

Eric Domyan, Ph.D.

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APPOINTMENTS

UTAH VALLEY UNIVERSITY

Assistant Professor, August 2015 to present

PROFESSIONAL PREPARATION

UNIVERSITY OF UTAH

Postdoctoral Fellow, October 2011 to July 2015

- Research involved elucidating genetic and developmental mechanisms of epidermal appendage evolution in domestic rock pigeons.
- Presented poster at 2013 International Society for Developmental Biology meeting entitled: “Endless pigeons most colorful: genetics of feather color diversity among rock pigeons.”
- Presented research at 2015 Society for Developmental Biology meeting entitled: “Genetic and developmental mechanisms of evolution of tarsal feathering in the domestic rock pigeon.”

UNIVERSITY OF WISCONSIN-MADISON

Doctor of Philosophy, December 2011

- Thesis involved studying how the respiratory and digestive lineages of the mouse endoderm are patterned and undergo morphogenesis to form distinct tracts within the embryo.
- Presented poster at 2008 Society for Developmental Biology meeting entitled: “Fibroblast Growth Factor 9 signaling inhibits airway smooth muscle differentiation in mouse lung”
- Presented posters at 2010 Society for Developmental Biology and 2011 British Society for Developmental Biology meetings entitled “Signaling through BMP receptors promotes respiratory identity via repression of *Sox2*.”

THE OHIO STATE UNIVERSITY

Master of Education, June 2001

Bachelor of Science with Honors, Summa cum Laude, Biology, March 2000

TEACHING

ASSISTANT PROFESSOR, Utah Valley University, 2015 - current

- Biology 1010: General Biology (Non-majors biology course)
- Biology 1610: Biology I

- Biology 3405: Cell Biology Lab
- Biology 3500: Genetics
- Biology 489R: Independent Research
- Biology 490R: Special Topics: Computer Programming for Biologists
- Biology 494R: Senior Seminar
- Biology 499R: Senior Thesis
- Biotechnology 2010: DNA Manipulation and Analysis
- Biotechnology 490R: Special Topics: Advanced Genetic Analyses

GUEST LECTURER, University of Utah, 2011 - 2014

- Presented lectures and led journal club discussions on “Genetics of Domestication” for Evo-Devo course

TEACHING ASSISTANT, Cold Spring Harbor Laboratory, NY, June 2011

- Molecular Embryology of the Mouse course

GRADUATE STUDENT, University of Wisconsin-Madison, 2006 - 2011

- Teaching Assistant, General Genetics
- Guest lecturer, Advanced Genetics – Developed and implemented unit on “Genetics of Exercise”
- Served as co-chair of Science Club at a local elementary school

BIOLOGY TEACHER, Loudonville High School, Loudonville, Ohio, 2003 - 2006

- Taught students molecular biology concepts and laboratory techniques, including *Drosophila* crosses, restriction mapping, and construction of recombinant plasmids in self-designed genetics course.
- Wrote and received grants to finance forest ecology surveying equipment, biotechnology equipment, and science career field trips.
- Served on steering committee to establish an International Baccalaureate Academy serving area school districts.
- Named a Martha Holden Jennings Fellow for excellence in teaching.

SCIENCE TEACHER, Lucas High School, Lucas, Ohio, 2001 - 2003

- Prepared and implemented lessons for Anatomy and Physiology, Biology I, Basic Biology, Integrated Science, and General Science
- Wrote and received grant to establish AP Biology for 2003-2004 school year

SCHOLARSHIP

MENTORED UNDERGRADUATE RESEARCH STUDENTS

Mckenzie Bell	Anthony Gostick	Lauren Lee*#
Elizabeth Bridges*	Garett Grant	Bryan Louie
Trevor	Jeremy Hardy*#	Thomas Mahoney*
Chamberlain*	Eric Harrison	Braydon Morris*
Jordan Daniels#	Mitchell Johnson	Emily Naylor
Zach Dean	Kendrick Kiggins*	Stefanie Parkinson
Cody Frazer#	Jacob Kirkpatrick*#	Abbi Passey
Michael Foster	Joshua Kirkpatrick#	Tyrel Porter
Daniela Godoy	Chris Koller	Bree Rawlings

Stephanie Santana
Erika Smith
Jeff Terry*

Nathan Tirrell*#
Bryce Trotter
Kalin Vorwaller

Tanner Wright*#

* Presented poster at UCUR or UASAL Conference

Co-authored manuscript for peer-reviewed journal

PUBLICATIONS

- Domyan ET.**, Hardy J*, Wright T*, Frazer C*, Daniels J*, Kirkpatrick J*, Kirkpatrick J*, Wakamatsu K, Hill J. SOX10 regulates multiple genes to direct eumelanin vs. pheomelanin synthesis in domestic rock pigeon. *Pigment Cell & Melanoma Res.* 2019 Sep; 32(5):634-42.
* *UVU Students*
- Lee L*, Tirrell N*, Burrell C, Chambers S, Vogel S, **Domyan ET.** Genetic tests reveal extra-pair paternity among Gentoo penguins (*Pygoscelis papua ellsworthii*) at Loveland Living Planet Aquarium: Implications for species survival plan. *Zoo Biol.* 2018 Jul 11; 37(4):236-44.
* *UVU Students*
- Domyan ET**, Shapiro MD. Pigeonetics takes flight: Evolution, development, and genetics of intraspecific variation. *Dev Biol.* 2017 Jul 15; 427(2):241-250.
- Domyan ET**, Kronenberg Z, Infante CR, Vickrey AI, Stringham SA, Bruders R, Guernsey MW, Park S, Payne J, Beckstead RB, Kardon G, Menke DB, Yandell M, Shapiro MD. Molecular shifts in limb identity underlie development of feathered feet in two domestic avian species. *eLife* 2016;5: e12115.
- Hines EA, Verheyden JM, Lashua AJ, Larson SC, Branchfield K, **Domyan ET**, Gao J, Harvey JF, Herriges JC, Hu L, Mcculley DJ, Throckmorton K, Yokoyama S, Ikeda A, Xu G, Sun X. Syndactyly in a novel *Fras1*(rdf) mutant results from interruption of signals for interdigital apoptosis. *Dev Dyn.* 2016 Apr; 245(4):497-507
- Kronenberg ZN, Osborne EJ, Cone KR, Kennedy BJ, **Domyan ET**, Shapiro MD, Elde NC, Yandell M. Wham: Identifying structural variants of biological consequence. *PloS Comput Biol.* 2015 Dec 1;11(12): e1004572.
- Vickrey AI, **Domyan ET**, Horvath MP, Shapiro MD. Convergent evolution of head crests in two domesticated Columbids is associated with different missense mutations in *EphB2*. *Mol Biol Evol.* 2105 Oct; 32(10):2657-64.
- Domyan ET**, Guernsey MW, Kronenberg Z, Krishnan S, Boissy RE, Vickrey AI, Rogers C, Cassidy P, Leachman SA, Fondon JW 3rd, Yandell M, Shapiro MD. Epistatic and combinatorial effects of pigmentary gene mutations in the domestic pigeon. *Curr Biol.* 2014 Feb; 2(4): 459-64.
- Shapiro MD, **Domyan ET.** Domestic pigeons. *Curr Biol.* 2013 Apr; 23(8): R302-3.
- Shapiro MD, Kronenberg Z, Li C, **Domyan ET**, Pan H, Campbell M, Tan H, Huff CD, Hu H, Vickrey AI, Nielsen SA, Stringham, SA, Willerslev E, Gilbert MTP, Yandell M, Zhang G, Wang J. Genomic diversity and evolution of the head crest in the rock pigeon. *Science* 2013 Mar; 339(6123): 1063-7.

- Domyan ET**, Branchfield K, Gibson DA, Naiche LA, Lewandoski M, Tessier-Lavigne M, Ma L, Sun X. Roundabout receptors are crucial for foregut separation from the body wall. *Dev Cell*. 2013 Jan; 24(1): 52-63.
- Domyan ET**, Ferreti E, Mishina Y, Nicolis S, Sun X. Signaling through BMP receptors promotes respiratory identity in the foregut via repression of *Sox2*. *Development*. 2011 Mar; 138(5): 971-81.
- Domyan ET**, Sun X. Patterning and plasticity in development of the respiratory system. *Dev Dyn*. 2011 Mar; 240(3): 477-85.
- Harris-Johnson KS, **Domyan ET**, Vezina CM, Sun X. beta-Catenin promotes respiratory progenitor identity in mouse foregut. *Proc Natl Acad Sci U S A*. 2009 Sep 22; 106(38):16287-92.
- Yi L*, **Domyan ET***, Lewandoski M, Sun X. Fibroblast growth factor 9 signaling inhibits airway smooth muscle differentiation in mouse lung. *Dev Dyn*. 2009 Jan; 238(1):123-37. * co-first authors

ORAL PRESENTATIONS

- Domyan ET**. Sox10 regulates multiple genes to direct eumelanin vs. pheomelanin production in domestic rock pigeon. Pan-American Society for Pigment Cell Research Conference, Gleneden Beach, OR. 2018.
- Domyan ET**. Not just rats with wings: Using domestic pigeons to provide insights into phenotypic evolution. Brigham Young University Department of Plant and Wildlife Sciences, Provo, UT. 2015.
- Domyan ET**. A molecular shift in limb identity underlies evolution of feathered feet. Society for Developmental Biology Annual Meeting, Snowbird, UT. 2015.
- Domyan ET**. Transformers: Evolution of feathers from scales in the domestic pigeon. University of Utah Evolution Retreat, Salt Lake City, UT. 2014.
- Domyan ET**. Change your fate! The transformation of tarsal scales to feathers in domestic pigeon. Brigham Young University Department of Physiology and Developmental Biology, Provo UT. 2014.
- Domyan ET**. How to paint a pigeon. Utah Museum of Natural History Presentation, Salt Lake City, UT. 2014.
- Domyan ET**. You can change your fate! Scale to feather transformation in the domestic rock pigeon. University of Utah Developmental Biology Training Grant Retreat, Salt Lake City, UT. 2013.
- Domyan ET**. Endless pigeons most colorful: Genetic and developmental basis of feather color diversity in domestic rock pigeons. Southwest Regional Society for Developmental Biology Annual Meeting, Salt Lake City, UT. 2013.
- Domyan ET, Vickrey A, Shapiro MD**. Investigations in to the genetic basis of color variation in the domestic rock pigeon. University of Utah Biology Retreat, Salt Lake City, UT. 2012.

ACADEMIC AND PROFESSIONAL HONORS

- 2019-2022 Primary Investigator, National Institutes of Health Academic Research Enhancement Award: “Seeing Red: Recessive red pigeons as an innovative model to elucidate Sox10 function and evolution in vertebrate pigmentation.

2019	UVU College of Science Dean's Excellence Award – Scholarship
2018	Eugene M. Farber Travel Award for Young Investigators: Attendance at Pan-American Society for Pigment Cell Research Conference
2018	UVU Faculty Senate Faculty Excellence Award
2017-2018	UVU College of Science and Health SAC Grant
2016-2017	UVU College of Science and Health SAC Grant
2016-2017	UVU Office of Engaged Learning GEL Grant
2013-2015	National Institutes of Health NRSA Postdoctoral Research Fellowship
2012-2013	National Institutes of Health Developmental Biology Training Program Trainee
2011	Schlimgen Award for Outstanding Genetics Graduate Student at UW-Madison
2010	Burroughs-Wellcome Foundation Travel Grant Recipient Society for Developmental Biology Best Student Poster
2008-2011	National Science Foundation Graduate Research Fellow
2006-2008	National Institutes of Health Genetics Program Trainee
2004-2005	Martha Holden Jennings Foundation Teaching Fellow
2000-2001	University Fellowship, Susan Gallagher Bailey Scholarship
1996-2000	Distinguished Scholarship for National Merit Scholars, National Merit Scholar, Ohio Academic Scholarship, Robert C. Byrd Scholarship, Mayers Biological Sciences Scholarship

PROFESSIONAL SOCIETIES

Pan-American Society for Pigment Cell Research (2019-present)

National Association of Biology Teachers (2015-2016)

Society for Developmental Biology (2008-2015)

SERVICE

TO THE DEPARTMENT

Chair, search committee for Assistant Zoology Lab Manager (2019)

Chair, search committee for Biology 1010 Faculty position (2017-2018)

Committee member, search committee for biology lecturer positions (2017)

Committee member, search committee for mycologist position (2017)

Chair, search committee for one year biology lecturer positions (2016)

Committee member, search committee for microbiologist position (2016)

Committee member, search committee for biotechnology position (2016)

Committee member, Department Curriculum Committee (2016-present)

- Meets 1-2x a month.
- Review proposed curricular changes to current and proposed courses
- Developed revised Senior Thesis Guidelines

TO THE COLLEGE

Presenter, Dean's Day (2015-present)

TO THE UNIVERSITY

Chair, Institutional Animal Care and Use Committee (2017-present)

Member, Scholarly and Creative Activities Committee (2017-present)

- Meets monthly
- Review internal grant applications to support student and faculty scholarly and creative activities

Member, SCULPT Advisory Board (2016-present)

- Meets 1-2 times per semester
- Promote integration of scholarly activities into the classroom
- Review internal grant proposals

Member, Academic Tutoring Advisory Board (2016-present)

- Meets 1 time per semester
- Publicize the Tutoring Center, participate in Finals Week study events

Presenter, UVYou Day (2015)

TO THE COMMUNITY

Presenter, Exploring Your Tomorrow (2015 & 2016)

Presenter, Provo High School Career Day (2016, 2017)

Ad-hoc Reviewer for Avian Biology Research, Molecular Ecology Resources, Molecular Biology Reports, and PLoS One.

Co-developer of STEM Science Summer Camp in Biomimicry (2017)

Collaborators:

Hill, Jonathon: Brigham Young University

Johnson, Jerry: Brigham Young University

Loveland Living Planet Aquarium

Shapiro, Michael D: University of Utah