

Curriculum vitae

Erin C. McKiernan

Education

University of Arizona	Ph.D. in Physiological Sciences	2010
	M.Sc. in Physiological Sciences	2007
	B.A. in Psychology	2002

Academic positions

National Autonomous University of Mexico	<i>Assistant Professor</i> Biomedical Physics Department of Physics Faculty of Science	2015-present
Wilfrid Laurier University	<i>Postdoctoral Researcher</i> Computational Neuroscience Department of Psychology	2014-2015
National Institute of Public Health	<i>Researcher in Medical Sciences</i> Mathematical Modeling Group Center for Research in Infectious Diseases	2013-2014
Monterrey Institute of Technology and Higher Studies	<i>Adjunct Professor</i> Department of Mathematics and Computation	2012-2013
University of Puerto Rico at Cayey	<i>Adjunct Professor</i> Institute of Interdisciplinary Research	2011-2012
Arizona State University	<i>Postdoctoral Researcher</i> Mathematical, Computational, and Modeling Sciences Center	2010-2011

Overview

- *Academic advising and teaching:* I have co-advised 3 graduate students, with whom I published 1 article, 2 book chapters, and 3 peer-reviewed conference abstracts. In 2012, I co-established a research training program at the University of Puerto Rico at Cayey in which I mentored 21 undergraduate students from various disciplines (scienceandmathgrp.wordpress.com). I have offered several courses in biophysics, physiology, and mathematics at the undergraduate and graduate levels. Currently, I am the thesis director for 1 student in the Bachelor's of Physics program at UNAM, and committee member for 2 doctoral students in mathematics.
- *Research interests:* **Theoretical biophysics**, biophysical models of excitable cells and microcircuits, dynamical systems; **Integrative physiology**, contribution of intrinsic cellular properties (patterns of gene expression, transcriptomes) to emergent network behaviors; **Neurophysiology**, electrophysiology, motor pattern generation, ion channels, excitability, synaptic plasticity.
- *Publications:* I have authored 5 peer-reviewed articles in international journals, 2 peer-reviewed articles book chapters, 12 scientific communication and advocacy articles in outlets such as Scientific American and the Guardian, and 5 peer-reviewed abstracts published in conferences proceedings.
- *Funding:* I have obtained funding from the National Science Foundation for an informative conference on research opportunities in science, technology, engineering, and mathematics (co-PI). I have received funding from the Shuttleworth Foundation for an educational project on open science (PI). This year, I received funding from the Open Society Foundations for a research project investigating how professors are evaluated for promotion and tenure

(co-PI). I also received two internal grants from DGAPA-UNAM, one to research aging in the hippocampus (PI) and the other to develop electrophysiology laboratory practicals for undergraduate students (PI).

- **Awards and recognition:** Morelos State System of Researchers (2013-2015); Candidate for the **Mexican National System of Researchers** (2015-2017).

Teaching

Courses taught

Undergraduate	National Autonomous University of Mexico	Introduction to Physics of the Human Body Physics of the Human Body Introduction to Physical Chemistry Molecular and Cellular Biology Physiology of the Human Body Biochemistry Measurement and Analysis in Experimental Physics
	University of Puerto Rico at Cayey	Research Seminar in Biology Biophysics Interdisciplinary Research in Physiology and Mathematics
	University of Arizona	Human Physiology
Graduate	University of Arizona	Human Physiology
	Arizona State University	Introduction to Mathematical Physiology
Highschool	Monterrey Institute of Technology and Higher Studies	Pre-algebra and algebra Pre-calculus and calculus Analytical Geometry Trigonometry

Advising and teacher training

- **Thesis advisor** for Lorena Vignau (biophysics and computational neuroscience), B.S. Physics, National Autonomous University of Mexico. Mexico City, Mexico. (2016-present)
- **Thesis co-advisor** for Leonardo Remedios (computational neuroscience), Ph.D. Mathematics, Meritorious Autonomous University of Puebla. (2016-present)
- **Committee member** for Alicia Angeles (computational neuroscience), Ph.D. Mathematics, Meritorious Autonomous University of Puebla. (2015-present)
- **Thesis co-advisor** for Carlos Chivardi Moreno (mathematical epidemiology), M.Sc. Economics of Health, National Institute of Public Health. Cuernavaca, Mexico. (graduated 2014)
- **Co-founder and mentoring professor** for an interdisciplinary research training program for undergraduates at the University of Puerto Rico, with support from the Building Research Infrastructure and Capacity (BRIC) program funded by the National Institutes of Health. Our program trained 21 students in natural sciences, mathematics, physics, biology, chemistry, psychology, and education. More information scienceandmathgrp.wordpress.com. (2012)
- **Mentoring professor** for the Mathematical and Theoretical Biology Institute (MTBI) at Arizona State University. I co-advised undergraduate and graduate students on several projects, incorporating epidemiological, immunological, and physiological knowledge into mathematical models of disease. (2011)
- **Curricular development and evaluation** for undergraduate and graduate programs in Applied Mathematics for the Life and Social Sciences, Arizona State University. (2010-2011)
- **Student advising** for undergraduate and graduate programs in Applied Mathematics for the Life and Social Sciences, Arizona State University. (2010-2011)

- **Committee member** for Maytee Cruz-Aponte (mathematical epidemiology), doctoral student in Applied Mathematics for the Life and Social Sciences, Arizona State University. (2010-2011)
- Participant in course “**The Core Virtues of Teaching Excellence**”, Arizona State University. (2011)
- Participant in **Graduate Teaching Workshop** in the Physiological Sciences program at the University of Arizona. Included teaching observations and practice. (2005-2006)

Teaching honors

- **Mentorship Award**, awarded by the Circle of Mathematics Undergraduate Student Organization, University of Puerto Rico at Cayey (2012)

Research

Publications

*indicates equal author contributions

†indicates mentored student

Peer-reviewed articles

1. **McKiernan, E.C.**, Bourne, P.E., Brown, C.T., Buck, S., Kenall, A., Lin, J., McDougall, D., Nosek, B.A., Ram, K., Soderberg, C.K., Spies, J.R., Thaney, K., Updegrove, A., Woo, K.H., and Yarkoni, T. (2016). How open science helps researchers succeed. *eLife* 2016;5:e16800.
2. McKiernan, E. C. (2013). Effects of manipulating slowpoke calcium-dependent potassium channel expression on rhythmic locomotor activity in *Drosophila* larvae. *PeerJ* 1, e57.
3. *Herrera-Valdez, M., ***McKiernan, E.C.**, Berger, S., Ryglewski, S., Duch, C., and Crook, S. (2013). Relating ion channel expression, bifurcation structure, and diverse firing patterns in a model of an identified motor neuron. *Journal of Computational Neuroscience* 34(2), 211–229.
4. *†Cruz-Aponte, M., ***McKiernan, E. C.**, and *Herrera-Valdez, M. A. (2011). Mitigating effects of vaccination on influenza outbreaks given constraints in stockpile size and daily administration capacity. *BMC Infectious Diseases* 11(1), 207.
5. Figueiredo, A. J., Hammond, K. R., and **McKiernan, E. C.** (2006). A Brunswikian evolutionary developmental theory of preparedness and plasticity. *Intelligence* 34(2), 211–227.

Book chapters

1. Chivardi-Moreno, C., **McKiernan E.C.**, and Herrera-Valdez, M.A. (2015) Análisis cualitativo de modelos básicos de transmisión infecciosa. In L. Cervantes Gómez (Ed.), *Modelación matemática. Principios y aplicaciones* (pp. 95-110). Textos Científicos, Fomento Editorial de la Benemérita Universidad Autónoma de Puebla. Available at www.fcfm.buap.mx/assets/docs/publicaciones/Modeliza.pdf.
2. Chivardi-Moreno, C., **McKiernan E.C.**, and Herrera-Valdez, M.A. (2015) Modelos metapoblacionales básicos de transmisión de enfermedades infecciosas. In L. Cervantes Gómez (Ed.), *Modelación matemática. Principios y aplicaciones* (pp. 135-151). Textos Científicos, Fomento Editorial de la Benemérita Universidad Autónoma de Puebla. Available at www.fcfm.buap.mx/assets/docs/publicaciones/Modeliza.pdf.

Preprints

1. McKiernan, E.C. (2017): Imagining the ‘open’ university: Sharing science to improve research and education *PeerJ Preprints* 5:e2711v2 <https://doi.org/10.7287/peerj.preprints.2711v2>.
2. **McKiernan, E.C.**, Marrone, D.F. (2016): CA1 pyramidal cells have diverse biophysical properties, affected by development, experience, and aging. *Figshare* <https://doi.org/10.6084/m9.figshare.4290005.v4>.

3. McKiernan E.C. (2015) A genetic manipulation of motor neuron excitability does not alter locomotor output in *Drosophila* larvae. *PeerJ PrePrints* 3:e1434 <https://dx.doi.org/10.7287/peerj.preprints.469v3>.

Doctoral thesis

1. McKiernan, E. C. (2010). The role of specific voltage-activated and calcium-activated potassium currents in shaping motor neuron firing output during rhythmic motor activity. Doctoral thesis. The University of Arizona Campus Repository. <http://hdl.handle.net/10150/145732>.

Peer-reviewed abstracts

1. †Melendez-Alvarez, J. R., **McKiernan, E. C.**, and Herrera-Valdez, M. A. (2012). Temperature dependent transitions in excitability predicted by an electrodiffusion model of membrane potential. *BMC Neuroscience* 13(Suppl 1), P85.
2. **McKiernan, E. C.** and Herrera-Valdez, M. A. (2012). From spinal cord to hippocampus: links between bifurcation structure, ion channel expression, and firing patterns in a variety of neuron types. *BMC Neuroscience* 13(Suppl 1), P121.
3. †Cruz-Aponte, M., †Smith, A., Herrera-Valdez, M. A., and **McKiernan, E. C.** (2011). The role of the large-conductance calcium-dependent potassium channel, BK/Slowpoke, in shaping motor neuron firing during rhythmic activity. *BMC Neuroscience* 12(Suppl 1), P217.
4. Herrera-Valdez, M. A., †Smith, A., †Cruz-Aponte, M., and **McKiernan, E. C.** (2011). Biophysical modeling of excitability and membrane integration at the single cell and network levels. *BMC Neuroscience* 12(Suppl 1), P218.
5. †Smith, A., Herrera-Valdez, †Cruz-Aponte, M., **McKiernan, E. C.**, Crook, S., and Herrera-Valdez, M.A. (2011). Differential contribution of A-type potassium currents in shaping neuronal responses to synaptic input. *BMC Neuroscience* 12(Suppl 1), P147.

Scientific communication, outreach, and advocacy

1. McKiernan, E.C. (2015). Accessibility and added value: a personal perspective on publishing in PeerJ. *PeerJ blog*. peerj.com/blog/post/115284877728/accessibility-and-added-value-a-personal-perspective-on-publishing-in-peerj-by-erin-mckiernan/.
2. **McKiernan, E.C.** and Tennant J.P. (2014). Top scientific publisher chooses not to advance open access. *The Conversation*. theconversation.com/top-scientific-publisher-chooses-not-to-advance-open-access-31248.
3. **McKiernan, E.C.** and Tennant, J.P. (2014). AAAS misses opportunity to advance open access. *The Winnower* 1:e140984.44268. <http://dx.doi.org/10.15200/winn.140984.44268>.
4. McKiernan, E.C. (2014). University research: if you believe in openness, stand up for it. *The Guardian*. www.theguardian.com/higher-education-network/blog/2014/aug/22/university-research-publish-open-access-journal.
5. **McKiernan, E.C.**, Herrera-Valdez, M.A., Madan, C.R., et al. (2014). Open letter to the Society for Neuroscience. *The Winnower* 1:e140865.54468. <http://dx.doi.org/10.15200/winn.140865.54468>.
6. Tennant, J.P., Poisot, T., Hancock, J.F., Kubke, M.F., Michonneau, F., Taylor, M.P., Steel, G., Anquetin, J., Coyte, E., Schwessinger, B., **McKiernan, E.C.**, et al. (2014). Open Letter to The American Association for the Advancement of Science. *The Winnower* 1:e140813.35294. <http://dx.doi.org/10.15200/winn.140813.35294>.
7. McKiernan, E.C. (2014). The ripples produced by my love of small waves. *PubChase*. www.pubchase.com/essay/the-ripples-produced-by-my-love-of-small-waves-by-erin-mckiernan-48.
8. McKiernan, E. C. (2013). Simulating the spread of disease. *Scientific American, Guest Blog*. blogs.scientificamerican.com/guest-blog/2013/09/09/simulating-the-spread-of-disease/.
9. McKiernan, E. C. (2013). Neuroscientists need to embrace open access publishing too. *The Conversation*. theconversation.com/neuroscientists-need-to-embrace-open-access-publishing-too-16736.
10. McKiernan, E. C. (2013). President Obama's brain map project is hardly the next Human Genome. *The Guardian*. www.theguardian.com/commentisfree/2013/apr/02/president-obama-brain-mapping-project-not-ideal.

11. McKiernan, E. C. (2013). Challenges in simulating a human brain. *Scientific American, Guest Blog.* blogs.scientificamerican.com/guest-blog/2013/02/28/challenges-in-simulating-a-human-brain/.
12. McKiernan, E. C. (2013). What role do motor neurons play in basic bodily functions? *Things We Don't Know.* blog.thingswedontknow.com/2013/02/what-role-do-motor-neurons-play-in.html.

Presentations

† indicates mentored student

1. McKiernan, E.C. Ciencia abierta: nuevas iniciativas, beneficios y desafíos (invited talk). Panel Internacional: Producción Abierta y Colaborativa. Hosted by Centro STEPS América Latina. Universidad Nacional de Tres de Febrero. Buenos Aires, Argentina. April 27, 2017.
2. McKiernan, E.C. Investigadores OPEN: Tendencias y recomendaciones en la Ciencia Abierta (webinar). Serie de webinares: Transparencias y buenas prácticas en revistas de acceso abierto. Colaboración del Directorio de las Revistas del Acceso Abierto (DOAJ) y Aprender 3C. December 15, 2016.
3. McKiernan, E.C. My pledge to be open - 2+ years on (webinar). Open Access Symposium 2016, SPARC Africa Conference. December 6, 2016.
4. McKiernan, E.C. The 'why' and 'how' of open data (keynote). Yale Day of Data. Yale University. New Haven, Connecticut, U.S.A. December 2, 2016.
5. McKiernan, E.C. How open science helps researchers succeed (keynote). OpenCon 2016 Cambridge. University of Cambridge, U.K. November 24, 2016.
6. **McKiernan, E.C.** and Wang Sonne, S.E. How to communicate openness effectively to academics (workshop). OpenCon 2016. American University Washington College of Law. Washington, D.C., U.S.A. November 13, 2016.
7. Piwowar, H., Jhangiani, R., Wang Sonne, S.E., Coates, H., and **McKiernan, E.C.** (moderator). Research Evaluation panel. OpenCon 2016. American University Washington College of Law. Washington, D.C., U.S.A. November 13, 2016.
8. McKiernan, E.C. Investigación abierta: buenas prácticas y experiencias personales (panel). El Acceso Abierto en Acción. Instituto de Investigaciones Bibliotecológicas y de la Información, UNAM. Mexico City, Mexico. October 22, 2016.
9. McKiernan, E.C. Tendencias actuales y avances en el mundo de la ciencia abierta (invited talk). Seminario de Estudios Interdisciplinarios Sobre la Ciencia, la Tecnología y la Innovación. Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas (IIMAS), UNAM. Mexico City, Mexico. September 8, 2016.
10. McKiernan, E.C. Tendencias actuales y avances en el mundo de la ciencia abierta (invited talk). III Congreso Internacional Gestión Para la Información y la Documentación (GID). Cali, Colombia. August 25, 2016.
11. Marrufo, O., **McKiernan, E.C.**, Avendaño, A., and Martín, R. Neurofunción e Imagen (panel). Feria del Libro de Ciencias de la Salud 2016. Palacio de la Facultad de Medicina. Mexico City, Mexico. August 21, 2016.
12. McKiernan, E.C. My pledge to be open - two years on (keynote). SPARC 2016 Meeting on Openness in Research and Education. San Antonio, TX, U.S. March 11, 2016.
13. McKiernan, E.C. Modelos biofísicos para explicar la diversidad de actividad eléctrica en neuronas (invited talk). Seminario del Departamento de Física, Facultad de Ciencias, UNAM. Mexico City, MX. February 16, 2016.
14. McKiernan E.C. Open peer review (invited talk). Demystifying Open: Open Scholarship for Graduate Students. University of California, Los Angeles (UCLA). Los Angeles, CA, U.S.A. January 22, 2016.
15. McKiernan, E.C. The value of working openly and how to do it (workshop). Workshop on Open Science. Institute of Marine Science. Venice, Italy. November 20, 2015.
16. McKiernan, E.C. Being open and successful as a researcher (keynote). Workshop on Open Science. Institute of Marine Science. Venice, Italy. November 20, 2015.

17. McKiernan, E.C. The value of working openly and how to do it (workshop). Data management plans, principles and practice. Bologna, Italy. November 19, 2015.
18. McKiernan, E.C. How to promote my research on the web (workshop and panel). Open research data: creating bridges for open science. OpenCon 2015 satellite event. Bologna, Italy. November 18, 2015.
19. McKiernan, E.C. My pledge to be open (keynote). Open research data: creating bridges for open science. OpenCon 2015 satellite event. Bologna, Italy. November 18, 2015.
20. **McKiernan, E.C.**, Tennant, J., and Niles, M. How to harness open to advance your career (workshop). OpenCon 2015. Thon Conference Center. Brussels, Belgium. November 14, 2015.
21. McKiernan, E.C. My pledge to be open – yeah, how's that going? (conferencia plenaria). OpenCon 2015. Thon Conference Center. Brussels, Belgium. November 14, 2015.
22. **McKiernan, E.C.** and Peterson, T. Perspectives on 'open': a dialogue about access, collaboration and career advancement (panel Q & A). International Open Access Week event. University of Kansas. Lawrence, KS, U.S.A. October 22, 2015.
23. McKiernan, E.C. Why open is important to me (invited talk). Open Access Advisory Board and Early-Career Researcher Luncheon. University of Kansas. Lawrence, KS, U.S.A. October 22, 2015.
24. **McKiernan, E.C.**, Herrera-Valdez, M.A., and Marrone, D.F. A biophysical, minimal model to explore age-related changes in ion channel gene expression and excitability in CA1 pyramidal cells (poster). Annual Meeting of the Society for Neuroscience. McCormick Place. Chicago, IL, U.S.A. October 20, 2015.
25. McKiernan, E.C. Sharing in science: Openness as a solution to improve reproducibility (invited talk and panel). Professional development panel "Tackling Challenges in Scientific Rigor: The (Sometimes) Messy Reality of Science". Annual Meeting of the Society for Neuroscience. McCormick Place. Chicago, IL, U.S.A. October 18, 2015.
26. McKiernan, E.C. Open access: How researchers can be successful and spur change (invited talk). CERN Workshop on Innovations in Scholarly Communication (OAI9). University of Geneva. Geneva, Switzerland. June 17, 2015.
27. McKiernan, E.C. Building a scholarly communication environment for the next generation of researchers (panel). Advancing Research Communication & Scholarship. Philadelphia, PA, U.S.A. April 28, 2015.
28. McKiernan, E.C. Socializing scholarly communication: Opening up scholarship from research to publication (short talk and panel). Advancing Research Communication & Scholarship. Philadelphia, PA, U.S.A. April 28, 2015.
29. McKiernan, E.C. Building an environment for open data (short talk and panel moderator). Advancing Research Communication & Scholarship. Philadelphia, PA, U.S.A. April 27, 2015.
30. McKiernan, E.C. My experiences with open access publishing as an early-career researcher (invited talk and panel). Open Access Ambassadors. Munich, Germany. December 3, 2014.
31. McKiernan, E.C. Being open as an early career researcher: Is sharing easier for the new generation? (online conference). STM Innovation Seminar. December 3, 2014.
32. McKiernan, E.C. A researcher's perspective on open peer review (invited talk). Open Education. Washington, D.C. November 20, 2014.
33. **McKiernan, E.C.** & Mounce, R. How to make your research open (workshop). OpenCon 2014. American University, College of Law. Washington, D.C., U.S.A. November 16, 2014.
34. McKiernan, E.C. Being open as an early career researcher (**keynote**). OpenCon 2014. American University, College of Law. Washington, D.C., U.S.A. November 16, 2014.
35. McKiernan, E.C. Culture change in academia: Making sharing the new norm (online conference). Australian Open Access Support Group Annual Forum. November 5, 2014.
36. McKiernan, E.C. Culture change in academia: Making sharing the new norm (invited talk). International Open Access Week Event. University of Calgary. Calgary, Canada. October 24, 2014.

37. McKiernan, E.C. Culture change in academia: Making sharing the new norm (**keynote**). International Open Access Week Event. University of Pittsburgh. Pittsburgh, Pennsylvania, U.S.A. October 22, 2014.
38. McKiernan, E.C. How to get faculty involved in open access (invited talk). International Open Access Week Event. University of Pittsburgh. Pittsburgh, Pennsylvania, U.S.A. October 22, 2014.
39. McKiernan, E.C. Open access: A researcher's view (online conference). International Open Access Week Event. Presented to the Association of Southeastern Research Libraries (ASERL). October 22, 2014.
40. McKiernan, E.C. Culture change in academia: Making sharing the new norm (invited talk). International Open Access Week Event. University of Arizona. Tucson, Arizona, U.S.A. October 20, 2014.
41. McKiernan, E.C. Being open as an early-career researcher (invited talk). International Open Access Week Event. University of Texas at Austin. Austin, Texas, U.S.A. October 17, 2014.
42. McKiernan, E.C. Sucesiones de bifurcaciones en sistemas excitables: geometría y aplicaciones en fisiología integrativa (invited talk). Congreso Internacional de Matemáticas y Sus Aplicaciones. Benemérito Universidad Autónoma de Puebla. Puebla, México. September 5, 2014.
43. McKiernan, E.C. Compartiendo su investigación y teniendo éxito como investigador de carrera temprana (invited talk). Instituto de Biotecnología, Universidad Nacional Autónoma de México. Cuernavaca, México. September 3, 2014.
44. McKiernan, E.C. Culture change in academia: Making sharing the new norm (**keynote**). Open Repositories 2014. Helsinki, Finland. June 10, 2014.
45. McKiernan, E.C. Sharing and being successful as an early-career researcher (invited talk). Open Access Symposium: The Business and Economics of Open Access. University of North Texas. Fort Worth, Texas, U.S.A. May 19, 2014.
46. McKiernan, E.C. Modelaje de transmisión de enfermedades infecciosas (invited talk and workshop). Curso en Enfoques Multidisciplinarios a Enfermedades Infecciosas Emergentes: De la Biología Molecular a la Vigilancia Epidemiológica. Lima, Peru. April 7, 2014.
47. McKiernan, E.C. Geometría detrás de la relación entre expresión genética y la actividad neuronal (invited talk). Seminario para el Cuerpo Académico de Ecuaciones Diferenciales y Modelación Matemática. Benemérito Universidad Autónoma de Puebla. Puebla, Mexico. March 13, 2014.
48. McKiernan, E.C. Being open as an early career researcher (invited talk). SPARC 2014 Open Access Meeting. Kansas City, Missouri, U.S.A. March 4, 2014.
49. **McKiernan, E.C.** and Herrera-Valdez, M.A. Introduction to dynamical systems in neuroscience: Relationship between bifurcation structure and genetic expression (invited talk). Taller en Dinámica Compleja. Benemérito Universidad Autónoma de Puebla. Puebla, Mexico. December 10, 2013.
50. McKiernan, E.C. Geometría detrás de la relación entre expresión genética y la actividad neuronal (invited talk). Seminario Interdisciplinario de Matemáticas y Sus Aplicaciones. Instituto de Matemáticas, Universidad Nacional Autónoma de México. Mexico City, MX. November 20, 2013.
51. McKiernan, E.C. Desarrollo de un modelo matemático para la toma de decisiones durante brotes de hepatitis A (invited talk). Seminario del Centro de Investigación Sobre Enfermedades Infecciosas. Instituto Nacional de Salud Pública. Cuernavaca, Mexico. October 23, 2013.
52. McKiernan, E.C. Geometría detrás de la relación entre expresión genética y la actividad neuronal (invited talk). Tercera Escuela de Verano de Matemáticas en Querétaro. Centro Multidisciplinario de Docencia e Investigación de la Facultad de Ciencias, Centro de Innovación Matemática, Universidad Nacional Autónoma de México. Juriquilla, Mexico. June 27, 2013.
53. Herrera Valdez, M.A. and **McKiernan, E.C.** Estrategias de mitigación basadas en consideraciones sobre transporte, contacto entre individuos y recursos disponibles para campañas de vacunación (invited talk). Seminario de la Línea de Investigación en Evaluación de Programas y Políticas de Salud. Instituto Nacional de Salud Pública. Cuernavaca, Mexico, April 24, 2013.
54. McKiernan, E.C. Changes in potassium channel expression shape activity of motor neurons mediating locomotion (invited talk). Universidad Autónoma Metropolitana, Unidad Lerma. Lerma, Mexico, January 11, 2013.

55. **McKiernan, E.C.** and Herrera-Valdez, M.A. Links between bifurcation structure, ion channel expression and firing patterns in a variety of neuron types (poster). Organization for Computational Neuroscience: *CNS 2012. Atlanta/Decatur, Georgia, U.S.A. July 21-26, 2012.
56. †Melendez-Alvarez, J., **McKiernan, E.C.** and Herrera-Valdez, M.A. Temperature dependent transitions in excitability predicted by an electrodiffusion model of membrane potential (poster). Organization for Computational Neuroscience: *CNS 2012. Atlanta/Decatur, Georgia, U.S.A. July 21-26, 2012.
57. **McKiernan, E.C.**, †Cruz-Aponte, M., y Herrera-Valdez, M.A. Mitigating effects of influenza vaccination given constraints in supply and administration capacity (poster). 32o Foro Anual de Investigación y Educación. Universidad de Puerto Rico, Ciencias Médicas. San Juan, Puerto Rico. March 29, 2012.
58. McKiernan, E.C.. Relating gene expression, bifurcation structure, and firing patterns in a biophysical model of a motor neuron (charla breve). Seminario Interuniversitario de Investigación en Ciencias Matemáticas. Universidad de Puerto Rico en Mayagüez. Mayagüez, Puerto Rico. March 3, 2012.
59. McKiernan, E.C. Changes in potassium channel expression shape activity of motor neurons mediating crawling and flight (invited talk). Seminario del Instituto de Neurobiología, Universidad de Puerto Rico, Ciencias Médicas. San Juan, Puerto Rico. December 14, 2011.
60. **McKiernan, E.C.**, and Herrera-Valdez, M.A. Role of the Ca^{2+} -activated K^+ channel slo in shaping locomotor activity (poster). Congreso Anual de Neurociencias en Puerto Rico. Centro de Estudios Avanzados de Puerto Rico y el Caribe. San Juan, Puerto Rico. December 3, 2011.
61. McKiernan, E.C. The role of specific calcium- and voltage-activated potassium currents in shaping locomotor activity in *Drosophila melanogaster* (invited talk). Seminario del Programa de Especializado de Investigación en Neurociencias (SNRP). Universidad Central del Caribe. Bayamón, Puerto Rico. October 27, 2011.
62. McKiernan, E.C. What can insects teach us about physiology and behavior? (invited talk). Seminario del Programa de Iniciativa de Investigación para la Mejora Científica (RISE). Universidad de Puerto Rico en Cayey. Cayey, Puerto Rico. October 20, 2011.
63. **McKiernan, E.C.**, and Herrera-Valdez, M.A. The balance between transient and persistent sodium currents. (poster). Workshop for Young Researchers in Mathematical Biology. Mathematical Biosciences Institute, Ohio State University. Columbus, Ohio, U.S.A. August 29-September 1, 2011.
64. †Smith, A., †Cruz-Aponte, M., **McKiernan, E.C.**, Crook, S., y Herrera-Valdez, M.A. Differential contribution of A-type potassium currents in shaping neuronal responses to synaptic input (poster). Twentieth Annual Computational Neuroscience Meeting: CNS 2011. Stockholm, Sweden. July 23-28, 2011.
65. †Cruz-Aponte, M., †Smith, A., Herrera-Valdez, M.A., y **McKiernan, E.C.** The role of the large-conductance calcium-dependent potassium channel, BK/Slowpoke, in shaping motor neuron firing during rhythmic activity (poster). Twentieth Annual Computational Neuroscience Meeting: CNS 2011. Stockholm, Sweden. July 23-28, 2011.
66. Herrera-Valdez, M.A., †Smith, A., †Cruz-Aponte, M., y **McKiernan, E.C.** Biophysical modeling of excitability and membrane integration at the single cell and network levels (poster). Twentieth Annual Computational Neuroscience Meeting: CNS 2011. Stockholm, Sweden. July 23-28, 2011.
67. McKiernan, E.C. The immune system: Sources of heterogeneity at multiple levels of defense (invited talk). Mini-workshop on Heterogeneity and Ecologies I. Mathematical, Computational, and Modeling Sciences Center, Arizona State University. May 9-13, 2011.
68. Maria Allison, Jennifer Fewell, Ben Katchman, **Erin McKiernan**, Andrew Webber, moderated by Jon Harrison. Mentorship follies: How to improve your mentor-mentee situation, and when and how to get out (panel discussion). Sponsored by Association For Women In Science Central Arizona Chapter, and Office of Research Integrity and Assurance. Arizona State University. Feb. 28, 2011.
69. **McKiernan, E.C.** and Christensen, T.A. Olfactory conditioning in the moth *Manduca sexta*: Exploring new methods and parameters (short talk). West Coast Nerve Net Learning and Memory. Santa Clara University, CA. July, 2004.

Media interviews

1. *PLOS*: PLOScasts Episode 21, Why Open Research: An interview featuring Erin McKiernan. Released May 3, 2017. <http://blogs.plos.org/plospodcasts/2017/05/03/why-open-research-an-interview-featuring-erin-mckiernan/>.
2. *Todo la UNAM en Línea*: La UNAM en la Open Education Week. Los retos y ventajas de la investigación abierta. Released March 21, 2017. <http://www.unamenlinea.unam.mx/eventos/open-education-week-2017>.
3. *Creative Commons*: Supporting a diverse community of scientists: How Erin McKiernan puts “Open in Action”. Published by Jennie Rose Halperin. October 26, 2016. <https://creativecommons.org/2016/10/26/supporting-diverse-community-scientists-scientist-erin-mckiernan-puts-open-action/>.
4. *Asociación Red Universitaria de Alta Velocidad del Valle del Cauca (RUAV)*: Congreso GID: Compartir información, otro aprendizaje de las bibliotecas. Published August 22, 2016. ruav.edu.co/congreso-gid-compartir-informacion-otro-aprendizaje-de-las-bibliotecas/.
5. *Figshare*: Making research open and accessible. Published by Megan Hardeman and Adrian Harja. August 10, 2016. <dx.doi.org/10.6084/m9.figshare.3472841.v4>
6. *eLife Podcast*: Episode 31 - “In the Open”. Recorded August 9, 2016. <https://elifesciences.org/podcast/episode31>.
7. *Scholarly Publishing and Academic Resources Coalition*: Openness as a Career Asset: Erin McKiernan. Published by SPARC. March, 2016. <sparcopen.org/impact-story/erin-mckiernan/>.
8. *Advancing Research Communication & Scholarship*: Advocating for openness. Published May 6, 2014. <arcscon.tumblr.com/post/84942060277/advocating-for-openness>.
9. *P2PU Open Science*: An Introduction. Session 3 - Open research / open notebook science. Recorded August 20, 2013. <p2pu.org/en/courses/5/content/1370/>.
10. *NEURO.tv* Episode 3 - Mind, brain, computations, and ion channels. Recorded August 2, 2013. <blog.brainfacts.org/2013/08/the-brain-show-episode-3>.
11. *Fierce Biotech Research*. Some still skeptical of BRAIN initiative as details remain fuzzy. Published by Emily Mullin. April 5, 2013. <www.fiercebiorchresearch.com/story/some-still-skeptical-brain-initiative-details-remain-fuzzy/2013-04-05>.
12. *BBC Future*. Will we ever simulate the human brain? Published by Ed Yong. February 8, 2013. <www.bbc.com/future/story/20130207-will-we-ever-simulate-the-brain>.

Conferences and workshops attended

1. **NIH/NSF event: Imagining Tomorrow’s University: Rethinking Scholarship, Education, and Institutions for an Open, Networked Era** (invitation only). Big 10 Conference Center. Chicago, IL, USA. March 8-9, 2017.
2. **Paul Allen Open Science Convening** (invitation only). Allen Institute for Artificial Intelligence. Seattle, WA, USA. February 22-23, 2017.
3. **The Future of Scientific Publishing: A Chan Zuckerberg Science Workshop** (invitation only). Chan Zuckerberg Biohub. San Francisco, CA, USA. January 23-25, 2017.
4. **Open Science Leadership Summit** (invitation only). Mozilla Headquarters. Toronto, Canada. September 21-23, 2015.
5. **Sydney Conference: Scholarly Communication Beyond Paywalls** (invitation only). Macquarie University. Sydney, Australia. July 22-24, 2015.
6. **Sci Foo Camp** (invitation only). Google Headquarters. Mountain View, CA, U.S.A. June 26-28, 2015.
7. **Open Science, Open Source: A Strategy Meeting Among Community Leaders** (invitation only). Center for Open Science, Charlottesville, VA, U.S.A. March 19-20, 2015.
8. **Reunión de Grupo de Investigación en Epidemias**. Centro de Investigación en Matemáticas (CIMAT). Hotel Misión Comanjilla. Silao, Mexico. October 18-19, 2013.

9. **Laboratorio Multidisciplinario de Modelación Matemática** (LM3). Centro de Investigación en Matemáticas (CIMAT). Guanajuato, Mexico. June 14, 2013.
10. **Council on Undergraduate Research Dialogues 2012**. Hamilton Crowne Plaza. Washington, DC., U.S.A. Feb. 23-25, 2012.
11. **Mathematical and Theoretical Biology Institute** (MTBI). Mathematical, Computational and Modeling Sciences Center, Arizona State University. Tempe, AZ, U.S.A.. June 14-August 3, 2011.
12. **Mini-workshop on Heterogeneity and Ecologies III**. Mathematical, Computational, and Modeling Sciences Center, Arizona State University. Tempe, AZ, U.S.A. June 26-July 1, 2011.
13. **Mini-workshop on Heterogeneity and Ecologies II**. Mathematical, Computational, and Modeling Sciences Center, Arizona State University. Tempe, AZ, U.S.A. June 1-10, 2011.
14. **NIH Regional Seminar on Program Funding and Grants Administration**. Talking Stick Resort. Scottsdale, AZ, U.S.A. April 28-29, 2011.
15. **The Ethics of Authorship**. Arizona State University. Tempe, AZ, U.S.A. March 25, 2011.
16. **Temporal Dynamics of Learning Center: All Hands Meeting**. University of California, San Diego. San Diego, CA, U.S.A. Jan. 28-29, 2011.
17. **Annual Meeting of the Society for Neuroscience**. San Diego Convention Center. San Diego, CA, U.S.A. Nov. 13-17, 2010.
18. **Successful Grantsmanship in Highly Competitive Times**. Led by Dr. Victor Fung from the National Institutes of Health Center for Scientific Review. University of Arizona. Tucson, AZ, U.S.A. April 1, 2009.

Funding

2017	E.C. McKiernan (PI), L. Medina Gómez, S. Solis Najera, M. Herrera Valdez, R. Martín Salas (participantes). “Mejoramiento del aprendizaje en Física Biomédica a través de prácticas del laboratorio en electrofisiología”. DGAPA-UNAM, PAPIME (Mexico).	\$199,563 MXN
2017	E.C. McKiernan (PI). “Excitabilidad de las células piramidales del hipocampo y transmisión sináptica durante el desarrollo y el envejecimiento”. DGAPA-UNAM, PAPIIT (Mexico).	\$199,956 MXN
2016	J.P. Alperin (PI), E.C. McKiernan (co-PI), and M. Niles (co-PI). “Assessing Current Practices in Tenure, Review and Promotion Guidelines”. Open Society Foundations (U.S.A).	\$50,000 USD
2015	E.C. McKiernan (PI). “Flash Grant” in support of an educational project on open science. Shuttleworth Foundation (U.K.).	\$5,000 USD
2011	C. Castillo-Chavez, W. Raskind, M.A. Herrera-Valdez, and E.C. McKiernan (co-PI). “2011 Mathematical Field of Dreams Conference” Award # 1115165). National Science Foundation, Division of Mathematical Sciences (U.S.A).	\$45,000 USD

Professional memberships and affiliations

- 2016-present Member, Advisory Board for Budapest Open Access Initiative, 15 year Anniversary (U.S.A)
- 2016-present Member, Advisory Board for Metric Toolkit (U.S.A)
- 2016-present Member, Advisory Board for PeerJPreprints (U.K.)
- 2016-2017 Member, Advisory Board for Robert Wood Johnson Foundation funding call for open science proposals (U.S.A)
- 2015-present Member, Advisory Board for The Content Mine (U.K.)
- 2015-present Member, Editorial Board for the journal Research Ideas and Outcomes (Europe)
- 2015-present Member, Advisory Board for Overleaf (U.K.)
- 2015-present Candidate, **National System of Researchers** (Mexico)
- 2015-present Member, Advisory Board for International Open Access Week (U.S.A.)
- 2014-present Member, Organizing Committee for conference OpenCon (U.S.A.)
- 2013-present Member, Advisory Board for Figshare (U.K.)
- 2014-2015 Member, Society for Neuroscience (U.S.A)
- 2014-2015 Member, Organizing Committee for conference ARCSCon 2015 (U.S.A)
- 2013-2015 Member, State System of Researchers for the State of Morelos (Mexico)
- 2012-2014 Member, Organization for Computational Neurosciences (U.S.A.)
- 2011-2015 Member, Council on Undergraduate Research (U.S.A.)

Additional Skills

Languages: English (first language); Spanish (90 % written and spoken)

Computational languages: Python, LaTeX, Matlab scripting, HTML

Data acquisition/analysis software: AxoScope, Clampex/Clampfit, Spike2, OpenElectrophy