

Flip Phillips

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Current position

Professor, Skidmore College, Saratoga Springs, NY

Areas of specialization

Vision & Haptics; Perception & Action; Computational Modeling.

Appointments held

- 2010— *Professor*, Skidmore College
- 2016–2017 *Visiting Professor*, Justus Liebig Universität Gießen, Psychologie und Sportwissenschaft
- 2015–2016 *Visiting Professor*, Rochester Institute of Technology, Imaging Science
- 2009–2015 *Visiting Scientist*, The Ohio State University, Psychology
- 2009–2010 *Chief Scientist*, investio.com
- 2007–2011 *Director of the Neuroscience Program*, Skidmore College
- 2005–2007 *Visiting Scientist*, The Ohio State University, Institute for Collaborative Innovation
- 2004–2010 *Associate Professor*, Skidmore College, Psychology & Neuroscience
 - 2002 *Visiting Scientist*, The Ohio State University, Psychology
 - 2001 *Visiting Scientist*, New York University, Psychology & Neural Systems
- 1998–2004 *Assistant Professor*, Skidmore College, Psychology & Neuroscience
- 1997–1998 *Research Scientist*, The Ohio State University, Psychology
- 1993–1997 *Research Assistant*, The Ohio State University, Psychology
- 1987–1992 *Animation Scientist*, Pixar Animation Studios
- 1986–1987 *Lecturer*, The Ohio State University, Computer Graphics Research Group
- 1985–1987 *Research Assistant*, The Ohio State University, Computer Graphics Research Group
- 1983–1984 *Laboratory Instructor*, The Ohio State University, Engineering Graphics

Education

- 1997 PhD in Psychology — Cognition & Perception, The Ohio State University
1994 MA in Psychology — Cognition & Perception, The Ohio State University
1986 BFA in Computer Graphics — Art, The Ohio State University
1982 Creative Music Studios, Woodstock NY

Publications

JOURNAL ARTICLES

- 2018 Why does the cortex reorganize after sensory loss? by A Kalia Singh, F Phillips, LB Merabet, & P Sinha. *Cell: Trends in Cognitive Science*, vol. 22, num. 7.
doi: [10.1016/j.tics.2018.04.004](https://doi.org/10.1016/j.tics.2018.04.004)
- Haptic shape discrimination and interhemispheric communication, by CJ Dowell, JF Norman, JR Moment, LM Shain, HF Norman, F Phillips, & AML Kappers. *Nature: Scientific Reports*, vol. 8, num. 377.
doi: [10.1038/s41598-017-18691-2](https://doi.org/10.1038/s41598-017-18691-2)
- Effects of post-weaning social isolation and oxytocin on adult anxiety and sociability in female rats, by M Lavoie, R Toma, F Phillips, & HH López. *IMPULSE*, pp. 1-15.
- 2016 Enhancing research with Plenary Labs, by P Sinha, P Bex, M Kjelgaard & F Phillips. *Science and Public Policy*, vol. 44, num. 3, pp. 434-439.
doi: [10.1093/scipol/scw051](https://doi.org/10.1093/scipol/scw051)
- Perceiving Object Shape from Specular Highlight Deformation, Boundary Contour Deformation, and Active Haptic Manipulation, by JF Norman, F Phillips, JR Cheeseman, KE Thomason, C Ronning, K Behari, K Kleinman, AB Calloway & D Lamirane. *PLoS ONE*, vol. 11, num. 2, e0149058.
doi: [10.1371/journal.pone.0149058](https://doi.org/10.1371/journal.pone.0149058).
- Binocular eye tracking calibration during a virtual ball catching task using head mounted display, by K Binaee, G Diaz, J Pelz & F Phillips. *Proceedings of the ACM Symposium on Applied Perception — SAP '16*.
doi: [10.1145/2931002.2931020](https://doi.org/10.1145/2931002.2931020)
- 2015 Magically deceptive biological motion—the French Drop Sleight, by F Phillips, MB Natter & EJM Egan. *Frontiers in Psychology*, vol. 6.
doi: [10.3389/fpsyg.2015.00371](https://doi.org/10.3389/fpsyg.2015.00371)
- 2014 Perception of Tactile Graphics: Embossings Versus Cutouts, by A Kalia, P Sinha, L Merabet, F Phillips, L Yazzolino, S Verma & R Hopkins. *Multisensory Research*, vol. 27, num. 2, pp. 111-125.
doi: [10.1163/22134808-00002450](https://doi.org/10.1163/22134808-00002450)
- Is the Perception of 3D Shape from Shading Based on Assumed Reflectance and Illumination? by JT Todd, EJM Egan & F Phillips. *i-Perception*, vol. 5, num. 6, pp. 497-514.
doi: doi.org/10.1068/i0645

- 2012 Solid shape discrimination from vision and haptics: Natural objects (*Capsicum annuum*) and Gibson's "feelies", by JF Norman, F Phillips, J Holmin, A Beers, A Boswell & H Norman. *Experimental Brain Research*, vol. 202, num. 3, pp. 321–332.
doi: [10.1007/s00221-012-3220-7](https://doi.org/10.1007/s00221-012-3220-7)
- Anticipation from biological motion: The goalkeeper problem, by GJ Diaz, B Fajen & F Phillips. *Journal of experimental psychology: Human perception and performance*, vol. 38, num. 4, pp. 848–864.
doi: [10.1037/a0026962](https://doi.org/10.1037/a0026962)
- 2011 The perception of 3D shape from planar cut contours, by EJL Egan, JT Todd & F Phillips. *Journal of Vision*, vol. 11, num. 12.
doi: [10.1167/11.12.15](https://doi.org/10.1167/11.12.15)
- Fechner, information, and shape perception, by J Lappin, JF Norman & F Phillips. *Attention, Perception & Psychophysics*, vol. 73, num. 8, pp. 2353–78.
doi: [10.3758/s13414-011-0197-4](https://doi.org/10.3758/s13414-011-0197-4)
- Texture discrimination based on global feature alignments, by F Phillips & J Todd. *Journal of Vision*, vol. 10, num. 6, art. 6.
doi: [10.1167/10.6.6](https://doi.org/10.1167/10.6.6)
- 2010 Fechner's aesthetics revisited, by F Phillips, JF Norman & AM Beers. *Seeing & Perceiving*, vol. 23, pp. 263–271.
- Does monocular visual space have planes?, by J Koenderink, et al. *Acta Psychologica*, vol. 134, num. 1, pp. 40–47.
doi: [10.1016/j.actpsy.2009.12.002](https://doi.org/10.1016/j.actpsy.2009.12.002)
- 2009 Perceptual equivalence between vision and touch is complexity dependent, by F Phillips, EJL Egan & BN Perry. *Acta Psychologica*, vol. 132, pp. 259–266.
- Intercepting moving targets: A little foresight helps a lot, by G Diaz, F Phillips & B Fajen. *Experimental Brain Research*, vol. 195, pp. 345–360.
- The perception of 3D shape from shadows cast onto curved surfaces, by JF Norman, Y Lee, F Phillips, HF Norman, LR Jennings & TR McBride. *Acta Psychologica*, vol. 131, pp. 1–11.
- Distortion of posterior visual space, by F Phillips & MG Voshell. *Perception*, vol. 38, pp. 1045–1052.
- Crossmodal information for visual and haptic discrimination, by F Phillips & EJL Egan. *SPIE Human Vision and Electronic Imaging*, vol. 14, pp. 7240–70.
- 2006 A novel metric for evaluating human-robot navigation performance, by F Phillips & MG Voshell. *Human Factors of Uninhabited Military Vehicles as Force Multipliers*, RTO-MP-HFM-135.
- 2005 Overcoming the keyhole in human-robot coordination: Simulation and evaluation, by MG Voshell, DD Woods & F Phillips. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting*, 26–30 September, Orlando FL.
- 2004 Creating noisy stimuli, by F Phillips. *Perception*, vol. 33, pp. 837–854.
- Effects of three-dimensional complexity on the perception of two-dimensional depictions of objects, by F Phillips, CH Thompson & MG Voshell. *Perception*, vol. 33, pp. 21–33.
- 2003 Perceptual representation of visible surfaces, by F Phillips, JT Todd, JJ Koenderink & AML Kappers. *Perception & Psychophysics*, vol. 65, pp. 747–762.

- 2001 Information concentration along the boundary contours of naturally shaped solid objects, by JF Norman, F Phillips & HE Ross. *Perception*, vol. 30, pp. 1285–1294.
- Limits, uncertainty, and randomness, by F Phillips. *The Mathematica Journal*, vol. 8, num. 2.
- The role of 2-D and 3-D task performance in the design and use of visual displays, by JS Tittle, DD Woods, A Roesler, M Howard & F Phillips. *Proceedings of the Human Factors Society*, vol. 45, num. 4, pp. 331–335.
doi: [10.1177/154193120104500414](https://doi.org/10.1177/154193120104500414)
- 2000 Quantum computation, by F Phillips. *The Mathematica Journal*, vol. 8.
- Simulating society — Sim City, by F Phillips. *The Mathematica Journal*, vol. 7, pp. 427–433.
- 1999 Artlandia, by F Phillips. *The Mathematica Journal*, vol. 7, pp. 230–236.
- Feeling shape, by F Phillips. *The Mathematica Journal*, vol. 7, pp. 93–94.
- 1998 The perception of surface curvature from optical motion, by VJ Perotti, JT Todd, JS Lappin & F Phillips. *Perception & Psychophysics*, vol. 60, pp. 377–388.
- 1997 *Geometric Structure, Frames of Reference, and Their Implication in the Localization of Features on Smoothly Curved Surfaces*, by F Phillips. Ph.D. Dissertation, The Ohio State University.
- Perceptual localization of features on smoothly curved surfaces, by F Phillips, JT Todd, JJ Koenderink & AML Kappers. *Journal of Experimental Psychology: Human Perception and Performance*, vol. 23, pp. 1481–1492.
- The perception of shape and curvedness from multiple sources of information, by JS Tittle, JF Norman, VJ Perotti & F Phillips. *Perception*, vol. 26, pp. 147–166.
- 1996 Perception of local three-dimensional shape, by F Phillips & JT Todd. *Journal of Experimental Psychology: Human Perception and Performance*, vol. 22, num. 4, pp. 930–944.
- Surface range and attitude probing in stereoscopically presented dynamic scenes, by JJ Koenderink, AML Kappers, JT Todd, JF Norman & F Phillips. *Journal of Experimental Psychology: Human Perception and Performance*, vol. 22 num. 4, pp. 869–878.
- 1995 The perception of surface orientation from multiple sources of optical information, by JF Norman, JT Todd & F Phillips. *Perception & Psychophysics*, vol. 57, num. 5, pp. 629–636.
- 1989 The animation environment at Studio Pixar, by F Phillips. *Proceedings of Computer Graphics '89 Conference*, pp. 243–255.
- 1988 Supercomputer medical imaging, by F Phillips. *Convex White Paper Series on Supercomputing*, pp. 1–7.
- 1987 Combinational imaging: Magnetic resonance imaging and EEG displayed simultaneously, by MW Torello, F Phillips, W Hunter & CA Csuri. *Journal of Clinical Neurophysiology*, vol. 4, num. 3, pp. 274–275.

BOOKS AND BOOK CHAPTERS

- 2011 Spatial perception and action, in *Handbook of Spatial Cognition*, by B Fajen & F Phillips. American Psychological Association.
- 2006 *Foundations of Cyclopean Perception*, by B Julesz, with T Pappathomas & F Phillips. MIT Press, ISBN 0262101130.

UNPUBLISHED MANUSCRIPTS AND TECHNICAL REPORTS

- 2006 Collaborative Metadata, by F Phillips, W Redenbarger, B Prue & MG Voshell. Technical Report, CPoD / CSEL Ohio State, Saratoga Springs, New York, March.
- 2000 *eel*: A language for conducting experiments, by F Phillips, JS Shomphe, AB Cencinni & MG Voshell. Technical Report, Skidmore Vision Laboratories, ebv-00/01, Saratoga Springs, New York, March.
- 1996 *AL*: A language for procedural modeling and animation, by SF May, WE Carlson, F Phillips & F Scheepers. Technical Report, OSU-ACCAD-12/96-TR5, Columbus, Ohio, December.
- 1987 Three dimensional surface representation and perspective enhancement of MR data II, by F Phillips. Technical Report, OSU CGRG, Columbus, Ohio, June.
- 1986 Three dimensional surface representation and perspective enhancement of MR data, by F Phillips. Technical Report, OSU CGRG, Columbus, Ohio, June.

CONFERENCE PRESENTATIONS

- 2018 Exploring the Uncanny Valley, by F Phillips, F Schmidt, L Noejovich & G Chakalos. *Journal of Vision*. vol. 18, num. 10.
[doi: 10.1167/18.10.348](https://doi.org/10.1167/18.10.348)
- Gravity and ground plane geometry in perspective images, by E Fourquet & F Phillips. *Journal of Vision*. vol. 18, num. 10.
[doi: 10.1167/18.10.506](https://doi.org/10.1167/18.10.506)
- Shape scission: causal segmentation of shape, by F Schmidt, F Phillips & R Fleming. *Journal of Vision*. vol. 18, num. 10.
[doi: 10.1167/18.10.1054](https://doi.org/10.1167/18.10.1054)
- 2017 Inferring the deformation of unfamiliar objects, by F Schmidt, F Phillips & R Fleming. *Journal of Vision*. vol. 17, num. 10.
[doi: 10.1167/17.10.315](https://doi.org/10.1167/17.10.315)
- The Veiled Virgin Project: Causal layering of 3D shape, by F Phillips & R Fleming. *Journal of Vision*. vol. 17, num. 10.
[doi: 10.1167/17.10.406](https://doi.org/10.1167/17.10.406)
- Effects of post-weaning social isolation & oxytocin on adult sociability, by M Lavoie, R Toma, F Phillips, & HH López. *Society for Neuroscience*. November, Washington, DC.
- 2016 Predictive movements of the hands and eyes to a target that disappears briefly when moving in depth, by G Diaz, K Binaee & F Phillips. *Journal of Vision*. vol. 16, num. 12.
[doi: 10.1167/16.12.1349](https://doi.org/10.1167/16.12.1349)
- Characterization and Calibration of Eye Tracking Data from Head Mounted Displays, by K Binaee, R Kothari, F Phillips & G Diaz. *Journal of Vision*. vol. 16, num. 12.
[doi: 10.1167/16.12.846](https://doi.org/10.1167/16.12.846)
- Assessment of social and sexual motivation in female rats, by M Lavoie, F Phillips, E Egan, & HH López. *Society for Neuroscience - Faculty for Undergraduate Neuroscience (FUN)*. November, San Diego, CA.

- 2015 Visual and haptic geometry of 3D shape discrimination, by F Phillips, E O'Donnell & N Kernis. *Journal of Vision*. vol. 15, num. 12.
doi: [10.1167/15.12.866](https://doi.org/10.1167/15.12.866)
- 2014 Specularity and shape from line drawings, F Phillips, J Mazzearella & P Docter. *Journal of Vision*. vol. 14, num. 10.
doi: [10.1167/14.10.729](https://doi.org/10.1167/14.10.729)
- Limits on the estimation of shape from specular surfaces, by J Mazzearella, S Cholewiak, F Phillips & R Fleming. *Journal of Vision*. vol. 14, num. 10.
doi: [10.1167/14.10.721](https://doi.org/10.1167/14.10.721)
- 2013 The kinetic depth effect for vision and haptics, by JF Norman, F Phillips, J Cheeseman, K Thomason, C Ronning, A Calloway & D Lamirande. *Journal of Vision*. vol. 13, num. 9.
doi: [10.1167/13.9.265](https://doi.org/10.1167/13.9.265)
- 2012 Deceptive biological motion: The French drop sleight, by F Phillips & M Natter. *Neuro-Magic 2012*, San Simón, Spain, May.
- Visual and haptic perception of 3D shape, by F Phillips, JF Norman, J Holmin, A Beers, A Boswell, H Norman. *Vision Sciences Society*, Naples, FL, May.
- The role of symmetry in 3D shape perception across the change of viewpoint, by E JL Egan, JT Todd & F Phillips. *Vision Sciences Society*, Naples, FL, May.
- 2011 The perception of 3D shape from contour textures, by E JL Egan, JT Todd & F Phillips. *Vision Sciences Society*, Naples, FL, May.
- Anticipating the actions of others: Do goalkeepers use local or distributed information?, by G Diaz, B Fajen & F Phillips. *Vision Sciences Society*, Naples, FL, May.
- 3D shape perception does not depend on symmetry, by F Phillips, JT Todd & E JL Egan. *Vision Sciences Society*, Naples, FL, May.
- Anticipation of sabre fencing attacks, by P Possidente, F Phillips, J Matthis & G Diaz. *Vision Sciences Society*, Naples, FL, May.
- 2010 A spherical harmonic model for the representation of 3D shape, by F Phillips, E JL Egan, J Lesperance & K Kömek. *Vision Sciences Society*, Naples, FL, May.
- 2009 The effect of complexity on haptic and visual discrimination, by F Phillips & E JL Egan. *Tactile Research Group*, Boston, MA, November.
- The traveling salesman problem in the natural environment, by F Phillips, T O'Connell & O Layton. *Vision Sciences Society*, Naples, FL, May.
- Learning to anticipate the actions of others: The goal-keeper problem, by GJ Diaz, D Ehlinger, F Phillips & BR Fajen. *Vision Sciences Society*, Naples, FL, May.
- The perception of 3-D shape from shadows cast onto curved surfaces, by JF Norman, Y Lee, F Phillips, HF Norman, LR Jennings & TR McBride. *Vision Sciences Society*, Naples, FL, May.
- 2008 Information, symmetry & vision, by J Lappin & F Phillips. *European Conference on Visual Perception*, Utrecht, NL, June.
- What sculpted depictions of 3-D objects reveal about visual and haptic mental representations, by E Egan, F Norman & F Phillips. *Vision Sciences Society*, Naples, FL, May.

- Gawking and fondling: Multimodal perception of 3D shape, by F Phillips, B Perry & E Egan. *Vision Sciences Society*, Naples, FL, May.
- The French drop sleight: Deceptive biological motion, by M Natter & F Phillips. *Vision Sciences Society*, Naples, FL, May.
- Intercepting moving targets: A little foresight helps a lot, by GJ Diaz, B Fajen & F Phillips. *Vision Sciences Society*, Naples, FL, May.
- 2007 Locomotor interception of unpredictable moving targets, by GJ Diaz, B Fajen & F Phillips. *Vision Sciences Society*, Sarasota, FL, May.
- 2006 Perception and action at a distance, by F Phillips, B Gaudino, B Prue & MG Voshell. *Vision Sciences Society*, Sarasota, FL, May.
- 2005 Overcoming remote perception challenges to support decision making in human-robot teams, by MG Voshell, F Phillips & DD Woods. *Naturalistic Decision Making 7*, Amsterdam, The Netherlands, June.
- What can drawings tell us about the mental representation of three-dimensional shape? by F Phillips, M Casella, & B Gaudino. *Vision Sciences Society*, Sarasota, FL, May.
- 2004 Things about stuff— sources of texture information, by F Phillips & W Roshia. *Vision Sciences Society*, Sarasota, FL, May.
- Emerging features in very low contrast, by GJ Diaz & F Phillips. *Vision Sciences Society*, Sarasota, FL, May.
- 2003 Moving random lines are better stimuli for far extrastriate brain areas, by K Denys, W Vanduffel, F Phillips, JT Todd & GA Orban. *Society for Neuroscience*, New Orleans, LA, November.
- Local and global coherence in two-dimensional textures, by F Phillips & JT Todd. *Vision Sciences Society*, Sarasota, FL, May.
- 2002 Distortions in posterior visual space, by F Phillips & M Voshell. *Vision Sciences Society*, Sarasota, FL, May.
- Ecological distortions in visual space, by M Voshell & F Phillips. *Vision Sciences Society*, Sarasota, FL, May.
- 2001 Contributions of geometric and image information in the perception of solid objects, by F Phillips & M Voshell. *Vision Sciences Society*, Sarasota, FL, May 2001.
- Information concentration along the boundary contours of naturally shaped solid objects, by JF Norman, F Phillips & HE Ross. *Psychonomic Society*, Orlando, FL, November.
- 2000 Implications of two and three dimensional information on the perception of solid objects, by F Phillips & CH Thompson. *The Association for Research in Vision and Ophthalmology*, Ft. Lauderdale, FL, April.
- 1999 A genetic methodology for performing highly dimensioned experiments, by F Phillips. *The Society of Mathematical Psychology*, Santa Cruz, CA, August.
- 1997 Geometric structure and its implication in the localization of features on smoothly curved surfaces, by F Phillips, JT Todd, JJ Koenderink & AML Kappers. *The Association for Research in Vision and Ophthalmology*, Ft. Lauderdale, FL, May.

- 1996 The perception of shape and curvedness from multiple sources of information, by JS Tittle, JF Norman, VJ Perotti & F Phillips. *The Association for Research in Vision and Ophthalmology*, Ft. Lauderdale, FL, May.
- 1995 The perception of shape and curvedness from binocular stereopsis, by JS Tittle, VJ Perotti & F Phillips. *The Association for Research in Vision and Ophthalmology*, Ft. Lauderdale, FL, May.
- Shape from constant flow fields, by VJ Perotti, JT Todd, JS Lappin & F Phillips. *The Association for Research in Vision and Ophthalmology*, Ft. Lauderdale, FL, May.
- What defines features on smoothly curved surfaces? by F Phillips & JT Todd. *The Association for Research in Vision and Ophthalmology*, Ft. Lauderdale, FL, May.
- The perception of shape and curvedness in noisy stereo stimuli, by JS Tittle, VJ Perotti & F Phillips. *Proceedings of the 36th Annual Meeting of the Psychonomic Society*, Los Angeles, CA, November.
- 1994 The perception of 3D surface orientation from multiple sources of optical information, by JF Norman, JT Todd & F Phillips. *The Association for Research in Vision and Ophthalmology*, Sarasota, FL, May.
- The perception of local 3D shape, by F Phillips, JT Todd & JF Norman. *The Association for Research in Vision and Ophthalmology*, Sarasota, FL, May.
- 1993 The visual perception of surface orientation, by JF Norman, JT Todd & F Phillips. *Proceedings of the 34th Annual Meeting of the Psychonomic Society*, Washington, DC, November.
- Quantitative analysis of perceived aesthetic value, by F Phillips. *Proceedings of the Fifth Annual Forum on Built Form and Culture Research*, Cincinnati, OH, October.
- 1987 Structure and function of the brain displayed simultaneously, by MW Torello, W Hunter, C Csuri & T Phillips. *Proceedings of the Society of Biological Psychiatry*, Chicago, IL, May.
- Combinational imaging: Magnetic resonance imaging and EEG displayed simultaneously, by MW Torello, T Phillips, W Hunter & C Csuri. *Proceedings of the American Electroencephalographic Society Meeting*, St. Louis, MO, September.

BOOK REVIEWS AND MAGAZINE ARTICLES

- 2009 Colormunki 1.1, *Macworld*, July,
URL: <http://www.macworld.com/article/141947/2009/07/colormunki.html>
- Papers for iPhone, *Macworld*, May,
URL: <http://www.macworld.com/appguide/app.html?id=89614>
- Wolfram Mathematica 7, *Macworld*, January,
URL: http://www.macworld.com/article/138219/2009/01/mathematica_7.html
- 2008 Maple 12, *Macworld*, October,
URL: <http://www.macworld.com/article/135794/2008/10/maple12.html>
- Papers 1.8, *Macworld*, June,
URL: <http://www.macworld.com/article/133801/2008/06/papers18.html>
- 2007 SPSS 16.0, *Macworld*, December,
URL: <http://www.macworld.com/article/131300/2007/12/spss16.html>

- 2000 Exploring Analytic Geometry with Mathematica, *The Mathematica Journal*, 7(4).
 1999 Mathematica Navigator, *The Mathematica Journal*, 7(3).
 Statistics with Mathematica, *The Mathematica Journal*, 7(3).
 Modern Differential Geometry of Curves and Surfaces, *The Mathematica Journal*, 7(3).
 Beginner's Guide to Mathematica, 4ed, *The Mathematica Journal*, 7(3).

INVITED TALKS

- 2018 University of Rochester, Center for Visual Science, *Travels in the Uncanny Valley*, Rochester, NY.
 2017 New York University Abu Dhabi, *Eyetracking Shape*, Abu Dhabi United Arab Emirates.
 Vision Sciences, *The Veiled Virgin Effect: Causal 3D Shape*, St. Pete Beach FL.
 2016 Justus Liebig Universität, *Sensory Compensation in the Blind*, Gießen Germany.
 Justus Liebig Universität Psychologie und Sportwissenschaft, *Visual and Haptic Perception of 3D Shape*, Gießen Germany.
 Rochester Institute of Technology MAGIC Center conference on VR/AR, *Travels in the Uncanny Valley*, Rochester NY.
 The Saratoga Foundation, *Art, Perception and Neuroscience*, Saratoga Springs NY.
 PRISM6, *Eye Tracking Shape*, Rauschholzhausen Castle Germany.
 2015 Rochester Institute of Technology Distinguished Scholar, *Molyneux's Empirical Problem*, Rochester NY.
 SIGGRAPH Rochester, *Pixar: The Early Years*, Rochester NY.
 Skidmore Project VIS, *Creating Scientific Posters*, Saratoga Springs NY.
 Rensselaer Institute of Technology Cognitive Science, *Visual and Haptic Shape*, Troy NY.
 Tactile Research Group, *Molyneux's Empirical Problem*, Chicago IL.
 Massachusetts Institute of Technology BCS, *Sensory Compensation in the Blind*, Cambridge MA.
 Charles River Associates, *Perception of 3D Shape*, Cambridge MA.
 Northern Arizona University, *Magic, Shape, Things and Stuff*, Flagstaff AZ.
 2014 SIGGRAPH Expressive, *What can art teach us about perception?* Vancouver B.C.
 Rochester Institute of Technology Center for Imaging Science Series, *Visual and Haptic Perception of 3D Shape*, Rochester NY.
 2013 EMPAC Artists and Scientists series, *Deconstructing Perception*, Troy NY.
 2013 TEDxSkidmore, *I'm still not an architect...*, Saratoga Springs NY.
 Neuromagic: Conference on the Neuroscience of Magic, *Deceptive Biological Motion*, Vigo Spain.
 2012 Art Beyond Sight & The Metropolitan Museum of Art, *Multimodal Approaches to Learning International Conference*, New York NY.
 Skidmore College, SKIDTalks, *Three Things I Believe*, Saratoga Springs NY.

- Skidmore College, *The Pursuit of Novel Sound*, Saratoga Springs NY.
- Skidmore College, *Your Brain is not a Computer*, Saratoga Springs NY.
- 2011 Skidmore College, *Gawking and Fondling — The Resolution of Arts and Science*, Saratoga Springs NY.
- 2010 Union College, *Information for Visual, Haptic, and Crossmodal Perception*, Schenectady NY.
 Skidmore College, The John Ramsey Lecture, *How Many Cultures?*, Saratoga Springs NY.
- 2009 MIT, *Information for Visual, Haptic, and Crossmodal Perception*, Cambridge MA.
- 2008 Vanderbilt University, *Information, Symmetry & Vision*, w/ J Lappin, Nashville TN.
 Rutgers University, *Sculpting and Drawing: What They Tell Us About Our Mental Representation of 3D Shape*, New Brunswick NJ.
- 2006 The Ohio State University, *Storytelling & Collaboration*, Columbus OH.
- 2005 Rensselaer Polytechnic Institute, *Seeing Shape* Troy NY.
 Old Dominion University, *Perception and Representation*, Norfolk VA.
- 2001–2004 National Science Foundation Chautauqua Short Courses, *Mathematical Modeling with Mathematics*, Memphis TN.
- 2002 The Ohio State University, *Contributions of 2-D Information to 3-D Perception*, Columbus OH.
- 2001 Rutgers University, *Size & Shape, the Effect of 2-D Information to 3-D Perception*, New Brunswick NJ.
 ATI, Inc., *Perceptual Issues in Computer Graphics*, Marlboro MA.
- 1997 Central Ohio Psychological Association, *Genetic Aesthetics: Breeding Better Models*, Columbus OH.
- 1993 Human Factors Society, *Interfaces for Traditional & Nontraditional Execution of the Arts*, Columbus OH.
- 1992 Advanced Computing Center for the Arts & Design, *The Animation Environment at Studio Pixar*, Columbus OH.
- 1991 USENIX Annual Conference, *Graphics as Systems Programming*, Keynote Speech[†], Dallas TX.
- 1990 ACM — SIGGRAPH, *Using of RenderMan to Generate Procedural Textures*, Dallas TX.
 University of San Francisco, *Computer Animation: Man Meets Machine in a Friendly Exchange of Ideas*, w/ P Docter, San Francisco CA.
- 1989–1991 Stanford University Undergraduate Excellence Series, *Computer Animation at Pixar*, Palo Alto CA.
- 1988 Association of Medical Illustrators, *Computer Graphics & Medical Illustration*, San Diego CA.

TELEVISION AND MEDIA APPEARANCES

- 2012 National Geographic, *Brain Games*.

GRANTS AND AWARDS

- 2018–2020 *Representing and Perceiving Depth in Digital Imagery*, by E Fourquet & F Phillips. Picker Interdisciplinary Science Institute. Award: approx. \$175,000.
- 2017 *Travels in the Uncanny Valley*, by F Phillips & L Noejovich. Skidmore Collaborative Research Grant. Award: approx. \$5,000 materials & support.
- 2015–2016 *What Can Art Tell Us About the Perception of 3D Shape?* Fulbright Scholar, Justus Liebig Universität Gießen Germany. Award: approx. \$50,000
- 2012 *The Pursuit of Novel Sound*, by Brendan Gaffney & Flip Phillips. Treuhft Fund for Art and Technology. Award: approx. \$7,500 materials.
- 2011 *What Can Drawing and Sculpting Tell Us About the Perception of 3D Shape?*, by D Pinnolis, K Eckman & Flip Phillips. Skidmore Collaborative Research Grant. Award: approx. \$5,000 materials & support.
- 2008 *The Traveling Salesman Problem*, by O Layton & Flip Phillips. Skidmore Collaborative Research Grant. Award: approx. \$5,000 materials & support.
- Spherical Harmonic Decomposition* by Kübra Kömek, Flip Phillips & Josh Lesperance. Skidmore Collaborative Research Grant. Award: approx. \$5,000 materials & support.
- 2007 *Scanning Three-Dimensional Sculptures*, by Eric Egan & Flip Phillips. Treuhft Fund for Art and Technology. Award: approx. \$7,500 materials.
- 2006–2008 *Converging Perspectives on Data*, by F Phillips. Collaborative program sponsored by the National Security Agency, hosted at The Ohio State University. Support included three Skidmore undergraduates. Award: \$80,000.
- 2003–2004 *Computational Neuroscience*, by F Phillips. A module of the Keck Undergraduate Computational Science Educational Consortium project. Award: \$11,000.
- 2003 *Control*, by F Phillips & K DeSimone. Skidmore Summer Collaborative Grant. Award: approx. \$5,000 materials & support.
- 2001 *Further Investigations of Scale, Depth, & Texture*, by F Phillips & M Voshell. Skidmore Summer Collaborative Grant. Award: approx. \$5,000 materials & support.
- 1999 *Perception of Textured Surfaces*, by F Phillips & C Thompson. Skidmore Summer Collaborative Grant. Award: approx. \$5,000 materials & support.
- 1999 *Scale, Depth, & Texture: Perceptual and Artistic Considerations*, by F Phillips & C Thompson. Keck Foundation. Award: approx. \$3,000 materials & travel support.
- 1997 *Perception of Texture and Shape*, by F Phillips, JT Todd, W Carlson, & S May. Cognitive Science Summer Research Fellowship. Award: approx. \$7,000 support.

Creative work, design competitions and awards

- 2016 Tang Teaching Museum, *Sixfold Symmetry, Patterns in Art and Science*. Exhibit essay "Pattern in Mind".
- Inside Out* for Disney-Pixar. Scientific advisor.
- 2012 *On Deck, Glens Falls*. Sculpture for charity auction.
- 2011 Skidmore College *The Resolution of Art and Science*. Exhibited sculpture.

- 1998 Greater Columbus Rowing Association. Logo design competition.
- 1991 *Warehouse* for Tropicana. Animation.
Dance Club for Life Savers. Animation and technical direction.
 Awards: Clio Awards — Gold Clio, Computer Animation.
Cracks for Fleishmann's. Animation director.
Grands for Pillsbury, Animation and technical direction.
- 1990 *Galaxy* for Toppan Printing. Animation and technical direction.
La Nouvelle Polo for Volkswagen. Animation and technical direction.
 Awards: French Advertising Industry Award.
Boxer for Listerine, Technical direction, 1990.
 Awards: International Monitor Awards — Finalist, Best Computer Animation.
Quite a Package for Trident. Technical direction and music pre-scoring.
Dancing Cards for California Lottery. Computer animation director and technical direction.
Skateboard for Life Savers. Technical direction, 1990.
 Awards: International Monitor Awards — Finalist, Best Computer Animation
Wake Up for Tropicana. Technical direction. Contributed to the sound track as a character 'voice'. Also created novel color separation methods for the production of a 'crew' T-shirt.
- 1989 *knickknack*, A collaboration of the Pixar Animation Production Group, filmed in '3D' and premiered at SIGGRAPH '89. Responsible for some blocking animation and technical implementation of the 'look' of the film. The surfaces of the objects in the film (both in form and appearance) were generated algorithmically, therefore, the film is almost entirely free of photographic textures. Also co-designed the award winning '3D' T-shirt.
 Awards: New York Exposition of Short Film and Video — Silver Award, Animation Monte Carlo "Imagina" Int'l Forum on New Images — First Prize Fiction Stuttgart Internationales Trickfilm Festival — Prize for Technical Innovation Sinking Creek Film Festival — Award Winner Seattle International Film Festival — Golden Space Needle Award for Best Short Film Computer '90 Lausanne — Award Winner, Le prix du public Zagreb — Special award for Humor and Bobby McFerrin's Vocal Contribution Images du Futur 90, 4e Compétition Internationale d'Animation par Ordinateur, Montreal — First Prize Fiction, Prix du public International Monitor Awards — Best Animation Barcelona Film Festival — First Prize, Animation Competition
Dance of the Waterlilies for Toppan Printing, Animation and technical direction, also created image rendering technique for lenticular printing. This was Pixar's first television commercial.
- 1988 *Tin Toy*, Character designer and 'rhythmic' consultant.
 Awards: Academy Award for Best Animated Short Film.
- 1996 Foundation Show, Exhibit of painting *Chair*, The Ohio State University, Columbus, OH.
- 1985-1991 Various credited medical images have appeared in *Computer Pictures* magazine. Animation and design related images have appeared in *Publish, Animation, Computer Pictures, Computer Graphics World*, and other related publications.

Teaching

THESIS SUPERVISION

- 2017 Skidmore College — Neuroscience Program, Thesis Supervisor, L Noejovich, *The Uncanny Valley*.
Skidmore College — Neuroscience Program, Thesis Supervisor, G Chakalos, *The Uncanny Valley*.
- 2016 Skidmore College — Self Determined Major Thesis Supervisor, M Stein, *Sound*.
- 2014 Skidmore College — Neuroscience Program, Thesis Supervisor, J Mazzarella, *Shape and specularity*.
- 2013 Boston University — Cognitive and Neural Systems, Doctoral Committee, O Layton, *Neural models of inter-cortical networks in the primate visual system for navigation, attention, path perception, & static and kinetic figure-ground perception*.
Rensselaer Polytechnic Institute — Department of Cognitive Science, Doctoral Committee, JS Matthis, *Humans exploit the biomechanics of bipedal gait during visually guided walking over rough terrain*.
- 2012 Skidmore College — Self Determined Major Thesis Supervisor, B Gaffney, *Sound*. Periclean Award Winner.
- 2011 Skidmore College — Neuroscience Program, Thesis Supervisor, BP Possidente, *Anticipation in Sabre Fencing Attacks*.
Skidmore College — Department of Psychology, Thesis Supervisor, J Spencer, *Metronomic Synchronization of Snare Drummers*.
- 2010 Rensselaer Polytechnic Institute — Department of Cognitive Science, Doctoral Dissertation Committee, GJ Diaz, *Anticipation from Biological Motion*.
Skidmore College — Neuroscience Program and Self Determined Major, Thesis Supervisor, K Kömek, *Computational Modeling of Schizophrenia*.
- 2009 Skidmore College — Neuroscience Program and Self Determined Major, Thesis Supervisor, O Layton, *The Traveling Salesman Problem in the Natural Environment*.
- 2008 Rensselaer Polytechnic Institute — Department of Cognitive Science, Masters Thesis Committee, GJ Diaz, *Intercepting Moving Targets*.
Skidmore College — Neuroscience Program, Thesis Supervisor, E Egan, *What Can Sculpting Tell Us About Our Mental Representation of Three-Dimensional Shape?*.
Skidmore College — Department of Psychology, Thesis Supervisor, M Natter, *Deceptive Biological Motion: The French Drop Slight*.
- 2006 Skidmore College — Neuroscience Program, Thesis Supervisor, B Gaudino & B Prue, *Perception and Action at a Distance*.
Skidmore College UWW — Self Determined Major, Thesis Committee, D Cook, *Colorful Tones II*.
- 2005 Skidmore College — Department of Psychology, Thesis Supervisor, M Casella, *What Can People's Line Drawings Tell Us About Our Mental Representation of Three-Dimensional Shape?*.

- 2004 Skidmore College — Department of Psychology, Thesis Supervisor, GJ Diaz, *Emerging Features in Very Low Contrast*.
- Skidmore College — Neuroscience Program, Thesis Supervisor, W Roshia, *Things About Stuff— Sources of Texture Information*.
- Skidmore College — Self Determined Major, Thesis Committee, N Jones, *Multimedia and Design*.
- 2002 Skidmore College — Department of Psychology, Thesis Supervisor, MG Voshell, *Perception of Posterior Visual Space*.
- 2001 Skidmore College — Self Determined Major, Thesis Committee, M Love, *Art and Mind*.
- 2000 Skidmore College — Department of Psychology, Thesis Committee, B Miller, *Shape, Salience, & Sonority*.
- 1993 The Ohio State University — Departments of Psychology / Photography & Cinema, BFA Committee, TR Acock.

CLASSES

Classes include computational methods, computational neuroscience, perception, statistics, introduction to cognitive science, “Designing a mind”, psychological aesthetics, history of animation, introductory animation, and other introduction / foundation courses in psychology and neuroscience.

Service to the profession

EDITORIAL

- 2018— *3D Research* — Reviewer.
Journal of Physiology — Reviewer.
- 2011— *Psychological Research* — Reviewer.
- 2010— *Acta Psychologica* — Reviewer.
Attention, Perception & Psychophysics — Reviewer.
Proceedings of the Royal Society — Reviewer.
Journal of Vision — Reviewer.
- 2007— *MacWorld Magazine* — Scientific Software Reviewer.
Oxford University Press — Proposal Reviewer.
MIT Press — Proposal Reviewer.
- 2005— *Perception* — Reviewer.
- 2002— *The Mathematica Journal* — Editorial Board.
- 2002 *A New Kind of Science*, by Wolfram — External Peer Reviewer.
Mathematical Statistics, by Rose & Smith — External Peer Reviewer.
Fundamentals of Behavioral Research Methods, by Pittinger — Reviewer.
- 2001 *Human Computer Interaction* — Reviewer.
- 1998–2002 *The Mathematica Journal* — Editor.

- 1997— *Journal of Experimental Psychology: Human Perception & Performance* — Reviewer.
Vision Research — Reviewer.
- 1992–1993 *Landscape and Urban Planning* — Reviewer.
- 1988–2001 *ACM-SIGGRAPH* — Reviewer.

AGENCY RELATED

- 2014 *National Institutes of Health* — Panelist.
- 2012 *National Science Foundation* — Committee of Observers.
- 2006— *National Science Foundation* — Ad Hoc Reviewer.
De Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO) — Ad Hoc Reviewer.
- 2004–2006 *National Science Foundation* — Regular Panelist.

COMPUTER SOFTWARE

- 2017 *VSCoDe plugin for Wolfram Language*, An extension to Microsoft Visual Studio Code to support the Wolfram Language.
github.com/skidvision/wolfram-language
FPTools, A set of *Mathematica* / Wolfram Language extensions supporting signal processing, semantic analysis, image and video IO, evolutionary algorithms, statistics and other areas used in the classes I presently teach.
- 2016 *Gibson “Feelies,”* Geometry for shape perception experiments.
github.com/skidvision/Feelies
“Glavens,” Geometry for shape perception experiments.
github.com/skidvision/Glavens
Bell Peppers, Geometry for shape perception experiments.
github.com/skidvision/Bellpeppers
- 2015 *Logtwine*, An interface between the Twine data acquisition device and the Wolfram Cloud.
github.com/flippPhillips/logtwine
- 2010 *Fuzzy*, Fuzzy logic tools for *Mathematica*.
github.com/skidvision/Fuzzy
- 2008 *New MDS Tools for Mathematica*, Update of the Multi-dimensional scaling package for *Mathematica*.
- 2005 *Path Analysis Tools for Mathematica*, A package for calculating tortuosity in two- and three-dimensional paths.
MacRib, A package for using the Pixar RenderMan interface from *Mathematica*.
github.com/skidvision/MacRib
- 2002 *Scaling Tools for Mathematica*, Torgerson-style scaling and Multi-dimensional scaling for *Mathematica*.
Signal Detection Tools for Mathematica, A set of tools based on Macmillan & Creelman’s *Detection Theory: A User’s Guide*.
github.com/skidvision/SDT

- Image Processing Tools for Mathematica*, A package of enhancements to the *Mathematica* Image Processing package for generating Adelson & Burt [1981] style Gaussian and Laplacian multi-resolution image pyramid.
- Scaling Tools for Mathematica*, Torgerson-style scaling and Multi-dimensional scaling for *Mathematica*.
- 2001 *Circular Statistics for Mathematica*, A package for conducting analyses on directional, orientation, and circular data based on NI Fisher's *Statistical Analysis of Circular Data*.
github.com/skidvision/CircularStatistics
- eel*, The “eel experimental language”, an extensible Python-based system for performing vision experiments on the Macintosh and Unix platforms.
- 1995 *WhichStat*, Statistical analysis expert system for determining the appropriate analyses for a given set of experimental data.
- Compact Disk Media Encryption System*, A system for protection of value-added material on audio compact disks. Provides for ‘unlocking’ of additional artists’ material for a small charge.
- 1994 *Real-Time Solo and Audio Mixer*, Add-in modules for a Macromedia Director CD-ROM project. The former interactively performs solo accompaniment to a backing music track, while the latter allows real-time mixing of up to ten audio channels and recording and playback of the mixing cues, 1994.
- 1992 *Ofoto Image Acquisition Module*, An add-in module for Aldus PageMaker that establishes an interface with the Ofoto digital imaging system.
- 1991 *NEC Video Sequencer*, The first Macintosh application for non-linear video tape editing.
- 1990 *NEC Multimedia Toolkit*, A Hypercard toolkit for controlling the NEC PC-VCR video tape recorder.
- 1988 *PICS2000 Volume Imaging Medical Workstation*, A three dimensional volume medical imaging workstation developed under contract for Philips NA.