



VITA

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Michael K. McBeath

ADDRESS

Department of Psychology
Arizona State University
Tempe, AZ 85287-1104
(480) 965-8930 [Fax: 965-8544]
m.m@asu.edu

Home:
4530 East Cathedral Rock Drive
Phoenix, AZ 85044-6811
(480) 785-5939

E-Mail
Web Page

<http://www.public.asu.edu/~mmcbeath>

PERSONAL

Born in Istanbul, Turkey. (U.S. Citizen)
Married to Karen McBeath, Children: Jasmine McBeath; Ross McBeath.

EDUCATION

Ph.D., Psychology, minor Electrical Engineering, 1990, Stanford University, CA.
M.S., Scientific Instrumentation, University of California, Santa Barbara, CA.
B.A., Electrical Engineering and Psychology, Brown University, Providence, RI.

HONORS AND AWARDS

New York Times – Selection of “Robot Fielder” – 6th Annual Year in Ideas, 2006
Wakonse Fellow, Inspiration and Support for College Teaching, 2004
Mentor Appreciation Award, Arizona State University PFF Program, 2000,2001
Innovative Teaching Award, Kent Psi Chi Psychology Honor Society, 1996
Advisor of the Semester Finalist, Kent State Office of Campus Life, 1995, 1996
Macmillan-SABR Baseball Research Award Finalist, 1995
Sigma Xi, Full Membership, 1995
National Eye Institute Young Investigator ARVO Travel Award, 1994
National Research Council Post-Doctoral Fellowship, 1990, 1991
Western Psychological Association Student Scholarship Award, 1990
Who's Who in Science and Engineering, 2nd Edition, 1994
Who's Who in the West, 21st-23rd Editions, 1987, 1990, 1992
Who's Who of Emerging Leaders in America, 2nd-3rd Editions, 1988, 1990
National Research Service Award, 1987, 1988
Stanford University Fellowship, 1985

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science (AAAS)
American Psychological Society (APS)
American Psychological Association (APA)
Institute of Electrical and Electronic Engineers (IEEE)
Psychonomic Society
Vision Sciences Society (VSS)
Acoustical Society of America (ASA)

RESEARCH INTERESTS

Perception and representation of three-dimensional space and motion
Navigation, tracking and attentional heuristics with applications in sports
Auditory pitch and rhythm perception with applications in localization and music
Object, pattern, & orientation recognition with applications in virtual environments
Mathematical, computational and geometrical modeling
Human factors, human-machine interface, and multimedia display enhancement

TEACHING INTERESTS

Partial listing of undergraduate and graduate courses I am prepared to teach:

Undergraduate

Perception
Experimental Design and Statistics
Cognitive Psychology
Human Factors/Engineering Psych.
Introductory Psychology

Graduate

Perception
User-Centered Research & Design
Navigating Nature (Vision & Audition)
Perception, Action, Cognition in Sports
Perception of Art and Music

VITA - Michael K. McBeath

PROFESSIONAL EXPERIENCE

- 2007-Present *Professor, Department of Psychology, Arizona State University, Tempe, AZ 85287. Research and teaching with specialties in 3 kinds of pitch perception: Baseball, music, & tilt. Dept. Chair, Dr. Keith Crnic.*
- 2002-2007 *Associate Professor, Department of Psychology, Arizona State University, Tempe, AZ 85287. Dept. Chair, Dr. Keith Crnic.*
- 1998-2002 *Assistant Professor, Department of Psychology, Arizona State University, Tempe, AZ 85287. Dept. Chair, Dr. Darwyn Linder.*
- 1992-1998 *Assistant Professor, Department of Psychology, Kent State University, Kent, OH 44242. Research and teaching with specialties in multisensory high-level space & motion perception. Dept. Chair, Dr. John Graham.*
- 1990-1992 *Research Associate (NRC), NASA-Ames Research Center, Moffett Field, CA 94035. Research on 3-D motion perception. Supervisor: Dr. Mary Kaiser.*
- 1986-1990 *Research Engineer, NASA-Ames Research Center, Moffett Field, CA 94035. Construction, programming, and development of experiments on human factors. Supervisors: Dr. Mary Kaiser & Dr. James Johnston.*

TEACHING EXPERIENCE

- 1999-2007 *Graduate Perception Class, Professor, Arizona State University. Instructor for graduate level core course.*
- 1999-2008 *Graduate Cognition and Behavior Seminar, Professor, Arizona State University. Instructor for graduate level seminar for the C&B area of Psychology.*
- 1999-2001 *Human Factors Class, Professor, Arizona State University. Instructor for upper level undergraduate course.*
- 1994-2009 *Introductory Perception Class, Professor, Arizona State University and Kent State University. Instructor for undergraduate level course.*
- 1995-1998 *Writing in Psychology Class, Professor, Kent State University. Instructor for undergraduate level course.*
- 1993-1994 *Introductory Statistics Class, Professor, Kent State University. Instructor for undergraduate level course.*
- 1993-1998 *Experimental Design and Statistics Class, Professor, Kent State University. Instructor for graduate level course.*
- 1992-2008 *Graduate Seminars in Perception, Computers, Web Authoring and Modeling, Professor, Arizona State University and Kent State University:*
1. *Functional Ecological Psychology: Sports, Robots, & Perception-Action*
 2. *Dynamic User-Centered Research and Design*
 3. *Perception and Cognition of Music and Art*
 4. *WWW to MMM (World Wide Web to Multidimensional Modeling Methods)*

Teaching Ratings

1. Average overall teaching rating: 1998-2008: 1.2 [undergrad & graduate] (on scale of 1-5 with 1 = most positive, 3 = average, 5 = most negative).
2. Sample rating, recent semester in Perception class (scale of 1-5): My average = 1.06 (1 = 94%, 2 = 6%, 3 = 0%, 4 = 0%, 5 = 0%).
3. Average teaching ratings for all undergraduate courses at Kent State from 1994-98 (scale of 1-6): My average = 1.46, Dept. average = 2.32.

VITA - Michael K. McBeath

MENTORING EXPERIENCE

Ph.D. Advisor

Completed Degrees

Suzanne Khalil, Ph.D. 2005. Dissertation: Canonical representation: An examination of preferences for viewing and depicting 3-dimensional objects.

Crystal D. Oberle, Ph.D. 2005. Dissertation: Different relative motion effects for stationary observers and active fielders in baseball.

Shannon E. Morgan, Ph.D. 2004. Dissertation: Examination of cues used to determine group center-of-attention. Masters: Using group center-of-attention to guide baseball fielders to the ball's destination.

Clifford F. Lewis, Ph.D. 2003. Dissertation: A neural network model of virtual pitch. Masters: Bias to experience approaching motion in a three-dimensional virtual environment

Angelique A. Scharine, Ph.D. 2002. Dissertation: Auditory scene analysis: The role of positive correlation of dynamic changes in intensity and frequency.

John G. Jewell, Ph.D. 1998. Dissertation: The misperception of body tilt: Support for an ecologically-guided multisensory representation of space.

Dennis M. Shaffer, Ph.D. 1998. Dissertation: Navigating in baseball: A spatial optical-tracking strategy and associated naïve physical beliefs. Masters: The perceptual strategy used by baseball outfielders to catch fly balls.

John G. Neuhoff, Ph.D. 1996. Dissertation: Modeling pitch perception: Evidence for a dynamic representation. Masters: Rising pitch with falling frequency: A new auditory illusion associated with the Doppler effect.

Masters Advisor

Wei Wang, M.A. 2008. Navigational strategy used to intercept fly balls under conditions with moving visual background fields.

Flavio DaSilva, M.A. 2007. Thesis: Improvement in upper-extremity motor-function in persons with hemiparesis using robot-assisted repetitive motion therapy and video games.

Igor Dolgov, M.A. 2007. Thesis: The axis of symmetry causes systematic errors in the perceived trajectory of thrown ellipsoids

Jason D. Addie, M.A. 2003. Thesis: Spatial multi-sensory interaction: auditory capture of visual apparent motion.

Joseph F. Wayand, M.A. 1999. Thesis: The harmonic detector model of pitch perception. (Completed Ph.D. in 2003)

Susan R. Perry, M.A. 1998. Thesis: Simple melodies are well represented using a circular chromatic dimension. (Completed Ph.D. in 2003)

Honors Advisor

Jeffrey Stone, B.S. Honors 2008. Thesis: Motion and Emotion Distracters: Effects on Basketball Free Throw Shooting Accuracy

Sean C. Madigan, B.S. Honors, 2005. Thesis: Perceptual-Motor Heuristics Used to Intercept Objects with Inconsistent Trajectories.

Michelle E. Guhse, B.S. Honors, 2004. Thesis: The Effects of Oculomotor Vision Therapy and Sensorimotor Integration on Reading Eye Movements.

Kristel Zachow, B.S. Honors, 2003. Thesis: Visual strategy used to catch a dropped ball.

Michael G. Thompson, B.S. Honors, 2003. Thesis: Intercepting ground balls: the infielder problem.

Eric G. Metz, B.S. Honors, 1996. Thesis: Are the tops of figures more salient than the bottoms?

**RESEARCH
EXPERIENCE**

Central Theme

My research specialty is computational modeling of perception and action. The work examines heuristics that observers use to discern natural regularities in dynamic, ecologically-realistic environments. The research spans vision, audition, and proprioception, and includes applications in sports, music, virtual environments, robotics, and navigation. The three principal lines of research are listed below.

Ongoing Work

1. Perception and navigation in sports and robotics:

This research explores and characterizes natural regularities and perceptual principles used in size and location judgments in which observers are free to locomote. Humans, animals, and robots are used to explore phenomena such as how a fielder knows where to run to catch a ball. This work has been funded by grants from the National Science Foundation and the Interval Research Corporation. (19 publications +16 published abstracts).

2. Orientation perception of objects and space:

This research explores heuristics used to identify and orient objects, terrains, and body position in 3-D space. The work clarifies natural regularities and corresponding perceptual biases such as one to assume that virtually all objects are bilaterally symmetric, and another to experience object motion in the direction objects are oriented. This work has been funded by a grant from Interval Research Corporation. (14 publications + 20 published abstracts).

3. Auditory pitch, pattern, and space perception:

This research explores how observers interpret dynamic sounds, with a particular emphasis on elucidating natural regularities in auditory pitch and scene analysis. This work has demonstrated a bias to assume co-dependence between dynamic changes in acoustic frequency and intensity, which we found in domains varying from the Doppler shift to music and speech. (6 publications+6 published abstracts).

Impact

My research has been widely cited in journals (over 400 citations in the Science Citation Index), in textbooks (both Introductory Psychology and Sensation and Perception), in the popular press (e.g. *Scientific American*, *Discover*, *New Scientist*, over 30 newspapers), and in educational web sites (e.g. San Francisco Exploritorium). It has been presented nationally on both radio (*NPR Science Friday*) and TV (*CBS Good Morning America*), and was even made fun of on *Saturday Night Live* (joke about research on dogs catching Frisbees). Specific examples of research receiving publicity include three *New York Times* articles, one each on the perception-action catching strategy used respectively by baseball players, dogs, and autonomous fielding robots. The nationally syndicated column *Strange but True* targeted several of my research findings, once on the bias for American pedestrians to head to the right (so lines are shorter to the left), and second describing basketball defense (how it is more effective to block vision with a stationary hand than to wave one's hand in the shooters face).

VITA - Michael K. McBeath

ENGINEERING EXPERIENCE

Educational

In addition to my Psychology Ph.D. I have three Engineering degrees. B.A. in Electrical Engineering from Brown University, M.S. in Instrumentation from University of California, Santa Barbara, and Ph.D. minor in Electrical Engineering from Stanford University.

Professional

I worked for a decade as a hardware and software design engineer, and have extensive computer and instrumentation experience. I designed, built or used numerous types of computer systems and electronic interfaces and programmed in a variety of both high and low level computer languages. My Ph.D. minor in Electrical Engineering emphasized a systems-engineering approach that can be applied to vision, audition, and neural functioning. Courses taken include image processing techniques, space-time and frequency transform techniques, linear analyses of stochastic systems, and digital signal processing. My six years of experience at the NASA - Ames Research Center during and following graduate school, and eight years consulting at the multimedia think tank, the Interval Corporation, has given me additional experience in applied perception and human factors research.

UNIVERSITY SERVICE EXPERIENCE

Committees

I served on the following department-level committees and advisory boards:

- Cognition & Behavior Program (Director)
- Cognition & Behavior Program Admissions Committee
- Psychology Department Faculty Evaluation Committee
- Psychology Department Colloquium Committee (Chair)
- Psychology Department Technical Committee & Web Page Committee
- Coordinator, Cognitive Systems, Behavioral Neuroscience Area Seminar
- Advisor, Psi Chi: Psychology Honor Society

I served on the following University-level committees and advisory boards:

- Arts, Media, and Engineering Program (Psychology Department Liaison)
- Campus Information Technology Certificate Program Committee
- Institute for Computing and Information Science and Engineering Liaison
- Executive Board, Department of Kinesiology
- Campus Bus Committee

Supervising

At Arizona State University I have supervised the following:

- Principal Advisor, 4 Ph.D. Degrees
- Principal Advisor, 4 Ph.D. students through first year project
- Principal Advisor, 4 Ph.D. students through Masters Degree
- Currently have 5 undergraduate R.A.s working in my lab for credit
- Member of graduate committee of 12 additional students
- Member Honors committee of seven undergraduates (Advisor for 6)

Supervising

At Kent State University I served as the Principal Advisor for students completing the following degrees:

- Principal Advisor, 4 Ph.D. Degrees (3 procured tenure-track positions)
- Principal Advisor, 6 Masters Degrees
- Principal Advisor, 2 Undergraduate Honors Degrees

VITA - Michael K. McBeath

GRANT ACTIVITY

- 2007-09 *Office of Naval Research - Multiple University Research Investigation (MURI)*. \$500,000. Effective human-robot interaction under time pressure. Co-PI with group from ASU, Stanford, and Notre Dame Univ.
- 2005-10 *National Science Foundation – Integrative Graduate Education and Research Traineeship (IGERT)*. \$3,038,681. Interdisciplinary training program in experiential media. Co-PI with *Arts, Media, & Engineering*.
- 2004-08 *National Science Foundation*. \$1,101,980. An interdisciplinary research environment for motion analysis. Co-PI with *Arts, Media, & Engineering*.
Arizona State University Arts, Media, & Engineering Research Assistantship Award. \$10,188. Funds for stipend in biofeedback and robotics, 2004.
- 2003-07 *National Science Foundation*. \$350,000. Perceptual invariants as a general mechanism for human interception.
Arizona State University Arts, Media, & Engineering Research Assistantship Award. \$10,188. Matching funds for stipend in human motion perception, Fall, 2003.
- 1999-02 *Arizona State University Research Incentive Award*. \$16,000 for navigation and eye tracking research and grant development, Spring, 2000.
Interval Research Corporation Grant. \$15,000 grant for research on applied multisensory space perception, Fall semester, 1999.
- 1998-99 *Interval Research Corporation Grant*. \$10,000 grant for research on applied visual and proprioceptive space perception, Summer semester, 1999.
- 1997-98 *Interval Research Corporation Grant*. \$10,000 grant for research on applied visual and proprioceptive space perception, Fall semester, 1997.
- 1996-97 *Ohio Board Of Regents Capital Funding Grant*. \$590,000 grant to the Ohio Consortium for Virtual Environment Research (of which I was one of six Co-PI board members) for the establishment of a cave facility for virtual environment research.
Interval Research Corporation Grant. \$30,000 grant for research on applied navigation and representation in 3-D space, Fall semester, 1996.
- 1995-96 *Interval Research Corporation Grant*. \$30,000 grant for research on applied perception of 3-D motion and space, Fall semester, 1995.
- 1994-95 *Kent State University Applied Psychology Center Forum Award*. \$15,000 to fund forum and travel and lodging for speakers. Forum title "Applied Cognition: Perception in Virtual Reality Displays".
Interval Research Corporation Grant. \$5,000 extension grant for research on applied perception of 3-D objects and space, Fall semester, 1994.
- 1993-94 *Kent State University College of Arts and Sciences Summer Session Teaching Development Award*. Summer salary award to develop undergraduate course on Introductory Statistics with Computer Applications, Summer 1994.
- 1992-93 *Kent State University Grants and Sponsored Programs Summer Research Grant*. Summer salary award to research displays and motion perception (in collaboration with the Liquid Crystal Institute [LCI]).
Interval Research Corporation Grant. \$25,000 grant for research on applied perception of 3-D objects and space with application to future 3-D displays and operating systems.. Spring semester & summer, 1993.

PUBLICATIONS –

Under review

DaSilva, F, Wechsler, N.E., McBeath, M.K., Sugar, T.G., & Koeneman, J. (2009). Improvements in upper-extremity motor-functioning in persons with hemiparesis using repetitive motion therapy and robot-assisted video games.

McBeath, K.H., & McBeath, M.K. (2009). Basketball experiments used to demonstrate scientific method on physical principles of projectile motion.

Wang, W., McBeath, M.K., & Sugar, T.G. (2009). Navigational strategy used to catch robots moving along complex, evasive pathways.

McBeath, M.K., Addie, J.D., & Afanador, K. (2009) Auditory capture of looming and receding visual apparent motion.

In Press

Dolgov, I., McBeath, M.K., & Sugar, T.G. (In Press) Evidence for axis-aligned motion bias: Football axis-trajectory misalignment causes systematic error in projected final destinations of thrown American footballs. *Perception*.

Dolgov, I., Birchfield, D.A., McBeath, M.K., Thornburg, H. & Todd, C.G.. (In Press) Amelioration of axis-aligned motion bias for active versus stationary judgments of bilaterally symmetric shapes' final destinations. *Perception & Psychophysics*, 71.

Dolgov, I., Birchfield, D.A., McBeath, M.K., Thornburg, H. & Todd, C.G. (In Press). Perception of approaching and retreating shapes in a large, immersive, multimedia learning environment. *Perceptual & Motor Skills*.

**PUBLISHED
ARTICLES
(Continued)**

Published

- McBeath, M.K., Nathan, A.M., Bahill, A.T. & Baldwin, D.G. (2008). Paradoxical pop-ups: Why are they hard to catch? *American Journal of Physics*. 76(8), 723-729.
- Schiano, D.J., McBeath, M.K., & Chambers, K.W. (2008). Regularity of symmetry verticality guides perceptual judgments of objects. *American Journal of Psychology*. 121(2) 209-227.
- Naylor, Y.K. & McBeath, M.K. (2008). Gender Differences in Spatial Perception of Body Tilt. *Perception & Psychophysics*. 70(2), 199-207.
- Shaffer, D.M., McBeath, M.K., Krauchunas, S.M., & Sugar, T.G. (2008). Evidence for a generic interceptive strategy. *Perception & Psychophysics*. 70(1), 145-157.
- Sugar, T.G., McBeath, M.K., & Wang, Z. (2006). A unified fielder theory for interception of moving objects either above or below the horizon. *Psychonomic Bulletin & Review*. 13(5) 908-917.
- Oberle, C.D., Hollums, N.K., McBeath, M.K., & Terry, D.P. (2006). Motion by nearby players biases perception but not action in judgments of baseball destination. *Perceptual & Motor Skills*. 103, 585-606.
- Sugar, T.G., McBeath, M.K., Suluh, A., & Mundhra, K. (2006). Mobile robot interception using human navigational principles: Comparison of active versus passive tracking algorithms. *Autonomous Robots*. 21(1), 43-54.
- Dolgov, I., & McBeath, M.K. (2005). A Signal-detection-theory Representation of Normal and Hallucinatory Perception. *Behavioral and Brain Sciences*. 28(6), 761-762.
- Shaffer, D.M., & McBeath, M.K. (2005). Naïve beliefs in baseball: Systematic distortion in perceived time of apex for fly balls. *Journal of Experimental Psychology: Learning Memory & Cognition*. 31(6), 1492-1501.
- Oberle, C.D., McBeath, M.K., Madigan, S.C., & Sugar, T.G. (2005). The Galileo Bias: A naïve conceptual belief that influences people's perceptions and performance in a ball-dropping task. *Journal of Experimental Psychology: Learning, Memory & Cognition*. 31(4), 643-653.
- McBeath, M.K. and Sugar, T.G. (2005). Natural Selection of Asymmetric Traits Operates at Multiple Levels. *Behavioral and Brain Sciences*. 28(4), 605-606.

**PUBLISHED
ARTICLES
(Continued)**

- Shaffer, D.M., Krauchunas, S.M., Eddy, M. & McBeath, M.K. (2004). How Dogs Navigate to Catch Frisbees. *Psychological Science*. 15(7), 437-441.
- Lewis, C.F., & McBeath, M.K. (2004). Bias to experience approaching motion in a three-dimensional virtual environment. *Perception*. 33(3), 259-276.
- Shaffer, D.M., McBeath, M.K., & Roy, W.L., & Krauchunas, S.M. (2003). A Linear Optical Trajectory informs fielders where to run to the side to catch fly balls. *Journal of Experimental Psychology: Human Perception and Performance*, 29(6), 1244-1250.
- Scharine, A.A. & McBeath, M.K. (2002) Right handers and Americans favor turning to the right. *Human Factors*. 44(1), 248-256.
- McBeath, M.K. & Neuhoff, J.G. (2002). The Doppler Effect is not what you think it is: Dramatic pitch change due to dynamic intensity change. *Psychonomic Bulletin & Review*. 9(2), 306-313.
- Shaffer, D.M. & McBeath, M.K. (2002). Baseball outfielders maintain a linear optical trajectory when tracking uncatchable fly balls. *Journal of Experimental Psychology: Human Perception and Performance*. 28(2), 335-348.
- Sugar, D.G. & McBeath, M.K. (2001). Robotic Modeling of Mobile Ball-Catching as a Tool for Understanding Biological Interceptive Behavior. *Behavioral and Brain Sciences*. 24(6), 1078-1080.
- Neuhoff, J.G., McBeath, M.K., & Wanzie, W.C. (1999) Dynamic frequency change influences loudness perception: A central analytic process. . *Journal of Experimental Psychology: Human Perception and Performance*. 25(4), 1050-1059.
- Chambers, K.W., McBeath, M.K., Schiano, D.J. and Metz, E. (1999). Tops are more salient than bottoms. *Perception & Psychophysics*. 61(4), 625-635.
- Neuhoff, J.G. & McBeath, M.K. (1997) Overcoming naive mental models in explaining the Doppler shift: An illusion creates confusion. *American Journal of Physics*, 65(7). 618-622.
- McBeath, M.K & Morikawa, K. (1997). Forward-facing motion biases for rigid and nonrigid biologically likely transformations. *Perceptual & Motor Skills*. 85, 1187-1193.

VITA - Michael K. McBeath

**PUBLISHED
ARTICLES
(Continued)**

- McBeath, M.K., Schiano, D.J., & Tversky, B. (1997). Three-dimensional bilateral symmetry assumed in judging figural identity and orientation. *Psychological Science*. 8(3), 217-223.
- McBeath, M.K., Shaffer, D.M., & Kaiser, M.K. (1996). On catching fly balls. *Science*. 273(5272), 256-259.
- Neuhoff, J.G. & McBeath, M.K. (1996) The Doppler illusion: The perception of rising pitch with falling frequency. *Journal of Experimental Psychology: Human Perception and Performance*. 22(4), 970-985.
- McBeath, M.K., Shaffer, D.M., & Kaiser, M.K. (1995). Play ball. *Science* 268(5218), 1681-1685.
- McBeath, M.K., Shaffer, D.M., & Kaiser, M.K. (1995). How baseball outfielders determine where to run to catch fly balls. *Science*. 268(5210), 569-573.
- McBeath, M.K., Morikawa, K., & Kaiser, M.K. (1992). Perceptual bias for forward-facing motion. *Psychological Science*. 3 (6), 362-367.
- Morikawa, K. & McBeath, M.K. (1992). Lateral motion bias associated with reading direction. *Vision Research*, 32 (6) 1137-1141.
- McBeath, M.K. (1990). The rising fastball: Baseball's impossible pitch. *Perception*, 19 (4), 545-552.
- McBeath, M.K. & Shepard, R.N. (1989). Apparent motion between shapes differing in location and orientation: A window technique for estimating path curvature. *Perception & Psychophysics*, 46(4), 333-337.
- Evans, C.S., Gaioni, S.J., & McBeath, M.K. (1985). A microcomputer system for the measurement of avian heart rate. *Bird Behavior*, 6, 41-45.

**PUBLISHED
BOOKS**

Editor

- Fountain, S.B., Bunsey, M., McBeath, M.K., and Danks, J.H. (Eds.). (2001). *Animal Cognition and Sequential Behavior*. Kluwer Academic Publishers: Norwell, MA.
- Danks, J.H., Shreve, G.M., Fountain, S.B., and McBeath, M.K. (Eds.). (1997). *Cognitive Processes in Translation and Interpreting*. Sage: Thousand Oaks, CA.

**PUBLISHED
BOOK CHAPTERS**

(Including Published Refereed Conference Proceeding Papers)

Wang, Z., Paranjape, A., Sugar, T.G., & McBeath, M.K. (2006). Perceptual navigation strategy for mobile robots intercepting ground balls. *Proceedings of the 2006 IEEE International Conference on Robotics and Automation*, (pp. 2713-2718).

Dolgov, I., McBeath, M.K., & Sugar, T.G. (2005). The influence of symmetry on perception of thrown, oblong, symmetrical projectiles in 3D. In H. Heft and K.L. Marsh (Eds.), *Studies in Perception and Action VIII*, Mahwah, NJ: Erlbaum. (pp. 132-135).

McBeath, M.K. (2004). Teaching using comics, humor, and hands-on toys. *Wakonse – Arizona Inspiration and Support for College Teaching Conference 2004*. (Invited feature essay).

Mundhra, K., Sugar, T.G., & McBeath, M.K. (2003). Perceptual navigation strategy: A unified approach to interception of ground balls and fly balls. *Proceedings of the 2003 IEEE International Conference on Robotics and Automation*, (pp. 3461-3466).

Suluh, A., Mundhra, K., Sugar, T.G., & McBeath, M.K. (2002). Spatial interception for mobile robots. *Proceedings of the 2002 IEEE International Conference on Robotics and Automation*. (pp. 4263-4268).

Mundhra, K., Suluh, A., Sugar, T.G. & McBeath, M.K. (2002). Intercepting a falling object: Digital video robot. *Proceedings of the 2002 IEEE International Conference on Robotics and Automation*. (pp. 2060-2065).

Sugar, T.G., & McBeath, M.K. (2001). Spatial navigation algorithms: Applications to mobile robotics. *Proceedings of VI 2001 Vision Interface Annual Conference*. (pp. 106-113).

Suluh, A., Sugar, T.G., & McBeath, M.K. (2001) Spatial navigational principles: Applications to mobile robotics. *Proceedings of the 2001 IEEE International Conference on Robotics and Automation*. (pp. 1689-1694).

**CONFERENCES
ORGANIZED AND
CHAired**

Third Annual Object Perception and Memory Conference, Chicago, IL. October 31, 1996.

Ninth Annual Kent State Forum: Spatial Navigational Principles used by Humans, Animals, and Machines, Millersberg, OH. April 1997.

**EDITORIAL AND
REVIEW WORK
Journals
Reviewed**

Science, Psychological Science, Psychonomic Bulletin & Review, Journal of Experimental Psychology: Human Perception and Performance, Psychological Method, Perception & Psychophysics, Vision Research, Perception, Journal of Sensory Studies, American Journal of Physics.

VITA - Michael K. McBeath

**ARTICLES IN
PREPARATION**

In preparation

Khalil, S. L. & McBeath, M.K. (in preparation). Canonical Object Orientations Differ When Chosen versus Drawn.

Sugar, T. G., McBeath, M.K., Paranjape, A., & Dolgov, I. (In preparation). Human and robotic interception of ground balls on a hill: Support for usage of a tilted control geometry. .

McBeath, M.K., Wang, W., Sugar, T.G., & Dolgov, I. (In preparation). Moving backgrounds alter baseball fielder running paths consistent with usage of an optical control strategy.

Morgan, S.E., McBeath, M.K. (in preparation). Group center-of-attention as a guide to a baseball's destination.

McBeath, M.K. (in preparation). The basketball hoop illusion.

Jewell, J.G., McBeath, M.K., & Schiano, D.J. (in preparation). Proprioceptive contribution to the spatial representation of slant.

Takarae, Y., & McBeath, M.K. (In preparation) Global and local motion processing in the perception of facial expression.

McBeath, M.K. & Perry, S.R. (In preparation). Simple melodies are well represented using a circular chromatic dimension.

McBeath, M.K. & Sugar, T.G. (In preparation). Perception-action navigation models and mobile robot research and design help guide each other.

Scharine, A.A., & McBeath, M.K. (In preparation). The contribution of integral processing of frequency and intensity to auditory scene analysis.

McBeath, M.K., Sugar, T.G., Thompson, J.M., & Wang, Z. (In preparation). Follow the bouncing ball: Fielders keep the centroid of bouncing grounders along a Linear Optical Trajectory.

**PUBLISHED
ABSTRACTS**

2008-2009

McBeath, M.K., Wang, W., Sugar, T.G. & Dolgov, I. (2008). Moving Backgrounds Alter Baseball Fielder Running Paths Consistent with Usage of an Optical Control Strategy. *Abstracts of the Psychonomic Society*. 13, 26. (Ms. No. 176).

**PUBLISHED
ABSTRACTS**
2006-2008

- Stone, J., Dolgov, I., DaSilva, F. & McBeath, M.K., (2008). Basketball free throw shooting accuracy unaffected by projected background displays showing motion or emotion. *Journal of Vision*. 8(6). (Ms. No. 1044).
<<http://www.journalofvision.org/8/6/1044>>
- McBeath, M.K., Bahill, A.T., Nathan, A.M. & Baldwin, D.G. (2008). Baseball's paradoxical pop-up: Physics and fielder control strategy can lead to lurching. *Journal of Vision*. 8(6). (Ms. No. 623).
<<http://www.journalofvision.org/8/6/623>>
- Holloway, S., Heintzelman, K., Gomez, N., & McBeath, M.K. (2008). Feedback may promote sub-threshold dot-motion detection. *Toward a Science of Consciousness – 2008*, Abstracts.
<<https://bandura.sbs.arizona.edu/login/consciousness/pubreport.aspx?aid=2814>>
- McBeath, M.K., DaSilva, F., Sugar, T.G., Wechsler, N.E., & Koenman, J. (2007). Stroke therapy using wearable robots and Ramachandran mirror technique produces functional improvement. *Abstracts of the Psychonomic Society*. 12, 20. (Ms. No. 128).
- Holloway, S. R., DaSilva F., & McBeath M. (2007). Linguistic and non-linguistic decoding as a function of flicker fusion. *Archives of Clinical Neuropsychology*, 22(7), 845.
- McBeath, M.K., Sugar, T.G., Dolgov, I., Paranjape, A., & Wang, W. (2007). Human and robot ball catching on a Hill: Is the control geometry on the level or atilt?. *Journal of Vision*. 7(9). 118a. (Ms. No. 118).
<<http://www.journalofvision.org/7/9/118>>
- Dolgov, I., Todd, C., Birchfield, D., McBeath, M.K., & Thornburg, D. (2007). The influence of locomotion on the axis-aligned motion bias in large situated display environments. *Journal of Vision*. 7(9). 153a. (Ms. No. 153).
<<http://www.journalofvision.org/7/9/153>>
- McBeath, M.K., & Khalil, S. (2006). Canonical object orientations differ when chosen versus drawn (Consistent with principles of information optimization). *Abstracts of the Psychonomic Society*. 11, 28. (Ms. No. 182).
- DaSilva, F., Weschsler, N.E., McBeath, M.K., Sugar, T.G., & Koeneman, J. (2006). Improvement in upper-extremity motor-function in hemiparetics using robot-assisted repetitive motion therapy with video games. *Journal of Vision*. 6(6). 76a. (Ms. No. 76).
<<http://www.journalofvision.org/6/6/76>>

**PUBLISHED
ABSTRACTS**
2002-2006

- Khalil, S.L. & McBeath, M.K. (2006). Canonical representation: An examination of preferences for viewing and depicting 3-dimensional objects. *Journal of Vision*. 6(6). 267a. (Ms. No. 267).
<<http://www.journalofvision.org/6/6/267>>
- McBeath, M.K., Wang, W., Sugar, T.G., Dolgov, I. & Wang, Z. (2005). Pursuers Maintain Linear-Optical-Trajectory when navigating to intercept robots moving along complex pathways. *Abstracts of the Psychonomic Society*. 10, 46. (Ms. No. 295).
- McBeath, M.K., Dolgov, I.N., & Sugar, T.G. (2005). The axis of an American football leads observers to misjudge where it is headed. *Journal of Vision*. 5(8), 731. (Ms. No. 731).
<<http://www.journalofvision.org/5/8/731>>
- McBeath, M.K., Sugar, T.G., & Shaffer, D.M. (2004). Catching things that change direction: Frisbees and bouncing grounders. *Cognitive Science Association for Interdisciplinary Learning Abstracts*. 10, 13. (Ms. No. 17).
<<http://www.ohsu.edu/csail/prog04.html>>
- McBeath, M.K. (2004). Teaching Using Comics, Humor, and Hands-on Toys. Wakonse Arizona – Inspiration and Support for College Teaching E-Newsletter. 2(2), 2. (Ms. No. 2).
<http://clte.asu.edu/wakonse/ENewsletter/comics_feature.htm>
- McBeath, M.K., Sugar, T.G., & Wang, Z. (2004). Baseball fielders utilize a rule of constant cotangent change to navigate to catch ground balls. *Journal of Vision*. 4(8), 157. (Ms. No. 157).
<<http://www.journalofvision.org/4/8/157>>.
- Morgan, S.E. & McBeath, M.K. (2004). What's the point? Determining the group's center of attention. *Journal of Vision*. 4(8), 220. (Ms. No. 220).
<<http://www.journalofvision.org/4/8/220>>.
- McBeath, M.K., Sugar, T.G., Thompson, M.J. & Mundhra, K. (2003). Catching ground balls: Optical control heuristics used by humans and robots support a unified fielder theory. *Journal of Vision*. 3(9), 543. (Ms. No. 543). <<http://www.journalofvision.org/3/9/543>>.
- McBeath, M.K., Shaffer, D.M., & Sugar, T.G. (2002). Catching Baseball Pop Flies: Individual Differences in Aggressiveness and Handedness. *Abstracts of the Psychonomic Society*. 7, 103. (Ms. No. 702).
- McBeath, M.K., Sugar, T.G., Morgan, S.E., Oberle, C.D. Mundhra, K., & Suluh, A. (2002). Human and robotic catching of dropped balls and balloons: Fielders still try to make the image of the projectile rise. *Journal of Vision*. 2(7), 434. (Ms. No. 434).
<<http://www.journalofvision.org/2/7/434>>

**PUBLISHED
ABSTRACTS
(Continued)**
1998-2002

- McBeath, M.K., Shaffer, D.E., Morgan, S.E., and Sugar, T.G. (2002). Lack of Conscious Awareness of How We Navigate to Catch Baseballs, *Toward a Science of Consciousness. Consciousness Research Abstracts*. 5, 84. (Ms. No. 190). <<http://www.consciousness.arizona.edu/tucson2002/Tucson2002pgmssummary.pdf>>.
- Shaffer, D.M., McBeath, M.K. & Krauchunas, S.M. (2001). Dogs Maintain a Double Linear Optical Trajectory When Catching Frisbees. *Abstracts of the Psychonomic Society*. 6, 92. (Ms. No. 632).
- Takarae, Y. & McBeath, M.K. (2001). Recognition of Dynamic Facial Expression in Point Light Displays. *The 9th Annual Workshop on Object Perception and Memory Abstracts*. 6, 12. (Ms. No. 11). <<http://www.opam.net/opam2001/abstracts/OPAM.pdf>>.
- McBeath, M.K., Sugar, T.G., & Shaffer, D.M. (2001). Comparison of Active versus Passive Ball Catching Control Algorithms using Robotic Simulations. *Journal of Vision*. 1(3), 193. (Ms. No. 193). <<http://www.journalofvision.org/1/3/193>>.
- McBeath, M.K. & Addie, J.D. (2001). A reverse ventriloquist effect: Auditory capture of moving visual stimuli. *Abstracts of the Psychonomic Society*. 6, 32. (Ms. No. 216).
- McBeath, M.K. & Scharine, A.A. (2000). Why do some people favor walking to right and others to the left. *Abstracts of the Psychonomic Society*. 5, 60. (Ms. No. 406).
- Jewell, J.G., McBeath, M.K. & Schiano, D.J. (2000). Distortions in body orientation follow egocentric rather than world-based coordinate system. *Abstracts of the Psychonomic Society*. 5, 1. (Ms. No. 5).
- McBeath, M.K. & Morgan, S.E.. (1999). Baseball outfielders can use group center-of-attention as a guide to fly ball destination. *Abstracts of the Psychonomic Society*. 4, 55. (Ms. No. 372).
- McBeath, M.K. & Wayand, J.F. (1998). The harmonic detection model of auditory pitch perception. *Abstracts of the Psychonomic Society*. 3, 55. (Ms. No. 529).
- Jewell, J.G. & McBeath, M.K. (1998). A mapping of the distortion in the representation of proprioceptive space. *Investigative Ophthalmology & Visual Science*. 39(4), S1096. (Ms. No. 5077).

**PUBLISHED
ABSTRACTS
(Continued)**
1995-1997

- McBeath, M.K. & Shaffer, D.M. (1997). Naive physics of baseball outfielders: Systematic distortion in perceived time of apex. *Abstracts of the Psychonomic Society*. 2, 52. (Ms. No. 510).
- Schiano, D.J., Jewell, J.G., & McBeath, M.K. (1997). Systematic overestimation of proprioceptive tilt. *Abstracts of the Psychonomic Society*. 2, 37. (Ms. No. 364).
- McBeath, M.K. & Neuhoff, John G. (1997). Auditory pitch influenced dramatically by dynamic intensity change. *Journal of the Acoustical Society of America*. 101(5 Pt.2), 3169. (Ms. No. 4pPPa2).
- Neuhoff, John G. & McBeath, M.K. (1997). The interaction of pitch and loudness in dynamic stimuli: Beyond the Doppler illusion. *Journal of the Acoustical Society of America*. 101(5 Pt.2), 3169. (Ms. No. 4pPPa3).
- McBeath, M.K. & Lewis, C.F. (1997). Visual bias for apparent motion in depth in a virtual environment. *Investigative Ophthalmology & Visual Science*. [ARVO 1997, No. 5440]. 38(4), S1168.
- McBeath, M.K. & Shaffer, D.M. (1996). Baseball outfielders use the same optical strategy to pursue catchable and uncachable fly balls. *Abstracts of the Psychonomic Society*. 1, 26. (Ms. No. 255).
- McBeath, M.K. & Shaffer, D.M. (1996). Baseball outfielders maintain a linear optical trajectory longer than optical acceleration cancellation when pursuing uncachable fly balls. *Investigative Ophthalmology & Visual Science*. 37(3), S454. (Ms. No. 2064).
- Chambers, K.W., McBeath, M.K., Schiano, D.J. & Metz, E.G. (1996). Viewers preferentially attend to the tops of figures. *Investigative Ophthalmology & Visual Science*. 37(3), S178. (Ms. No. 2064).
- Jewell, J.G. & McBeath, M.K. (1996). Viewers exhibit independent perceptual and kinesthetic stereo learning. *Investigative Ophthalmology & Visual Science*. 37(3), S284. (Ms. No. 1304).
- McBeath, M.K. Shaffer, D.M. & Kaiser, M.K. (1995). The Musculoskeletal System: How baseball outfielders determine where to run to catch fly balls. *Focus & Opinion: Pediatrics*. 1(6), 526-527. (Ms. No. 215-95-6-51).

**PUBLISHED
ABSTRACTS
(Continued)**

1991-95

- McBeath, M.K. & Lane, S.M. (1995). Judgments of tennis serve location systematically vary with vantage angle and ball speed. *Investigative Ophthalmology & Visual Science*. 36(4), S360. (Ms. No. 1689).
- Chambers, K.W., McBeath, M.K. & Schiano, D.J. (1995). Bias to interpret three dimensional objects as aligned with canonical axes in depth. *Investigative Ophthalmology & Visual Science*. 36(4), S360. (Ms.No.3895).
- McBeath, M.K. Shaffer, D.M. & Kaiser, M.K. (1994). Baseball outfielders catch fly balls by canceling optical curvature not optical acceleration. *Investigative Ophthalmology & Visual Science*. 35(4), 1985. (Ms.No.3383).
- McBeath, M.K. (1992). The basketball hoop illusion. *Bulletin of the Psychonomic Society*. 30(6), 453.
- McBeath, M.K. & Schiano, D.J. (1992). Degree of figural symmetry specifies orientation of interpreted objects. *Bulletin of the Psychonomic Society*. 30(6), 476.
- McBeath, M.K. & Kaiser, M.K. (1992). Visual bias for gravitationally downward motion. *Investigative Ophthalmology & Visual Science*. 33(4), 1143. (Ms. No. 2257).
- McBeath, M.K. (1991). Influence of depth cues on velocity of apparent motion. *Bulletin of the Psychonomic Society*. 29(6), 488.
- Schiano, D.J., McBeath, M.K., and Tversky, B. (1991). 3-D bilateral symmetry assumed in judging figural identity and orientation. *Bulletin of the Psychonomic Society*. 29(6), 488.
- Morikawa, K. & McBeath, M.K. (1991). Lateral motion bias associated with reading direction. *Investigative Ophthalmology & Visual Science*. 32(4).
- McBeath, M.K. (1991). Evidence for constancy of velocity of apparent motion. *Investigative Ophthalmology & Visual Science*. 32(4).
- McBeath, M.K. (1991). Velocity of apparent motion in three-dimensional space. *Dissertation Abstracts International*. 51(11-B) 5616. (Ms. No. 28-58292).

VITA - Michael K. McBeath

PROFESSIONAL PRESENTATIONS

2008

[Listed below are four representative presentations per year. Total number of presentations in years shown is: 2006 = 7. 2007=6. 2008=6.]

McBeath, M.K., Wang, W., Sugar, T.G., & Dolgov, I. Moving backgrounds alter baseball fielder running paths consistent with usage of an optical control strategy. Paper presented at the 49th Annual Meeting of the Psychonomic Society, Chicago, IL, November 2008.

Stone, J., Dolgov, I., DaSilva, F. & McBeath, M.K. Basketball free throw shooting accuracy unaffected by projected background displays showing motion or emotion. Poster presented at the 8th Annual Vision Sciences Society Meeting, Naples, FL, May 2008.

McBeath, M.K., Bahill, A.T., Nathan, A.M. & Baldwin, D.G. Baseball's paradoxical pop-up: Physics and fielder control strategy can lead to lurching. Poster presented at the 8th Annual Vision Sciences Society Meeting, Naples, FL, May 2008.

Holloway, S., Heintzelman, K., Gomez, N., & McBeath, M.K. Feedback may promote sub-threshold dot-motion detection. Paper presented at the Eighth Biennial Toward a Science of Consciousness Conference, Tucson, AZ, April 2008. .

2007

McBeath, M.K., DaSilva, F., Sugar, T.G., Wechsler, N.E., & Koenman, J. Stroke therapy using wearable robots and Ramachandran mirror technique produces functional improvement. Paper presented at the 48th Annual Meeting of the Psychonomic Society, Long Beach, CA, November 2007.

Holloway, S. R., DaSilva F., & McBeath M. (2007). Linguistic and non-linguistic decoding as a function of flicker fusion. Poster presented at the 27th Annual Conference of the National Academy of Neuropsychology, Scottsdale, AZ. November 2007.

McBeath, M.K., Sugar, T.G., Dolgov, I., Paranjape, A., & Wang, W. (2007). Human and robot ball catching on a Hill: Is the control geometry on the level or atilt?. Paper presented at the 7th Annual Vision Sciences Society Meeting, Sarasota, FL, May 2007.

Dolgov, I., Todd, C., Birchfield, D., McBeath, M.K., & Thornburg, D. (2007). The influence of locomotion on the axis-aligned motion bias in large situated display environments. Poster presented at the 7th Annual Vision Sciences Society Meeting, Sarasota, FL, May 2007.

2006

McBeath, M.K., & Khalil, S.L. Canonical Object Orientations Differ When Chosen versus Drawn (consistent with principles of information optimization). Paper presented at the 47th Annual Meeting of the Psychonomic Society, Houston, TX, November 2006.

McBeath, M.K. Psychoacoustics of the Harmonica. Invited address presented at the National Association of Federal Retired Employees Meeting, Scottsdale, AZ. June 2006.

DaSilva, F., Weschsler, N.E., McBeath, M.K., Sugar, T.G., & Koeneman, J. Improvement in upper-extremity motor-function in hemiparetics using robot-assisted repetitive motion therapy with video games. Poster presented at the 6th Annual Vision Sciences Society Meeting, Sarasota, FL, May 2006.

McBeath, M.K. Baseball Players, Dogs, & Robots: A Unified Fielder Theory of Catching. Invited Colloquium presented at Dept.s of Psychology and Mathematics, Fresno State University, Fresno, CA, February 2006.

VITA - Michael K. McBeath

PROFESSIONAL
PRESENTATIONS
(Continued)

2005

[Listed below are four representative presentations per year. Total number of presentations in years shown is: 2003 = 6. 2004 = 6. 2005 = 5.]

McBeath, M.K., Wang, W., Sugar, T.G., Dolgov, I., & Wang, Z. Pursuers Maintain Linear-Optical-Trajectory when Navigating to Intercept Robots Moving Along Complex Pathways. Paper presented at the 46th Annual Meeting of the Psychonomic Society, Toronto, Canada, November 2005.

Dolgov, I., McBeath, M.K., & Sugar, T.G. The Influence of Symmetry on Perception of Thrown, Oblong, Symmetrical Projectiles in 3D. Poster presented at the International Conference on Perception and Action. Monterey, CA, July 2005.

Oberle, C.D. & McBeath, M.K. Induced or Relative Motion Effects in Baseball. Paper presented at the International Conference on Perception and Action. Monterey, CA, July 2005.

McBeath, M.K. Dolgov, I., & Sugar, T.G. The Axis of an American Football Leads Observers to Misjudge Where it is Headed. Poster presented at the 5th Annual Vision Sciences Society Meeting, Sarasota, FL, May 2005.

2004

McBeath, M.K., Sugar, T.G., & Shaffer, D.M. Catching things that change direction: Frisbees and bouncing grounders. Paper presented at the 10th Annual Cognitive Science Association for Interdisciplinary Learning. (CSAIL) Conference, Hood River, OR, July 2004.

McBeath, M.K. Using Comics, Humor, and Hands-on Toys for Learning. Invited workshop presented at the 13th Annual Wakonse Arizona – Inspiration and Support for College Teaching Conference, May 2004.

McBeath, M.K., Sugar, T.G., & Wang, Z. Baseball Fielders Utilize a Rule of Constant Cotangent Change to Navigate to Catch Ground Balls. Paper presented at the 4th Annual Vision Sciences Society Meeting, Sarasota, FL, May 2004.

McBeath, M.K. Universal Fielder Theory: Navigational Principles used by Baseball Players, Animals, and Robots. Invited address presented at the Western Psychological Association Annual Meeting, Phoenix, AZ, April 2004.

2003

McBeath, M.K. & Addie, J.D. Changes in Acoustic Intensity Capture Visual Motion in Depth. Paper presented at the 2nd Annual Auditory Perception, Cognition, and Action Meeting, Vancouver, BC, November 2003.

McBeath, M.K. Catching ground balls: Optical control heuristics used by humans and robots support a unified fielder theory. Poster presented at the 3rd Annual Vision Sciences Society Meeting (VSS), Orlando, FL, May 2003.

McBeath, M.K. Perceptual Navigational Principles Used by Humans, Animals, and Robots. Invited colloquium presented to the Army Research Laboratory / HRED, Aberdeen Proving Ground, MD, February 2003.

McBeath, M.K. Perceptual Navigational Principles Used by Baseball Players. Invited colloquium presented to the Psychological and Brain Sciences Department, Johns Hopkins University, Baltimore, MD, February 2003.

VITA - Michael K. McBeath

PROFESSIONAL PRESENTATIONS (Continued)

2002

[Listed below are four representative presentations per year. Total number of presentations in years shown is: 2000 = 5. 2001 = 8. 2002 = 7.]

McBeath, M.K., Shaffer, D.M., & Sugar, T.G. (2002). Catching Baseball Pop Flies: Individual Differences in Aggressiveness and Handedness. Paper presented at the 43rd Annual Meeting of the Psychonomic Society, Kansas City, MO, November 2002.

McBeath, M.K. Perceptual Navigational Principles Used in Baseball. Invited Colloquium presented at the Department of Psychology, Ohio State University, Columbus, OH, June 2002.

McBeath, M.K., Sugar, T.G., Morgan, S.E., Oberle, C.D. Mundhra, K., & Suluh, A. Human and robotic catching of dropped balls and balloons: Fielders still try to make the image of the projectile rise. Paper presented at the 2nd Annual Vision Sciences Society Conference, Sarasota, FL, May 2002.

McBeath, M.K., Shaffer, D.E., Morgan, S.E., and Sugar, T.G. (2002). Lack of Conscious Awareness of How We Navigate to Catch Baseballs, Paper presented at the 5th Biannual Conference on Toward a Science of Consciousness, Tucson, AZ, April 2002.

2001

McBeath, M.K. & Addie, J.D. A Reverse Ventriloquist Effect: Auditory Capture of Moving Visual Stimuli. Paper presented at the 42nd Annual Meeting of the Psychonomic Society, Orlando, FL, November 2001.

Shaffer, D.M., McBeath, M.K., & Krauchunas, S. Dogs Maintain a Double Linear Optical Trajectory when Catching Frisbees. Paper submitted to the 42nd Annual Meeting of the Psychonomic Society, Orlando, FL, November 2001.

Takarae, Y., & McBeath, M.K. Recognition of Dynamic Facial Expression in Point Light Displays. Poster submitted to the Eighth Annual Object Perception and Memory Conference (OPAM), Orlando, FL, November 2001.

McBeath, M.K., Sugar, T.G., & Shaffer, D.M. Comparison of Active versus Passive Ball Catching Control Algorithms using Robotic Simulations. Paper presented at the 1st Annual Vision Sciences Society Conference, Sarasota, FL, May 2001.

2000

Suluh, A., Sugar, T.G., & McBeath, M.K. Spatial Navigational Principles: Applications to Mobile Robotics. Paper presented at the IEEE International Conference on Robotics and Automation.

McBeath, M.K. & Scharine, A.A. Why do some people favor walking to right and others to the left. Paper presented at the 41st Annual Meeting of the Psychonomic Society, New Orleans, LA, November 2000.

Jewell, J.G., McBeath, M.K. & Schiano, D.J. Distortions in Body Orientation Follow Egocentric Rather than World-Based Coordinate System. Poster presented at the 41st Annual Meeting of the Psychonomic Society, New Orleans, LA, November 2000.

McBeath, M.K. Perceptual Illusions and Strategies in Basketball. Invited talk presented at the Westminster Village Colloquia, Scottsdale, AZ, March 2000.

VITA - Michael K. McBeath

PROFESSIONAL
PRESENTATIONS
(Continued)

1999

[Listed below are four representative presentations per year. Total number of presentations in years shown is: 1997 = 10. 1998 = 7, 1999 = 7.]

McBeath, M.K. & Morgan, S.E. Baseball Outfielders Can Use Group Center-of-Attention as a Guide to Fly Ball Destination. . Paper presented at the 40th Annual Meeting of the Psychonomic Society, Los Angeles, CA, November 1999.

McBeath, M.K. The Navigational Principles Used by Baseball Outfielders. Invited Colloquium presented at the Department of Psychology, University of Arizona, Tucson, AZ, 1999.

McBeath, M.K. Findings with the Human Gyro: Misperception of Body Tilt. Invited talk presented at the Interval Research Corporation, Palo Alto, CA, July 1999.

Scharine, A. A., & McBeath, M.K. The Coupling of Changes in Intensity and Frequency in Music and Speech. Paper presented at the 79th annual convention of the Western Psychological Association, Los Angeles, CA, April 1999.

1998

McBeath, M.K., & Wayand, J.F. The Harmonic Series Detector Model of Auditory Pitch Perception. Paper presented at the 39th Annual Meeting of the Psychonomic Society, Dallas, TX, November 1998.

Takarae, Y., Melamed, L.E., and McBeath, M.K. Two Separate Systems for the Perception of Form for Dynamic Occlusion: The Roles of the Magnocellular and Parvocellular Systems in Form Perception. Paper presented at the Fifth Annual Object Perception and Memory Conference (OPAM), Dallas, TX, November 1998

Yoder, S.R. & McBeath, M.K. A Toroidal Model for Simple Melodies. Paper presented at the Annual Meeting of the American Psychological Society (APS), Washington, DC, May 1998

McBeath, M.K. Natural Regularities and Invariants used to Perceive Object Orientation. Invited Colloquium, University of Louisville, Louisville, KY, April 1998.

1997

McBeath, M.K. & Shaffer, D.M. Naive Physics of Baseball Outfielders: Systematic Distortion in Perceived Time of Apex. Paper presented at the 38th Annual Meeting of the Psychonomic Society, Philadelphia, PA, November 1997.

Schiano, D.J., McBeath, M.K. & Jewell, J.G. Systematic Misperception of Proprioceptive Tilt. Paper presented at the 38th Annual Meeting of the Psychonomic Society, Philadelphia, PA, November 1997.

McBeath, M.K. & Neuhoff, J.G. Auditory Pitch Influenced Dramatically by Dynamic Intensity Change. Paper presented at the 133RD Meeting of the Acoustical Society of America, Penn State University, State College, PA, June 1997.

McBeath, M.K. & Lewis, C. Visual Bias for Apparent Motion in Depth in a Virtual Environment. Paper presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Ft. Lauderdale, FL, May 1997.

VITA - Michael K. McBeath

PROFESSIONAL PRESENTATIONS (Continued)

1996

[Listed below are four representative presentations per year. Total number of presentations in years shown is: 1994=10. 1995=14. 1996=14.]

McBeath, M.K. & Perry, S.R. Simple Melodies are Well Represented Using a Simple Chromatic Dimension. Poster at the Annual Meeting of the American Psychological Society (APS), San Francisco, CA, July 1996.

Chambers, K.W., McBeath, M.K., Schiano, D.J. & Metz, E.G. Viewers preferentially attend to the tops of figures. Poster presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Ft. Lauderdale, FL, May 1996.

McBeath, M.K. & Shaffer, D.M. Baseball outfielders maintain a linear optical trajectory longer than optical acceleration cancellation when pursuing uncatchable fly balls. Paper presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Ft. Lauderdale, FL, May 1996.

McBeath, M.K. Using virtual environments to study perceptual invariants in navigational tasks. Invited talk presented at the Conference on Synthetic Environments, Wright State University, Dayton, OH, January 1996.

1995

McBeath, M.K. & Jewell, J.G. Proprioceptive Contribution to the Spatial Representation of Slant. Poster presented at the 36th Annual Meeting of the Psychonomic Society, Los Angeles, CA, November 1995.

Chambers, K.W. & McBeath, M.K. Bias to interpret Three Dimensional Objects as Aligned with Canonical Axes in Depth. Paper presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Ft. Lauderdale, FL, May 1995.

McBeath, M.K. & Lane, S.M. Judgments of Tennis Serve Location Systematically Vary with Vantage Angle and Ball Speed. Poster presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Ft. Lauderdale, FL, May 1995.

McBeath, M.K. How Baseball Players Figure Out Where the Ball is Going. Invited talk presented at the Miami University Department of Psychology Colloquium Series, Miami, OH, January 1995.

1994

McBeath, M.K. & Neuhoff, J.G. Immense Illusory Pitch Change Occurs with Dynamic Doppler Stimuli. Paper presented at the 35th Annual Meeting of the Psychonomic Society, St Louis, MO, November 1994.

Schiano, D.J., McBeath, M.K., and Bruner, K.W. Orientation Constraining Heuristics for Interpreting Figures as 3-D Objects. Paper presented at the 35th Annual Meeting of the Psychonomic Society, St Louis, MO, November 1994.

McBeath, M.K., Shaffer, D.M., & Kaiser, M.K. Baseball Outfielders Catch Fly Balls by Canceling Optical Curvature, Not Optical Acceleration. Paper presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Sarasota, FL, May 1994.

McBeath, M.K., Bruner, K.W., & Schiano, D.J. The influence of Symmetry and Stimulus Complexity on Commonality of Interpretations of Indeterminate Shapes. Poster presented at the Annual Convention of the Midwestern Psychological Association, Chicago, IL, May 1994.

VITA - Michael K. McBeath

PROFESSIONAL
PRESENTATIONS
(Continued)

1993

[Listed below are four representative presentations per year. Total number of presentations in years shown is: 1991 = 7. 1992 = 6. 1993 = 5.]

McBeath, M.K. & Kellman, P.J. Optimal Defensive Hand Positioning to Limit Basketball Shooting Accuracy. Poster presented at the 34th Annual Meeting of the Psychonomic Society, Washington DC., November 1993.

McBeath, M.K. Perceptual Biases in the Display of Visual Motion: Why does Lightning Appear to Travel Down and Rising Fastballs Up? Invited Banquet Address presented at the Annual Meeting of the Ohio Section of the American Physical Society, Kent, OH, May 1993.

McBeath, M.K. The Display of Three-Dimensional Motion in Virtual Space. Invited talk presented at the Department of Mathematics and Computer Science Colloquium Series, Kent State University, Kent, OH, February 1993.

McBeath, M.K., Neuhoff, J.G., & Schiano, D.J. Familiar Suspended Objects Appear Smaller than Actual Independent of Viewing Distance. Poster presented at the 5th Annual Convention of American Psychological Society, Chicago, IL, June 1993.

1992

McBeath, M.K. & Schiano, D.J. Extent of figural symmetry determines interpreted orientation of indeterminate shapes. Poster presented at the 33rd Annual Meeting of the Psychonomic Society, St Louis, MO, November 1992.

McBeath, M.K. The Basketball Hoop Illusion. Poster presented at the 33rd Annual Meeting of the Psychonomic Society, St Louis, MO, November 1992.

McBeath, M.K. & Kaiser, M.K. Visual bias for gravitationally downward motion. Poster presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Sarasota, FL, May 1992.

McBeath, M.K. The illusion of the rising fastball and the stop-and-drop sinkerball: Consequences of pitch speed misestimation. Paper presented at the 72nd Annual Convention of the Western Psychological Association, Portland, OR, April-May 1992.

1991

McBeath, M.K. The influence of depth cues on the velocity of apparent motion. Poster presented at the 32nd Annual Meeting of the Psychonomic Society, San Francisco, CA, November, 1991.

McBeath, M.K. & Schiano, D.J. Assumption of 3-D bilateral symmetry constrains orientation and interpretation of indeterminate shapes. Poster presented at the Human Factors Society 35th Annual Meeting, San Francisco, CA, September, 1991.

McBeath, M.K. Evidence for constancy of velocity of apparent motion. Poster presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Sarasota, FL, April-May, 1991.

McBeath, M.K. Geometric illusion bends the path of apparent motion. Paper presented at the 71st Annual Convention of the Western Psychological Association, San Francisco, CA, April 1991.

VITA - Michael K. McBeath

PROFESSIONAL PRESENTATIONS (Continued)

[Listed below are four representative presentations during graduate school.]

1990

McBeath, M.K. Perceptual bias for forward-facing motion. Paper presented at the 12th Annual Stanford-Berkeley Cognitive Psychology Conference, Stanford, CA, May, 1990.

McBeath, M.K. The effect of object shape on path of apparent motion. Paper presented at the 70th Annual Convention of the Western Psychological Association, Los Angeles, CA, April 1990.

McBeath, M.K. Comparison of four models that describe path of apparent motion. Paper presented at the 70th annual convention of the Western Psychological Association, Los Angeles, CA, April 1990.

McBeath, M.K. The effect of interstimulus interval on the path of apparent motion. Poster presented at the 68th Annual Convention of the Western Psychological Association, Burlingame, CA, April, 1988.

WEB PAGE URLs:

Home Page: <http://www.public.asu.edu/~mmcbeath>

Web Vita: <http://www.public.asu.edu/~mmcbeath/mcbeath.vita/vita.html>

REFERENCES

Dr. Roger N. Shepard, Professor
Department of Psychology
Jordan Hall, Building 420
Stanford University
Stanford, CA 94305-2130
(650) 725-2445
roger@psych.stanford.edu
<http://matia.stanford.edu>

Dr. Mary K. Kaiser, Principal Scientist
Mail Stop 262-3
Aerospace Human Factors Research Division
NASA - Ames Research Center
Moffett Field, CA 94035-1000
(650) 604-4448
moose@eos.arc.nasa.gov
<http://vision.arc.nasa.gov>

Dr. Kevin Jordan, Professor
Department of Psychology
NASA Human Factors Program
San Jose State University
San Jose, CA 95192-0120
(408) 924-5600
kjordan@mail.arc.nasa.gov
<http://www.psych.sjsu.edu/~kjordan>

Dr. Diane J. Schiano, Sr. Research Scientist
Human Interface Division
AT&T Labs
75 Willow Road
Menlo Park, CA 94025-0000
(650) 463-7027
schiano@research.att.com
<http://www.research.att.com/info>

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