

**BIOGRAPHICAL SKETCH**

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NAME: **Emily Fawcett, PhD**

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: **Postdoctoral Fellow**

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Completion Date MM/YYYY	FIELD OF STUDY
<b>St. Mary's College of Mary's Coty, MD</b>	<b>BA</b>	<b>05/2010</b>	<b>Biology</b>
<b>University of Washington</b>	<b>PhD</b>	<b>08/2015</b>	<b>Molecular Biology</b>

**A. Personal Statement****B. Positions and Honors****Undergraduate honors:**

Summer 2009:  
Amgen Scholar, University of Washington

2009-2010:  
Phi Beta Kappa

Spring 2010:  
Department of Biology Service and Academic Distinction Award, St. Mary's College of MD

Spring 2010:  
Best Senior Thesis- Biology, St. Mary's College of MD

## **Graduate student honors:**

2012-2015:

NIH Interdisciplinary Training in Developmental Biology Fellow, University of Washington

March 2013:

Best Talk-Graduate Student Category: Society for Developmental Biology Northwest Regional Meeting, Friday Harbor, WA.

S Summer 2014:

Amgen Scholars Alumni Travel Award, The Amgen Foundation

- Awarded to program alumni who are committed to scientific careers, promoting professional networking

Fall 2014:

DeLill Nasser Award for Professional Development in Genetics, Genetic Society of America

- Awarded to graduate students who demonstrate excellence in genetics research, with an emphasis on productivity

March 2015:

Best Poster- Graduate Student Category: Society for Developmental Biology Northwest Regional Meeting, Friday Harbor, WA.

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## **C. Contribution to Science (Publications)**

**Fawcett, E.M.**, Hoyt, J.M., Johnson, J.K. and Miller, D.L. 2015. "Hypoxia disrupts proteostasis in *Caenorhabditis elegans*". *Aging Cell*, Feb 2015; 14(1) 92-101. PMC4326909.

**Fawcett, E.M.**, Horsman, J.W. and Miller, D.L. 2012. "Creating defined atmospheric conditions for studying effects of hypoxia on *C. elegans*". *J. Vis. Exp.*, Jul 2012; (65) PMC3570071.

## **D. Research Support (Grants/fellowships)**

Fluctuations in environmental conditions can be deadly. The ability to rapidly and appropriately respond to stressful conditions can mean the difference between life and death. In my dissertation research in the Miller lab, I discovered that the initial response to low levels of the environmental toxin hydrogen sulfide (H<sub>2</sub>S) establishes a cellular bookmark that allows nematodes to predict the onset and pre-emptively respond to future stressful conditions. This robust bookmark allows for survival of otherwise lethal concentrations of H<sub>2</sub>S much later in life. I went on to show that the maintenance of this bookmark requires epigenetic machinery including histone modifiers and chromatin remodeling complexes. As a postdoctoral fellow in the Miller lab, I am using biochemical approaches to characterize the precise epigenetic changes associated with the formation and persistence of an H<sub>2</sub>S bookmark. By leveraging the genetic tractability of *C. elegans* and the simplicity of the H<sub>2</sub>S bookmarking model, I aim to define mechanisms that allow animals to code changes of environmental conditions into chromatin modifications in a tightly controlled manner. I propose that these coded changes will help to explain, at least partially, differences in sensitivity between individuals to drugs, stress, and even aging.