

JENNIFER K. INGEMI

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EDUCATION

- PhD** University of Massachusetts Medical School, Biomedical Sciences March 2013
Dissertation: “*The Role of Ion Channels in Coordinating Neural Circuit Activity in Caenorhabditis elegans*”
Thesis Advisor: Mark Alkema, PhD.
- BS** Stonehill College, Biology May 2005
Awarded with Honors, Cum Laude
Mentor: Craig Almeida, PhD.

EMPLOYMENT HISTORY

Northeastern University, Behavioral Neuroscience

- Assistant Teaching Professor 2015 – Present
- Interim Director/Head Advisor 2020 – Present
- Assistant Director/Assistant Head Advisor 2017 – 2020
- Faculty Advisor 2015 - 2017

University of Massachusetts Medical School, Neurobiology Department

- Post-Doctoral Associate, Neurobiology Department 2013 - 2015
- Graduate Student, Neurobiology Department 2005 - 2013

SCHOLARSHIP AND CREATIVE ACTIVITY

Refereed Articles

Huang, YC., **Pirri, JK.**^{*}, Rayes, D., Gao, S., Mulchay, B., Grant, J., Saheki, Y., Francis, MM., Zhen, M., Alkema, M. (2019). Gain-of-function mutations in the UNC-2/CaV2 α channel lead to excitation-dominant synaptic transmission in *Caenorhabditis elegans*. *eLife*, 8 (e45905). doi: 10.7554/eLife.45905.

Pirri, JK.^{†*}, Reyes, D[†]., and Alkema, MJ. (2015). A Change to the Ion Selectivity of Ligand-Gated Ion Channels Provides a Mechanism to Switch Behavior. *PLoS Biology*, 13(9). doi: 10.1371/journal.pbio.1002238.

- Gao, S., Xie L., Kawano, T., Po, MD., **Pirri, JK.***, Guan S., Alkema, MJ., Zhen, M. (2015). The NCA sodium leak channel is required for persistent motor circuit activity that sustains locomotion. *Nature Communications*, 6(6323). doi: 10.1038/ncomms7323.
- Sun, L., Shay, J., McLoed, M., Roodhosue, K., Chung, S., Clark, C., **Pirri, JK.***, Alkema, M., and Gabel, C. (2014). Neuronal Regeneration in *C. elegans* Requires Sub-cellular Calcium Release by Ryanodine Receptor Channels and Can be Enhanced by Optogenetic Stimulation. *Journal of Neuroscience*, 34(48), 15947-15956.
- Donnelly, JL., Clark, CM., Leifer, A., **Pirri, JK.***, Haburcak, M., Francis, MM., Samuel, A., and Alkema, MJ. (2013). Monoaminergic orchestration of motor programs in a complex behavior in *C. elegans*. *PLoS Biology*, 11(4). doi: 10.1371/journal.pbio.1001529.
- Schumacher, JA., Hsieh, YW., Chen, S., **Pirri, JK.***, Alkema, MJ., Li, WH., Chang, C., Chuang, CF. (2012). Intercellular calcium signaling in a gap junction-coupled cell network establishes asymmetric neuronal fates in *C. elegans*. *Development*, 139, 4191-41201.
- Pirri, JK.*** and Alkema, MJ. (2012). The neuroethology of *C. elegans* escape. *Current Opinion in Neurobiology*, 22(2), 187-193. doi:10.16/j.conb.2011.12.007.
- Maguire, SM., Clark, CM., Nunnari, J., **Pirri, JK.***, and Alkema, MJ. (2011). The *C. elegans* escape response facilitates escape from predacious fungi. *Current Biology*, 21(15), 1326-1330.
- Pirri, JK.***, McPherson, AD., Donnelly, JL., Francis, MM., Alkema, MJ. (2009). A tyramine-gated chloride channel coordinates distinct motor programs of a *Caenorhabditis elegans* escape response. *Neuron*, 62(4), 526-538.

*Last Name changed to Ingemi from Pirri in May 2016

† Equal contribution

Presentations

- Ingemi, JK.** 2019. *A CRISPR Future: Can we edit our way to utopia?* Seminar. NU@Noon, Burlington, MA.
- Ingemi, JK.** 2018 & 2019. *A CRISPR Future: Gene Editing in Behavioral Genetics*. Seminar. Northeastern University Welcome Day Master Class, Boston, MA.
- Pirri, JK.***, Rayes, D. and Alkema, MJ. 2012. *Synaptic engineering: an ionic switch of behavior*. Poster presentation. Neural Circuits Meeting, Cold Spring Harbor, NY.
- Pirri, JK.***, Huang, Y., Haburcak, M., Saheki, Y., Bargmann, CI. and Alkema MJ. 2010. *A Gain-of-Function Mutation in the Voltage-Gated Calcium Channel, UNC-2, Increases Synaptic Transmission*. Poster presentation. Chilean Society for Cell Biology Annual Meeting, Púcon, Chile.

Pirri, JK.*, Francis, MM. and Alkema, MJ. 2009. *Changing the ion selectivity of Cys-Loop Ligand Gated Chloride Channels*. Poster presentation. University of Massachusetts Medical School Annual Research Retreat, Marine Biological Laboratory, Woods Hole, MA.

Pirri, JK.*, McPherson, AD., Donnelly, JL., Francis, MM. and Alkema, MJ. 2008. *A tyramine-gated chloride channel is required for the suppression of head oscillations and modulates reversal behavior*. Platform. *C. elegans* Neuronal Development, Synaptic Function and Behavior Meeting. University of Wisconsin-Madison, Madison, WI.

Pirri, JK.* and Alkema, MJ. 2007. Analysis of Tyraminergetic signaling in *C. elegans*. Platform. University of Massachusetts Medical School Annual Research Retreat, Marine Biological Laboratory, Woods Hole, MA.

*Last Name Changed to Ingemi from Pirri in May 2016

TEACHING AND ADVISING

Courses Taught at Northeastern University, College of Science, Departments of Psychology and Biology

<u>2015</u>	<u>Term</u>	<u>Enrollment</u>	<u>Load</u>
BIOL 3405 Neurobiology	Spring	52	R
BIOL 3405 Neurobiology	Fall	56	R
PSYC 3458 Biological Psychology	Fall	81	R
BNSC 1000 BNS at NU	Fall	102	E
<u>2016</u>			
PSYC 3458 Biological Psychology	Spring	89	R
PSYC 4570 Behavioral Genetics	Spring	61	R
BIOL 3409 Cell and Molecular Neuroscience	Fall	22	R
PSYC 4570 Behavioral Genetics	Fall	37	R
BNSC 1000 BNS at NU	Fall	103	E
<u>2017</u>			
BIOL 3405 Neurobiology	Spring	63	R
PSYC 4570 Behavioral Genetics	Spring	36	R
BIOL 3405 Neurobiology (online)	Summer 2	27	E
BIOL 3409 Cell and Molecular Neuroscience	Fall	36	R
PSYC 3458 Biological Psychology	Fall	66	R
BNSC 1000 BNS at NU	Fall	88	E
<u>2018</u>			
BIOL 3409 Cell and Molecular Neuroscience	Spring	38	R
PSCY 4570 Behavioral Genetics	Spring	38	R
BIOL 3405 Neurobiology (online)	Summer 2	23	E

2019

BIOL 3405 Neurobiology (online)	Summer 1	18	E
BIOL 5595 Cell and Molecular Neuroscience	Fall	27	R
PSYC 4570 Behavioral Genetics	Fall	26	R

2020

BIOL 5595 Cell and Molecular Neuroscience	Spring	27	R
PSYC 4570 Behavioral Genetics	Spring	39	R
BIOL 3405 Neurobiology (online)	Summer 1	27	E
BIOL 5595 Cell and Molecular Neuroscience	Fall	26	R
PSYC 3458 Biological Psychology	Fall	97	R

2021

PSYC 3458 Biological Psychology	Spring	74	R
PSYC 4570 Behavioral Genetics	Spring	58	R
INSC 1200 First Year Research Project	Spring	19	E
PSYC 3458 Biological Psychology	Fall	114	R
PSYC 4570 Behavioral Genetics	Fall	25	R

Notes:

- “R” refers to Regular Load; “E” refers to Extra Compensation
- In 2016 I developed PSYC 4570 Behavioral Genetics as a new course; in 2017 I developed Neurobiology for an asynchronous online format and developed BIOL 3409 Cell and Molecular Neuroscience as a new course.
- In 2019 Cell and Molecular Neuroscience received a new course number, BIOL 5595
- Maternity/Parental Leave Fall 2018/Spring 2019.

Supervision of Undergraduate Student Work

Honors in the Discipline

Sabrina Chan (2020)

Title: *Intranasal Oxytocin: A Novel Potential Treatment for Boosting Maternal Mood and Promoting Infant Bonding*

Field Supervisor: Sharon Dekel, PhD, Massachusetts General Hospital

Michael Iskols (2021)

Title: *A Candidate Sensor of Sexual Touch*

Field Supervisor: David Ginty, PhD, Harvard Medical School

Andrea Yessallian (2021)

Title: *Choroid Plexus Macrophages: The First Responders of the Ventricle to Neonatal Intraventricular Hemorrhage*

Field Supervisor: Maria Lehtinen, PhD, Boston Children’s Hospital

Izabella Bankowski (2021)

Title: *The Dose-Dependent Effect of Synthetic Oxytocin at Birth on Offspring Neural circuitry and Alloparental Care Behavior in a Rodent Model*

Field Supervisor: Marcy Kingsbury, PhD, Harvard Medical School

Ji Hae Choi (2021)

Title: *Investigating the role of Kiss1 neurons in the regulation of metabolism*

Field Supervisor: Victor Navarro, PhD, Harvard Medical School

Internships

Sonika Agarwal, Fall 2017

Claire Peterson, Juliana Bonardi, Juliana Lebron-Echandy, Niesa Nelson, Spring 2018

Izabella Bankowsik, Sara Gannon, Lauren Choi, Syra Mehdi, Fall 2019

Briana Valli, Bonnie Cao, Spring 2020

Emily Erhard, Emily Johnson, Natalie Hall, Fall 2020

Ece Bapcum, Megan Beck, Spring 2021

Biology Capstone Consultant

Emily Kim, Lindsay Evans, Andrea Rigby, Ian Brenckel (2015)

Alissa Cutrone, Liann Ammar, Matthew Kirk, Laura Rottenberk (2016)

Evan Hale, Collette Biro, Kiara Taquechel, Alice Renaud (2017)

Sabrina Seo, Keishi Nambara, Grace Severance (2018)

Kaitlyn Clausell, Shawn Mozeika, Juliana Lebron Echandy, Sarah Williams (2019)

Amanda Glynn, William Ocampo (2020)

Andrew Szendrey, Priya Ranade (2021)

Additional Teaching Experience

Marine Biological Laboratory, Woods Hole, MA

Summer 2014

Teaching Assistant, Neural Systems and Behavior

Universidad de Valparaiso, Santiago, Chile

2012 - 2013

Academic Coordinator, Small Brains, Big Ideas: Bringing Invertebrate Neuroscience to South America

Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Fall 2011

Academic Coordinator, *C. elegans* Genetics

Advising Activities

- Head Advisor, Behavioral Neuroscience (2020 – Present)
- Assistant Head Advisor, Behavioral Neuroscience (2017 – 2020)
- Faculty Advisor, Behavioral Neuroscience (2015 -2017)
- Advisor for Genetics Counseling Student Interest Group (2021 – Present)
- Chapter Advisor, *Nu Rho Psi* (2019 – Present)
- Advisor for STEMPower (2019 – Present)
- Advisor for NEURONS Club (2017 – 2019)

PROFESSIONAL DEVELOPMENT AND SERVICE

Service

Behavioral Neuroscience

- Interim Director (2020 – Present)
- Assistant Director (2017 – 2020)
- Behavioral Neuroscience Steering Committee, Chair (2020 – Present)
- Behavioral Neuroscience Steering Committee, voting member (2017-2020)
- Coordinator and presenter for admitted student orientation sessions and welcome week activities
- Coordinator and presenter for Welcome Days, prospective student visits, phone-a-thon, and other recruitment activities
- Representative at Explore Program student events
- Coordinator for Behavioral Neuroscience Graduation Celebration
- Coordinator and reviewer for Behavioral Neuroscience Undergraduate Student Travel Award
- Coordinator and reviewer for the Alex Skavenski Award for Student Achievement
- Manager of the Behavioral Neuroscience Alumni LinkedIn page
- Search committee member for non-tenure track positions
- Faculty Advisor for NEURONS student club (2017-2019)

College/University Service

- TIER 1 Grant Reviewer (2021)
- Undergraduate Curriculum Committee, voting member (2020-Present)
- Hodgkinson Award Committee Member (2018, 2021)
- Faculty advisor for STEMPower (2019 – Present)
- Faculty advisor for Genetics Counseling Student Interest Group (2021 – Present)
- College of Science Non-Tenure Track Faculty Committee Member (2017 – 2019)
- Search Committee member for Cooperative Education Faculty (2016)
- Prepare and deliver seminars as invited speakers for student clubs and other university events such as Welcome Days and NU@Noon.

Professional Development

Workshops and Conferences Attended

Northeastern University, Office of Institutional Diversity, and Inclusion, Boston, MA

- Recognizing and Addressing Microaggressions 2021

Northeastern University, CATLR, Boston, MA

- Multiple Choice Questions for Higher Order Thinking 2021
- Curriculum Mapping 2021
- Writing Intensive Workshop 2020
- Strategies for Effective Online Exams 2020
- Assessing Undergraduate Degree Programs 2019
- Structuring Online Courses for Student Success 2019
- Learning Across Cultures: Benefitting from Student Diversity 2017

- Online Teaching and Learning Inquiry Group 2017
- Facilitating an Online Course 2016

Cornell University, Ithaca, NY

- Improving Undergraduate Education Through Science Outreach 2015

Awards and Academic Honors

- Elected to *Nu Rho Psi* 2015
- Student Award for Outstanding Mentoring, UMMS 2011
- Dan Mullen Memorial Award for Outstanding Poster Presentation, UMMS 2009
- Deans Award for Outstanding Curriculum Achievement, UMMS 2007
- Elected to *Lambda Epsilon Sigma* 2004

Professional Membership

- Nu Rho Psi, National Honor Society for Neuroscience 2013-Present
- Faculty for Undergraduate Neuroscience 2013-Present
- American Association for the Advancement of Science 2011-Present