Flip Phillips

Rochester Institute of Technology
Department of Motion Picture Science
MAGIC Center
300 Lomb Memorial Drive
Rochester NY 14623-5608
USA

email: flip.phillips@rit.edu
URL: flipphillips.com

Current position

Professor of Motion Picture Science and Affiliated Professor of Imaging Science,
Rochester Institute of Technology, Rochester, NY

Areas of specialization

Vision & Haptics; Perception & Action; Computational Modeling.

Appointments held

2021—	*Emeritus Professor of Psychology and Neuroscience*, Skidmore College
2020—	*Affiliated Professor of Imaging Science*, Rochester Institute of Technology
2020—	*Professor of Motion Picture Science*, Rochester Institute of Technology
2019—	*Mentor*, Wolfram Summer School
2010–2021	*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

2021 Resilience of temporal processing to early and extended visual deprivation. by J Ye, P Gupta, P Shah, K Tiwari, T Gandhi, S Ganesh, F Phillips, D Levi, F Thorn, S Diamond & P Sinha. *Vision Research*, vol. 186.

2020 Effects of illumination on the categorization of shiny materials. by JF Norman, JT Todd & F Phillips. *Journal of Vision*, vol. 20, num. 5. doi.org/10.1167/jov.20.5.2

The Veiled Virgin illustrates visual segmentation of shape by cause. by F Phillips & Flip and RW Fleming. *Proceedings of the National Academy of Sciences*, vol. 117, num. 21.

2019 Visual perception of shape-transforming processes:'Shape scission'. by F Schmidt, F Phillips & RW Fleming. *Cognition* vol. 189.

Effects of the spatial spectrum on the perception of reflective and refractive materials. by F Phillips, JF Norman & JT Todd. *Journal of Vision*, vol. 19, num. 10.

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

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

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

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 Lamiranee. *PLoS ONE*, vol. 11, num. 2, e0149058.
doi: 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

2015 Magically deceptive biological motion—the French Drop Sleight, by F Phillips, MB Natter & EJL Egan. *Frontiers in Psychology*, vol. 6.
doi: 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

Is the perception of 3D shape from shading based on assumed reflectance and illumination? by JT Todd, EJL 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*, vol2⊠2, num. 3, pp. 321–332.
doi: 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

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

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

Texture discrimination based on global feature alignments, by F Phillips & JT Todd. *Journal of Vision*, vol. 10, num. 6, art. 6.
doi: 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

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

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, ISBN 9781433812040.

2006 *Foundations of Cyclopean Perception*, by B Julesz, with T Papathomas & F Phillips. MIT Press, ISBN 0262101130.

Preprints

2019 *Effects of Illumination on the Categorization of Shiny Materials*, by JF Norman, JT Todd & F Phillips. *arXiv*:1908.00902 [cs.CV].
arxiv.org/abs/1908.00902

2010 *The Traveling Salesman Problem in the Natural Environment*, by F Phillips, T O'Connell & O Layton. *Nature Precedings*: npre.2010.4960.1.
precedings.nature.com/documents/4960/version/1

Unpublished manuscripts and technical reports

2006 *Collaborative Metadata*, by F Phillips, W Redenbarger, B Prue & MG Voshell. Technical Report, CPoD / CSEL, The Ohio State University, Columbus Ohio.

2000 eel: *A Language for Conducting Experiments*, by F Phillips, JS Shomphe, AB Cencinni & MG Voshell. Technical Report, Vision Laboratories, ebv-00/01, Skidmore College, Saratoga Springs New York .

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, The Ohio State University, Columbus Ohio.

1987 *Three Dimensional Surface Representation and Perspective Enhancement of MR Data II*, by F Phillips. Technical Report, Computer Graphics Research Group, The Ohio State University, Columbus Ohio.

1986 *Three Dimensional Surface Representation and Perspective Enhancement of MR Data*, by F Phillips. Technical Report, Computer Graphics Research Group, The Ohio State University, Columbus Ohio.

Conference presentations

2021 Visual perception of surface properties through direct manipulation, by S Padhye, K Doerschner, F Phillips & J Ferwerda. *Vision Sciences Society*, Saint Pete Beach Florida (Online), Sept.

Regions of high curvature help to stabilize the perception of 3D shape, by Y Yu, F Phillips & JT Todd. *Vision Sciences Society*, Saint Pete Beach Florida (Online), Sept.

21st century film school: Teaching virtual production at Rochester Institute of Technology, by F Deese, D Long, S Foster & F Phillips. *University Film and Video Association*, (Online), July.

Perception of Animated Exaggeration, by F Phillips, D Mullen & P Schmidt. *Society for Cognitive Studies of the Moving Image (SCSMI)* (Online), June.

2019 Effects of the spatial spectrum on the perception of reflective and refractive materials, by F Phillips, JF Norman & JT Todd. *Vision Sciences Society*, Saint Pete Beach Florida, May.

Temporal consequences of spatial acuity reduction, by P Sinha, SP Diamond, F Thorn, F Phillips, S Gilad-Gutnick, S Ben-Ami & S Raja. *Vision Sciences Society*, Saint Pete Beach Florida, May.

Teaching Computational Thinking Through Colorimetry: Comparing Apples and Oranges, by F Phillips. *Wolfram Technology Conference*, Champaign-Urbana Illinois, November.

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

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

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

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

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

Effects of post-weaning social isolation & oxytocin on adult sociability, by M Lavoie, R Toma, F Phillips & HH López. *Society for Neuroscience.* Washington DC, November.

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

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

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).* San Diego California, November.

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

2014 Specularity and shape from line drawings, F Phillips, J Mazzarella & P Docter. *Journal of Vision.* vol. 14, num. 10.
doi: 10.1167/14.10.729

Limits on the estimation of shape from specular surfaces, by J Mazzarella, S Cholewiak, F Phillips & R Fleming. *Journal of Vision.* vol. 14, num. 10.
doi: 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

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 Florida, May.

The role of symmetry in 3D shape perception across the change of viewpoint, by EJL Egan, JT Todd & F Phillips. *Vision Sciences Society*, Naples Florida, May.

2011 The perception of 3D shape from contour textures, by EJL Egan, JT Todd & F Phillips. *Vision Sciences Society*, Naples Florida, May.

Anticipating the actions of others: Do goalkeepers use local or distributed information? by G Diaz, B Fajen & F Phillips. *Vision Sciences Society*, Naples Florida, May. ,

3D shape perception does not depend on symmetry, by F Phillips, JT Todd & EJL Egan. *Vision Sciences Society*, Naples Florida, May.

Anticipation of sabre fencing attacks, by P Possidente, F Phillips, J Matthis & G Diaz. *Vision Sciences Society*, Naples Florida, May.

2010 A spherical harmonic model for the representation of 3D shape, by F Phillips, EJL Egan, J Lesperance & K Kömek. *Vision Sciences Society*, Naples Florida, May.

2009 The effect of complexity on haptic and visual discrimination, by F Phillips & EJL Egan. *Tactile Research Group*, Boston Massachusetts, November.

The traveling salesman problem in the natural environment, by F Phillips, T O'Connell & O Layton. *Vision Sciences Society*, Naples Florida, 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 Florida, 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 Florida, May.

2008 Information, symmetry & vision, by J Lappin & F Phillips. *European Conference on Visual Perception*, Utrecht, The Netherlands, 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 Florida, May.

Gawking and fondling: Multimodal perception of 3D shape, by F Phillips, B Perry & E Egan. *Vision Sciences Society*, Naples Florida, May.

The French drop sleight: Deceptive biological motion, by M Natter & F Phillips. *Vision Sciences Society*, Naples Florida, May.

Intercepting moving targets: A little foresight helps a lot, by GJ Diaz, B Fajen & F Phillips. *Vision Sciences Society*, Naples Florida, May.

2007 Locomotor interception of unpredictable moving targets, by GJ Diaz, B Fajen & F Phillips. *Vision Sciences Society*, Sarasota Florida, May.

2006 Perception and action at a distance, by F Phillips, B Gaudino, B Prue & MG Voshell. *Vision Sciences Society*, Sarasota Florida, 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 Florida, May.

2004 Things about stuff— sources of texture information, by F Phillips & W Roshia. *Vision Sciences Society*, Sarasota Florida, May.

Emerging features in very low contrast, by GJ Diaz & F Phillips. *Vision Sciences Society*, Sarasota Florida, 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 Louisiana, November.

Local and global coherence in two-dimensional textures, by F Phillips & JT Todd. *Vision Sciences Society*, Sarasota Florida, May.

2002 Distortions in posterior visual space, by F Phillips & M Voshell. *Vision Sciences Society*, Sarasota Florida, May.

Ecological distortions in visual space, by M Voshell & F Phillips. *Vision Sciences Society*, Sarasota Florida, May.

2001 Contributions of geometric and image information in the perception of solid objects, by F Phillips & M Voshell. *Vision Sciences Society*, Sarasota Florida, May.

Information concentration along the boundary contours of naturally shaped solid objects, by JF Norman, F Phillips & HE Ross. *Psychonomic Society*, Orlando Florida, 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*, Fort Lauderdale Florida, April.

1999 A genetic methodology for performing highly dimensioned experiments, by F Phillips. *The Society of Mathematical Psychology*, Santa Cruz California, 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*, Fort Lauderdale Florida, 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*, Fort Lauderdale Florida, 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*, Fort Lauderdale Florida, May.

Shape from constant flow fields, by VJ Perotti, JT Todd, JS Lappin & F Phillips. *The Association for Research in Vision and Ophthalmology*, Fort Lauderdale Florida, May.

What defines features on smoothly curved surfaces? by F Phillips & JT Todd. *The Association for Research in Vision and Ophthalmology*, Fort Lauderdale Florida, 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 California, 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 Florida, May.

The perception of local 3D shape, by F Phillips, JT Todd & JF Norman. *The Association for Research in Vision and Ophthalmology*, Sarasota Florida, 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 Ohio, October.

1988 Supercomputer medical imaging, by F Phillips. *Convex User Group Meeting*. Richardson Texas, August.

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 Illinois, 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*, Saint Louis Missouri, September.

3D reconstruction of MRI images. by C Csuri & F Phillips. *SIGCHI 1987*. Toronto Ontario Canada, April.

Reviews and magazine articles

2010 WolframAlpha for iPhone, *Macworld*, January,
URL: www.macworld.com/article/1145925/wolframalpha.html

2009 Colormunki 1.1, *Macworld*, July,
URL: www.macworld.com/article/141947/2009/07/colormunki.html

Papers for iPhone, *Macworld*, May,
URL: www.macworld.com/article/1140597/papers_iphone.html

Wolfram Mathematica 7, *Macworld*, January,
URL: www.macworld.com/article/138219/2009/01/mathematica_7.html

2008 Maple 12, *Macworld*, October,
URL: www.macworld.com/article/135794/2008/10/maple12.html

Papers 1.8, *Macworld*, June,
URL: www.macworld.com/article/133801/2008/06/papers18.html

2007 SPSS 16.0, *Macworld*, December,
URL: 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

2021 *Between Art and Neuroscience: The Mind As Storyteller.* with Shekhar Kapur, F Phillips, S Riskin, S Sarma, S Schwettmann & P Sinha. Cambridge Massachusetts.

SIGGRAPH, Rochester Chapter, *History of Pixar Animation Studios*, Rochester, New York.

2019

University of Arizona, SciAPP, *Art & Perception*, Tempe Arizona.

MIT Museum, Spring Symposium: Interstitial Illumination, *Exaggeration & Art*, Cambridge Massachusetts.

2018 Rijksmuseum, The Skin of Things, *The Veiled Virgin Project: Causal Layering of 3D Shape*, Amsterdam, The Netherlands.

University of Rochester, Center for Visual Science, *Travels in the Uncanny Valley*, Rochester New York.

2017 New York University Abu Dhabi, *Eyetracking Shape*, Abu Dhabi, United Arab Emirates.

Vision Sciences, *The Veiled Virgin Effect: Causal 3D Shape*, Saint Pete Beach Florida.

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 New York.

The Saratoga Foundation, *Art, Perception and Neuroscience*, Saratoga Springs New York.

PRISM6, *Eye Tracking Shape*, Rauischholzhausen Castle, Germany.

2015 Rochester Institute of Technology Distinguished Scholar, *Molyneux's Empirical Problem*, Rochester New York.

SIGGRAPH Rochester, *Pixar: The Early Years*, Rochester New York.

Skidmore Project VIS, *Creating Scientific Posters*, Saratoga Springs New York.

Rensellear Institute of Technology Cognitive Science, *Visual and Haptic Shape*, Troy New York.

Tactile Research Group, *Molyneux's Empirical Problem*, Chicago Illinois.

Massachusetts Institute of Technology BCS, *Sensory Compensation in the Blind*, Cambridge Massachusetts.

Charles River Associates, *Perception of 3D Shape*, Cambridge Massachusetts.

Northern Arizona University, *Magic, Shape, Things and Stuff*, Flagstaff Arizona.

2014 SIGGRAPH Expressive, *What can art teach us about perception?* Vancouver, Canada.

Rochester Institute of Technology Center for Imaging Science Series, *Visual and Haptic Perception of 3D Shape*, Rochester New York.

2013 EMPAC Artists and Scientists series, *Deconstructing Perception*, Troy New York.

TEDxSkidmore, *I'm still not an architect…*, Saratoga Springs New York.

Neuromagic: Conference on the Neuroscience of Magic, *Deceptive Biological Motion*, Vigo, Spain.

2012 The Metropolitan Museum of Art, Art Beyond Sight *Multimodal Approaches to Learning International Conference*, New York New York.

Skidmore College, SKIDTalks, *Three Things I Believe*, Saratoga Springs New York.

Skidmore College, *The Pursuit of Novel Sound*, Saratoga Springs New York.

Skidmore College, *Your Brain is not a Computer*, Saratoga Springs New York.

2011 Skidmore College, The Resolution of Arts and Science *Gawking and Fondling*, Saratoga Springs New York.

2010 Union College, *Information for Visual, Haptic, and Crossmodal Perception*, Schenectady New York.

Skidmore College, The John Ramsey Lecture, *How Many Cultures?*, Saratoga Springs New York.

2009 MIT, *Information for Visual, Haptic, and Crossmodal Perception*, Cambridge Massachusetts.

2008 Vanderbilt University, *Information, Symmetry & Vision*, w/ J Lappin, Nashville Tennessee.

Rutgers University, *Sculpting and Drawing: What They Tell Us About Our Mental Representation of 3D Shape*, New Brunswick New Jersey.

2006 The Ohio State University, *Storytelling & Collaboration*, Columbus Ohio.

2005 Rensselaer Polytechnic Institute, *Seeing Shape* Troy New York.

Old Dominion University, *Perception and Representation*, Norfolk Virginia.

2001–2004 National Science Foundation, Chautauqua Short Courses, *Mathematical Modeling with Mathematica*, Memphis Tennessee.

2002 The Ohio State University, *Contributions of 2-D Information to 3-D Perception*, Columbus Ohio.

2001 Rutgers University, *Size & Shape, the Effect of 2-D Information to 3-D Perception*, New Brunswick New Jersey.

ATI, Inc., *Perceptual Issues in Computer Graphics*, Marlboro Massachusetts.

1997 Central Ohio Psychological Association, *Genetic Aesthetics: Breeding Better Models*, Columbus Ohio.

1993 Human Factors Society, *Interfaces for Traditional & Nontraditional Execution of the Arts*, Columbus Ohio.

1992 Advanced Computing Center for the Arts & Design, *The Animation Environment at Studio Pixar*, Columbus Ohio.

1991 USENIX Annual Conference, *Graphics as Systems Programming*, Keynote Speech†, Dallas Texas.

1990 ACM — SIGGRAPH, *Using of RenderMan to Generate Procedural Textures*, Dallas Texas.

University of San Francisco, *Computer Animation: Man Meets Machine in a Friendly Exchange of Ideas*, w/ P Docter, San Francisco California.

1989–1991 Stanford University Undergraduate Excellence Series, *Computer Animation at Pixar*, Palo Alto California.

1989 CG '89, *The Animation Environment at Studio Pixar*, London England.

1988 Association of Medical Illustrators, *Computer Graphics & Medical Illustration*, San Diego California, August.

Television and media appearances

2020

2012 National Geographic, *Brain Games*.

Computer software

2019 *RQA* — A recurrence quantification analysis system for the Wolfram Language.
github.com/flipphillips/RQA

`NotebookRelativePath` — Wolfram Function Repository path function.
resources.wolframcloud.com/FunctionRepository/resources/NotebookRelativePath

`TimeSeriesZero` — Wolfram Function Repository time series function.
resources.wolframcloud.com/FunctionRepository/resources/TimeSeriesZero

`SecondsToday` — Wolfram Function Repository time function.
resources.wolframcloud.com/FunctionRepository/resources/SecondsToday

`SmoothStep` — Wolfram Function Repository interpolation function.
resources.wolframcloud.com/FunctionRepository/resources/SmpoothStep

`SmootherStep` — Wolfram Function Repository interpolation function.
resources.wolframcloud.com/FunctionRepository/resources/SmootherStep

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.
github.com/flipphillips/FPTools

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/flipphillips/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.

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.

StoryTime — A system for doing interactive timing for animation storyboards. First known digital software for this sort of timing.

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.

1986 *MacPixar* — An image processing system for the original Macintosh. Maintained and processed data in full 8-bit depth with 1-bit dithered display. Distributed by the Boston Computer Society without my permission. (Not a Pixar product, name was a parody.)

Grants and awards

In Process

2021–

Investigating the contribution of the motor system to visual shape discrimination by S Ben-Ami, R Mukamel, F Phillips & P Sinha. Israeli Binational Science Foundation (BSF).

2020–

Investigating the contribution of the motor system to visual shape discrimination by S Ben-Ami, R Mukamel, F Phillips & P Sinha. National Science Foundation (NSF).

Funded

2018–2020 *Representing and Perceiving Depth in Digital Imagery*, by E Fourquet & F Phillips. Picker Interdisciplinary Science Institute. Award: approx. $175,000.

2018 *Material Perception*, by F Phillips. Skidmore Faculty Development Grant. Award: $3,000.

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 BB Gaffney & F Phillips. Treuhaft 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 & F Phillips. Skidmore Collaborative Research Grant. Award: approx. $5,000 materials & support.

2008 *The Traveling Salesman Problem*, by O Layton & F Phillips. Skidmore Collaborative Research Grant. Award: approx. $5,000 materials & support.

Spherical Harmonic Decomposition, by K Kömek, F Phillips & J Lesperance. Skidmore Collaborative Research Grant. Award: approx. $5,000 materials & support.

2007 *Scanning Three-Dimensional Sculptures*, by EJL Egan & F Phillips. Treuhaft 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.

Unfunded

2006 Coordinating Agents: Real-Time Choreography of Mixed Human-Robot Teams by D Woods, R Murphy, F Phillips, J Bradshaw & C Nass. ONR/MURI. Total grant: $5 million, Skidmore: $500,000.
Disposition: Finalist, withdrawn by coordinating PI.

2001 Art & Psychophysics— Further Contributions from Art to Science, by F Phillips. Fulbright Foundation.
Disposition: Alternate.

Creative work, design competitions and awards

2016 *Pattern in mind* — Essay for exhibit catalog for *Sixfold Symmetry, Patterns in Art and Science* at Skidmore College Tang Teaching Museum.

Inside Out — Scientific advisor for feature film by Disney-Pixar.

2012 *Phil's Flying Fish* — Sculpture exhibited at *On Deck,* Glens Falls New York.

2011 *Golden Boy; Feelie 5; Little Uncle Homunculus* — Sculptures exhibited for *The Resolution of Art and Science* at Skidmore College Schick Gallery.

1991 *Warehouse* — Animation on television commercial for Tropicana.

Dance Club — Animation and technical direction on television commercial for Life Savers.

Cracks — Animation director on television commercial for Fleishmann's.

Grands — Computer animation and technical direction on television commercial for Pillsbury.

1990 *Galaxy* — Animation and technical direction on television commercial for Toppan Printing.

La Nouvelle Polo — Animation and technical direction on television commercial for Volkswagen.
Awards: French Advertising Industry Award.

Boxer — Technical direction on television commercial for Listerine.
Awards: International Monitor Awards — Finalist, Best Computer Animation.

Quite a Package — Technical direction and music pre-scoring on television commercial for Trident.

Dancing Cards — Computer animation director and technical direction on television commercial for California Lottery.

Skateboard — Technical direction on television commercial for Life Savers.
Awards: International Monitor Awards — Finalist, Best Computer Animation.

Wake Up — Technical direction, graphic design, and voice work on television commercial for Tropicana.

1989 *knickknack* — Technical direction, story, graphic design, character design, and animation on short film for Pixar.
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 — Animation director and technical direction on television commercial and print advertisement for Toppan Printing,

1988 *Tin Toy* — Character design, music consultant on short film for Pixar.
Awards: Academy Award for Best Animated Short Film.

1996 *Chair* — Exhibited painting at *Foundation Show,* The Ohio State University, Columbus Ohio.

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

2021 Rochester Institute of Technology — Motion Picture Science, Thesis Supervisor, S Yahn, *HDR Color Workflows*.

Rochester Institute of Technology — Motion Picture Science, Thesis Supervisor, J Carstens, *Multi-Primary Displays for Virtual Production*.

2020 Rochester Institute of Technology — Motion Picture Science, Thesis Supervisor, D Mullen, *Faces in the Uncanny Valley*.

Rochester Institute of Technology — Motion Picture Science, Thesis Supervisor, T Housel, *Motion Picture Dialog Processing*.

Rochester Institute of Technology — Color Science, Doctoral Outside Examiner / Committee Chair, H Xie.

2019 Rochester Institute of Technology — Motion Picture Science, Thesis Advisor, D Hill, *Characterizing a Dolby Atmos Theater*.

Rochester Institute of Technology — Motion Picture Science / Center for Imaging Science, Thesis Advisor, O Thompson, *Machine Learning for Depth from Monocular Motion Picture Images*.

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 and seminars

Classes

- Art & Perception
- Computational Methods in Psychology and Neuroscience
- Designing a Mind
- Freshman Imaging Project
- High Level Vision
- Introduction to Cognitive Science
- Introduction to Psychology
- Perception Research Methods
- Research Methods in Psychology
- Sensory Neuroscience
- Vision in Humans, Animals & Machines
- Virtual Production I
- Virtual Production I
- Visual Effects

Seminars

- Perception & Aesthetics
- Blind Vision
- Ecological Perception
- Psychology & Neuroscience in the Real World

Structured Independent Studies

- Auditory Perception
- Color Vision
- History of Animation
- Machine Vision / Machine Learning
- Music Perception
- Style Transfer

Service to the profession

Editorial

2019— *Experimental Brain Research* — Reviewer.
Scientific Reports — Reviewer.
PeerJ — Reviewer.

Art and Perception — Reviewer.
Projections: The Journal for Movies and Mind — Reviewer.

2018— *3D Research* — Reviewer.
Journal of Physiology — Reviewer.
iPerception — Reviewer.
ACM Transactions on Applied Perception

2017— *Journal of Experimental Psychology: Learning, Memory & Cognition* — Reviewer.

2015 *Vision: How it works and what can go wrong* by Dowling & Dowling, MIT Press — Reviewer.

2011— *Psychological Research* — Reviewer.

2011 *Computational Explanation. Its Nature, Scope, and Limits*, by Milkowski, MIT Press — 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.

Other service

2018— *Wolfram Language Live Coding Competition* — Master of Ceremonies.

1990, 1994 *SIGGRAPH Bowl* — Announcer.