Gregory Cary: *curriculum vitae*

The Jackson Laboratory
600 Main St
Bar Harbor, ME 04609

Email: greg.cary [at] jax.org

EDUCATION:

Ph.D. **University of Washington** *(December 2013)*
Molecular & Cellular Biology Program

A.B. **Colby College** *(May 2004)*
Major: Biology: Neuroscience; *Minor:* Chemistry

RESEARCH EXPERIENCE:

2020 - present **Bioinformatics Analyst,** The Jackson Laboratory (JAX)
Advisor: Gregory Carter, Ph.D.
Topic: Supporting development of new therapeutic targets for Alzheimer's disease (Open-AD)

2017 - 2020 **Research Scientist,** Carnegie Mellon University (CMU)
Advisor: Veronica Hinman, Ph.D.
Topic: Echinoderm cis-regulatory sequence evolution and larval regeneration transcriptomics

2014 - 2016 **Postdoctoral Associate,** Carnegie Mellon University (CMU)
Advisor: Veronica Hinman, Ph.D.
Topic: Echinoderm cis-regulatory sequence evolution and larval regeneration transcriptomics

2009 - 2013 **Doctoral Student,** Institute for Systems Biology (ISB)
Advisor: Aimee Dudley, Ph.D.
Topic: Proteomic and transcriptomic assessment of post-transcriptional regulation in yeast

2006 - 2009 **Doctoral Student,** University of Washington (UW)
Advisor: Albert La Spada, M.D., Ph.D.
Topic: Polyglutamine neurodegeneration via transcriptional dysregulation

2004 - 2006 **Laboratory Technician,** Massachusetts General Hospital
Advisor: Robert Brown Jr., M.D., D.Phil.
Topic: Pre-clinical therapeutic trials in an ALS mouse model

2001 - 2004 **Undergraduate Research,** Colby College
Advisor: Andrea Tilden, Ph.D.
Topic: Effects of melatonin on the crustacean nervous system

TEACHING EXPERIENCE:

2018, Fall **Special Faculty**, CMU - Genetics (03-220) *(50% of course)*
2016-17, Fall **Lecturer**, CMU - Evolution of Regulatory Genomics (03-326): Genomics analyses *(2 lectures)*
2016, Spring **Adjunct Professor**, Chatham University - Biochemistry II (Bio439/539/Chem339)
2015, Fall **Lecturer**, CMU - Evolution (03-125): Population Genetics *(7 lectures)*
2014, Fall **Lecturer**, CMU - Evolution (03-125): EvoDevo *(2 lectures)*
2008, Winter **Teaching Assistant**, UW - Advanced Cell Biology Lab (BIOL 402)
2007, Fall **Teaching Assistant**, UW - Introductory Biology Lab (BIOL 200)
2004, Spring **Teaching Assistant**, Colby - Neurobiology Laboratory (BI274)
2001-2004 **Chemistry Tutor**, Colby - General & Organic Chemistry

2009, 2014-18 **Undergraduate Research Mentor**, CMU and ISB - 15 students total

PUBLICATIONS:

([#] *mentored undergraduate co-author;* [†] *mentored masters student co-author)*

Analysis of sea star larval regeneration reveals conserved processes of whole-body regeneration across the metazoa
BMC Biol. 2019. 17(1):16. DOI:10.1186/s12915-019-0633-9
Cary GA, Wolff A, Zueva O, Pattinato J[#], Hinman VF

Genomic Resources for the Study of Echinoderm Development and Evolution
Methods Cell Biol. 2019. 151:65-88 DOI:10.1016/bs.mcb.2018.11.019
Cary GA, Cameron RA, Hinman VF

EchinoBase: Tools for Echinoderm Genome Analyses
Methods Mol Biol. 2018. 1757:349-369. DOI:10.1007/978-1-4939-7737-6_12
Cary GA, Cameron RA, Hinman VF

Echinoderm development and evolution in the post-genomic era
Dev Biol. 2017. 427(2):203-211. DOI:10.1016/j.ydbio.2017.02.003
Cary GA, Hinman VF

Genome-wide use of high and low affinity Tbrain transcription factor binding sites during echinoderm development
PNAS. 2017. 114(23):5854-5861. DOI:10.1073/pnas.1610611114
Cary GA, Cheatle-Jarvela AM, Francolini RD[†], Hinman VF

The evolution of gene regulation.
Elife. 2017. 6. pii: e27291. DOI:10.7554/eLife.27291
Hinman V, Cary G

Proteomic analysis of Dhh1 complexes reveals a role for Hsp40 chaperone Ydj1 in yeast P-body assembly
G3 (Bethesda). 2015. 5(11):2497-511. DOI:10.1534/g3.115.021444
Cary GA, Vinh DBN, May P, Kuestner R, Dudley AM

Unidirectional P-body transport during the yeast cell cycle.
PLoS One. 2014. 9(6):e99428. DOI:10.1371/journal.pone.0099428
Garmendia-Torres C, Skupin A, Michael SA, Ruusuvuori P, Kuwada NJ,
Falconnet D, Cary GA, Hansen C, Wiggins PA, Dudley AM.

Identification and characterization of a drug sensitive strain enables puromycin-based translational assays in *S. cerevisiae*
Yeast. 2014. 31(5):167-78. DOI:10.1002/yea.3007
Cary GA, Yoon SH, Torres CG, Wang K[#], Hays M, Ludlow C, Goodlett DR, Dudley AM.

Melatonin: neuritogenesis and neuroprotective effects in crustacean x-organ cells.
Comp Biochem Physiol A Mol Integr Physiol. 2012. 161(4):355-60. DOI:10.1016/j.cbpa.2011.12.005
Cary GA, Cuttler AS, Duda KA, Kusema ET, Myers JA, Tilden AR

Androgen receptor function in motor neuron survival and degeneration. (Review)
Phys Med Rehabil Clin N Am. 2008. 19(3):479-94. DOI:10.1016/j.pmr.2008.03.002
Cary GA, La Spada AR

DATASETS:

Genome assembly of *Strongylocentrotus purpuratus* (GCA_000002235.4)
In: Genbank [Internet]. Bethesda, MD: NCBI Assembly; 2019 September.
NCBI:Assembly: GCA_000002235.4.

Regeneration time course of a larval sea star, *Patiria miniata*
In: Gene Expression Omnibus [Internet]. Bethesda, MD: NCBI GEO; 2018 December.
NCBI:GEO: GSE97230.

Genome-wide use of high and low affinity Tbrain transcription factor binding sites during echinoderm development
In: Gene Expression Omnibus [Internet]. Bethesda, MD: NCBI GEO; 2016 December.
NCBI:GEO: GSE89865. ***[super-series]***
NCBI:GEO: GSE89862. ***[ChIP-seq]***
NCBI:GEO: GSE89863. ***[RNA-seq]***

Proteomic and transcriptomic analyses of Dhh1 complexes reveals mitochondrial RNP complex association with yeast P-bodies.
In: Gene Expression Omnibus [Internet]. Bethesda, MD: NCBI GEO; 2015 December.
NCBI:GEO: GSE65989.

CONFERENCE & MEETING PRESENTATIONS:

Talk: Enhancing EchinoBase to Support Echinoderm Genomics and Regulatory Analyses
2018 Developmental Biology of the Sea Urchin meeting XXV - Woods Hole, MA

Talk: Using Echinoderms for Youth Outreach and Undergraduate Genomic Education
2018 Developmental Biology of the Sea Urchin meeting XXV - Woods Hole, MA

Poster: Regulatory Evolution of Cell Type Specification in Echinoderms
2017 Society for Molecular Biology and Evolution - Austin, TX

Talk: Evolution of transcription factor binding site preference and contribution to GRN rewiring
2017 Developmental Biology of the Sea Urchin meeting XXIV - Woods Hole, MA

Talk: Conserved features of metazoan whole-body regeneration
2016 Elizabeth Jones Annual Retreat - Hidden Valley, PA

Poster: Conserved transcriptional changes during metazoan whole-body regeneration
2016 Society for Developmental Biology meeting - Boston, MA

Talk: RNA-seq profiling of larval echinoderms highlights conserved features of metazoan regeneration
2015 Developmental Biology of the Sea Urchin meeting XXIII - Woods Hole, MA

Poster: RNA-seq profiling of larval echinoderms highlights conserved features of metazoan regeneration
2015 Comparative Biology of Tissue Repair, Regeneration, & Aging Symposium - Bar Harbor, ME

Poster: Evolution of Gene Regulatory Networks for Neurogenesis in Echinoderms
2014 Systems Developmental Biology Symposium - Pittsburgh, PA

Poster: Systems-level analyses of yeast RNA granules as a model for function in higher eukaryotes
2013 Systems Biology Symposium - Seattle, WA

Poster: Systems biology approaches for dynamic post-transcriptional regulatory processes
2011 Eukaryotic mRNA Processing Meeting - Cold Spring Harbor, NY

Poster: TAPAS: a new technique for translation state analysis
2010 Centers for Systems Biology Meeting - Seattle, WA

SERVICE ACTIVITIES:

Scientific Advisory Board: Echinobase.org web information system *2020-present*
Software, Database, and Systems Manager: Echinobase.org web information system *2016-2019*
Judge, Undergraduate Research Symposium, CMU *2014-2019*
Public Outreach, Hinman Lab/CMU Gelfand Center, Ocean Life (Grades K-2) *2018, Spring*
Public Outreach, Hinman Lab/CMU Gelfand Center, Diversity in the Ocean (Grades 7-9) *2018, Winter*
Public Outreach, Tour Your Future careers in STEM, CanTEEN Career Exploration *2015, '16 Fall*
Graduate Student Committee, Institute for Systems Biology *2010-2013*
Panelist, STEM Education Panel, Institute for Systems Biology Retreat *2011, Fall*
Public Outreach, Life Science Research Weekend, NWABR *2010, Fall*
Peer Review: BMC Genomics, Communications Biology, Nature Communications, Mechanisms of Development, Development Genes and Evolution, Archives of Microbiology

WORKSHOPS ATTENDED:

NSF Grants Conference, National Science Foundation; Pittsburgh PA *2016, Fall*
XSEDE HPC Workshop: Introduction to Bridges, Pittsburgh Supercomputing Center *2016, Spring*
Proteomics Informatics Workshop, Institute for Systems Biology *2009, Spring*
TA Conference on Teaching and Learning, UW Center Instructional Development and Research *2007, Fall*

AWARDS AND HONORS:

Graduated *summa cum laude* and with Honors in Biology, Colby College *2004*
BRIN-ME Undergraduate Research Fellowship *2003*
Colby College Presidential Scholarship *2000-2004*

SOCIETY AFFILIATIONS:

Society for Molecular Biology and Evolution
Society for Developmental Biology
American Association for the Advancement of Science