

## COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Schartz, Ph.D., M.C.S.  
April 25, 2014

### **I. EDUCATIONAL AND PROFESSIONAL HISTORY**

#### **A. List of institutions attended (least to most recent)**

Kansas State University; Manhattan, KS; 1982-1986; Psychology & Physical Science (dual major); B.S. in 1986

The University of Iowa; Iowa City, IA; 1986-1988; Psychology; M.A. in 1988

The University of Iowa; Iowa City, IA; 1988-1991; Experimental Psychology; Ph.D. in 1994

The University of Iowa; Iowa City, IA; 1998-2001; Computer Science with Software Engineering specialization; Master of Computer Science (M.C.S.) in 2001

#### **B. Professional and academic positions held (least to most recent)**

Graduate Assistant; 1986-1991; Department of Psychology, The University of Iowa; Iowa City, IA

Instructor; 1988-1990 (summers); Department of Psychology, The University of Iowa; Iowa City, IA

Interdisciplinary Assistantship; 1990-1991; Department of Philosophy, The University of Iowa; Iowa City, IA

Lecturer; 1992-1995; Department of Psychology, Missouri State University; Springfield, MO

Assistant Professor; 1995-1998; Department of Psychology, Missouri State University; Springfield, MO

Research Assistant II; 1998-1999; Department of Radiology, The University of Iowa; Iowa City, IA

Graduate Research Assistant; 1999-2001; Department of Radiology, The University of Iowa; Iowa City, IA

Assistant Research Scientist; 2001; Law, Health Policy & Disability Center, College of Law, The University of Iowa; Iowa City, IA

Assistant Research Scientist; 2001-2002; Medical Image Perception Laboratory, Department of Radiology (50%), Law, Health Policy & Disability Center (50%), The University of Iowa; Iowa City, IA

COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Schartz, Ph.D., M.C.S.

page 2

Associate Research Scientist; 2003; Department of Radiology (50%), Law, Health Policy & Disability Center (50%), The University of Iowa; Iowa City, IA

Application Development & Support III; 2004-2006; Department of Radiology (80%), Law, Health Policy & Disability Center (20%), The University of Iowa; Iowa City, IA

Application Development & Support III; 2006-2009; Department of Radiology, The University of Iowa; Iowa City, IA

Research Assistant Professor; 2009-present; Department of Radiology, The University of Iowa; Iowa City, IA

C. **Honors, Awards, Recognitions, Outstanding Achievements (least to most recent)**

Master Advisor designation; Missouri State University; Springfield, MO; Fall 1996

II. **TEACHING**

A. **Teaching assignments on semester by semester basis (least to most recent)**

*Classroom, seminar, teaching lab*

The University of Iowa, Department of Psychology (summers 1988-1990)

Introductory Psychology (co-taught the course 1988 & 1989)

Introduction to Mental Processes (1990)

Missouri State University (1992-1998)

Introductory Psychology (2 semesters)

Psychological Statistical Methods (10 semesters)

Experimental Psychology I (lecture & laboratory sections) (11 semesters)

Using SPSS to Describe and Analyze data (one intersession)

Health, Psychology, and the World Wide Web (one intersession)

*Clinical teaching*

none

B. **Students supervised**

no students supervised at the University of Iowa

C. **Other contributions to institutional programs**

none at the University of Iowa

**III. SCHOLARSHIP**

**A. Publications or creative works (least to most recent)**

*Peer-reviewed papers*

1. Phelps JA, Davis JO, **Schartz KM**. Nature, nurture, and twin research strategies. *Current Directions in Psychological Science* 1997; 6: 117-121.
2. **Schartz KM**, Schartz HA, Blanck PD. Employment of persons with disabilities in information technology jobs: Literature review for "IT Works." *Behavioral Sciences & the Law* 2002; 20: 637-657.
3. Blanck P, Schartz HA, **Schartz K**, Schmeling J. "IT Works": Disability and employment in information technology. *SCI Life* 2002/2003; Fall 2002/ Winter 2003: 26-27.
4. Blanck PD, Schartz HA, **Schartz KM**. Labor force participation and income of individuals with disabilities in sheltered and competitive employment: Cross-sectional and longitudinal analyses from seven states during the 1980s and 1990s. *William & Mary Law Review* 2003; 44: 1029-1108.
5. Hillis SL, Obuchowski NA, **Schartz KM**, Berbaum KS. A comparison of the Dorfman-Berbaum-Metz and Obuchowski-Rockette Methods for receiver operating characteristic (ROC) data. *Statistics in Medicine* 2005; 24: 1579-1607.
6. Schartz HA, **Schartz KM**, Hendricks DJ, Blanck P. Workplace accommodations: Empirical study of current employees. *University of Mississippi Law Journal* 2006; 75: 917-943.
7. Berbaum KS, Franken EA, Caldwell RT, **Schartz KM**. Can a checklist reduce SOS errors in chest radiography? *Academic Radiology* 2006;13: 296-304.
8. **Schartz KM**, Berbaum KS, Caldwell RT, Madsen MT. WorkstationJ: Workstation emulation software for medical image perception and technology evaluation research. *Proceedings of the International Society for Optical Engineering* 2007; 6515: 651511-6515111.
9. Berbaum KS, El-Khoury GY, Ohashi K, **Schartz KM**, Caldwell RT, Madsen MT, Franken EA Jr. Satisfaction of search in multi-trauma patients: severity of detected fractures. *Academic Radiology* 2007; 14: 711-722.
10. Berbaum KS, Caldwell RT, **Schartz KM**, Thompson BH, Franken EA Jr. Does computer-aided diagnosis for lung tumors change satisfaction of search in chest radiography? *Academic Radiology* 2007; 14: 1069-76.
11. Krupinski EA, Berbaum KS, Caldwell RT, **Schartz KM**, Kim J. Long radiology workdays reduce detection and accommodation accuracy. *Journal of the American College of Radiology* 2010; 7: 698-704.
12. D'Alessandro B, Madsen M, Samei E, Li X, Wooi-Tan J, Berbaum KS,

COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Schartz, Ph.D., M.C.S.

page 4

**Schartz K**, Caldwell R, Zuckier LS. Synthetic positron emission tomography-computed tomography images for use in perceptual studies. *Seminars in Nuclear Medicine* 2011 Nov;41(6):437-48.

13. Berbaum KS, **Schartz KM**, Caldwell RT, El-Khoury GY, Ohashi K, Madsen M, Franken EA Jr. Satisfaction of search for subtle skeletal fractures may not be induced by more serious skeletal injury. *Journal of the American College of Radiology* 2012; 9:344-351.
14. **Schartz, KM**, Berbaum, KS, , Madsen MT, Thompson, BH, Mullan, BF, Caldwell RT, Hammett B, Ellingson A, Franken EA Jr. Multiple diagnostic task performance in computed tomography examination of the chest. *British Journal of Radiology* 2013; 86: 18244135. doi:10.1259/bjr/18244135.

*Reports*

1. Blanck PD, Schartz HA, **Schartz KM**. *Labor force participation and income of individuals with disabilities in sheltered and competitive employment: Cross-sectional and longitudinal analyses from seven states during the 1980s and 1990s*. A report prepared for the Presidential Taskforce on Employment of Adults with Disabilities, U.S. Department of Labor, 2001.

*Chapters*

1. Berbaum KS, Franken EA Jr, Caldwell RT, **Schartz KM**. Satisfaction of search in traditional radiographic imaging. In: Samei E, Krupinski E, Jacobson F, eds. *The Handbook of Medical Image Perception and Techniques*. Cambridge, UK: Cambridge University Press, 2010; 107-138.

**B. Areas of Research Interest and Current Projects**

*Areas of Research Interest:* Software tools to conduct observer performance and technology evaluation studies in diagnostic radiology, software tools for receiver operating characteristic (ROC) analysis, psychophysics.

*Current Projects:* Development of open source software tools to conduct observer performance studies in diagnostic radiology using the Java programming language, development of open source software tools for receiver operating characteristic (ROC) analysis using the Fortran programming language, development of software tools for abnormality manipulation for tomographic imaging perception research using the IDL programming language.

**C. Published reviews of scholarship**

**D. Grants received**

*Previous*

COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Schartz, Ph.D., M.C.S.

page 5

Title: Satisfaction of Search in Diagnostic Radiology  
Source: NIH Grant R01 EB000145  
Funding: \$242,941 (direct)  
Dates: 1986-2013  
P.I.: Kevin Berbaum, Ph.D.  
Role: Co-investigator  
%Effort: 58.75% effort and salary support

Title: Improved DBM ROC Methods for Diagnostic Radiology  
Source: NIH Grant R01 EB000863  
Funding: \$569,460 (direct)  
Dates: 2003-2007  
P.I.: Kevin Berbaum, Ph.D.  
Role: Co-investigator  
%Effort: 100% effort and salary support except for other support listed below

Title: IT Works  
Source: National Institute on Disability Rehabilitation and Research, U.S.  
Department of Education grant H133A011803  
Funding: \$299,719 (direct)  
Dates: November 2001 – October 2006  
P.I.: Peter D. Blanck, Ph.D., J.D.  
Role: Co-investigator  
%Effort: 50% effort and salary 2001-2003

Title: Satisfaction of Search in Diagnostic Radiology  
Source: NIH Grant R01 EB000145  
Funding: \$1,125,000 (direct)  
Dates: 2002-2007  
P.I.: Kevin Berbaum, Ph.D.  
Role: Co-investigator  
%Effort: 50% effort and salary support for 3 months in 2006.

Title: Web-based Resource for Sample Size Estimation in Medical  
Diagnostic Technology Evaluation Research  
Source: University of Iowa Informatics Initiative  
Funding: \$25,440 (direct)  
Dates: 2003  
P.I.: Kevin Schartz, Ph.D., M.C.S.  
Role: Co-investigator  
%Effort: 25% effort and salary support

Title: WorkstationJ as ImageJ Plugin for Medical Image Studies  
Source: Society for Imaging Informatics in Medicine  
Funding: \$20,000 (direct)  
Dates: 07/01/2008-06/30/2009  
P.I.: Kevin Schartz, Ph.D., M.C.S.  
Role: Principal investigator  
%Effort: 20% effort and salary support

COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Schartz, Ph.D., M.C.S.

page 6

Title: Abnormality Manipulation for Tomographic Imaging Perception Research  
Source: NIH EB006638-02  
Funding: \$223,943 (direct)  
Dates: 09/01/2007-05/31/2010  
P.I.: Mark Madsen, Ph.D.  
Role: Co-investigator  
%Effort: 30% effort and salary support

Title: Improved DBM ROC Methods for Diagnostic Radiology  
Source: NIH Grant R01 EB000863  
Funding: \$503,784 (direct)  
Dates: 04/01/2003-03/31/2011, no cost extension to 03/31/2012  
P.I.: Kevin Berbaum, Ph.D.  
Role: Co-investigator  
%Effort: 80% effort and salary support

*Current*

Title: Eyestrain in Radiologists (local subcontract)  
Source: NIH Grant 2R01EB004987-05A1 (PI: E. Krupinski, U. of Arizona)  
Funding: \$91,060 (annual direct of local subcontract)  
Dates: 07/01/2005 - 06/30/2017  
P.I.: Kevin M. Schartz (PI of local subcontract)  
Role: Co-investigator  
%Effort: 50% effort and salary support

Title: Power and Sample-Size Methodology For Radiology Research  
Source: NIH Grant R01 EB013667  
Funding: \$675,000 (direct)  
Dates: 04/01/2012-03/31/2015  
P.I.: Stephen Hillis, Ph.D.  
Role: Co-investigator  
%Effort: 50% effort and salary support

**E. Invited lectures**

**Conference presentations**

1. **Schartz KM**, Dorfman DD. A comparison of two psychophysical procedures. Presentation at the Iowa Student Psychological Association Meeting, Iowa City, Iowa, April 1988.
2. Zimba L., **Schartz K**, Tellinghuisen D. The effect of spatial expectancy on line orientation judgments in a stereoscopic display. Poster at The Association for Research in Vision and Ophthalmology Meeting, Sarasota, Florida, April 1991.

COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Schartz, Ph.D., M.C.S.

page 7

3. **Schartz KM.** A monte carlo comparison of two adaptive psychophysical procedures. Presentation at the research meeting of the Ozark Area Psychological Association, Springfield, Missouri, March 1996.
4. Parameswaran G, Lockett DR, **Schartz KM**, Davis JO. Gender in mental and physical health advertising. Poster at the 1997 Meeting of the American Association of Applied and Professional Psychologists, Washington, D. C., May 1997.
5. Mitchell DW, **Schartz KM**, Sand SA. Infant discrimination learning: Identification of factors within a synchronous reinforcement schedule that control attending behavior. Poster at the 1997 International Meeting of the Association for Behavior Analysis, Chicago, Illinois, May 1997.
6. **Schartz KM.** Mirror star tracing in experimental psychology: Keeping students interested. Poster at the 5th Annual American Psychological Society Institute on the Teaching of Psychology, Washington, D.C., May 1998.
7. **Schartz KM**, Pesce L, Hillis S, Metz CE, Berbaum M, Berbaum KS. DBM MRMC: Software to perform analysis of variance for multi-reader multi-case receiver operating characteristic experiments using various observer models and accuracy parameters. Education Exhibit (infoRAD) at the Annual meeting of the Radiological Society of North America, Chicago, IL, November 2006.
8. **Schartz KM**, Berbaum KS, Caldwell RT, Madsen MT. WorkstationJ: Workstation emulation software for medical image perception and technology evaluation research. Presentation at the Annual Meeting of the SPIE – The International Society for Optical Engineering, Medical Imaging 2007: Image Perception and Performance, San Diego, CA, February 2007.
9. Berbaum KS, El-Khoury GY, Ohashi K, **Schartz KM**, Caldwell RT, Madsen MT, Franken EA Jr. Satisfaction of search in multi-trauma patients: Severity of detected fractures. Presentation at the Association of University Radiologists 55th Annual Meeting, Denver, CO, April 24-28, 2007.
10. **Schartz KM**, Berbaum KS, Caldwell RT, Madsen MT. Software to facilitate medical image perception and technology evaluation research. Presentation at the Medical Image Perception Conference XII, Iowa City, IA, October 17-20, 2007.
11. Berbaum KS, El-Khoury GY, Ohashi K, **Schartz KM**, Caldwell RT, Madsen MT, Franken EA Jr. Satisfaction of search in multi-trauma patients: Severity of detected fractures. Presentation at the Medical Image Perception Conference XII, Iowa City, IA, October 17-20, 2007.
12. Madsen MT, Berbaum KS, Caldwell RT, **Schartz KM**. Abnormality manipulation tools for medical image perception research. Presentation at the Medical Image Perception Conference XII, Iowa City, IA, October 17-20, 2007.
13. Madsen MT, Durst GR, Caldwell RT, **Schartz KM**, Thompson BH, Berbaum KS. Validation of an improved abnormality insertion method for medical

COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Sartz, Ph.D., M.C.S.

page 8

image perception investigations. Presentation at the Annual Meeting of the SPIE – The International Society for Optical Engineering, Medical Imaging 2009, Lake Buena Vista, Florida, February 7-12, 2009.

14. **Sartz KM**, Berbaum KS, Caldwell RT, Madsen MT. WorkstationJ. Software workshop presentation at the Annual Meeting of the SPIE – The International Society for Optical Engineering, Medical Imaging 2009, Lake Buena Vista, Florida, February 7-12, 2009.
15. Madsen MT, **Sartz KM**, Caldwell RT, & Berbaum KS. Abnormality Manipulation Software Tools. Software workshop presentation at the Annual Meeting of the SPIE – The International Society for Optical Engineering, Medical Imaging 2009, Lake Buena Vista, Florida, February 7-12, 2009.
16. **Sartz KM**, Berbaum KS, Caldwell RT, Madsen MT. WorkstationJ as ImageJ plugin for medical image studies. Presentation at the R&D Symposium at the Annual Meeting of The Society for Imaging Informatics in Medicine, Charlotte, North Carolina, June 4-7, 2009.
17. **Sartz KM**, Berbaum KS, Caldwell RT, Madsen MT. WorkstationJ as ImageJ plugin for medical image studies. Software demonstration at the Annual Meeting of The Society for Imaging Informatics in Medicine, Charlotte, North Carolina, June 4-7, 2009.
18. **Sartz KM**, Berbaum KS, Caldwell RT, Madsen MT. Conversion of WorkstationJ to ImageJ Plugin. Presentation at the Medical Image Perception Conference XIII, Santa Barbara, CA, October 19-21, 2009.
19. Madsen MT, Berbaum KS, **Sartz KM**, & Caldwell RT. Abnormality Manipulation Tools for PET CT. Presentation at the Medical Image Perception Conference XIII, Santa Barbara, CA, October 19-21, 2009.
20. Madsen MT, Berbaum K, Caldwell R, **Sartz K**. Abnormality manipulation of PET images. Presentation at the Society of Nuclear Medicine Annual Meeting, Salt Lake City, UT, June 5-9, 2010.
21. **Sartz KM**, Hammett B, Ellingson A, Madsen MT, Thompson B, Mullan B, Caldwell RT, Franken EA, Berbaum KS. Off-task performance in CT examination of the chest. Presentation at the Medical Image Perception Conference XIV, Dublin, Ireland, August 9-12, 2011.
22. Berbaum KS, & **Sartz KM**. One parameter contaminated binormal model (CBM) for analysis of difficult-to-fit ROC data. Presentation at the Annual Meeting of the SPIE – The International Society for Optical Engineering, Medical Imaging 2013, Lake Buena Vista, Florida, February 10-14, 2013.
23. **Sartz KM**, Berbaum KS, Madsen MT *et al*. Reduced detection of abnormalities not suggested by clinical information in computed tomography of the chest. Presentation at the Medical Image Perception Conference XV, Washington, DC, August 14-16, 2013.
24. Caldwell RT, **Sartz KM**, Berbaum KS *et al*. A vocalized checklist and satisfaction of search in chest radiography. Presentation at the Medical



COLLEGE OF MEDICINE CURRICULUM VITAE

Kevin M. Scharz, Ph.D., M.C.S.

page 9

Image Perception Conference XV, Washington, DC, August 14-16, 2013.

**Visiting Professorships**

none

F. **Pending decisions (grant proposals, book contracts)**

none

**IV. SERVICE**

A. **Offices held in professional organizations (least to most recent)**

none

B. **Clinical assignments since last promotion (if applicable)**

none