Erik C. Andersen

Assistant Professor
Northwestern University
Department of Molecular Biosciences

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DATE UPDATED: March 10, 2019

MAJOR PROFESSIONAL INTERESTS

Evolutionary genetics; quantitative genetics; molecular genetics; developmental genetics

EDUCATION

1996-2000 B.S. in Biological Sciences with departmental honors
Stanford University, Stanford, CA
Advisor: Dr. Matthew P. Scott
Dissertation: *in vivo* analysis of *Drosophila* heart-tube formation

2000-2008 Ph.D. in Biology
Massachusetts Institute of Technology (MIT), Cambridge, MA
Advisor: Dr. H. Robert Horvitz
Dissertation: The synthetic Multivulva genes and their suppressors regulate opposing cell fates through chromatin remodeling

2008-2013 Post-doctoral fellowship
Princeton University
Advisor: Dr. Leonid Kruglyak

AWARDS, HONORS, AND FELLOWSHIPS

1996-1998 Robert C. Byrd Honors Scholarship recipient
1998 Stanford University Undergraduate research small grant recipient
1999, 1998 Howard Hughes Medical Institute Summer Research Fellowship
2000 Firestone Medal for Excellence in Undergrad. Research (top Biological Sciences researcher)
2005 - 2006 Anna Fuller Cancer Graduate Research Fellowship
2009 - 2011 Ruth L. Kirschstein National Research Service Award Recipient
2011 - 2012 National Cancer Institute Post-doctoral Fellow, training grant T32-CA009528
2012 - 2013 Howard Hughes Medical Institute Post-doctoral Fellow
2014 - 2018 Pew Scholar in the Biomedical Sciences
2015 - Editorial Board Member of *Trends in Genetics*
2015 - 2017 March of Dimes Basil O'Connor Research Scholar
2015 - 2019 American Cancer Society Research Scholar
2017 - Associate Editor for *BMC Genomics*
2018 - 2023 National Science Foundation CAREER Award Recipient

EMPLOYMENT

2013 - Assistant Professor of Molecular Biosciences, Northwestern University
Preceptor for the Interdisciplinary Biological Sciences Graduate Program (IBiS)
Full Member of the Robert H. Lurie Comprehensive Cancer Center
Member of the Chemistry of Life Processes Institute (CLP)
Member of Northwestern Institute on Complex Systems (NICO)

2008 - 2013 Post-doctoral fellow, Princeton University, Princeton, NJ, Advisor: Dr. Leonid Kruglyak

2000 - 2008 Graduate student, Biology Department at Massachusetts Institute of Technology (MIT), Cambridge, MA, Advisor: Dr. H. Robert Horvitz

RESEARCH SUPPORT

PRESENT

2018 - 2023 National Institutes of Health (R01 ES029930) - NIEHS
Discovery of conserved molecular mechanisms underlying population-wide variation in toxin responses
Lead PI: Erik Andersen, co-PIs: Baugh (Duke), Rockman (NYU)

2018 - 2023 National Science Foundation
CAREER Award (1751035)
Discovery of the molecular mechanisms underlying microevolution of phenotypic plasticity in a developmental trait
PI - Andersen

2018 - 2022 National Institutes of Health (U2C OD026506) - NIEHS
Genetics and quantum chemistry as tools for unknown metabolite identification
Lead PI: Dr. Art Edison (UGA), co-PIs Andersen, Fernandez (Georgia Tech), McIntyre (U of Florida), Merz (Missouri State), Schroeder (Cornell)

2018 Google, Inc.
Google Cloud Platform Research credit award
Optimization of computational pipelines to support the C. elegans *Natural Diversity Resource*
PI - Andersen

2018 - 2023 National Science Foundation (1764421) and Simons Foundation (597491)
Research Center for Mathematics of Complex Biological Systems
Understanding organismal growth and development through quantitative approaches
Lead PIs Dr. Rich Carthew and Dr. Bill Kath, co-PIs Andersen, Mangan, Bagheri, Braun, Wang

2018 - 2022 National Institutes of Health (R01 GM127433) - NIGMS
100k spontaneous mutations: the foundation for an evolutionary systems biology of C. elegans
PI Dr. Charlie Baer (Univ. of Florida), PI Dr. Vaishali Katju (Texas A+M) with sub to Andersen

2017 - 2021 National Institutes of Health (R01 DK115690) - NIDDK
Large scale nutrigenetics and genomics in a tractable metazoan model
Multi-investigator Grant with EC Andersen, AJ Marian Walhout (UMass Medical School), Frank Schroeder (Cornell)

2017 - 2019 National Institutes of Heath (R21 AG053638) - NIA
High-throughput multi-modal analysis of natural variation in C. elegans healthspan
Multi-investigator Grant with Chris Fang-Yen (Univ. of Pennsylvania) and Andersen

2016 - 2019 National Institutes of Heath (R21 AI121836) - NIAID
Discovery and validation of avermectin resistance loci in free-living and parasitic nematodes
PI - Andersen with subcontract to Dr. Michael Kimber (Iowa State University)

2015 - 2019 American Cancer Society Research Scholar Grant
Elucidating the genetic causes of variation in chemotherapy-based toxicity
PI - Andersen

2014 - 2019 Pew Charitable Trusts, Scholars Program in the Biomedical Sciences
Elucidating the genetics of anthelmintic resistance in nematode-borne neglected tropical diseases
PI - Andersen

2014 - 2019 National Institutes of Health (R01 GM107227) - NIGMS
Direct determination of the distribution of fitness effects of spontaneous mutations
PI Dr. Charlie Baer (University of Florida) with subcontract to Andersen

PAST

2016 - 2017 Amazon Web Services
Optimization of computational pipelines to support the C. elegans *Natural Diversity Resource*
PI - Andersen

2016-2017 IDP/Sherman Fairchild Research Innovation Challenge Award, Robert H. Lurie Comprehensive Cancer Center
Validating individual differences in cytotoxicity to improve personalized chemotherapy treatment regimens
Multi-investigator Grant with Andersen and Dr. Paul Burridge (Northwestern University)

2015 - 2017 March of Dimes Basil O'Connor Starter Research Grant
Identification of hookworm anthelmintic resistance genes to ameliorate maternal and infant anemia
PI - Andersen

2016 Weinberg College Research Innovation Grant, Northwestern University
The Caenorhabditis elegans *Natural Diversity Resource - a powerful tool to facilitate biomedical discovery*
PI - Andersen

2014 - 2016 Chicago Biomedical Consortium, Catalyst Grant
Uncovering "missing heritability" in an experimentally tractable model organism
Multi-investigator Grant with Andersen and Ilya Ruvinsky (University of Chicago)

2016 Data Scientist Initiative, Northwestern University
A novel statistical model to predict the removal of mobile genetic elements
Multi-investigator Grant with Andersen and Jiping Wang (Northwestern University)

2013 - 2014 American Cancer Society, Institutional Research Grant [93-037-18]
Elucidating the genetic causes of variation in chemotherapy-based toxicity
PI - Andersen

2013 - 2014 Chemistry of Life Processes, Chairman's Innovation Award
Using perturbations of heavy metal homeostasis to treat nematode-borne neglected tropical diseases
Multi-investigator Grant with Andersen and Thomas O'Halloran (Northwestern University)

PENDING

2019 - 2022 Human Frontiers Science Program (LIP000827/2019)
Successful Letter of Intent (top 11%), 38% of applications in the next stage will be funded
The repeatability of genetic mechanisms underlying behavioral evolution
Lead PI Andersen, co-PIs Dr. Andre Brown (Imperial Coll. London), Kathryn Hodgins (Monash)

PUBLICATIONS

corresponding authors in bold, *undergraduate co-authors in italics*, graduate students and post-docs in underline

h-index=20, i10-index=28, link to Google Scholar page (here)

1. Bernstein MR, Zdraljevic S, **Andersen EC**, and Rockman MV (2018)
   Tightly linked antagonistic-effect loci underlie polygenic demographic variation in *C. elegans*
   bioRxiv 428466; DOI https://doi.org/10.1101/428466

2. Zdraljevic S, Fox BW, Strand C, Panda O, Tenjo-Castano FJ, Brady SC, Crombie TA, Doench JG, Schroeder FC, and **Andersen EC** (2018)
   Natural variation in arsenic toxicity is explained by differences in branched chain amino acid catabolism
   bioRxiv 373787; DOI https://doi.org/10.1101/373787
   Accepted at *eLife* under new trial of paper acceptance before review

3. Hahnel SR, Zdraljevic S, Rodriguez BC, Zhao Y, McGrath PT, and **Andersen EC** (2018)
   Extreme allelic heterogeneity at a *Caenorhabditis elegans* beta-tubulin locus explains natural resistance to benzimidazoles
   PLoS Pathogens Oct 29; 14(10):e1007226
   Citations: 1, Journal Impact Factor (2017): 6.158

4. Brady SC, Evans KS, Bloom JS, Tanny RE, Cook DE, Giuliani SE, *Hippleheuser SW*, Zamanian M, and **Andersen EC**.
   Common genomic intervals underlie natural variation in diverse toxin responses
   Genetics accepted on Sept. 24, 2018
   bioRxiv 325399; DOI: https://doi.org/10.1101/325399

5. Zamanian M, Cook DE, Zdraljevic S, Brady SC, Lee D, Lee J, and **Andersen EC** (2018)
   Discovery of genomic intervals that underlie nematode responses to benzimidazoles
   PLoS Neglected Tropical Diseases Mar 5; 12(3):e0006368
   Citations: 5, Journal Impact Factor (2017): 4.367

6. Zdraljevic S and **Andersen EC** (2017)
   Natural diversity facilitates the discovery of conserved chemotherapeutic response mechanisms
   Current Opinions in Genetics and Development Dec;47:41-47
   Citations: 4, Journal Impact Factor (2017): 4.995

7. Zdraljevic S, Strand C, Seidel HS, Cook DE, Doench JG, and **Andersen EC** (2017)
   Natural variation in a single amino acid substitution underlies physiological responses to topoisomerase II poisons
   PLoS Genetics Jul 12; 13(7):e1006891
   Citations: 16, Journal Impact Factor (2017): 5.540

8. Lee D, Yang H, Kim J, Brady SC, Zdraljevic S, Zamanian M, Kim H, Paik Y, Kruglyak L, **Andersen EC** and **Lee J** (2017)
The genetic basis of natural variation in a phoretic behavior
Nature Communications Aug 17; 8(1):273
Citations: 11, Journal Impact Factor (2016): 12.353

9. Laricchia KM, Zdraljevic S, Cook DE, and **Andersen EC** (2017)
The causes and consequences of natural variation in the distribution and abundance of transposable elements across the *Caenorhabditis elegans* species.
Molecular Biology and Evolution Sept 1; 34(9)2187-2202
Citations: 9, Journal Impact Factor (2017): 10.217

10. Garcia-Gonzalez AP, Ritter AD, Shrestha S, Andersen EC, Yilmaz LS, **Walhout AJM** (2017)
Bacterial metabolism affects the *C. elegans* response to cancer chemotherapeutics.
Cell Apr 20; 169(3)431-441
Citations: 40, Journal Impact Factor (2017): 31.398

11. Cook DE and **Andersen EC** (2017)
VCF-kit: Assorted utilities for the variant call format
Bioinformatics May 15; 33(10):1581-1582
Citations: 9, Journal Impact Factor (2017): 5.481

12. Mashock MJ, Zanon T, Kappell AD, Petrella LN, Andersen EC, **Hristova KR** (2016)
Copper oxide nanoparticles impact several toxicological endpoints and cause neurodegeneration in *Caenorhabditis elegans*
PLoS ONE Dec 2; 11(12):e0167613
Citations: 7, Journal Impact Factor (2017): 2.766

13. Evans KS, Zhao Y, Brady SC, Long L, McGrath PT, **Andersen EC** (2016)
Correlations of genotype with climate parameters suggest *Caenorhabditis elegans* niche adaptations
G3 Nov 18; [10.1534/g3.116.035162]
Citations: 10, Journal Impact Factor (2017): 2.742

14. Cook DE, Zdraljevic S, *Roberts JP*, **Andersen EC** (2016)
CeNDR, the *Caenorhabditis elegans* Natural Diversity Resource.
Nucleic Acids Research Jan 4; 45(D1):D650-D657
Citations: 41, Journal Impact Factor (2017): 11.561

15. Cook DE, Zdraljevic S, Tanny RE, Seo B, Riccardi DD, Noble LM, Rockman MV, Alkema MJ, Braendle C, Kammenga JE, Wang J, Kruglyak L, Felix MA, Lee J, **Andersen EC** (2016)
The genetic basis of natural variation in *C. elegans* telomere length
Genetics Sept; 204(1):371-83
Citations: 35, Journal Impact Factor (2017): 4.075

16. Large EE, Xu W, Zhao Y, Brady SC, Long L, Butcher RA, Andersen EC, **McGrath PT** (2016)
Selection on a Subunit of the NURF Chromatin Remodeler Modifies Life History Traits in a Domesticated Strain of *Caenorhabditis elegans*
PLoS Genetics July 28; 12(7):e1006219
Citations: 13, Journal Impact Factor (2017): 5.540

17. Zamanian M and **Andersen EC**. (2016)
Prospects and challenges of CRISPR/Cas genome editing for the study and control of neglected vector-borne nematode diseases
FEBS Sep; 283(17):3204-21
Citations: 21, Journal Impact Factor (20176): 4.530

18. Farhadifar R, Ponciano JM, Andersen EC, Needleman DJ, **Baer CF**. (2016)
Mutation Is a Sufficient and Robust Predictor of Genetic Variation for Mitotic Spindle Traits in *Caenorhabditis elegans*
Genetics Aug; 203(4):1859-1870
Citations: 10, Journal Impact Factor (2017): 4.075

19. Sterken MG, Snoek LB, **Kammenga JE**, **Andersen EC**. (2015)
The laboratory domestication of *C. elegans*
Trends in Genetics Mar; 31(5) 224-231
Citations: 57, Journal Impact Factor (2017): 10.556

20. Thompson OA, Snoek LB, Nijveen H, Sterken MG, Volkers RJM, Brenchley R, van't Hof A, Bevers RPJ, Cossins AR, Yanai I, Hajnal A, Schmid T, Perkins JD, Spencer D, Kruglyak L, Andersen EC, Moerman DG, Hillier LW, Kammenga JE, **Waterston RH**. (2015)
Remarkably divergent regions punctuate the genome assembly of the *Caenorhabditis elegans* Hawaiian strain CB4856
Genetics May 19; 200(3) 975-989
Citations: 51, Journal Impact Factor (2017): 4.075

21. **Andersen EC**, *Shimko TC*, Crissman JR, Ghosh R, Gerke JP, Seidel HS, **Kruglyak L**. (2015)
A powerful new quantitative genetics platform combining *Caenorhabditis elegans* high-throughput fitness assays with a large collection of recombinant strains
G3 Mar 13; 5(5) 911-920
Citations: 37, Journal Impact Factor (2017): 2.742

22. Farhadifar R, Baer CF, Valfort AC, Andersen EC, Muller-Reichert T, Delattre M, **Needleman DJ**. (2015)
Scaling, Selection, and Evolutionary Dynamics of the Mitotic Spindle
Current Biology Mar 16; 25(6) 732-740
Citations: 33, Journal Impact Factor (2017): 8.851

23. Balla K, Andersen EC, Kruglyak L, **Troemel E**. (2015)
A wild *C. elegans* strain has enhanced epithelial immunity to a natural microsporidian parasite
PLoS Pathogens Feb 13; 11(2)e1004583
Citations: 23, Journal Impact Factor (2017): 6.158

24. Etienne V*, Andersen EC*, Ponciano JM, Blanton D, Cadavid A, Joyner-Matos J, Matsuba C, Tabman B, **Baer CF**. (2015)
The Red Death Meets the Abdominal Bristle: Polygenic Mutation for Susceptibility to a Bacterial Pathogen in *Caenorhabditis elegans*
Evolution Feb; 69(2) 508-519 *equal contribution
Citations: 5, Journal Impact Factor (2017): 4.201

25. *Shimko TC*, **Andersen EC**. (2014)
COPASutils: an R package for reading, processing, and visualizing data from COPAS large-particle flow cytometers
PLoS One Oct 20; 9(10):e111090
Citations: 18, Journal Impact Factor (2017): 2.766

26. **Andersen EC**, Bloom JS, Gerke JP, **Kruglyak L**. (2014)
A variant in the neuropeptide receptor *npr-1* is a major determinant of *Caenorhabditis elegans* growth and physiology
PLoS Genetics Feb; 10(2):e1004156
Citations: 61, Journal Impact Factor (2017): 5.540

Publications from before Northwestern University:
undergraduate co-authors in italics, corresponding authors underlined

Felix MA, Jovelin R, Ferrari C, Han S, Cho YR, Andersen EC, Cutter AD, Braendle C. (2013)
Species richness, distribution and genetic diversity of *Caenorhabditis* nematodes in a remote tropical rainforest
BMC Evolutionary Biology 13(1), 10

Ghosh R, Andersen EC, Shapiro JA, Gerke JP, Kruglyak L. (2012)
Natural variation in a chloride channel subunit confers avermectin resistance in *C. elegans*
Science 335(6068): 574-578.

Andersen EC*, Gerke JP*, Shapiro JA*, Crissman JR, Ghosh R, Bloom JS, Felix MA, Kruglyak L. (2012)
Chromosome-scale selective sweeps shape *Caenorhabditis elegans* genomic diversity
Nature Genetics 44(3): 285-290. *equal contribution

Andersen EC. (2011)
PCR-directed *in vivo* plasmid construction using homologous recombination in baker's yeast
Molecular Methods for Evolutionary Genetics, 772; 409-421. *Invited book chapter

Raj A, Rifkin SA, Andersen EC, van Oudenaarden A. (2010)
Variability in gene expression underlies incomplete penetrance
Nature 463(7283): 913-918.

Bessler JB, Andersen EC, Villeneuve AB. (2010)
Differential localization and independent acquisition of the H3K9me2 and H3K9me3 chromatin modifications in the *Caenorhabditis elegans* adult germ line
PLoS Genetics 6(1): e1000830.

Reddy KC*, Andersen EC*, Kruglyak L, and Kim DH. (2009)
A polymorphism in *npr-1* is a behavioral determinant of pathogen susceptibility in *C. elegans*
Science 323(5912): 382-384. *equal contribution

Andersen EC, Saffer AM, and Horvitz HR. (2008)
Multiple levels of redundant processes inhibit *Caenorhabditis elegans* vulval cell fates
Genetics 179(4): 2001-2012.

Andersen EC and Horvitz HR. (2007)
Two *C. elegans* histone methyltransferases repress *lin-3* EGF transcription to inhibit vulval development
Development 134(16): 2991-2999.

Reddien PW, Andersen EC, *Huang M*, and Horvitz HR. (2007)
DPL-1 DP, LIN-35 Rb, and EFL-1 E2F act with the MCD-1 Zinc-finger protein to promote programmed cell death in *C. elegans*
Genetics 175(4): 1719-1733.

Andersen EC, Lu X, and Horvitz HR. (2006)
C. elegans ISWI and NURF301 antagonize an Rb-like pathway in the determination of multiple cell fates
Development 133(14): 2695-2704.

Furlong EE, *Andersen EC*, Null B, White KP, and Scott MP. (2001)
Patterns of gene expression during *Drosophila* mesoderm development
Science 293(5535): 1629-1633.

PROFESSIONAL TALKS

Departmental seminars and invited conference presentations (not including trainees):

2019 Dept. of Infectious Diseases, Univ. of Georgia, Athens, GA
Dept. of Biology, Georgia Institute of Technology, Atlanta, GA
Ingram Cancer Center, Vanderbilt University, Nashville, TN

2018 Max Planck Institute for Developmental Biology, Tübingen, Germany
Dept. of Evolutionary Ecology and Genetics, Christian-Albrechts-Universitat, Kiel, Germany
Berlin Seminar for Resistance Research, Freie Universitat Berlin, Berlin, Germany
Robert H Lurie Comprehensive Cancer Center, Northwestern University, Chicago, IL
Dept. of Genetics, Washington University School of Medicine, St. Louis, MO
Dept. of Genetics, University of Pennsylvania, Philadelphia, PA
Dept. of Pathobiology, University of Pennsylvania, Philadelphia, PA
Dept. of Microbiology, Seoul National University, Seoul, Korea
Dept. of Biology, University of Oregon, Eugene, OR
Dept. of Biological Sciences, University of Southern California, Los Angeles, CA
Dept. of Cell Biology and Anatomy, Rosalind Franklin University, Chicago, IL
New York Univ. Center for Genomics and Sys. Bio. Parasite Workshop, Abu Dhabi, UAE

2017 Department of Biology, Univ. of California - San Diego, San Diego, CA
Department of Biology, Duke University, Durham, NC
Donnelly Centre for Cellular And Biomolecular Research, University of Toronto, Toronto, ON
Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY
Medical Research Council, London Institute of Medical Sciences, London, UK
Department of Biology, Carnegie Mellon University, Pittsburgh, PA
Host-Parasite Interactions, University of Calgary, Banff, Canada
Florida Area Worm Meeting (keynote), Florida Institute of Technology, Melbourne, FL
Department of Biology, Skirball Institute, New York University Medical School, New York, NY
Department of Biology, University of Minnesota, Minneapolis, MN
Department of Biology, Indiana University, Bloomington, IN
New York University Center for Genomics and Systems Biology Symposium in Abu Dhabi, UAE

2016 Midwest Quantitative Biology at Purdue University, West Lafayette, IN
Molecular and Cellular Biology of Helminth Parasites X, Hydra, Greece
Computational Research Day, Northwestern University, Evanston, IL

2016 Evolutionary Biology of *Caenorhabditis* and other nematodes (keynote), CSHL, Cold Spring Harbor, NY
Department of Genetics, University of Utah, Salt Lake City, UT
Department of Biology, University of Iowa, Iowa City, IA
Department of Biomedical Sciences, Iowa State University, Ames, IA
Anthelmintics: Discovery to Resistance II, San Diego, CA

2015 Program in Systems Biology, University of Massachusetts Medical School, Worcester, MA
Evolution seminar series, University of Wisconsin, Madison, WI
Biotechnology Training Program, Northwestern University, Evanston, IL
Department of Biology, Johns Hopkins University, Baltimore, MD
Department of Biology, University of Maryland, College Park, MD
Department of Pharmacology, Feinberg School of Medicine, Northwestern University, Chicago, IL
Midwest Neglected Infectious Disease Meeting, Notre Dame University, South Bend, IN
Quantitative genetics workshop, 20th International *C. elegans* meeting, UCLA, Los Angeles, CA
Michigan Area Worm Meeting, van Andel Institute, Grand Rapids, MI

2014 Northwestern Institute on Complex systems, Northwestern University, Evanston, IL
Fondation de Treilles: Revisiting the roles of phenotypic plasticity in evolution, Provence, France
Biology Department, Marquette University, Milwaukee, WI
Pharmacogenomics group, University of Chicago, Chicago, IL

Seminars before starting at Northwestern:

2013 Quantitative genetics workshop, 19th International *C. elegans* meeting, UCLA, Los Angeles, CA
Molecular Bioscience Department, Northwestern University, Evanston, IL
Program in Systems Biology, University of Massachusetts Medical School, Worcester, MA

2012 Biology Department, Dartmouth University, Hanover, NH
Human Genetics Department and Life Sciences Institute, University of Michigan, Ann Arbor, MI
Genetics Department, University of Georgia, Athens, GA
Biology Department, Case Western Reserve University, Cleveland, OH
Biology Department and BioDesign Institute, Arizona State University, Phoenix, AZ
Center for Computational and Integrated Biology, Rutgers University, Camden, NJ
Biology Department, University of Florida, Gainesville, FL

2011 Evolution workshop, 18th International *C. elegans* meeting, UCLA, Los Angeles, CA
Laboratory of Toxicology, NIEHS, Research Triangle Park, NC

2010 Institute for Evolutionary Biology Department, University of Edinburgh, Edinburgh, UK

2008 Featured talk at *C. elegans* Aging, Stress, and Pathogenesis meeting, Madison, WI

2000 Undergraduate research symposium, Stanford University, Stanford, CA

Seminars chosen from abstracts (not including trainees): (*selected for oral presentation)

2018 *Evolutionary biology of *Caenorhabditis* and other nematodes meeting, Hinxton, UK
Evolutionary biology of *Caenorhabditis* and other nematodes meeting (poster), Hinxton, UK
*Anthelmintics III, Indian Rocks Beach, FL

2017 *Molecular Helminthology: An Integrated Approach, Cape Cod, MA

2015 *Midwest Neglected Infectious Disease meeting, U. of Notre Dame, Notre Dame, IN
*Bridging the divide, 20th International *C. elegans* meeting, UCLA, Los Angeles, CA

2013 *19th International *C. elegans* meeting, UCLA, Los Angeles, CA
Society for Molecular Biology of Evolution, Chicago, IL

2012 *Evolutionary biology of *Caenorhabditis* and other nematodes meeting, CSHL, NY

2011 *18th International *C. elegans* meeting, UCLA, Los Angeles, CA
18th International *C. elegans* meeting (poster), UCLA, Los Angeles, CA

2010 *Evolutionary biology of *Caenorhabditis* and other nematodes meeting, Hinxton, UK
Evolutionary biology of *Caenorhabditis* and other nematodes meeting (poster), Hinxton, UK
Cold Spring Harbor Labs Automated Imaging and High-throughput Phenotyping, CSHL, NY

2009 *17th International *C. elegans* meeting, UCLA, Los Angeles, CA

2009 Gordon Research Conference on Quantitative Genetics and Genomics, Galveston, TX
2007 Department of Biology Annual Retreat, MIT, ** poster prize winner
2006 *C. elegans* Evolution and Development meeting, Univ. of Wisconsin, Madison, WI
2005 *15th International *C. elegans* meeting, UCLA, Los Angeles, CA
Chromatin Structure and Function meeting, Nassau, Bahamas
2004 East Coast *C. elegans* meeting, Yale, New Haven, CT
2003 *14th International *C. elegans* meeting, UCLA, Los Angeles, CA
2002 East Coast *C. elegans* meeting, University of New Hampshire, Durham, NH

PEER REVIEW AND RELATED ACTIVITIES

Editorial board:
2015 - *Trends in Genetics*

Associate editor:
2017 - *BMC Genomics (Multicellular invertebrate genomics)*

Guest editor:
PLoS Genetics

Reviewing activity: Academic Journals
American Naturalist, *Biological Journal of the Linnean Society*, *BMC Evolutionary Biology*, *BMC Genetics*, *BMC Genomics*, *Cell*, *Development*, *eLife*, *EMBO*, *Environmental Microbiology*, *Genes and Development*, *G3*, *Genetics*, *Genome Research*, *Journal of Visualized Experiments*, *Heredity*, *Nature*, *Nature Scientific Reports*, *Nature Genetics*, *PLoS Genetics*, *PLoS Neglected Tropical Diseases*, *PLoS ONE*, *PLoS Pathogens*, *PNAS*, *Science*, *Scientific Reports*, *Trends in Genetics*, *Trends in Molecular Medicine*, *Trends in Parasitology*

Reviewing activity: Grants and fellowships
2018 Scientific Advisory Board for P01AI127338 (PI Michael Ferdig, Notre Dame Univ.)
2017 *Ad hoc* reviewer for Bill and Melinda Gates Foundation
2014 *Ad hoc* reviewer for Human Frontiers Science Program
2014 *Ad hoc* reviewer for National Science Foundation (IOS)

PROFESSIONAL AFFILIATIONS AND SERVICE

Membership in Professional Societies:
Genetics Society of America, member
Society of Molecular Biology and Evolution, member

Professional service:
2018 Organizing committee for *C. elegans* dev., cell bio., and gene exp. meeting (Barcelona, Spain)
Chair of the Natural Variation session, *C. elegans* dev., cell bio., and gene exp. meeting
Co-organizer of the Chicago Area Worm Meeting (ChAWM, www.chawm.org)
Scientific Advisory Board Member for P01AI127338 (PI Dr. Michael Ferdig, Notre Dame Univ.)
Organizing committee for Parasitic Nematodes meeting, NYU Abu Dhabi
External thesis committee member for Victoria Vu (Fraser lab, University of Toronto)
2018 Poster judge, Northwestern Undergraduate Research Symposium
2017 Organizing committee for the 21st International *C. elegans* meeting
2017 Chair of the Evolution and Ecology parallel session, 21st International *C. elegans* meeting

2015 Organizing committee for the 20th International *C. elegans* meeting
Poster judge, 20th International *C. elegans* meeting - Evolution and Genomics section
Genetics Soc. of America Mentor Lunch, *Postdoc search*, 20th International *C. elegans* meeting
2014 Panelist, NUIN Post-doc Association, *Interviews and Start-up packages*
Poster judge, Northwestern Undergraduate Research Symposium
Panelist, Pathways to the Professoriate, *How to prepare for a job interview?*
2013 Poster judge, Northwestern Undergraduate Research Symposium
Panelist, Bioscientist Freshman seminar; *How to find a research lab?*
Poster judge, 19th International *C. elegans* meeting - Evolution and Genomics section

***C. elegans* community service:**

2016 - Creator and advisor board member of the *C. elegans* Natural Diversity Resource (CeNDR, link)
This resource organizes and disseminates wild *C. elegans* strains, whole-genome sequence data, and enables genome-wide association mappings through a cloud-based service. Since 2016, over 1900 strains have been distributed to the community and over 2000 mappings have been performed.

TEACHING AND ADVISING

Undergraduate teaching:

2018 **Biological Sciences 393: *Genetic Analysis* (winter, 28 students)**
Biological Sciences 398: *Tutorial in Biology* (Karol Bisaga)
Biological Sciences 399: *Independent Research* (Karol Bisaga, Kimberly Collins, Selina Deiparine, Grace Park)
2017 **Biological Sciences 393: *Genetic Analysis* (spring, 22 students)**
Biological Sciences 398: *Tutorial in Biology* (Kimberly Collins)
Biological Sciences 399: *Independent Research* (Selina Deiparine, Samuel Hamilton, Grace Park)
2016 **Biological Sciences 393: *Genetic Analysis* (spring, 17 students)**
Biological Sciences 398: *Tutorial in Biology*
(Sarah Bier, Mattlyn Cordova, Selina Deiparine, Samuel Hamilton, Grace Park)
2015 *Guest Lecture:* University of Wisconsin-Madison Biology 675 - *Evolution seminar*
(fall, 8 students)
New course: Biological Sciences 393: *Genetic Analysis* (spring, 10 students)
Biological Sciences 398: *Tutorial in Biology* (Lautaro Cilenti)
Biological Sciences 399: *Independent Research* (Kreena Patel, Hillary Tsang)
2014 Biological Sciences 398: *Tutorial in Biology* (Mazeed Aro-Lambo, Kreena Patel, Hillary Tsang)

Graduate teaching:

2018 Interdisciplinary Biological Sciences 421: *Rigor and Reproducibility*
(summer, one guest lecture, 25 students)
Interdisciplinary Biological Sciences/Chemistry 416: *Practical Training in Chemical Biology Methods and Experimental Design*
(spring, five lectures, 10 students)
2017 Interdisciplinary Biological Sciences 421: *Rigor and Reproducibility*
(summer, one guest lecture, 15 students)
Interdisciplinary Biological Sciences/Chemistry 416: *Practical Training in Chemical Biology Methods and Experimental Design*
(spring, five lectures, 8 students)
2017 Interdisciplinary Biological Sciences 421: *Rigor and Reproducibility*
(spring, one guest lecture, 5 students)

2016 Interdisciplinary Biological Sciences: *Graduate Computational Biology Bootcamp*
(fall, 3 days, eight hours per day, 19 students) - www.GitHub.com/AndersenLab/IBiS-Bootcamp
2015 Interdisciplinary Biological Sciences 402: *Eukaryotic Molecular Biology*
(fall, one guest lecture, 22 students)
Interdisciplinary Biological Sciences: *Graduate Computational Biology Bootcamp*
(fall, 3 days, eight hours per day, 22 students) - www.GitHub.com/AndersenLab/IBiS-Bootcamp
Interdisciplinary Biological Sciences 423: *Ethics of peer review*
(spring, one guest lecture, 41 students)
2014 Interdisciplinary Biological Sciences 402: *Eukaryotic Molecular Biology*
(fall, one guest lecture, 16 students)
New course: Interdisciplinary Biological Sciences: *Graduate Computational Biology Bootcamp*
(fall, 3 days, eight hours per day, 16 students) - www.GitHub.com/AndersenLab/IBiS-Bootcamp
Interdisciplinary Biological Sciences 423: *Ethics of peer review*
(spring, one guest lecture, 42 students)
2013 Interdisciplinary Biological Sciences 402: *Eukaryotic Molecular Biology*
(fall, one guest lecture, 24 students)

K-12 advising:
Britney Sun, Glenbrook North High School (summer 2018)
Ethan Schonfeld, Glenbrook North High School (summer 2018)
Lillian Tushman, Oak Park and River Forest High School (2016-2017 academic year)
Caitlin Westerfield, Evanston Township High School (2015-2016 academic year)
Matteo di Bernardo, Evanston Township High School (2015-2016 academic year)
Ainsley Tran, Oak Park and River Forest High School (2015-2016 academic year)
Lauren Mann, Oak Park and River Forest High School (2014-2015 academic year)
Jacob Cruger, Latin School of Chicago (summers 2013, 2014)
Gina Liu, Illinois Math and Science Academy (2013-2014 academic year)

Undergraduate advising:
Katie Introcaso (2018 - , Class of 2022), Biological Sciences Major
Ellen Chao (2018 - , Class of 2021), Biological Sciences Major
2018 Summer URG recipient
Tim Sheng (2018 - , Class of 2019), Biological Sciences Major
2018 Summer URG recipient
Yihong Hu (2018 - , Class of 2021), Biological Sciences Major
2018 Program in Biological Sciences Summer Grant recipient
Grace Park (2016 - , Class of 2019), Biological Sciences Major
2016 Posner Fellowship recipient
2017 Program in Biological Sciences Summer Grant recipient
Peter Finnegan (2017 - 2018, Class of 2020), Biological Sciences Major
2017 Program in Biological Sciences Summer Grant recipient
Karol Bisaga (2017 - 2018, Class of 2020), Biological Sciences Major
2017 NU Bioscientist Summer Grant recipient
Kimberly Collins (2016 - 2018, Class of 2020), Biological Sciences Major
2017 NU Bioscientist Summer Grant recipient
Selina Deiparine (2016 - 2018, Class of 2018), Biological Sciences Major
2016 Summer URG recipient, 2016 Academic URG recipient
Rohit Rastogi (2016 - 2017, Class of 2019), Computer Science and Statistics Majors
Sarah Bier (2016 - 2017, Class of 2019), Biological Sciences Major
2016 Summer URG recipient

Mattlyn Cordova (2016 - 2017, Class of 2019), Gender Studies Major
2016 Program in Biological Sciences Summer Grant recipient
Joshua Roberts (2015-2016, Class of 2016), Computer Science Major
Nicholas Irons (2015, Class of 2018), Physics Major
2015 Summer URG recipient
Annika Zhang (2014-2015, Class of 2018), Biological Sciences Major
2015 Weinberg College Summer Grant recipient
Tyler Shimko (summers 2012, 2013, 2014, 2015, University of Utah Class of 2015), Biology Major
Barry Goldwater Scholarship recipient
Myriad Academic Scholarship recipient
Thomas Verender Hanks Scholarship recipient
National Science Foundation Graduate Research Fellowship recipient
Department of Energy Computational Science Graduate Fellowship Honorable Mention
Mazeed Aro-Lambo (2014, Class of 2017), Biological Sciences Major
2014 NU Bioscientist Summer Grant recipient
Stevie Hippleheuser (2014 - , Class of 2017), Biological Sciences Major
2016 Program in Biological Sciences Summer Grant recipient
2015 Summer URG recipient
2014 Weinberg College Summer Grant recipient
Camille Calvin (2014, Class of 2017), Mechanical Engineering Major
2014 Posner fellowship recipient
Hillary Tsang (2013 - 2016, Class of 2016), Biological Sciences Major
2015 Weinberg Summer Grant recipient
2014 Summer URG recipient
2014 Academic URG recipient
Lautaro Clienti (2013 - 2015, Class of 2017), Mechanical Engineering Major
2014 Academic URG recipient
Kreena Patel (2013 - 2015, Class of 2015), Biological Sciences and Psychology Double Major
2015 Emmanuel Margoliash Prize for Basic Research recipient
Winfred Hill Award recipient
James Alton James Scholar
Ellen Taus Scholarship recipient
J.G. Nolan Scholarship recipient
2014 Academic URG recipient
Zifan Xiang (2014 - 2015, Class of 2015), Biomedical Engineering Major
Stephen Chan (2013 - 2014, Class of 2014), Computer Science Major
2013 Summer URG recipient

Masters student advising:
Ryan (Heechul) Chung (Quantitative and Systems Biology Masters), 2018 - 2019
Suma Aldakeel (advisor, Cindy Voisine - Northeastern Illinois Univ.), 2016 - 2017
Nick Timkovich (advisor, Luis Amaral - Interdisciplinary Biological Sciences Program), 2015
Kristen Larrichia (advisor, Nyree Zerega – Program in Plant Biology and Conservation), 2014 - 2015
Lucie Bastin-Heline (Master's exchange student, Ecole Normale Superior, Paris, France), 2014

Graduate student and post-doctoral advising:

Graduate PhD candidates:

Clayton Dilks (2018 -), Ph.D. student, Interdisciplinary Biological Sciences Program
Funded by the Biotechnology NIH Training grant cluster (2019)

Ye Wang (2017 - 2019), Visiting Ph.D. student, Sichuan Agricultural University, China
Funded by China Scholarship Council

Kathryn Evans (2016 -), Ph.D. student, Interdisciplinary Biological Sciences Program
Funded by the Cell and Molecular Basis of Disease NIH Training grant (2017-2019)
Recipient of travel awards from IBiS and the Northwestern Graduate School (2017)
Recipient of Biotechnology NIH Training grant cluster member, declined (2017)

Shannon Brady (2015 -), Ph.D. student, Interdisciplinary Biological Sciences Program
Recipient of the Dr. John N. Nicholson Fellowship (2018-2019)
Funded by the Biotechnology NIH Training grant (2015-2017)
National Science Foundation Graduate Research Fellowship Program (Honorable Mention)
Recipient of travel award from Union Biometrica (2016)
Recipient of travel awards from IBiS and the Northwestern Graduate School (2017)
Poster first prize winner Northwestern Computational Research Day (2017)
Poster prize winner 21st International C. elegans meeting
Best TA award IBiS Graduate Program (2017)

Daniel Cook (2014 - 2018), Ph.D. student, Driskill Graduate Program
Current position: Senior Programmer at VectorBase, London, U.K.
Funded by a National Science Foundation Pre-doctoral Fellowship (2015-2018)
Recipient of travel awards from IBiS and the Northwestern Graduate School (2016)
Northwestern Presidential Fellowship Finalist (2017)

Stefan Zdraljevic (2014 -), Ph.D. student, Interdisciplinary Biological Sciences Program
Recipient of the IBiS Rappaport Award for Research Excellence (2018)
Funded by the Cell and Molecular Basis of Disease NIH Training grant (2015-2017)
Recipient of travel awards from Northwestern Center for Genetic Medicine (2016, 2017)
Recipient of travel awards from IBiS and the Northwestern Graduate School (2015, 2017)
Chemistry of Life Processes Drug Discovery Scholar (2017)

Post-doctoral researchers:

Gaotian Zhang (2018 -), Ph.D. from Ecole Normale Superieure, Paris, advisor Dr. Marie-Anne Felix

Timothy Crombie (2017 -), Ph.D. from University of Florida, advisor Dr. David Julian

Steffen Hahnel (2017 - 2018), Ph.D. from Justus-Liebig University, advisor Dr. Christoph Grevelding
Current position: Scientist at Bayer Animal Health, Germany
Recipient of DFG German Science Fellowship (2018-2020)
Recipient of Northwestern Post-doctoral Travel Award (2018)
Recipient of Burroughs-Wellcome Travel Award (2018)

Daehan Lee (2017 -), Ph.D. from Seoul National University, advisor Dr. Junho Lee

Mostafa Zamanian (2014 - 2016), Ph.D. from Iowa State University, advisor Dr. Timothy Day
Current position: Assistant Professor of Pathobiological Sciences, University of Wisconsin - Madison
Recipient of NIH/NIAID K22 Career Transition Award (2016)
Recipient of Northwestern Post-doctoral Travel Award (2016)
Funded by the Bill and Melinda Gates Foundation (2014)

Bryn Gaertner (2014), Ph.D. from University of Oregon, advisor Dr. Patrick Phillips

Additional rotation graduate students:
Loraina Stinson (Winter, 2019), Emily Czajkowski (Fall, 2018), Julie Liang (Spring, 2018), Elan Ness-Cohn (DGP, Spring, 2018) Kyle Siegel (Spring, 2018), Clayton Dilks (Winter, 2018), Garth Fisher (Fall, 2017), Nicholas Sepulveda (Spring, 2017), Michael Schamber (Winter, 2017), Evan Buechel (Spring, 2016), Nic Daffern (Spring, 2016), Bryan Eder (Winter, 2016), Ryan Abdella (Winter, 2015), Erin Baker (Fall, 2014), Alex Karge (Spring, 2014), Saiorse McSharry (Winter, 2014), Amy Nilles (Fall, 2013), Ian Wolff (Summer, 2013)

Graduate thesis committee memberships:
Alex McFarland (advisor, Erica Hartman) 2018 -
Sumach Aldakeel (advisor, Cindy Voisine - Northeastern Illinois Univ.), 2016 - 2017
Adam Hockenberry (advisors, Luis Amaral and Michael Jewett) 2015 - 2017
Rachel Bakker (advisor, Rich Carthew) 2015 -
Joseph Muldoon (advisors, Neda Bagheri and Josh Leonard) 2015 -
Sarah Stainbrook (advisor, Keith Tyo) 2015 -
Timothy Toby (advisor, Neil Kelleher) 2015 - 2018
Rose Njoroge (advisor, Sarki Abdulkadir – DGP, Feinberg School of Medicine), 2014 - 2018
Keila Torre-Santiago (advisor, Sadie Wignall) 2014 - 2017
Aaron Sue (advisor, Thomas O'Halloran), 2014 -
Arianne Rodriguez (advisor, Yun Wang), 2014 (Transferred to DGP)
Ritika Giri (advisor, Richard Carthew), 2013 -
Lilien Voong (advisor, Alec Wang), 2013 - 2017

DEPARTMENT, COLLEGE, AND UNIVERSITY SERVICE

Departmental Service:

2017	Departmental Strategic Planning committee
2016	Faculty search committee
	Departmental Strategic Planning committee
2015	Faculty search committee
2014	Departmental Program Review committee

Weinberg College of Arts and Sciences Service:

2016	Faculty search committee for the Neurobiology Department
2014	NUIN Post-doc Association, *Interviews and Start-up packages*

University-level Service:

2018	IBiS Graduate Admissions committee
	Steering committee for NUSeq Facility in Northwestern Medicine
	Qualifying examination committee, Chair (Alex McFarland, Hartman lab)
	Masters Program in Quantitative and Systems Biology, Curriculum committee
	Poster judge, Northwestern Undergraduate Research Symposium
	Ad hoc reviewer for Chemistry of Life Processes undergraduate grants and fellowships
	Ad hoc reviewer for Data Science Initiative grants and fellowships
2017	Discussion organizer, Northwestern Computational Research Day
	Steering committee for NUSeq Facility in Northwestern Medicine
	Ad hoc reviewer for Chemistry of Life Processes undergraduate grants and fellowships
	Ad hoc reviewer for Data Science Initiative grants and fellowships
2016	IBiS Computational Bootcamp for incoming graduate students
	Lurie Cancer Center American Cancer Society IRG review panel
	Steering committee for NUSeq Facility in Northwestern Medicine
	Ad hoc reviewer for Chemistry of Life Processes undergraduate grants and fellowships

2016	*Ad hoc* reviewer for Data Science Initiative grants and fellowships
2015	IBiS Graduate Admissions committee
	IBiS Retreat committee, Co-chair
	IBiS Computational Bootcamp for incoming graduate students
	Qualifying examination committee (Rachel Bakker, Carthew lab)
	Qualifying examination committee, Chair (Joseph Muldoon, Bagheri and Leonard labs)
	Qualifying examination committee (Sarah Stainbrook, Tyo lab)
	Qualifying examination committee (Timothy Toby, Kelleher lab)
2014	Creation of IBiS Computational Bootcamp for incoming graduate students
	IBiS Retreat committee, Co-chair
	Qualifying examination committee (Aaron Sue, Morimoto lab)
	Qualifying examination committee (Arianne Rodriguez, Wang lab)
	Qualifying examination committee (Rose Njoroge, Abdulkadir lab)
	Masters thesis examination committee (Kristen Larrichia, Zerega lab)
	Poster judge, Northwestern Undergraduate Research Symposium
2013	IBiS Graduate Admissions committee
	Qualifying examination committee (Lilien Voong, Wang lab)
	Qualifying examination committee (Ritika Giri, Carthew lab)
	Poster judge, Northwestern Undergraduate Research Symposium

COMMUNITY WORK

2018 -	Mentored Britney Sun from Glenbrook North High School on variation in zinc responses
2018	Mentored Ethan Schonfeld from Glenbrook North High School on variation in stress responses
2016 - 2017	Mentored Lillian Tushman from Oak Park and River Forest High School on glucose responses *Recipient of 3rd place All-Illinois Science Research Competition*
2016 - 2017	Mentored Lillian Kameny from Alameda Community Learning Center on etoposide variation
2016 -	Assistant Den Leader, Pack 922
2016 - 2017	American Youth Soccer Organization (AYSO) U8 Head Coach, *The Storm*
2015 -	Hosted 80 5th grade students from Lincolnwood Elementary School for a day of science
2015 - 2016	Mentored Caitlin Westerfield from Evanston Township High School on pathway evolution
2015 - 2016	Mentored Ainsley Tran from Oak Park and River Forest High School on iron sensitivity
2015 - 2016	American Youth Soccer Organization (AYSO) U8 Head Coach, *Golden Ninjas*
2015 - 2016	Mentored Matteo di Bernardo from Evanston Township High School on anthelmintic sensitivity, Recipient of Columbia University Scientific Scholars Fellowship
2014 -	Lecturer on *C. elegans* genetics to the Latin School of Chicago advanced biology class
2014	Mentored Lauren Mann from Oak Park and River Forest High School on iodine sensitivity
2014	Co-organized with Jacob Cruger nematode collections with the Punahou School, Hawaii
2013, 2014	Mentored Jacob Cruger from Latin School of Chicago
2009	Organized nematode collections with Vassalboro Community School, Maine