Malcolm A. MacIver

Curriculum Vitae

Department of Biomedical Engineering and
Department of Mechanical Engineering
Northwestern University
2145 Sheridan Rd, Tech B224
Evanston IL 60208-3111

maciver@northwestern.edu
(847) 491-3540 (work)
(773) 793-8523 (mobile)

Education

2001	Ph.D.	Neuroscience, University of Illinois, Urbana IL (Beckman Inst.)
1994		(through to 1996) Course work only of joint Ph.D. in Cognitive Science and Philosophy, Indiana University, Bloomington IL
1992	M.A.	Philosophy, University of Toronto, Toronto ON
1991	B.Sc.	Computer Science, University of Toronto, Toronto ON

Professional Experience

2005-present	Assistant Professor by Courtesy, Department of Neurobiology and Physiology, Northwestern University, Evanston IL
2003-present	Assistant Professor, Department of Biomedical Engineering, Northwestern University, Evanston IL
2003-present	Assistant Professor, Department of Mechanical Engineering, Northwestern University, Evanston IL
2003-2004	Visiting Associate, California Institute of Technology, Pasadena CA
2001-2003	Postdoctoral Fellow, Division of Engineering and Applied Science, Computation and Neural Systems Program, and Center for Neuromorphic Systems Engineering, California Institute of Technology, Pasadena CA

Honors and Awards

2009	Recipient, National Science Foundation CAREER Award
2006	Invited Distinguished Evening Lecturer, MBL at Woods Hole Summer Course in Neural Systems and Behavior
2003	Invited Panelist, *Issues at the Intersection of Art and Science*, Center for Neuromorphic Systems Engineering at Caltech and the Art Center's Alyce de Roulet Williamson Gallery, Pasadena CA

2003	Recipient, Center for Neuromorphic Systems Engineering NEURO Art Installation Development Award for **Body Electric**
1999	Selected to attend the Telluride Neuromorphic Engineering Workshop
1997	Beckman Institute for Advanced Science and Technology Research Assistantship
1995	Scholarship to Attend the Princeton Lectures on Biophysics
1994	McDonnell Summer Institute in Cognitive Neuroscience Scholarship
1993	Cognitive Science Summer Research Fellowship, Indiana University
1992	Summer internship, Artificial Intelligence, Canadian National Research Council
2001	Best Exhibit, Beckman Institute for Advanced Science Open House
1991	Graduated with High Distinction (University-wide graduating class GPA Award)

Memberships

Society for Neuroscience

International Society of Neuroethology

The J.B. Johnston Club (Evolutionary neurobiology)

Institute of Electrical and Electronics Engineers

American Physical Society

Active Funding

Active awards total $4,000,000. Please contact me for details.

Publications

Northwestern

1. MacIver, M. A., Patankar, N. A., Lauder, G. V., Shirgaonkar, A. A., Curet, O. M. Why knifefish are shaped like knives. Submitted to *Nature*.
2. Curet, O.M., AlAli, I. K., MacIver, M.A., Patankar, N. A. (2009) A versatile implicit iterative approach for fully resolved simulation of self-propulsion. In review *Journal of Computational Physics*.
3. Shirgaonkar, A. S., MacIver, M. A., Patankar, N. A. (2009) A new mathematical formulation and fast algorithm for fully resolved simulation of self-propulsion. *Journal of Computational Physics*, 228, 2366-2390.
4. Postlethwaite, C. M., Psemeneki, T. M., Selimkhanov*, J., Silber, M., MacIver, M. A. (2009) Optimal movement in the prey strikes of weakly electric fish: A case study of the interplay of body plan and movement capability. *Journal of the Royal Society Interface*. Published online Oct 8, 2008; doi:10.1098/rsif.2008.0286; published in journal 2009. *Undergraduate researcher.

5. Shirgaonkar, A. A., Curet, O.M., Patankar, N. A., MacIver, M. A. (2008) The hydrodynamics of ribbon-fin propulsion under impulsive motion. *Journal of Experimental Biology* 211: 3490-3503.
6. Solberg, J. R., Lynch, K. M., & MacIver, M. A. (2008). Active electrolocation for underwater target localization. *International Journal of Robotics Research*, 27(5), 529-548.
7. Snyder, J.B., Nelson, M.E., Burdick, J. W., MacIver, M.A. (2007) Omnidirectional sensory and movement volumes in electric fish. *PLoS Biology 5(11): e301.*
8. Nelson, M.E. and MacIver, M.A. (2006) Sensory acquisition in active sensing systems. *Journal of Comparative Physiology A* 192: 573-586.
9. MacIver, M.A., Fontaine, E., Burdick, J. W. (2004) Designing future underwater vehicles: principles and mechanisms of the weakly electric fish. *IEEE Journal of Oceanic Engineering* 29(3):651-659.

Northwestern—In Preparation

1. Torres, R. R., Curet, O. M., Lauder, G. V., MacIver, M. A. Fin kinematics for multidirectional thrusting and stabilization in a ribbon fin fish. Final editing in process.
2. Curet, O.M., Patankar, N. A., Lauder, G.V., MacIver, M. A. Swimming "top first"---a motor adaptation for non-visual sensing. Final editing in process.
3. MacIver, M.A., Shirgaonkar, A. A., Patankar, N. A. Trading information for movement. Final editing in process.
4. Shirgaonkar, A. A., MacIver, M. A., Patankar, N.A. On the separation of drag and thrust in undulatory propulsion. Near completion.
5. Shirgaonkar, A. A., MacIver, M. A., Patankar, N.A. Biofluiddynamics of balistiform and gymnotiform locomotion: Revisited.
6. Solberg, J., Lynch, K. M., MacIver, M. A. Optimal sensing in weakly electric fish.
7. Snyder, J. S., MacIver, M. A. Spatial and temporal properties of electrosensory signals during prey capture behavior

Pre-Northwestern

8. Nelson, M.E., MacIver, M.A., Coombs, S. (2002) Modeling electrosensory and mechanosensory images during the predatory behavior of weakly electric fish. *Brain, Behavior, and Evolution* 59(4): 199-210.
9. MacIver, M.A., Nelson, M.E. (2001) Towards a biorobotic electrosensory system. *Autonomous Robots* 11, 263–266.
10. MacIver, M.A., Sharabash, N. M., Nelson, M.E. (2001) Prey-capture behavior in gymnotid electric fish: motion analysis and effects of water conductivity. *Journal of Experimental Biology*, 204(3): 543-557.
11. MacIver, M.A., Nelson, M.E. (2000) Body modeling and model-based tracking for neuroethology. *Journal of Neuroscience Methods*, 95(2):133-143.

12. Nelson, M.E., MacIver, M.A. (1999) Prey capture in the weakly electric fish *Apteronotus albifrons*: Sensory acquisition strategies and electrosensory consequences. *Journal of Experimental Biology*, 202(10):1195-1203 (**cover feature article**).

Invited Book Chapter and Review

Northwestern

1. MacIver, M.A. Neuroethology: From Morphological Computation to Planning (2009). *The Cambridge Handbook of Situated Cognition*, Robbins P. & Aydede, M. (eds). Cambridge University Press: Chapter 26, 480-504.

Pre-Northwestern

2. MacIver, M.A. (2001) How building physical models can reduce and guide the abstraction of nature. *Brain and Behavioral Sciences* 24(6):1066-1067.

Peer Reviewed Conference Proceedings

Northwestern

1. James R. S., Lynch, K. M., MacIver, M.A. (2007) Robotic Electrolocation: Active Underwater Target Localization with Electric Fields. IEEE International Conference on Robotics and Automation, Rome, Italy, 2007.
2. Epstein, M., Colgate, J.E, MacIver, M.A. (2006) Generating Thrust with a Biologically-Inspired Robotic Ribbon Fin Source. 2006 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) Beijing, China.
3. Epstein, M., Colgate, J.E, MacIver, M.A. (2005) A Biologically Inspired Robotic Ribbon Fin. Proceedings of the 2005 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), workshop on Morphology, Control, and Passive Dynamics.
4. MacIver, M.A., Lin, J.L., Nelson, M.E. (1997) Estimation of signal characteristics during electrolocation from video analysis of prey capture behavior in weakly electric fish. Computational Neuroscience: Trends in Research, 1997. Plenum Press. pp. 729-734

Art Installation

2003 **Body Electric**, Malcolm A. MacIver and Simon Penny. Williamson Art Gallery in the Art Center College of Design in Pasadena CA, April 15-June 29 2003. Part of the NEURO exhibition developed by the Caltech Center for Neuromorphic Systems Engineering and the Williamson Art Gallery.

Invited Talks at Symposia

2009 "The development of a bio-inspired magnetoelectrosensory navigation module." Office of Naval Research Symposium on Bio-inspired Systems, Washington DC

2009 "Biomechanical constraints on sensory acquisition in weakly electric fish" Society for Integrative and Comparative Biology, Symposium on Sensory Biomechanics, Boston, MA

2008 "Acquiring information under mechanical constraints" Fourth International Symposium on Adaptive Motion of Animals and Machines, Case Western Reserve University, Cleveland, OH

2007 "Sensory and movement volumes in animals: Implications for control" Symposium on top-down influences in active sensing. International Congress of Neuroethology, Vancouver BC Canada

2007 "Infomechanical specializations for maximizing prey capture in the knifefish" Satellite meeting on electrosensory organisms, International Congress of Neuroethology, Vancouver BC Canada

2007 "Robotic electrolocation: Active underwater target localization with electric fields." Solberg, J.S., Lynch, K.M., and MacIver, M.A. International Conference for Robotics and Automation, Symposium on Bio-inspired Perception, Rome, Italy. Presenter: Solberg.

2006 "From morphological computation to planning: insights from neuroethology," Tenth International Conference on the Simulation and Synthesis of Living Systems (ALife X), Workshop on Morphologies, Motion and Cognition, Bloomington, IN, USA

2006 "Generating Thrust with a Biologically-Inspired Robotic Ribbon Fin." Epstein, M., Colgate, J. E., MacIver, M.A. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Beijing, China. Presenter: MacIver.

2005 "Explorations in Computational Morphology," The Canadian Electric Fish Meeting, Merrickville, ON, Canada

2005 "A Biologically Inspired Robotic Ribbon Fin." Epstein, M., Colgate, J. E., MacIver, M. A. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Edmonton, AB, Canada. Presenter: MacIver.

2004 "Matching of sensing and motor volumes in active sensory systems." MacIver, M. A., Nelson, M. E., Burdick, J. W. Society for Neuroscience Satellite Symposium on Advances in Computational Motor Control, San Diego, CA, USA. Presenter: MacIver

2004 "Matching of sensing and motor volumes and optimality of movements in active sensory systems," Center for Neuromorphic Systems Engineering 10th Anniversary Celebration.

2003 "Neuromechanical design and active sensory systems," 13th International Symposium on Unmanned Untethered Submersible Technology, Durham, NH, USA

2003 "Getting around on a small charge: mechanics, sensing, and biorobotics with the weakly electric fish," Second International Symposium on Aqua Bio-Mechanisms, Honolulu, HI, USA

2002 "Sensing, mechanics, and control: a framework for the integrated understanding of a natural behavior," The Hebrew University and Caltech 2nd Joint Symposium on Frontiers in Computational Neuroscience, Pacific Grove, CA, USA

2000 "A robotic implementation of electrosensory signal acquisition in electric fish," NASA Workshop on Biomorphic Robotics, Pasadena, CA, USA

OTHER TALKS

1. Northwestern University Institute of Neuroscience Retreat, St. Charles IL 2009
2. Slivka Residence Hall Fireside Science Talk, Evanston IL 2009
3. Dept. of Engineering Sci., U. of Illinois Urbana-Champaign 2009
4. Division of Eng., & Dept. of Ecology and Evolutionary Biology, Brown University 2009
5. Dept. of Biomedical Engineering, University of California Irvine 2008
6. Program in Neuroscience and Cognitive Science, U. of Maryland, College Park, MD 2007
7. Dept. of Mechanical Engineering, Johns Hopkins, Baltimore MD 2007
8. Dept. of Philosophy, Univ. of Chicago, IL, USA 2006
9. Dept. of Physiology, Northwestern U. Feinberg School of Medicine, Chicago, IL 2006
10. IGERT Seminar Series, Machines & Organisms, Cornell University, Ithaca, NY 2006
11. Neuroscience Program, Michigan State University, East Lansing, MI 2005
12. Dept. of Electrical and Computer Engineering, Univ. of Illinois Chicago, IL 2005
13. Neuroscience Program, Univ. of Illinois Urbana-Champaign, IL 2005
14. Dept. of Biology, McGill University, Montreal, QC 2005
15. Dept. of Physical Therapy & Human Movement Sci., Northwestern Univ. 2005
16. Dept. of Aeronautics and Astronautics, Univ. of Washington, Seattle, WA 2005
17. Committee on Computational Neuroscience, Univ. of Chicago, IL 2005
18. Evolutionary Discussion Group, Northwester Univ., Evanston, IL 2004
19. Sensory Motor Performance Program, Rehabilitation Institute of Chicago, IL 2003
20. IGERT Program on Dynamics of Complex systems, Evanston, IL 2003
21. Northwestern University Institute of Neuroscience, St. Charles, IL, 2003
22. Sloan Theoretical Neurobiology Seminar Series, Caltech, Pasadena CA 2002
23. Caltech Bioengineering Seminar Series, Caltech, Pasadena CA 2001
24. Beckman Institute Visualization Seminar Series, Urbana, IL 1998

Contributed Talks and Posters

1) 2009 American Physical Society, 62nd Annual Meeting (talk, presenter: Curet), Minneapolis, MN
2) 2009 Society for Neuroscience (poster), Chicago, IL
3) 2009 Society of Integrative and Comparative Biology (talk), Boston, MA
4) 2008 American Physical Society, 61st Annual Meeting (talk, presenter: MacIver) San Antonio, TX
5) 2008 American Physical Society, 61st Annual Meeting (talk, presenter: Curet) San Antonio, TX
6) 2008 American Physical Society, 61st Annual Meeting (talk, presenter: Shirgaonkar) San Antonio, TX
7) 2008 American Physical Society, 61st Annual Meeting (video submission to Gallery of Fluid Motion, San Antonio, TX
8) 2007 American Physical Society, 60th Annual Meeting (talk, presenter: MacIver), Salt Lake City, UT
9) 2007 American Physical Society, 60th Annual Meeting (talk, presenter: Shirgaonkar), Salt Lake City, UT
10) 2007 American Physical Society, 60th Annual Meeting (talk, presenter: Curet), Salt Lake City, UT
11) 2007 American Physical Society, 60th Annual Meeting (poster, presenter: Curet), Salt Lake City, UT
12) 2007 International Congress of Neuroethology, Vancouver BC (talk)
13) 2007 International Congress of Neuroethology, Vancouver BC (poster)
14) 2007 International Congress of Neuroethology, Vancouver BC (poster)
15) 2007 International Congress of Neuroethology, Vancouver BC (poster)
16) 2006 Biomedical Engineering Society, Chicago, IL
17) 2006 Society for Neuroscience, Atlanta, GA (poster)
18) 2006 American Physical Society, 59th Annual Meeting, with Neelesh Patankar and Oscar Curet, Tampa, FL (talk, presenter: Shirgaonkar)
19) 2006 American Physical Society, 59th Annual Meeting, with Oscar Curet and Neelesh Patankar, Tampa, FL (talk, presenter: MacIver)
20) 2005 Developmental Basis of Evolutionary Change, Chicago, IL (poster)
21) 2005 Developmental Basis of Evolutionary Change, Chicago, IL (poster)
22) 2005 Joint Dept of Neurology and Biomedical Engineering Poster Session (with T. Kuiken & A. Schultz), Chicago, IL (poster)
23) 2005 Southern California Joint Symposium on Computational Neuroscience (with J. Burdick), California Institute of Technology, Pasadena CA (talk)
24) 2005 Neural Engineering Workshop (with J. Snyder), Chicago IL
25) 2004 International Soc. Neuroethology, Nyborg, Denmark (with J. Burdick & M. Nelson) (poster)
26) 2002 Gordon Research on Sensory Coding and the Natural Environment (with M. Nelson), South Hadley, MA (poster)
27) 2001 International Soc. Neuroethology, Bonn, Germany (poster with M. Nelson)
28) 2000 Society for Neuroscience 30th Meeting, New Orleans LA (poster with M. Nelson)
29) 1999 Computation and Neural Systems Meeting (CNS), Pittsburgh, PA (poster with M. Nelson)

30) 1998 International Soc. Neuroethology, San Diego, CA (poster with M. Nelson)
31) 1997 Society for Neuroscience 27th Meeting, New Orleans, LA (poster with M. Nelson)
32) 1996 Computation and Neural Systems Meeting (CNS), Boston, MA (poster with M. Nelson)
33) 1995 Society for Neuroscience 25th Meeting, San Diego, CA (poster with M. Nelson)

MENTORING

Postdoctoral Associates

Srinivas Ramakrishnan (Co-supervised with N. Patankar). Current.

Claire Postlethwaite (Co-supervised with M. Silber), 2006-Jun 2008: Assistant Professor, University of Auckland, New Zealand.

Anup Shirgaonkar (Co-supervised with N. Patankar), 2006-2008: Postdoctoral Associate at MIT.

Graduate Students

Current Ph.D. students

James Snyder, Biomedical Engineering: In process.

Completed Ph.D. students

Oscar Curet (with N. Patankar), Mechanical Engineering (2003-2009). Just completed.

Michael Epstein, Mechanical Engineering (with E. Colgate) (2003-2007): Consulting.

James Solberg, Mechanical Engineering (with K. Lynch) (2003-2007): Kinea Design LLC.

Masters students

Aimee Schultz, Mechanical Engineering (2004-2007). Research Engineer, Rehabilitation Institute of Chicago.

Thesis Committees

Matthew Geary, Biomedical Engineering PhD

Brian London, Northwestern Interdepartmental Neuroscience Program PhD

Dhwanil Damania, Biomedical Engineering MS (2009)

Vladimir Turzhitsky, Biomedical Engineering PhD (2009)

Hariharan Subramanian, Biomedical Engineering PhD (2008)

Lexyne McNealy, Department of Physical Medicine and Rehabilitation MS (2006)

Michael Siegel, Biomedical Engineering MS (2005)

Albert Chen, Biomedical Engineering, PhD (2005)

Northwestern University Interdepartmental Neuroscience Program Student 3 Month Rotations:
Ricardo Ruiz-Torres (2009), Lydia Wood (2005), Brian London (2004)

Undergraduate Students

2009-present Uzair Admani, Biomedical Engineering
2009-present Omar Hassan, Biomedical Engineering
2009 Aravinda Gunda, SINE Intern, George Washington University
2008-2009 Jad Carson, Biomedical Engineering
2008-2009 Benjamin Proznitz, Dept. of Eng Sci and Applied Math
2007-2008, Jangir Selimkhanov, Dept. of Eng Sci and Applied Math
2007-2008, Alec Zopf, Dept. of Biomedical Engineering
2006-2007 Irene Chiang, Dept. Biochemistry, Molecular, and Cell Biology
2006-2007 Alfred Shoukry, Biomedical Engineering
2006-2007 Vicky Huang, Biomedical Engineering
2005-2006 Clif Lin, College of Arts and Science, Northwestern (with T. Kuiken)
2004-2007 Tiffany Keung, Biomedical Engineering, Northwestern 2003-2004
2004-2005 Marie Kyle, Mechanical Engineering, Northwestern (with E. Colgate)
2004-2005 Elana Green, Mechanical Engineering, Northwestern (with E. Colgate)
2004-2006 Colin Tan, Biomedical Engineering, Northwestern
2004-2005 Karin Stensvad, Mech Engineering, Washington University (with E. Colgate)
2004-2005 Beth Lapour, Mechanical Engineering, Northwestern (with E. Colgate)
2004-2005 Ani Chatterjee, Biomedical Engineering, Northwestern

TEACHING

Teaching-Northwestern University

"Experimental Engineering" (ME 224)	2007-present
IDEA 298 Faculty Advisor for Submersible Team	2007
"Neuromechatronics Laboratory" (BME 464)	2004-present
"Computational neuromechanics and neuroethology (BME 461)	2004-present
"Honors Eng. Analysis 3"	2004-2006

Other Teaching

Northwestern University, National High School Institute Cherubs, Theatre Arts Program, guest instructor for "Theatre for Nerds" elective, July 7-8, 2009.
Gulbenkian Research Institute, Portugal, "Normative Theories of Brain Function" Feb 2008
University of Chicago, guest lecturer, Dept. of Philosophy/HIPS, William Wimsatt and John Haugeland**,** "Boundaries, Modules and Levels" Feb 2006

Guest lecturer, "Animal Behavior" Northwestern University 2004

Teaching Prior to Northwestern University

University of Illinois, "Neurophysiology Laboratory" (PHYSL 416)	1/97-5/97
University of Illinois, "Topics in Neuroethology" (PHYSL 490)	8/96-12/96
University of Illinois, "Introduction to Neurobiology" (BIO 303)	8/94-12/94
Indiana University, "Introduction to Philosophy" (P100)	1/94-5/94
University of Toronto, "How Computers are Used" (CSC104)	1/91-5/91
Indiana University, "Introduction to Ethics" (P140)	9/92-12/92
University of Toronto, "How Computers are Used" (CSC104)	9/91-12/91
University of Toronto, "Computer Programming" (CSC108)	9/90-12/90
University of Toronto, "Science and Pseudo Science" (PHL272)	1/89-7/89
Confederation College, Digital Electronics, Programming	1/86-4/86

SERVICE

Scientific Review Panels

NSF Ad-Hoc for Animal Sensation and Movement, and Neural Cluster Program Panels, 2007-present; NSF Neural Cluster Program Panel Meeting, 2008; NSF Animal Sensation and Movement Program Panel Meeting, 2006; MIT Sea Grant College Program, 2006; NIH Sensorimotor Integration Study Section, 2004.

Conference Organization

International Society for Neuroethology Symposium "Coupled Robot-Animal Systems," Spain 2010

Reviewer for the Following Journals

Advanced Robotics; Autonomous Robots; Biological Cybernetics; Complexity; Journal of Biomechanics; Journal of Comparative Physiology; Journal of Experimental Biology; Journal of the Royal Society Interface; Neurocomputing; Physical Biology; IEEE Journal of Oceanic Engineering; International Conference on Artificial Neural Networks; International Conference of Robotics and Automation (ICRA); Integrative and Comparative Biology; International Journal of Robotics Research.

Current Advisory Boards

FILOSE Advisory Board Member (of three). FILOSE (Robotic FIsh LOcomotion and SEnsing) is a FP7-ICT-2007-3 STREP research project financed by the European Union 7th Framework Program, headed by the Tallinn University of Technology in Estonia, with partners Riga Technical University of Latvia, the Italian Institute of Technology in Genova, and the Universities of Verona and Bath UK. Web site: http://www.biorobotics.ttu.ee/tikiwiki_filose/tiki-index.php.

University Service

2009-2010	Tech and Ford Safety Committee
	Freshman Advising
2008-2009	BME Admissions Committee
	NUIN Student Interviews
	Organized and ran the ME Dept. Professional Skills graduate seminar series
	Freshman Advising
2007-2008	ME Control and Manufacturing Search Committee
	Organized and ran the ME Dept. Professional Skills graduate seminar series
	Interdisciplinary Committee on Evolutionary Processes
	NUIN Student Interviews
2006-2007	ME Target of Opportunity Ad-hoc Hiring Committee
	Department of Neurobiology and Physiology Hiring Committee
	ME Undergraduate Laboratory Course Renewal Committee
	NUIN Admissions Committee
	Interdisciplinary Committee on Evolutionary Processes
2005-2006	Dept. of Neurobiology and Physiology & Department of Physics and Astronomy Hiring Interdepartmental Hiring Committee
	Dynamics and Complex Systems IGERT, managed seminar series on the Mechanics of Locomotion
	BME Departmental Website Faculty Liaison
2004-2005	BME Graduate Student Admissions Committee
	BME Web Site Faculty Liason
	BME/Department of Physical Medicine and Rehabilitation Neural Engineering Hiring Committee
	BME/RIC Neural Engineering Hiring Committee
	ME/BME Neural Engineering Hiring Committee
	NUIN Retreat Planning Committee
	Research Data Integration and Assessment System Development Committee
2002-2003	Summer Minority Undergraduate Research Program mentor, Caltech

Public Service

2010 Science Café “The Evolution of Consciousness” March 17, 2010, Firehouse Grill Evanston IL.

2009-present Robotics, science, and philosophy script consultant for SyFy Channel's new prequel to Battlestar Galactica, "Caprica."

2009-present Blogger for the Science in Society Blog, Feinberg School of Medicine. http://blog.scienceinsociety.northwestern.edu/

2009 Technology consultant for TRON II, as part of the National Academy of Science's "Science Entertainment Exchange Program" to bring better science to Hollywood. News story: http://tinyurl.com/cr5oja

2009 Lecturer for the Illinois Science Council's Science Café "Body Electric: Lightning, defibs, and Tasers" at Lucky Strike (AMC Theater Building), 322 E Illinois St., Chicago IL.

2003 NSF High School Teacher Program, worked with a Los Angeles inner city school district teacher to bring biofluids research to high schools

2003 NSF & Caltech sponsored art show, Williamson Gallery in Pasadena, interactive art installation on active sensing with Simon Penny. More details at http://www.neuromech.northwestern.edu/uropatagium/#ArtSci

2001 Beckman Institute Open House tour guide and exhibit builder (best exhibit award)

MEDIA

2009 "Stimulus for Cotton Candy, Tango and a Fish Orchestra? Wacky, or Actually Worthy?" http://is.gd/4O7Vs

2009 Art Meets Engineering: Audio Installation Will Let Fish Sing. Northwestern University News, http://tinyurl.com/l33vun.

2009 A Shark's Sixth Sense (interview on electroreception in sharks for Shark Week). Chicago Tribune, August 6 2009, http://tinyurl.com/nfsq9u, and Feinberg Science and Society featured article http://tinyurl.com/lahfv5.

2009 Professor Heads to Los Angeles, Gets Science in Movies. Northwestern University News. http://tinyurl.com/cr5oja.

2008 Tackling the complex system of animal life. McCormick Magazine http://tinyurl.com/mqfcv5.

2008 F1000 "Must Read": Leonard Maler: Faculty of 1000 Biology Review of "Omnidirectional sensory and motor volumes in electric fish." http://www.f1000biology.com/article/id/1102090/evaluation

2008 S. Schuster. Active sensing: Matching motor and sensory space. *Current Biology*,18(4):R176–R178, 2008. Review of Snyder and MacIver's 2007 PLoS paper on Omnidirectional sensory and motor volumes, http://tinyurl.com/ndmyg4.

2007 K. E. O'Day. Omnidirectional electric fish. PLoS Biology, 5(11):e314 doi:10.1371/journal.pbio.0050314, 2007. Review of Snyder and MacIver's 2007 PLoS paper on Omnidirectional sensory and motor volumes, http://tinyurl.com/nv6fr9.

2007 Robotic submersibles take on fish-like sensing abilities. **engadget** technology blog (#1 linked-to blog in the world), http://tinyurl.com/37pvm4.

2007 Northwestern Study Looks at Sensing, Movement, and Behavior. Northwestern University News, http://tinyurl.com/l49v95.

2007 Electric fields could give subs `fish-like' sense. New Scientist Tech 2007 http://tinyurl.com/m27oxo.

2003 Avant science; Artists and scientists both think creatively, so why not match them in projects showcasing new research? In Pasadena, the results have been adventurous. By Suzanne Muchnic *The Los Angeles Times*. Los Angeles, CA, USA, Feb 16 2003. page E.41, http://tinyurl.com/l3uwbe.

2003 What Is It Like To Be a Fish? By Margaret Wertheim, *LA Weekly*, Los Angeles, CA, USA. April 11, 2003, http://tinyurl.com/ku8azp.

2003 Neuro Art Show: *LA Weekly* Pick of the Week, May 9, 2003, http://tinyurl.com/mkgaoj.

2003 'Neuro': Engineering Art and Science. By Lance Carlson, *Art Week*, July/August 2003, p. 24-25, http://tinyurl.com/l9ee8d.