CATHERINE KIRKPATRICK

Biology Teaching and Learning, University of Minnesota cakirkpa@umn.edu
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CURRENT POSITION:

Teaching Associate Professor 2017-present
Teaching Assistant Professor 2010-2017
  University of Minnesota, Department of Biology Teaching & Learning (formerly the Biology Program)

PREVIOUS POSITIONS:

Assistant Professor 2000-2010
  University of Minnesota, Department of Genetics, Cell Biology & Development
Research Associate 2000-2009
  University of Minnesota, Department of Genetics, Cell Biology & Development
Postdoctoral Fellow 1994-2000
  University of North Carolina, Department of Biology
  Research Advisor: Dr. Mark Peifer

EDUCATION:

University of Toronto B.Sc. in Biochemistry, May 1987
Massachusetts Institute of Technology Ph.D. in Biology, February 1994
  Thesis Advisor: Dr. Paul Schimmel

TEACHING EXPERIENCE:

University of Minnesota:

Foundations of Biology for Biological Sciences Majors, Part II Laboratory
  Independent group research projects for sophomores Fall 2010 - present
  Required for all CBS majors: 12-20 sections, 200-400 students/semester

Foundations of Biology for Biological Sciences Majors, Part II Fall 2010-14, Spring 2013
  Active learning lecture/discussion course for sophomores

Human Histology Fall 2007 - 2009
  Lecture and laboratory course for first-year medical & dental students

Freshman Seminar: Evolutionary Developmental Biology Fall 2007
  Developed and taught highly interactive seminar class for new freshmen

Developmental Biology Spring 2003 - 2006
  Guest Lecturer for undergraduate course

Augsburg College:

Genetics Spring 2010
  Lecture and laboratory course for sophomores and juniors

Massachusetts Institute of Technology:

Introductory Biochemistry Teaching Assistant Spring 1991
Nucleic Acid Biochemistry Teaching Assistant Fall 1988

PROGRAM & CURRICULAR DEVELOPMENT:

Developing new research areas for the Foundations of Biology labs:

- Microbial evolution (microbiology: antibiotic resistance) — 2021-22
- Experimental evolution (digital evolution with Avida-ED) — 2020
- Global change ecology with field work at Cedar Creek — 2019
- Global change ecology (computational analysis of ecological datasets) — 2018-19
- Zebrafish microbiome (zebrafish microbiome sequencing & microbiology) — 2016-17
- Environmental toxicology (using zebrafish) — 2015-16
- Computational microbiology (human gut microbiome analysis) — 2015-16
- Experimental evolution (microbiology: adaptive radiation) — 2014-15
- Developmental timing (identifying interacting proteins) — 2010

Co-PI, National Science Foundation IUSE grant "Integrated Science Education for Discovery in Introductory Biology (InSciED-In)" — 2014-19
Summer Transfer Student Research Experience — 2013
Summer Active Learning Lab Pilot Research Program — 2012

OUTREACH & OTHER PROFESSIONAL ACTIVITIES:

Nature of Life Faculty member: Itasca Biological Station & Laboratory — 2014-2019, 2022
Co-facilitator: Fostering Inclusive Environments in CBS Courses Workshop — 2020, 2022
Panelist, COBE Digital Teaching: Returning to Campus, University of Minnesota — 2021
Seminar: "Foundations of Biology Labs", Biology Teaching & Learning, University of Minnesota — 2021
Participant: Active Lens Digital Evolution Faculty Development Workshop — 2020
Key liaison for collaborative National Science Foundation IUSE grant "Accelerating the pace of research and implementation of Writing-to-Learn pedagogies across STEM disciplines" (Julie Reynolds, Leslie Schiff and Ginger Shultz, PIs) — 2015-19
Facilitator: STEM-Write Summer Institute, University of Minnesota — 2018-19
Panelist: Teaching Writing in Large-Enrollment Courses, University of Minnesota — 2018
Panelist: Writing and Project-Based Learning, University of Minnesota — 2017
Facilitator, National Academies Education Mentor in the Life Sciences: National Academies Northstar Summer Institute, University of Minnesota — 2012-16
Panelist: Research in the Science Classroom, St. Olaf College, Northfield, MN — 2015
Participant: Teaching with Writing 5-Day Faculty Seminar, Center for Writing, University of Minnesota — 2015
Participant: CURE Summer Institute, University of Texas-Austin — 2015
Plenary panelist: Scaling Up and Working Across Institutions, CUREnet Conference on Course-Based Undergraduate Research Experiences, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY — 2014
Panelist: Teaching with Writing in Large-Enrolment Introductory Courses, University of Minnesota — 2014
Reviewer: CourseSource — 2014
Facilitator: HHMI Course-based Research Experiences workshop, Hope College — 2013
Participant: Early Career Teaching Program, University of Minnesota — 2012-13
National Academies Education Fellow in the Life Sciences; National Academies Northstar Summer Institute, University of Minnesota — 2011

Mentoring:

Undergraduate Teaching Assistants: 12-30 per semester — 2010-22
Graduate Teaching Assistants/Teaching Specialists: 4-11 per semester — 2010-22
Honors thesis reader: 18 undergraduates — 2010-21

Faculty mentor for student team participating in Mayo Clinic IMPACT program   2016-17

SERVICE:

Diversity, Equity & Inclusion Committee (Biology Teaching & Learning)   2020-present
    Department meeting discussion sub-committee   2021-present
Search Committee for 2 Teaching Assistant Professors   Summer 2022
Chair, Promotion Review Committee - Vanessa Pompei   Spring 2022
CBS Faculty Consultative Committee   2018-21
CBS Awards & Recognition Committee   2018-21
Promotion Review Committee - Dr. Brian Gibbens   Spring 2019

SELECTED PUBLICATIONS (17 total):

Olson, A.N., Cotner, S., **Kirkpatrick** C., Thompson, S. and Hebert, S. (2022) "Real-time text message surveys reveal student perceptions of personnel resources throughout a course-based research experience" PLoS ONE 17(2): e0264188. https://doi.org/10.1371/journal.pone.026418

Thompson, S.K., **Kirkpatrick, C.**, Kramer, M. and Cotner, S. (2020) "Leveraging public data to offer online inquiry opportunities" Ecol. & Evol. <u>10</u>: 12555-12560.

Kirkpatrick, C., Schuchardt, A., Baltz, D., Wright, R. and Cotner, S (2019) "Computer-based and Bench-based Undergraduate Research Experiences Produce Equivalent Attitudinal Outcomes" CBE Life Sci Educ. March 1, 2019 18:ar10 DOI:10.1187/cbe.18-07-0112.

Ren Y., **C. Kirkpatrick**, J.M. Rawson, M. Sun, S.B. Selleck (2009) "Cell-type specific requirements for heparan sulfate biosynthesis at the *Drosophila* NMJ: effects on synapse function, membrane trafficking and mitochondrial localization" J. Neurosci. <u>29</u>: 8539-8550.

Kirkpatrick, C.A. and S.B. Selleck (2007) "Heparan sulfate proteoglycans at a glance" J. Cell Sci.: <u>120</u>: 1829-1832 (invited review).

***Kirkpatrick, C.A.**, *S.M. Knox, W.D. Staatz, B. Fox, D.M. Lercher and S.B. Selleck (2006) "The function of a *Drosophila* glypican does not depend entirely on heparan sulfate modification" Dev. Biol. <u>300</u>: 570-582. (*contributed equally)

Kirkpatrick, C.A., B.D. Dimitroff, J.M. Rawson and S.B. Selleck (2004) "Spatial regulation of Wingless morphogen distribution and signaling by Dally-like protein" Dev. Cell <u>7</u>: 513-23.

*Simcha, I., **C. Kirkpatrick**, E. Sadot, M. Shtutman, G. Polevoy, B. Geiger, M. Peifer and A. Ben-Ze'ev (2001) "Cadherin sequences that inhibit ß-catenin signaling: a study in yeast and mammalian cells" Mol. Biol. Cell <u>12</u>: 1177-1188. (*contributed equally)

McCartney, B.M., *H.A. Dierick, **C. Kirkpatrick**, M.M. Moline, A. Baas, M. Peifer and A. Bejsovec (1999) "*Drosophila* APC2 is a cytoskeletally-associated protein that regulates Wingless signaling in the embryonic epidermis" J. Cell Biol., <u>146</u>: 1303-1318. (*contributed equally)

van Es, J.H., **C. Kirkpatrick**, M. van de Wetering, M. Molenaar, A. Miles, J. Kuipers, O. Destree, M. Peifer and H. Clevers (1999) "A homologue of the Adenomatous Polyposis Coli tumour suppressor" Curr. Biol. <u>9</u>: 105-108.

*Pai, L.-M., **C. Kirkpatrick**, J. Blanton, H. Oda, M. Takeichi and M. Peifer (1996) " -catenin and DE-cadherin occupy distinct binding sites on *Drosophila* Armadillo that differ substantially in size" J. Biol. Chem. <u>271</u>: 32411-32420. (*contributed equally)

Kirkpatrick, C. and M. Peifer (1995) "Not just glue: cell-cell junctions as cellular signaling centers" Curr. Opin. Genet. Dev. <u>5</u>: 56-65 (invited review).