., Zingaro, D., Wayne, K., O'Hallaron, D., Guerin, J.T.,

Davies, S., Kurmas, Z., and Debby, K., "Nifty Assignments." in *Proceedings of the 43rd ACM Technical Symposium on Computer Science Education* (SIGCSE 2012), pp.475-476, Raleigh, North Carolina, March 2012.

- Clemmer, A., and **Davies, S.**, "Smeagol: A 'Specific-to-General' Semantic Web Query Paradigm for Novices." in *Proceedings of the 22nd International Conference on Database and Expert Systems Applications* (DEXA 2011), *Lecture Notes in Computer Science (LNCS) 6860,* A. Hameurlain et al. (Eds.), pp.288-302, Spring-Verlag, September 2011.

- **Davies, S.,** Polack-Wahl, J., and Anewalt, K. "A Snapshot of Current Practices in Teaching the Introductory Programming Sequence." *Proceedings of the 42nd ACM Technical Symposium on Computer Science Education (SIGCSE2011),* pp.625-640, Dallas, Texas, March 2011.

- **Davies, S.,** "Still Building the Memex." *Communications of the ACM*, **53**(2), pp. 80-88, Feb. 2011.

- **Davies, S.**, Donaher, C., Hatfield, J., and Zeitz, J. "Making the Semantic Web Usable: Interface Principles to Empower the Layperson." *Journal of Digital Information*, **12**(2), Jan. 2011.

- **Davies, S.**, Zeitz, J., and Hatfield, J. "Addressing the Cognitive Difficulties of Expressing N-ary Relations in Semantic Web Data." *Proceedings of the 6th International Conference on Semantic Systems (I-SEMANTICS 2010)*, Graz, Austria, Sept. 2010.

- Donaher, C., Hatfield, J., Zeitz, J., and **Davies, S.** "Toward a Semantic Web Editor for the Layperson." (competitive, peer-reviewed research poster.) *Proceedings of the Seventh Extended Semantic Web Conference (ESWC2010)*, Heraklion, Greece, May 2010.

- **Davies, S.,** Hatfield, J., Donaher, C., and Zeitz, J. "User Interface Design Considerations for Linked Data Authoring Environments." *Proceedings of the WWW2010 Workshop on Linked Data on the Web (LDOW2010)*, Raleigh, North Carolina, USA, April 27, 2010, *CEUR Workshop Proceedings*, ISSN 1613-0073, online CEUR-WS.org/Vol-628/ldow2010_paper01.pdf.

- **Davies, S.** "Appointing Team Leads for Student Software Development Projects." *Journal of Computing Sciences in Colleges*, **25**(2), pp.92-99, December 2009.

- **Davies, S.,** Lamb, R., and Odhiambo, N. "Non-Intrusive Techniques for Enhancing Decentralized Data Storage with Strategic GIS Visualization." *Proceedings of the 2009 WRI World Congress on Computer Science and Information Engineering (CSIE09)*, Los Angeles, California, vol.**2**, pp.379-383, IEEE Computer Society, 2009.

- **Davies, S.**, "The Effects of Emphasizing Computational Thinking in an Introductory Programming Course." *Proceedings of the 38th Annual Frontiers in Education Conference (FIE08)*, Saratoga Springs, NY, pp. 3-8, 2008.

- **Davies, S.**, "Work in Progress – Analyzing the Gap Between Diagrams and Code in Computer Science." *Proceedings of the 38th Annual Frontiers in Education Conference (FIE08)*, Saratoga Springs, NY, pp.16-17, 2008.

- **Davies, S.**, "'Why Should I Care?' Making Programming Assignments Relevant for Non-Majors." *Journal of Computing Sciences in Colleges*, **23**(3), pp. 90-95,

2008.
- **Davies, S.**, Allen, S., Raphaelson, J., Meng, E., Engleman, J., and Lewis, C. "Popcorn: the Personal Knowledge Base." *Proceedings of the Sixth ACM Conference on Designing Interactive Systems,* University Park, PA, pp. 150-159, 2006.
- **Davies, S.** and King, R. "Crossing the Objective-Subjective Divide in Information Space Organization." *Proceedings of the Eighth Joint Conference on Information Sciences*. Salt Lake City, Utah, July 21-26, 2005.
- **Davies, S.**, Badem, S., Williams, M., and King, R. "Google by Reformulation: Modeling Search as Successive Refinement." *Proceedings of the IEEE International Workshop on Web Information Retrieval,* pp. 435-440, 2004.
- **Davies, S.** and King, R. "Leveraging Metadata Inductively and Subjectively." *Proceedings of the Fourth International Conference on Dublin Core and Metadata Applications*, pp. 163-167, 2004.

WORKS IN PROGRESS:

- Research topic: "A computational simulation to study the factors impacting a college student body's racial diversity"
- Research topic: "Algorithms for predicting the current geolocation of social media users"

HONORS, GRANTS, AWARDS:

- Chi Beta Phi Faculty Award. An annual student-nominated award which "honors exceptional professors in the sciences and mathematics who demonstrate a love of teaching, genuine outreach to students, and contribution to the university community." April 2013.
- Mary W. Pinschmidt Award. Awarded annually by UMW Senior class to the faculty member "whom they will most likely remember as the one who had the greatest impact on their lives." May 2010.
- UMW Jepson Fellowship, academic year 2009-2010: "Modeling Subjectivity in Database Exploration."
- Teaching Innovation Program summer 2007 faculty development grant: "Promoting Learning and Collaboration in Computer Science Through Team-based, Interdisciplinary Projects."
- "Who's Who Among America's Teachers," 2007.
- Upsilon Pi Epsilon, inducted 2007.
- Residence Life Academic Teaching Award. Awarded to faculty who students in the Honors Residence Hall identify as having had significant impact on their success at the University of Colorado. April 2005.
- CU-LEAD Alliance Faculty Appreciation Award, for work with minority students. Given annually by the Leadership, Excellence, Achievement, and Diversity Alliance at the University of Colorado to selected faculty for demonstrating dedication and commitment to the success of underrepresented students. November 2004.

SUBJECTS TAUGHT:

- FSEM 100: Freshman Seminar (Artificial Intelligence; History of Technology)
- CPSC 105: Problem-Solving with Databases
- CPSC 110: Introduction to Computer Science
- CPSC 125: Introduction to Discrete Math
- CPSC 220: Computer Science I
- CPSC 230: Data Structures
- CPSC 270: Foundations for Data Science
- CPSC 305: Computer Systems & Architecture
- CPSC 326: Theoretical Foundations of Computing
- CPSC 330: Object-oriented Analysis and Design
- CPSC 350: Applications of Databases
- CPSC 370: Database Essentials and Data Mining
- CPSC 370: Computational Science
- CPSC 420: Modeling and Simulation
- CPSC 448: Advanced Web Application Development
- CPSC 470: The Semantic Web

SERVICE:

- Track co-Coordinator, Social and Behavioral Simulation Track – 2015 WSC (Winter Simulation Conference; affiliated with ACM SIGSIM), 2014-2015.
- Provost's 4-Credit Working Group, Chair, 2014-2015.
- President's Strategic Reallocation Task Force, Academic Subcommittee, 2013-2014.
- University Curriculum Committee, University of Mary Washington; chair 2012-2013.
- University Faculty Council, University of Mary Washington, at-large representative, 2011-2013.
- CAS Faculty Senate, University of Mary Washington, representative from Computer Science, 2010-2011.
- CAS Curriculum Committee, University of Mary Washington, member 2007-2008; secretary 2008-2009, chair 2009-2010.
- CAS Faculty Senate, parliamentarian 2008-2011.
- QEP (Quality Enhancement Plan) Planning Committee, 2011-2012, in preparation for SACS re-accreditation.
- RFP (Request For Proposals) committee for online course evaluations, 2011-2012.
- ACM Chapter Supervisor, 2010-2011.
- UMW Quantitative Reasoning Assessment Committee, representative from Computer Science, 2011-2013.
- Invited speaker for Summer Science Institute, summer 2009, 2010, and 2013.
- Department of Mathematics Search Committee – member 2008-2009.
- First-Year Advisor, University of Mary Washington, 2007-2011.
- Computer Science Career Advisor, 2007-2008, 2011-2012.
- PERLs Student Group, Faculty Sponsor and Supervisor, 2007-2010, 2012-2013.
- Invited speaker for Writing Intensive Program Summer Workshop, summer 2008.
- Invited speaker for Teaching Innovation Program (TIP) New Faculty Welcome, fall 2007.
- Invited presentation for Math Awareness Month: "Semantic Networks and the Quest for the Personal Knowledge Base," University of Mary Washington (2007).
- Computer Science Department Secretary, 2006-2007.
- Computer Science Graduate School Advisor, 2006-2007.
- Reviewer – ACM SIGCSE (Special Interest Group on Computer Science Education), 2007-2011.

- Reviewer – ACM ITiCSE (Innovation Technology in Computer Science Education), 2007-2011.
- Reviewer – FIE (Frontiers In Education) conference, 2010.
- Reviewer – VJAS (Virginia Junior Academy of Sciences), 2007.
- Programming Contest Coordinator – Consortium for Computing Sciences in Colleges Eastern Conference, 2007.

References available upon request.

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