

# Dr. Candice M. Klingerman, M.S., Ph.D.

## *Curriculum Vitae*

Bloomsburg University  
400 East Second Street  
Bloomsburg, PA 17815  
Email: [cklinger@bloomu.edu](mailto:cklinger@bloomu.edu)  
Phone: 570-389-4219

### Education

---

Lehigh University <i>Ph.D., Integrative Biology, Neuroscience</i> ➤ Adviser: Dr. Jill E. Schneider	Bethlehem, PA January 2012
University of Delaware <i>M.S., Animal Science, Animal Nutrition</i> ➤ Adviser: Dr. Limin Kung	Newark, DE January 2008
Delaware Valley College <i>B.S., Small Animal Science</i>	Doylestown, PA May 2004

### Teaching Experience

---

Bloomsburg University <i>Assistant Professor</i> ➤ I am currently teaching Anatomy and Physiology and Concepts in Biology. Future plans include teaching Animal Behavior as well.	Bloomsburg, PA 2013 to present
Lehigh University <i>Graduate Student Laboratory Instructor</i> ➤ I led a laboratory section in Cell and Molecular Biology and taught students enzyme kinetics, importance of proper pH, and genomic and plasmid DNA isolation.	Bethlehem, PA 2011
Lehigh University <i>Graduate Student Laboratory Instructor</i> ➤ I led a laboratory section in Experiment Neuroscience and taught students neuroanatomy, experimental design, tract tracing, and immunocytochemistry techniques.	Bethlehem, PA 2009
Lehigh University <i>Undergraduate Mentoring</i> ➤ Kaila Krishnamoorthy      Competition-induced food hoarding (2010 to 2011) ➤ Amir Abdulhay            Cold and exercised-induced suppression of sexual behavior and enhancement of food hoarding (2008 to 2010) ➤ Sanjana Bhatia            Male preference of females with varying energy availability (2008 to 2010) ➤ Anand Patel                Effect of dopamine receptor agonists/antagonists on sexual and ingestive behavior (2007 to 2009) ➤ Noah Benton                Effect of melanocortin receptor agonists/antagonists on sexual	Bethlehem, PA 2007 to 2011

and ingestive behavior (2007 to 2008)

Delaware Valley College  
*Teaching Assistant*

Doylestown, PA  
2003

- I assisted in a laboratory section of Introduction to Laboratory Animal Science and taught students animal handling, anatomy, and various surgical techniques.

## **Employment & Work Experience**

---

Penn State College of Medicine  
*Post Doctoral Research Associate*

Hershey, PA  
2012 to present

- I studied the toxicity of hydrogen sulfide *in vivo*. My NIH-funded project tested potential antidotes against H<sub>2</sub>S and involved microsurgery, cerebrospinal fluid collection, and measurement of H<sub>2</sub>S in the blood and expired gas of spontaneously breathing, anesthetized rats.

Penn State College of Medicine  
*Post Doctoral Research Associate*

Hershey, PA  
2011 to 2012

- I elucidated the mechanisms by which atypical antipsychotic medications cause overeating, obesity, and development of type II diabetes using cell culture and animal model systems.

Lehigh University  
*Research Assistant*

Bethlehem, PA  
2007 to 2011

- I studied the effects of food restriction on metabolic processes and brain peptides related to energy balance and reproduction in Syrian hamsters and sheep. Sheep experiments were performed by temporarily relocating to work in the laboratory of Dr. Iain Clarke at Monash University in Clayton, Australia.

University of Delaware  
*Research Assistant*

Newark, DE  
2005 to 2007

- I performed various *in vivo* and *in vitro* experiments studying the effects of exogenous, amylolytic enzymes on digestion and performance of dairy cows.

Children's Hospital of Philadelphia  
*Research Technician, Level II*

Philadelphia, PA  
2004 to 2005

- I assisted in various arterial stenting procedures in the Department of Cardiology in both swine and rodents. Skills included monitoring of anesthesia and heart rate, pre- and post-operative care, euthanasia, and organ recovery. I monitored all IACUC protocols in the department and filed for both their annual and 3-year renewals. I also performed cell culture and immunostaining techniques on various cell and tissue samples.

Delaware Valley College  
*Student Animal Laboratory Manager*

Doylestown, PA  
2002 to 2004

- Managerial duties, work scheduling, technician training/monitoring, administration of medication, procedural training, breeding, and quality assurance

Delaware Valley College  
*Animal Laboratory Technician*

Doylestown, PA  
2001

- Animal handling/restraint, animal care

## Grants & Awards

---

- |   |      |
|---|------|
| 1. Gordon C. Thorne Fellowship, Lehigh University                       | 2011 |
| 2. Graduate student spotlight, Lehigh University                        | 2011 |
| 3. Lehigh University travel award                                       | 2011 |
| 4. Grants-in-aid of research, Sigma Xi                                  | 2010 |
| 5. Cover photograph for <i>Hormones and Behavior</i> , Vol. 58, Issue 4 | 2010 |
| 6. Gordon C. Thorne Fellowship, Lehigh University                       | 2010 |
| 7. Lehigh University travel award                                       | 2010 |

## Peer-reviewed Publications

---

1. Haouzi, P. & **C. M. Klingerman**. (In press) “Fate of intracellular H<sub>2</sub>S/HS<sup>-</sup> and metallo-proteins.” *Resp. Physiol. And Neurobiol.*
2. **Klingerman, C.M.**, M.E. Stipanovic, M. Bader, and C.J. Lynch. (2013) “Second generation antipsychotics cause a rapid switch to fat oxidation that is required for survival in C57BL/6J mice.” *Schizophrenia Bulletin*.
3. Schneider, J.E., **C.M. Klingerman**, A.A. Abdulhay. (2012) “Sense and nonsense in metabolic control of reproduction.” *Frontiers in Systems and Translational Endocrinol.* 3, 26:1-21.
4. **Klingerman, C.M.\***, W.P. Williams\*, L.J. Kriegsfeld, and J.E. Schneider. (2012) “Cellular activation in gonadotropin-inhibiting hormone-immunoreactive cells is association with sexual motivation and food hoarding, but not sexual performance and food intake in female Syrian hamsters.” *Frontiers in Systems and Translational Endocrinol.* \*Co-first authors on this manuscript. 2, 101:1-15.
5. **Klingerman, C.M.**, A. Patel, V.L. Hedges, R.L. Meisel, and J.E. Schneider. (2011) “Food restriction dissociates sexual motivation, sexual performance, and the rewarding consequences of copulation in female Syrian hamsters.” *Behav Brain Res.* 223:356-370.
6. **Klingerman, C.M.**, Krishnamoorthy, K., Patel, K., Struby, C. Spiro, A.B., and Schneider, J.E. (2010) “Energetic challenges unmask the role of ovarian hormones in orchestrating ingestive and sex behaviors.” *Horm. Behav.* 58:563-574.
7. Kung, Jr., L., E. Stough, E. McDonell, R.J. Schmidt, M. Hofherr, L., Reich, and **C. Klingerman**. (2010) “The effect of wide swatching on wilting times and nutritive value of alfalfa haylage.” *J. Dairy Sci.* 93:1770-1773.
8. **Klingerman, C.M.**, W. Hu, E.E. McDonell, M.C. DerBedrosian, and L. Kung, Jr. (2009) “An evaluation of exogenous enzymes with amyolytic activity for dairy cows.” *J. Dairy Sci.* 92:1050-1059.

9. Hu, W., R.J. Schmidt, E.E. McDonell, **C.M. Klingerman**, and L. Kung, Jr. (2009) “The effect of *Lactobacillus buchneri* 40788 or *Lactobacillus planterum* MTD-1 on the fermentation and aerobic stability of corn silages ensiled at two dry matter contents.” *J. Dairy Sci.* 92:3907-3914.

---

### Accepted

---

1. **Klingerman, C.M.**, Trushin, N., Prokopczyk, B., and Haouzi, P. (Accepted) “H<sub>2</sub>S concentrations in the arterial blood during H<sub>2</sub>S administration in relation to its toxicity and effects on breathing control.” *Amer J Physiol*.

---

### In Review

---

1. Haouzi, P. & **C. M. Klingerman**. (Submitted) “Methemoglobin solution as an antidote against hydrogen sulfide. *Amer J Physiol*.”
2. Abdulhay, A.A., **C.M. Klingerman**, K. Krishnamoorthy, J. Brozek, N. Benton, and J. E. Schneider. “Increased energy expenditure unmasks the role of ovarian hormones in making reproduction a priority over ingestive behavior.”

---

### In Preparation

---

1. **Klingerman, C.M.**, E. Keen-Rhinehart, and J.E. Schneider. (in preparation) “Estradiol treatment decreases cellular activation, but not neuropeptide Y, in hypothalamic nuclei of food-restricted Syrian hamsters.”

---

### Other Publications

---

1. **Klingerman, C.M.**, and R.W. Taylor. (2007) “Grass tetany – a look at its causes, symptoms, and management.” *Mid-Atlantic Regional Agronomist Quarterly Newsletter*. 18-21.
2. Kung, Jr., L., E. Stough, E. McDonell, R. Schmidt, **C. Klingerman**, M. Hofherr, and L. Reich. (2007) “A quick note at wide swathing alfalfa for making silage.” *Pennstate Extension Central Region Dairy Newsletter*. 5-6.

---

### Presentations at National & International Meetings

---

1. **Klingerman, C.M.** and Haouzi, P. “Concentrations of dissolved and combined H<sub>2</sub>S in the blood in relation to its toxicity: Effects of vitamin B12 and methemoglobin solutions in rats and sheep.” (poster) *CounterACT Network Research Symposium*. Bethesda, MD. 2013.
2. **Klingerman, C.M.** and Haouzi, P. “The arterial chemoreceptors can be stimulated by very low levels of H<sub>2</sub>S in-vivo.” (talk) *Experimental Biology*. Boston, MA. 2013.

3. **Klingerman, C.M.** and Haouzi, P. “Very low levels of H<sub>2</sub>S in the blood are needed to affect the medullary respiratory neurons and the arterial chemoreceptors in-vivo.” (poster) *Experimental Biology*. Boston, MA. 2013.
4. **Klingerman, C.M.**, Trushin, N., Prokopczyk, B., Van de Louw, A., and Haouzi, P. “How much H<sub>2</sub>S is needed to stimulate the arterial chemoreflex in-vivo?” (poster) *Data and Dine Symposium*. Hershey, PA. 2013.
5. **Klingerman, C.M.**, Stipanovic, M.E., Panganiban, R., and Lynch, C.J. “Atypical antipsychotics increase the risk of obesity and diabetes and cause rapid metabolic toxicity when combined with CPT-1 inhibitors in mice.” (talk and poster) *Penn State Diabetes and Obesity Research Summit*. Hershey, PA. 2012.
6. **Klingerman, C.M.**, Patel, A., Hedges, V.L., Meisel, R.L., and Schneider, J.E. “Energetic deficits dissociate motivation from performance and reward.” (talk) *Society for the Study of Ingestive Behavior*. Clearwater, FL. 2011.
7. Williams, W.P., **C.M. Klingerman**, J. Simberlund, N. Brahme, L.J. Kriegsfeld, and J.E. Schneider. “Energetic and reproductive status impact RFamide-related peptide-3 immunoreactivity in female Syrian hamsters.” (poster) *Society for Neuroscience*. San Diego, CA. 2010.
8. **Klingerman, C.M.**, Patel, A., Hedges, V.L., Meisel, R.L., and Schneider, J.E. “Food restriction alters appetitive and ingestive behaviors but not consummatory behaviors nor neural activation in the ventromedial nucleus of the hypothalamus and nucleus accumbens.” (poster) *Society for Behavioral Neuroendocrinology*. Toronto, Canada. 2010.
9. Schneider, J.E., **C.M. Klingerman**, K. Krishnamoorthy, K. Patel, C. Struby, and A.B. Spiro. “Energetic challenges unmask the role of ovarian hormones in orchestrating the appetitive ingestive and sex behaviors, food hoarding, and paracopulatory behaviors.” (poster) *Society for Behavioral Neuroendocrinology*. Toronto, Canada. 2010.
10. Patel, A., **C.M. Klingerman**, R. Meisel, J.E. Schneider. “Dopamine and the desire for food and sex.” (poster) *Society for Behavioral Neuroendocrinology*. East Lansing, MI. 2009.
11. **Klingerman, C.M.**, W. Hu, E.E. McDonell, M.C. DerBedrosian, and L. Kung, Jr. “An evaluation of exogenous enzymes with amylolytic activity for dairy cows.” (poster) *American Dairy Science Association and American Society of Animal Science joint annual meeting*. Indianapolis, IN. 2008.
12. **Klingerman, C.M.**, J. Simberland, R. Shankar, C. Casper, and J. Schneider. “Detailed analysis of effects of energy on ingestive and sex behaviors.” (poster) *Society for Behavioral Neuroendocrinology*. Groningen, The Netherlands. 2008.
13. **Klingerman, C.M.**, R.J. Schmidt, W. Hu, E.E. McDonell, and L. Kung, Jr. “The effect of microbial inoculants on the fermentation and aerobic stability of orchard grass silage.” (talk) *American Dairy*

*Science Association and American Society of Animal Science joint annual meeting.* San Antonio, TX. 2007.

14. **Klingerman, C.M.**, R.J. Schmidt, W. Hu, E.E. McDonell, and L. Kung, Jr. “The effect of microbial inoculants on the fermentation and aerobic stability of orchard grass silage.” (poster) *American Dairy Science Association and American Society of Animal Science joint annual meeting.* San Antonio, TX. 2007.
15. Kung, L. Jr., E.C. Stough, E.E. McDonell, R.J. Schmidt, M.W. Hoffher, L.J. Reich, and **C.M. Klingerman**. “The effect of wide swathing on wilting times and nutritive value of alfalfa haylage.” (poster) *American Dairy Science Association and American Society of Animal Science joint annual meeting.* San Antonio, TX. 2007.
16. McDonell, E.E., **C.M. Klingerman**, R.J. Schmidt, W. Hu, and L. Kung, Jr. “An evaluation of two methods to cover bunker silos to maintain the nutritive value of silage.” (talk) *American Dairy Science Association and American Society of Animal Science joint annual meeting.* San Antonio, TX. 2007.
17. Schmidt, R.J., J.A. Mills, W. Hu, **C.M. Klingerman**, E.E. McDonell, and L. Kung, Jr. “Changes in fermentation end products and use of real-time quantitative PCR to monitor the dynamics of *Lactobacillus buchneri* in alfalfa silage.” (poster) *American Dairy Science Association and American Society of Animal Science joint annual meeting.* San Antonio, TX. 2007.
18. Schmidt, R.J., W. Hu, **C.M. Klingerman**, E.E. McDonell, and L. Kung, Jr. “The effect of *Lactobacillus buchneri* 40788 with or without *Pediococcus pentasaceus* on the fermentation and aerobic stability of corn silage made at different locations.” (talk) *American Dairy Science Association and American Society of Animal Science joint annual meeting.* San Antonio, TX. 2007.
19. Yellen, B.B., M. Chorney, I. Fishbein, N. Dai, **C.M. Klingerman**, I. Alferiev, O. Nyanguile, R. Wilensky, G. Friedman, and R.J. Levy. “Site specific gene delivery using magnetic forces to localize adenoviral vector-magnetic nanoparticle complexes to stented arterial segments.” (poster) *American Heart Association Scientific Sessions.* Dallas, TX. 2005.
20. Yellen, B.B., M. Chorney, I. Fishbein, D.N. Williams, **C.M. Klingerman**, I.S. Alveriev, O. Nyanguile, G. Friedman, and R.J. Levy. “Nanoparticle mediated gene delivery to magnetized implants.” (poster) *American Society for Gene Therapy.* St. Louis, MO. 2005.

### **Invited Lecturer**

---

---

1. Keynote speaker; Lehigh Valley Chapter of the Society for Neuroscience conference	2012
2. Energy balance and reproduction lecture; Bioscience in the 21 <sup>st</sup> Century (Instructor Vassie Ware)	2011
3. Lehigh University Graduate Student Open House/ Symposium	2010
4. Energy balance lecture; Endocrinology of Behavior (Instructor Jill Schneider)	2007

## **Professional Affiliations**

---

- |   |                 |
|---|-----------------|
| 1. The Society for the Study of Ingestive Behavior (SSIB)       | 2011 to present |
| 2. Collaborative Institutional Training Initiative (CITI)       | 2011 to present |
| 3. The Society for Behavioral Neuroendocrinology (SBN)          | 2009 to present |
| 4. The Society for Neuroscience (SFN)                           | 2011 to 2012    |
| 5. American Association for the Advancement of Science (AAAS)   | 2008 to 2011    |
| 6. Lehigh Valley Chapter of the Society for Neuroscience (LVSN) | 2009 to 2010    |
| 7. American Dairy Science Association (ADSA)                    | 2005 to 2007    |

## **Other Achievements**

---

- |   |              |
|---|--------------|
| 1. Responsible Care and Use of Laboratory Animals Training Program<br>Penn State College of Medicine; Hershey, PA | 2012         |
| 2. Completion of Teacher Development Series, Lehigh University  | 2011         |
| 3. Craig Hill achievement award, Delaware Valley College  | 2004         |
| 4. Delta Tau Alpha honors society, Delaware Valley College  | 2003 to 2004 |
| 5. Dean's list, Delaware Valley College   | 2001 to 2004 |
| 6. Faculty scholarship, Delaware Valley College   | 2000 to 2004 |

## **Community Service**

---

- |   |                    |
|---|--------------------|
| 1. Vice President of the Biological Sciences Organization of<br>Graduate Students (BOGS; Lehigh University) | 2010 to 2011       |
| 2. Brain Awareness Day volunteer for grade school students at the Bethlehem<br>Free Library                 | 2010               |
| 3. Graduate advisor to the undergraduate Lehigh University Neuroscience Club                                | 2009 to 2010       |
| 4. Lehigh canal clean-up volunteer  | 2008 to 2011       |
| 5. Pennsylvania Junior Academy of Science (PJAS) high school judge  | 2008, 2010 to 2011 |
| 6. Education chairperson for BOGS   | 2008 to 2009       |