

JOHN ERNEST KRATZ, PH.D.

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EDUCATION

Columbia University, Graduate School of Arts and Sciences, New York, NY

Doctor of Philosophy, Biological Sciences

October 2010

Rice University, Houston, TX

Bachelor of Fine Arts, Photography

May 2000

Bachelor of Arts, double major: Art & Art History, Biology

May 1999

EXPERIENCE

California Digital Library, UC Office of the President, Oakland, CA

2013 – present

CLIR/DLF postdoctoral fellowship in data curation for the sciences and social sciences

Supervisor: Dr. Carly Strasser

- Comprehensively reviewed new and ongoing data publication initiatives; published the findings as an article in *F1000Research*.
- Surveyed researcher practices and perceptions relating to data publication to inform initiatives at the California Digital Library and beyond.
- Wrote blog posts for *Data Pub* and the Digital Library Federation.
- Led a data publication session at the 2013 CLIR Fellows Winter Meeting. Presented review article to UC Berkeley Research IT reading group.
- Served on the FORCE11 Data Citation Implementation Working Group.

San Diego Zoo Institute for Conservation Research, San Diego, CA

Volunteer research

2012 - 2013

Principal Investigator: Dr. Lance Miller

- Contributed to database of natural history of species in the San Diego Zoo's collection
- Collected exhaustive data on behavioral and ecological metrics from the literature.

Department of Biological Sciences, Columbia University, New York, NY

Graduate dissertation research

2003 - 2010

Advisor: Dr. Martin Chalfie, Nobel Laureate

Thesis Title: Prohibitin homology domain proteins in *Caenorhabditis elegans*.

- Analyzed *C. elegans* prohibitin homology domain (PHB-d) protein sequences from public databases using bioinformatics tools and classified into subfamilies.
- Devised confocal microscopy protocol for cell mapping. In collaboration with WormAtlas, fully characterized PHB-d protein family expression and subcellular localization.
- Correlated sequence data and expression patterns to identify subfamily enriched in neurons.
- Tested for functional roles and identified a gene needed for sensitive odor detection.
- Established mammalian cell culture system for expression of *C. elegans* proteins.
- Managed collaborations with Benzing and Hall labs.
- Trained and supervised two undergraduate technicians.

Graduate rotation research

Spring 2003

Principal Investigator: Dr. Darcy Kelley

- Electrophysiology and immunohistochemistry of *Xenopus laevis* larynx.

Graduate rotation research

Summer 2003

Principal Investigator: Dr. Harmen Bussemaker

- Implemented a computational method to use gene expression data to identify up or down regulated Gene Ontology categories.

Teaching Assistant

Spring 2006

Bioinformatics of Gene Expression: Dr. Harmen Bussemaker

- Wrote and edited on-line Perl tutorials and bioinformatics programming assignments.
- Provided one-on-one guidance to students during lab sessions.

Teaching Assistant

Fall 2005

Neurobiology I: Cellular and Molecular Biology: Dr. Jian Yang

- Led weekly discussion of journal articles.
- Organized exam review sessions; graded exams.

Department of Neuropathology, Johns Hopkins University, Baltimore, MD

Senior Laboratory Technician

2000 - 2002

Principal Investigator: Dr. Charles Eberhart

- Studied role of Wnt signaling in medulloblastoma, a pediatric brain tumor.
- Characterized two transgenic mouse strains and managed mouse colony, including all genetics and genotyping.

SKILLS & TECHNIQUES

Computer Skills & Software

- General Purpose: Microsoft Office, EndNote, Zotero, Adobe Illustrator, Evernote, Mendeley.
- Data Analysis: IPython, NumPy, Pandas, SciPy, TextMate.
- Image Acquisition & Analysis: Adobe Photoshop, ImageJ, AxioVision, FluoView.
- Sequence Analysis: BLAST, ClustalW, JALView, Dendroscope, TreeviewX, EnzymeX, ApE.
- Computer Language/Syntax: C/C++, LaTeX, Markdown, Python, XML.

Bench Biology

- Microscopy: Confocal, Transmission Electron, Epifluorescent, DIC.
- Molecular Biology: Cloning, DNA Electrophoresis, Restriction Digest, PCR, RT-PCR.
- Biochemistry: Immunohistochemistry, Western Blot, Blue Native Gel Electrophoresis, *in situ* Hybridization.
- Genetics: Classical Genetics, Genotyping, RNAi, Behavioral Assays.
- Model Systems: *C. elegans*, Mice, *X. laevis*, Mammalian Cell Culture

COURSES & CERTIFICATES

University of California San Diego Extension, San Diego, CA

- C/C++ Programming Certificate 2012

Coursera

- Introduction to Databases Winter 2013
- Computing for Data Analysis Fall 2012
- Writing in the Sciences Fall 2012

Columbia University, New York, NY

- Structure and Function of Membrane Channels Spring 2006
- Signal Transduction Fall 2005
- Computational Genomics Spring 2004

FELLOWSHIPS

- CLIR/DLF Postdoctoral Fellowship in Data Curation 2013 - 2015
- Columbia University Presidential Fellowship 2002 - 2010
- National Institute of Health Training Grant 2005 - 2007

PUBLICATIONS

J. E. Kratz and C. Strasser, *Researcher perspectives on publication and peer review of data*. in submission, PLOS ONE

J. E. Kratz and C. Strasser, *Data publication consensus and controversies*. F1000Research **3**:94 (2014) doi:10.12688/f1000research.4518

E. M. Schurek, J. Tax, L. A. Völker, T. Lamkemeyer, D. Ungrue, **J. E. Kratz**, Y. Tian, K. Kunzelmann, M. Chalfie, B. Schermer, T. Benzing, M. Höhne, *A disease-causing mutation illuminates protein membrane topology of the kidney protein podocin*. Journal of Biological Chemistry **289**, 11262-71 (Apr 18, 2014). doi:10.1074/jbc.M113.521773

J. E. Kratz, *What is the circadian clock? The Where, The What & The How: 75 Artists Illustrate the Wondrous Mysteries of the Universe*. Ed. Julia Rothman. Chronicle Books, September 2012.

A. Bounoutas, **J. E. Kratz**, L. Emtage, C. Ma, K. Nguyen, M. Chalfie, *Microtubule depolymerization in C. elegans touch receptor neurons reduces gene expression through a p38 MAPK pathway*. Proceeding of the National Academy of Sciences **108**, 3982-3987 (Mar 8, 2011). doi:10.1073/pnas.1101360108

C. G. Eberhart, **J. Kratz**, Y. Wang, K. Summers, D. Stearns, K. Cohen, C. V. Dang, P. C. Burger, *Histopathological and molecular prognostic markers in medulloblastoma: c-myc, N-myc, TrkC, and anaplasia*. Journal of Neuropathology & Experimental Neurology **63**, 441-9 (May, 2004).

X. Fan, Y. Wang, **J. E. Kratz**, D. J. Brat, Y. Robitaille, A. Moghrabi, E. J. Perlman, C. V. Dang, P. C. Burger, C. G. Eberhart, *hTERT gene amplification and increased mRNA expression in central nervous system embryonal tumors*. American Journal of Pathology **162**, 1763-1769 (June, 2003). doi:10.1016/S0002-9440(10)64311-8

J. E. Kratz, D. Stearns, D. L. Huso, H. H. Slunt, D. L. Price, D. R. Borchelt, C. G. Eberhart, *Expression of stabilized beta-catenin in differentiated neurons of transgenic mice does not result in tumor formation*. BMC Cancer **2**, 33-42 (Dec 2, 2002). doi:10.1186/1471-2407-2-33

C. G. Eberhart, **J. E. Kratz**, A. Schuster, P. Goldthwaite, K. J. Cohen, E. J. Perlman, P. C. Burger, *Comparative genomic hybridization detects an increased number of chromosomal alterations in large cell/anaplastic medulloblastomas*. Brain Pathology **12**, 36-44 (Jan, 2002). doi:10.1111/j.1750-3639.2002.tb00420.x

PRESENTATIONS

J. E. Kratz, C. Strasser, *Researcher Expectations from Data Publication and Peer Review*. Presentation, Digital Library Federation Forum. Atlanta, Georgia (October 27, 2014)

J. E. Kratz, C. Strasser, *Researcher Perspectives on publication and peer review of data*. Poster, presented at the Research Data Alliance 4th Plenary Meeting. Amsterdam, Netherlands (September 22, 2014)

J. E. Kratz, G. Janee, J. Kunze, J. Starr, S. Abrams, C. Strasser, *Metadata publication for datasets through EZID*. Poster, presented at the 9th International Digital Curation Conference. San Francisco, California (February 24, 2014)

J. E. Kratz, M. Chalfie, *The PHB-domain protein STO-1 is required for sensitive chemotaxis to diacetyl*. Poster, presented at the 17th Biennial International C. elegans Conference. Los Angeles, California (June 24, 2009).

J. E. Kratz, S. Zhang, T. Benzing, M. Chalfie, *Characterizing the C. elegans PHB domain proteins*. Poster, presented at the 16th Biennial International *C. elegans* Conference. Los Angeles, California (June 27, 2007).

J. E. Kratz, M. Chalfie, *A worm identikit for neuron identification*. Poster, presented at the 15th Biennial International *C. elegans* Conference. Los Angeles, California (June 25, 2005).

C. G. Eberhart, **J. E. Kratz**, A. Schuster, E. Gabrielson, E. J. Perlman, P. C. Burger, *Numerous chromosomal alterations and unique gene-expression profiles in large-cell/anaplastic medulloblastomas*. Poster, presented at Mechanisms for Cell Growth and Differentiation. Houston, Texas (Oct 2, 2001).