

# Nancy F. Day, Ph.D.

# Curriculum Vitae

---

## CONTACT INFORMATION

Whitman College  
Psychology Department  
Maxey Hall  
345 Boyer Ave  
Walla Walla, WA 99362  
Office: (509) 522-4409

Email: [daynf@whitman.edu](mailto:daynf@whitman.edu)

## EDUCATION

**Ph.D., University of Minnesota** 2011  
Minneapolis, MN  
Graduate Program in Neuroscience

**B.A., Whitman College** 2005  
Walla Walla, WA  
Majors in Psychology (Honors) & Biology

## SPECIALIZED TRAINING

**Neural Systems and Behavior** 2009  
Marine Biological Laboratory, Woods Hole, MA  
Eight-week intensive lecture/laboratory course

## APPOINTMENTS

**Assistant Professor of Psychology** 2019 - present  
Whitman College, Walla Walla, WA

**Visiting Assistant Professor of Biology** 2018  
Claremont McKenna College, Keck Joint Science Department

**Postdoctoral Scholar/Staff Research Assistant** 2012 – 2019  
UCLA; Department of Integrative Biology & Physiology  
Advisor: Dr. Stephanie A. White  
Project: Neurogenomics of vocal learning in songbirds

## TEACHING

### INSTRUCTOR

Introduction to Psychology 2019  
Whitman College, Psychology Dept. Fall 2019

Brain and Language 2019  
Whitman College, Psychology Dept. Fall 2019

Introduction to Biology Laboratory 2018  
Claremont McKenna College, Keck Joint Sciences Department Fall 2018

Foundations of Neuroscience Laboratory 2018  
Claremont McKenna College, Keck Joint Sciences Department Spring 2018

Why Fido Can't Speak: The Biological Evolution of Language 2017  
UCLA; Physiological Science Spring 2017

### ASSISTANT

Why Fido Can't Speak: The Biological Evolution of Language 2013 – 2014  
UCLA  
Instructor: Stephanie White

Neural Systems and Behavior, Songbird Unit 2010 – 2012  
Marine Biological Laboratory, Woods Hole, MA  
Instructors: Melissa Coleman, Eric Fortune, and Teresa Nick

	Introduction to Neuroscience; University of Minnesota, Minneapolis, MN Instructors: Paul Mermelstein, Lorene Lanier	2007
	Marine Biology Whitman College, Walla Walla, WA Instructor: Paul Yancey	2005
GUEST LECTURER	Career Exploration in the Life Sciences UCLA Instructor: Rachel Kennison	2018
	Laboratory of Neuroendocrinology Summer Course UCLA Instructor: Art Arnold	2015
	Introduction to Neuroscience Claremont Colleges, Claremont, CA Instructor: Melissa Coleman	2013 – 2015
	Neuroscience Capstone Course Carleton College, Northfield, MN Instructors: Fernan Jaramillo, Julie Neiworth	2010 – 2011

## PUBLICATIONS

### UNDER REVIEW

Coleman M.J., Saxon D., Robbins, A., Lillie, N., and **Day, N.F.** An operant conditioning task to measure song preference in zebra finches. *Journal of Visualized Experiments*.

### PUBLISHED

**Day NF**, Hobbs TG<sup>^</sup>, Heston JB, White SA. Beyond the critical period: Striatal FoxP2 affects the active maintenance of learned vocalizations in adulthood. *Journal of Neuroscience*

**Day NF**, Robbins A<sup>^</sup>, Saxon D<sup>^</sup>, Harris L<sup>^</sup>, Nee E<sup>^</sup>, Schroff-Mehta N<sup>^</sup>, Korn C<sup>^</sup>, Coleman, MJ. D2 dopamine receptor activation induces female preference for male song in the monogamous zebra finch. *Journal of Experimental Biology*

Burkett ZD, **Day NF**, Hilliard AT, Kimball TH, Aamodt CM, Heston JB, Xiao X, White SA (2018). Learning-related striatopallidal transcriptional networks emerge following isoform-specific FoxP2 overexpression in the zebra finch. *eLife*. 7:e30649. doi: 10.7554/eLife.30649.

Heston JB, **Day NF**, Simon J<sup>^</sup>, Coleman MJ, White SA (2018). Reciprocal scaling of vocal variability by an avian cortico-basal ganglia circuit. *Physiological Reports*. 6(8):e13638. doi: 10.14814/phys2.13638.

Fraley ER, Burkett ZD, **Day NF**, Schwartz BA, Phelps PE, White SA (2016). Mice with Dab1 or Vldlr insufficiency exhibit abnormal neonatal vocalization patterns. *Sci Rep*. 6, 25807; doi: 10.1038/srep25807.

Burkett ZD, **Day NF**, Peñagarikano O, Geschwind DH, White SA (2015). VoICE: A semi-automated pipeline for standardizing vocal analysis across models. *Sci Rep*. 5, 10237; doi: 10.1038/srep10237.

- Day NF** and Fraley ER (2013). Insights from a nonvocal learner on social communication. *J Neurosci.* vol. 33 (31) pp. 12553-4.
- Day NF** and Nick TA (2013). Rhythmic cortical neurons increase their oscillations and sculpt basal ganglia signaling during motor learning. *Dev Neurobiol.* 73(10) pp. 754-68.
- Day NF**, Terleski KL, Nykamp DQ, Nick TA (2013). Directed functional connectivity matures with motor learning in a cortical pattern generator. *J Neurophysiol.* 109(4): 913-23.
- Day NF**, Kerrigan SJ, Aoki N, Nick TA (2011). Identification of single units in a forebrain network. *J Neurophysiol.* 106(12): 3205-3215.
- Day NF**, Kinnischtzke AK, Adam M, Nick TA (2009). Daily and developmental modulation of "premotor" activity in the birdsong system. *Dev Neurobiol.* 69(12): 796-810.
- Day NF**, Kinnischtzke AK, Adam M, Nick TA (2008). Top-down regulation of plasticity in the birdsong system: "Premotor" activity in the nucleus HVC predicts song variability better than it predicts song features. *J Neurophysiol.* 100(5): 2956-65.
- Withers GS, **Day NF**, Talbot E, Dobson HEM, Wallace CS (2008). Experience-dependent plasticity in the mushroom bodies of the solitary bee *Osmia lignaria* (Megachilidea). *Dev Neurobiol.* 68(1): 73-82.

IN PREPARATION

- Coleman MJ, **Day NF**, Rivera-Parra P, Fortune ES. Sex differences in sensorimotor coding for duet singing. (Target journal: *Science*)
- Chen Q, Mai Y<sup>^</sup>, Panaitof CM, Condro M, **Day NF**, White SA. Attenuation of contactin associated protein-like 2 (Cntnap2) expression impairs vocal mimicry. *Genes, Brain, and Behavior*
- Shoenhard H<sup>^</sup>, McQuade<sup>^</sup> A, **Day NF**, Burkett ZD, Farve L<sup>^</sup>, Shapiro ER<sup>^</sup>, Johnson L<sup>^</sup>, Arnold R<sup>^</sup>, Coleman MJ. Song stability after perturbations of auditory pathways in the zebra finch. (Target journal: *Journal of Neurophysiology*)

<sup>^</sup> denotes undergraduate researcher

**AWARDS**

UCLA Brain Research Institute/Semel Institute Postdoctoral Scholars Travel Award	2016
Company of Biologists Travelling Fellowship	2016
Fine Science Tools Travel Award (UCLA)	2015
International Society for Neuroethology Young Investigator Award	2014
Society for Neuroscience Postdoctoral Travel Award	2013

	UCLA Brain Research Institute Chapter Recipient for Society for Neuroscience Travel Award	2013
	Milne & Brandenburg Award for Exceptional Graduate Research in the Biomedical Sciences; conferred by the Mayo Medical Foundation	2011
	American Legion Auxiliary Brain Sciences Award for Outstanding Academic Achievement by a Graduate Student	2010
	University of Minnesota nominee, NIH Awardee, and Conference Attendee at the Interdisciplinary Meeting of Nobel Laureates, Lindau, Germany	2010
	Milne and Brandenburg Award for Student Achievement; conferred by Graduate Program of Neuroscience (Univ. MN)	2009
	Stark Award for Travel to Neural Systems & Behavior (Univ. MN)	2009
	Graduate and Professional and Student Assembly Travel Grant (Univ. MN)	2009
<i>RESEARCH FUNDING</i>	NIH Postdoctoral Training Grant (Institutional); UCLA Laboratory of Neuroendocrinology (T32HD07228)	2012-14
	Doctoral Dissertation Fellowship, University of Minnesota	2010
	NIH Predoctoral Training Grant (Institutional); Univ. MN Graduate Program in Neuroscience (T32GM008471)	2006
<b>EXTRAMURAL TALKS</b>	FoxP2 overexpression in adult zebra finches impacts song. Young Investigator Symposium. International Congress of Neuroethology, Sapporo, Japan	2014
<b>POSTER PRESENTATIONS</b>	Coleman MJ, <b>Day NF</b> , Rivera-Parra P, Fortune ES (2017) Sex differences in sensorimotor coding for the production of duets in plain-tailed wrens. Society for Neuroscience, Washington D.C.	
	Eisenman LE, Burns M, <b>Day NF</b> , White SA, Coleman MJ (2017) Dopamine enhances female zebra finch preference for male song. Society for Neuroscience & Faculty for Undergraduate Neuroscience Poster Session, Washington, D.C.	
	<b>Day NF</b> , Burkett ZD, Hilliard AT, Xiao X, and White SA (2016) FoxP2 overexpression coupled with auditory deprivation in adult zebra finches disrupts molecular microcircuitry in a song-dedicated basal ganglia nucleus. Society for Neuroscience, San Diego.	
	Freda S <sup>^</sup> , <b>Day NF</b> <sup>*</sup> , Jimenez D <sup>^</sup> , Hoffman LA, Sober SJ, White SA (2016) 'Phoning it in': Error correction of real-time pitch perturbations in adult zebra finches following manipulation of striatal <i>FoxP2</i> . Faculty for Undergraduate Neuroscience Poster Session at Society for Neuroscience Annual Meeting, San Diego. (* authors contributed equally; ^ undergraduate author)	

- Burkett ZD, **Day NF**, Hilliard AT, Heston JB, Xiao X, and White SA (2016) FoxP2 isoform-specific overexpression in juvenile finches alters transcriptional networks underlying learned vocalization. Society for Neuroscience, San Diego.
- Fortune ES, **Day NF**, Rivera P, and Coleman MJ (2016) Motor and sensory coding in duetting wrens. Society for Neuroscience, San Diego.
- Nee EL<sup>^</sup>, Harris N<sup>^</sup>, **Day NF**, Coleman MJ (2016) The effect of dopamine on partner preference in female finches (*Taeniopygia guttata*). Faculty for Undergraduate Research (Society for Neuroscience Meeting).
- Day NF**, Kim CY<sup>^</sup>, and White SA (2015) Beyond sensorimotor learning: Striatal FoxP2 affects maintenance of learned vocalizations in adult zebra finches. Society for Neuroscience, Chicago.
- Shoenhard HM<sup>^</sup>, **Day NF**, Burkett ZD, and Coleman MJ (2014) Contributions of higher-order auditory cortical areas to adult song maintenance in the zebra finch, *Taeniopygia guttata*. International Society for Neuroethology, Sapporo, Japan.
- Burkett ZD\*, **Day NF\***, and White SA (2014) Novel clustering methods reveal altered syntax and phonology in avian and rodent models for language disorders. Avian Model Systems, Cold Spring Harbor Laboratory. (\* authors contributed equally)
- Day NF** and White SA (2013) Determining the impact of a language-related gene, *FoxP2*, on song maintenance in adult male zebra finches. Society for Neuroscience, San Diego.
- Burkett ZD, **Day NF** and White SA (2013) Semi-automated methodology for vocal phonology and sequence analysis. Society for Neuroscience, San Diego.
- Fraley ER, Burkett ZD, **Day NF**, Phelps PE and White SA (2013) The Reelin-signaling pathway influences calling behavior: A cross-species approach. Society for Neuroscience, San Diego.
- Day NF** and White SA (2013) Determining the impact of a language-related gene, *FoxP2*, on song maintenance in adult male zebra finches. Neuroethology: Genes, Behavior and Evolution Gordon Conference West Dover, VT.
- Day NF** and Nick TA (2011) Functional interactions among neurons in the song nucleus HVC. Society for Neuroscience Annual Meeting. Washington, DC.
- Best BJ<sup>^</sup>, **Day NF**, Carels VM, Nick TA (2011) Vocal effects of perineuronal net destruction in the adult zebra finch. Society for Neuroscience Annual Meeting. Washington, DC.
- Day NF** and Nick TA (2009) Neural circuit effects of manipulating the vocal sensitive period in the zebra finch. *Society for Neuroscience Abstracts*, **35**:378.14.
- Day NF**, Talbot E, Dobson HEM, Wallace CS, Withers GS (2005) Separating experience-expectant organization from experience-expectant plasticity in the

mushroom bodies of the solitary bee *Osmia lignaria*. Annual Society for Neuroscience Meeting Undergraduate Poster Session.

**Day NF**, Talbot E, Dobson HEM, Wallace CS, Withers GS (2005) Evidence that foraging experience alters the mushroom bodies of the solitary bee *Osmia lignaria*. Pacific Branch of the Entomological Society of America Annual Meeting.

**INTRAMURAL TALKS**

Beyond sensorimotor learning: FoxP2 overexpression alters learned vocalizations in adult songbirds. 'Synapse To Circuits' Seminar. UCLA. 2017

Too much of a good thing: Role of FoxP2 in female choice. Laboratory of Neuroendocrinology Symposium – Steroids, Genes and the Brain: A New Dogma. UCLA. 2015

Circuit mechanisms for vocal learning in the zebra finch. Graduate Program in Neuroscience Annual Retreat. University of Minnesota. 2011

**STUDENTS MENTORED**

UCLA  
HIGH SCHOOL

Erin Krantz 2016 - 2018  
Dustin Morris Summer 2017  
*Currently 2<sup>st</sup> year Wesleyan University undergraduate*  
Petra Grutzik 2013 – 2014  
*Intel Science and Engineering Fair 2<sup>nd</sup> place*

UNDERGRADUATE

Sara Freda; Molecular, Cellular, Developmental Biology 2016 – 2018  
*Howard Hughes Undergraduate Research Scholar*  
*Dean's Prize Recipient for Research*  
*Currently first year Neuroscience graduate student*  
Taylor Hobbs; Neuroscience 2016 – 2018  
Yunna Gu; Physiological Science 2017 – 2019  
Aneesa Yousefi, English; Minor in Biomedical Research 2015 – 2017  
Daniela Jimenez, Washington University at St. Louis undergraduate; Biology Summer 2016  
Chae Y. Kim; Psychobiology 2013 – 2015  
*Dean's Prize Recipient for Research*  
*Currently 3<sup>rd</sup> year medical student*  
Rozi Aulakh, Psychobiology 2013 – 2015  
Mandisa Taquee, Savannah State University; Biology Summer 2014

UNIV MINNESOTA

Benjamin Best; Neuroscience 2009 – 2012  
*Neurosurgery Residency*  
James Pettiti, Ecology, Evolution, and Behavior 2009 – 2011  
Angela Rosedahl; Biology 2009 – 2010  
Iqra Mian; Biology 2009 – 2010  
Samuel Henly; Economics 2007 – 2009

**COLLABORATORS**

Melissa Coleman (Claremont Colleges) 2014 – present  
*Dopaminergic regulation of partner preference in zebra finches*

Eric Fortune (New Jersey Institute of Technology) & Melissa Coleman (Claremont Colleges) 2015 – present  
*Behavior and neural physiology of duetting wrens in Ecuador*

	Samuel Sober (Emory University)	2016 – 2019
	<i>Adaptive plasticity of adult songbirds using manipulated auditory feedback delivered by miniature headphones</i>	
	Daniel Geschwind (UCLA)	2014 – 2015
	<i>Assessment of ultrasonic vocalizations in wild-type and <i>Cntnap2</i> null mouse pups</i>	
<b>PROFESSIONAL DEVELOPMENT</b>	Mobile Summer Institutes on Scientific Teaching	2018
	Entering Mentoring Training Program (Center for the Integration of Research, Teaching and Learning; CIRTl)	2017
	UCLA Faculty Workshop on the Best Practices in Teaching (Center for Education Innovation and Learning in the Sciences)	2017
	Introduction to Evidence-Based Undergraduate STEM Teaching (CIRTl Massive Open Online Course) & affiliated in-person learning community	2017
	CIRTl @ UCLA Local Learning Community	2017-18
	-Discuss/evaluate evidenced-based teaching strategies	
	- Proposed topic & collected data for Teaching as Research project (data visualization and analysis in Microsoft Excel for first-year college students)	
<i>PEDAGOGICAL CERTIFICATIONS</i>	STEM Scientific Teaching Associate	2018
	Undergraduate STEM Mentor – CIRTl	2017
	CIRTl Scholar	2019
<b>PUBLISHED DATASETS</b>	<b>Day NF</b> and Nick TA. Development of a birdsong motor circuit with antidromically identified neurons: Spontaneous spiking data from anesthetized juvenile and adult zebra finch HVC. 2014. <a href="http://dx.doi.org/10.6080/K0SF2T3M">CRCNS.org</a> . <a href="http://dx.doi.org/10.6080/K0SF2T3M">http://dx.doi.org/10.6080/K0SF2T3M</a>	
<b>PRESS</b>	Al-Jazeera America, <i>TechKnow</i> , feature on high school student Petra Grutzik and her award-winning research at Intel Science and Engineering Fair	
<b>SOCIETY MEMBERSHIPS</b>	Faculty for Undergraduate Neuroscience Society for Neuroscience The International Society for Neuroethology Sigma Xi, The Scientific Research Society	
<b>MANUSCRIPT REFEREE</b>	Journal of Neurophysiology PLoS One Journal of Neuroscience	
<b>SCIENCE OUTREACH</b>	Whitman College, Alumna Admissions Representative for Science Majors (2008 – 2019) UCLA Project Synapse, Volunteer (2016 – 2019) Neuroscience Poster Session, UCLA, Judge (2013 – 2016) Los Angeles County Science Fair, Judge (2015) International Intel Science and Engineering Fair, Judge (2014) 'RedTalk' – Rendondo Beach High School TED-style talk (2014) Brain Awareness Week, University of Minnesota	

*Last updated: August 2019*