

## Curriculum Vitae

15 May 2017

**PAUL D. HEIDEMAN**

### Office Address:

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### Current Position:

Boles-Ash Distinguished Professor of Biology  
& *Neuroscience Faculty Affiliate*  
College of William and Mary

### Degrees:

B.A. Biology (*summa cum laude* with Senior Honors). Central College, Pella, Iowa. 1979.  
Thesis title: Habitat Selection by Small Mammals on the Shoreline of a Flood Control Lake.  
M.S. Zoology. The University of Michigan, Ann Arbor. 1982.  
Ph.D. Ecology and Evolutionary Biology. The University of Michigan, Ann Arbor. April 1987. Dissertation title: The Reproductive Ecology of a Community of Philippine Fruit Bats.

### Employment and Service:

Lecturer in Biology, Central College, Pella Iowa. Winter 1986-1987  
Postdoctoral Research Collaborator, Smithsonian Institution. March 1987 - July 1988.  
NIH Postdoctoral Trainee/Fellow, Institute of Reproductive Biology, The University of Texas at Austin. 1988-1991.  
Lecturer in Biology and Research Scientist. University of Texas at Austin. 1991-1994.  
Assistant Professor, Department of Biology, College of William & Mary. 1994-1999.  
Associate Professor, Department of Biology, College of William & Mary 1999-2005.  
Chair, Department of Biology. 2004 –2009.  
Professor, Department of Biology, College of William and Mary. 2005 – present.

### Honors and Awards:

Anna M. Jackson Award. The American Society of Mammalogists. 1986.  
Alumni Fellowship Award for Outstanding Teaching. College of William & Mary. 1997-98  
Faculty Award for Excellence in Teaching, Phi Beta Kappa (Alpha of Virginia Chapter),  
College of William and Mary. 2001-02.  
University Professor for Teaching Excellence, College of William and Mary, 2002-2005.  
Selection as Finalist, 2010 Outstanding Faculty Award, State Council of Higher Education for Virginia  
Plumeri Award for Faculty Excellence. College of William and Mary, 2010  
Boles-Ash Distinguished Chair in Biology, College of William and Mary (2012-present)  
Advisor of the Year, College of Arts and Sciences, College of William and Mary (2013)

### Editorial Board:

2014-17 Advisory Editorial Board Member for *Journal of Experimental Zoology - A*

**Grants Active:**

National Science Foundation. "Recruitment, Preparation, and Retention of Math and Science Teachers: **Noyce Scholars II** Program at the College of William and Mary," (\$799,983) 2014 - 2019. PI: Paul D. Heideman; Co-PI's: Meredith Kier, Marguerite M. Mason, R. Heather Macdonald, Andrew J. Stelljes. No. 1339939. National Science Foundation.

National Science Foundation. *Supplement to* "Recruitment, Preparation, and Retention of Math and Science Teachers: **Noyce Scholars II** Program at the College of William and Mary," (\$159,840) 1 January 2014 – 31 December 2018. PI: Paul D. Heideman; Co-PI's: Meredith Kier, Marguerite M. Mason, R. Heather Macdonald, Andrew J. Stelljes. Supplement to DUE-1339939. National Science Foundation.

**Selected List of Previous Grants and Fellowships:**

National Science Foundation Graduate Fellowship, 1979-1983.

Post-doctoral Institutional National Research Service Award, National Institutes of Health, University of Texas, Austin. 1988-1989.

NIH Post-doctoral Fellowship (National Research Service Award), National Institutes of Child Health and Human Development. "Photoperiodism and Reproduction in a Tropical Mammal." 1989-1991.

Jeffress Memorial Trust. "Individual Variation in a Neuroendocrine Pathway." (\$17,753), 1996. PI: Heideman

NIH Academic Research Enhancement Award. "Variation in a Neuroendocrine Pathway." (\$108,750), 1996-1999. PI: Heideman

National Science Foundation--Multiuser Instrumentation Grant. "A Confocal Microscope for Molecular, Cellular, and Integrative Biology" Instrumentation grant for confocal laser microscope. (with M.S. Saha, PI; Co-PI's L. A. Allison, E. L. Bradley, P. D. Heideman, D. C. Shakes). \$172,444. 2000-2002. No. 0070366.

National Science Foundation. "CAREER: Individual Variation in a Neuroendocrine Pathway", (\$407,861). 1999-2004. No. 9875886. PI: Heideman

National Institutes of Health--Academic Research Enhancement Award. "Variability in Brain Regulation of Photoresponsiveness." (\$145,000), 2001-2004. No. R15-MH62402-01A1. PI: Heideman

Alsam Foundation. "ALSAM Foundation Scholars Program" (\$150,000 in total during annual awards in 2005-2012) (*A scholarship program of research experiences for biomedically-oriented science and mathematics students; program created and run by P. Heideman.*)

United States Department of Education. "The Teachers for a Competitive Tomorrow (TCT) Teaching Fellows Program at the College of William and Mary," (\$672,574) 2008-2013. PI: Juanita Matkins; Co-PI's: Virginia L. McLaughlin, Marguerite M. Mason, Paul D. Heideman, R. Heather Macdonald.

Jessie Ball DuPont Fund. "Reducing the achievement gap: creating a free resource for teachers and learners for a short course and readings on developing active learning skills." (\$44,050) 1 Sept. 2010- 31 Aug. 2012. PI: Heideman

National Science Foundation. "Recruitment, Preparation, and Retention of Math and Science Teachers: Noyce Scholars Program at the College of William and Mary," (\$750,000 *with* \$149,100 supplement) 1 January 2009 - 30 September 2014 (no cost extension). PI: Paul D. Heideman; Co-PI's: Juanita Matkins, Marguerite M. Mason, R. Heather Macdonald, Virginia L. McLaughlin. No. 0833330. National Science Foundation.

National Institutes of Health AREA, "Combinatorial contributions of heritable

neuroendocrine variation to male infertility” (\$378,182) 15 June 2011 – 31 May 2014.  
No. 1 R15 HD068962. PI: Heideman

## PUBLICATIONS:

(Student names in bold; \* indicates undergraduate, + indicates M.S. student)

- Heaney, L. R., P. D. Heideman, and K. M. Mudar. 1981. Ecological notes on mammals in the Lake Balinsasayao region, Negros Oriental, Philippines. *Silliman Journal* 28:122-131.
- Heideman, P. D., J. B. Bowles, and K. R. Erickson. 1983. Habitat selection by small mammals on the shoreline of a flood control lake in south-central Iowa. *Proc. Iowa Acad. Sci.* 90:93-97.
- Erickson, K. R., and P. D. Heideman. 1983. Notes on the avifauna of the Twin Lakes Region, Negros Oriental, Philippines. *Silliman Journal* 30:63-72.
- Heideman, P. D., L. R. Heaney, R. L. Thomas, and K. R. Erickson. 1987. Patterns of faunal diversity and species abundance of non-volant small mammals on Negros Island, Philippines. *Journal of Mammalogy* 68:884-888.
- Heideman, P. D., and K. R. Erickson. 1987. The climate and hydrology of the Lake Balinsasayao watershed, Negros Oriental, Philippines. *Silliman Journal*. 34:82-107.
- Heaney, L. R., and P. D. Heideman. 1987. Philippine fruit bats, endangered and extinct. *Bats* 5:3-5.
- Heideman, P. D. The timing of reproduction in the fruit bat Haplonycteris fischeri (Pteropodidae): Geographic variation and delayed development. 1988. *Journal of Zoology (London)* 215:577-595.
- Heideman, P. D., and L. R. Heaney. 1989. Population biology of fruit bats (Pteropodidae) in Philippine submontane rainforest. *Journal of Zoology (London)* 218:564-586.
- Heideman, P. D. Delayed development in a paleotropical fruit bat, Haplonycteris fischeri (Pteropodidae). 1989. *Journal of Reproduction and Fertility* 85:363-382.
- Heaney, L. R., P. D. Heideman, E. A. Rickart, R. B. Utzurrum, and J. Klompen. 1989. Elevational zonation of mammals in the central Philippines. *Journal of Tropical Ecology* 5:259-280.
- Rickart, E. A., P. D. Heideman, and R. B. Utzurrum. 1989. Tent-roosting by Scotophilus kuhlii (Chiroptera: Vespertilionidae) in the Philippines. *Journal of Tropical Ecology* 5:433-436.
- Heideman, P. D. Temporal and spatial variation in the phenology of flowering and fruiting in a tropical rainforest. 1989. *Journal of Ecology* 77:1059-1079.
- Bronson, F. H., and P. D. Heideman. 1990. Short-term hormonal responses to food intake in the peripubertal female rat. *American Journal of Physiology* 259:R25-R31.
- Bowles, J. B., P. D. Heideman, and K. R. Erickson. 1990. Observations on six species of free-tailed bats (Molossidae) from Yucatan, Mexico. *Southwestern Naturalist* 35:151-157.
- Heideman, P. D., and F. H. Bronson. 1990. Photoperiod, melatonin secretion and sexual maturation in a tropical rodent. *Biology of Reproduction* 43:745-750.
- Heideman, P. D., K. R. Erickson, and J. B. Bowles. 1990. Notes on the breeding biology, gular gland, and roost habits of Molossus sinaloae (Chiroptera, Molossidae). *Zeitschrift fur Saugetierkunde* 55:303-307.
- Bronson, F. H., P. D. Heideman, and M. C. Kerbeshian. 1991. Lability of fat stores in peripubertal wild house mice. *Journal of Comparative Physiology B* 161:15-18.
- Heideman, P. D., and F. H. Bronson. 1991. Characteristics of a genetic polymorphism for reproductive photoresponsiveness in the white-footed mouse (Peromyscus leucopus). *Biology of Reproduction* 44:1189-1196.
- Utzurrum, R. C. B., and P. D. Heideman. 1991. Differential injection of viable vs. nonviable Ficus seeds by fruit bats. *Biotropica* 23:311-312.
- Heideman, P. D., and K. E. Erickson. 1992. A new task for an old tool: Using crochet hooks to remove bats from mist nets. *Bat Research News* 33:7.

- Bronson, F. H., and P. D. Heideman. 1992. Lack of reproductive photoresponsiveness and correlative failure to respond to melatonin in a tropical rodent, the cane mouse. *Biology of Reproduction* 46:246-250
- Voss, R. S., P. D. Heideman, V. L. Mayer, and T. M. Donnelly. 1992. Husbandry, reproduction, and postnatal development of the neotropical murid rodent *Zygodontomys brevicauda*. *Laboratory Animals* 26:38-46.
- Heideman, P. D., and F. H. Bronson. 1992. A pseudo-seasonal reproductive strategy in a tropical rodent, *Peromyscus nudipes*. *Journal of Reproduction and Fertility* 95:57-67.
- Heideman, P. D., and L. R. Heaney. 1992. Authors of 20 species accounts in: *Old-World Fruit Bats: An Action Plan for their Conservation*. (S.P. Mickleburgh, A.M. Hutson, & P.A. Racey, eds.) IUCN Press. Gland, Switzerland. 252 pp.
- Heideman, P. D., P. Deoraj, and F. H. Bronson. 1992. Seasonal reproduction of a tropical bat, *Anoura geoffroyi*, in relation to photoperiod. *Journal of Reproduction and Fertility* 96:765-773.
- Heideman, P. D., and F. H. Bronson. 1993. Potential and realized life-history characteristics in a tropical population of *Peromyscus* (Rodentia). *Journal of Mammalogy* 74:261-269.
- Bronson, F. H., and P. D. Heideman. 1993. Failure of cryptorchidism to suppress fertility in a tropical rodent. *Biology of Reproduction* 48:1354-1359.
- Heideman, P. D., **Jennifer A. Cummings\***, and L. R. Heaney. 1993. Reproductive timing and early embryonic development in an Old World fruit bat, *Otopteropus cartilagonodus* (Megachiroptera). *Journal of Mammalogy* 74:621-630.
- Rickart, E. A., L. R. Heaney, P. D. Heideman, and R. C. B. Utzurrum, 1993. The distribution and ecology of mammals on Leyte, Biliran, and Maripipi Islands, Philippines. *Fieldiana: Zoology, n.s.*, 72:1-62.
- Heideman, P. D., and F. H. Bronson. 1993. Sensitivity of Syrian hamsters (*Mesocricetus auratus*) to amplitudes and rates of photoperiodic change typical of the tropics. *Journal of Biological Rhythms* 8:325-337.
- Bronson, F. H., and P. D. Heideman. 1994. Seasonal regulation of reproduction in mammals. Invited Review in *The Physiology of Reproduction*, 2nd Edition, Volume 2, Pages 541-583 (E. Knobil and J. D. Neill, eds.). New York: Raven.
- Heideman, P. D., and F. H. Bronson. 1994. An endogenous circannual rhythm of reproduction in a tropical bat, *Anoura geoffroyi*, is not entrained by photoperiod. *Biology of Reproduction* 50:607-614.
- Pierson, Tyler\***, and P. D. Heideman. 1994. Acceleration and Deceleration of Sexual Maturation by Social Cues in a Tropical Rodent, *Zygodontomys brevicauda*. *Journal of Reproduction and Fertility* 102:459-462.
- Heideman, P. D. Synchrony and seasonality of reproduction in tropical bats. 1995. In *Ecology, Evolution, and Behaviour of Bats*. (P.A. Racey and S. Swift, Eds.; Oxford University Press) Symposium of the Zoological Society of London 67:151-165.
- Heideman, P. D., K. P. Bhatnagar, F. K. Hilton, and F. H. Bronson. 1996. Melatonin rhythms and pineal structure in a tropical bat, *Anoura geoffroyi*, that does not use photoperiod to regulate seasonal reproduction. *Journal of Pineal Research* 20:90-97.
- Heideman, Paul D., and **C. John Sylvester<sup>†</sup>**. 1997. Reproductive photoresponsiveness in unmanipulated male Fischer 344 laboratory rats. *Biology of Reproduction* 57:134-138.
- Heideman, P. D., and **Kendall S. Powell \***. 1998. Age-specific reproductive strategies and delayed embryonic development in an Old World fruit bat, *Ptenochirus jagori* (Megachiroptera). *Journal of Mammalogy* 79:295-311. (\* Both authors contributed equally to this work; order of authorship was determined by coin flip.)
- Chae, Haejin E.<sup>†</sup>**, and P. D. Heideman. 1998. Water-deprived white-footed mice express c-fos on a day/night cycle graded according to the duration of deprivation. *Brain Research* 791:1-10.
- Heideman, P. D., **Richard W. Deibler\*** and **Lisa M. York\***. 1998. Food and Neonatal Androgen Interact with Photoperiod to Inhibit Reproductive Maturation in Fischer 344 Rats. *Biology of Reproduction* 59:358-363.
- Heideman, P. D., **Stephanie L. Kane\***, and **Andrea L. Goodnight\***. 1999. Differences in

- Hypothalamic 2-[<sup>125</sup>I]iodomelatonin Binding in Photoresponsive and Nonphotoresponsive White-Footed Mice, *Peromyscus leucopus*. *Brain Research* 840:56-64.
- Heideman, P. D., **Todd A. Bruno\***, **Jeff W. Singley\*** and **Jeremy V. Smedley\***. 1999. Genetic variation in photoperiodism in *Peromyscus leucopus*: Geographic variation in an alternative life history strategy. *Journal of Mammalogy* 80:1232-1242.
- Heideman, P. D. Environmental regulation of reproduction. 2000. Pg. 469-499 In *The Reproductive Biology of Bats*. (E. G. Crichton and P. Krutsch, Eds.) Academic Press.
- Heideman, P. D., **Cynthia K. Bierl\***, and **M. Eric Galvez\***. 2000. Inhibition of reproductive maturation and somatic growth of Fischer 344 rats by photoperiods shorter than L14:D10 and by gradually decreasing photoperiod. *Biology of Reproduction* 63:1535-1540.
- Majoy, Sean B.<sup>+</sup>**, and P. D. Heideman. 2000. Tau differences between short-day responsive and short-day nonresponsive white-footed mice (*Peromyscus leucopus*) do not affect reproductive photoresponsiveness. *Journal of Biological Rhythms* 15:500-512.
- Heideman, P. D., **Cynthia K. Bierl\***, and **C.J. Sylvester<sup>+</sup>**. 2001. Photoresponsive Fischer 344 rats are reproductively inhibited by melatonin and differ in 2-[<sup>125</sup>I] iodomelatonin binding from nonphotoresponsive Sprague Dawley rats. *Journal of Neuroendocrinology* 13:223-232.
- Lorincz, Annaka M.\***, **M. Benjamin Shoemaker\***, and Paul D. Heideman. 2001. Genetic variation in photoperiodism among naturally photoperiodic rat strains. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*. 281:R1817-R1824.
- Shoemaker, M. Benjamin\***, and Paul D. Heideman. 2002. Reduced body mass, food intake, and testis size in response to short photoperiod in adult F344 rats. *BMC Physiology* 2002 2:11 (10 pages)
- Heideman, Paul D. and Uzzurum, Ruth C. 2003. Seasonality and synchrony of reproduction in three species of nectarivorous Philippines bats. *BMC Ecology*. 2003 Nov 21; 3(1): 11
- DeCoursey, Patricia J. (author), and **contributors**: Paul D. Heideman, Teresa Horton, Theresa Lee, Stephan Reeb, and Laura Smale. 2003. The behavioral ecology and evolution of biological timing systems. Chapter 2 in: *Chronobiology: Biological Timekeeping*. Dunlap, J. C., J.J. Loros, and P. J. DeCoursey, Editors.
- Heideman, Paul D. 2004. Top-down approaches to the study of natural variation in complex physiological pathways using the white-footed mouse (*Peromyscus leucopus*) as a model. *ILAR Journal* 45:4-13.
- Francisco, Nicole R.\***, **Christen M. Raymond\***, and Paul D. Heideman. 2004. Short Photoperiod Inhibition of Growth in Body Mass and Reproduction in ACI, BUF, and PVG Inbred Rats. *Reproduction* 128:857-862.
- Avigdor, Mauricio<sup>+</sup>**, **Shannon D. Sullivan\***, and Paul D. Heideman. 2005. A response to selection for photoperiod responsiveness on the density and location of mature GnRH-releasing neurons. *American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology* 288:R1226-1236.
- Heideman, Paul D., **Michelle Rightler<sup>+</sup>**, and **Kathleen Sharp<sup>+</sup>**. 2005. A Potential Microevolutionary Life History Trade-off in White-footed Mice (*Peromyscus leucopus*). *Functional Ecology* 19:331-336
- Smale, Laura, Jeffrey A. French, and Paul D. Heideman. 2005. Behavioral neuroendocrinology in nontraditional species of mammals: Things the 'knockout' mouse CAN'T tell us. *Hormones and Behavior*: 48: 474-483

- Price, Matthew R.\***, **Julie A. M. Kruse<sup>†</sup>**, **M. Eric Galvez\***, **Annaka M. Lorincz\***, **Mauricio Avigdor<sup>†</sup>** and Paul D. Heideman. 2005. Failure to Respond to Endogenous or Exogenous Melatonin May Cause Nonphotoresponsiveness in Harlan Sprague Dawley Rats. *Journal of Circadian Rhythms* 3:12 (8 pages)
- Fetsch, Christopher R.<sup>†</sup>**, Paul D. Heideman, and John D. Griffin. 2006. Effects of melatonin on thermally classified anterior hypothalamic neurons in the white-footed mouse (*Peromyscus leucopus*). *Journal of Thermal Biology* 31:40-49
- Reilly, Sarah J.\***, **Robert Oum\***, and Paul D. Heideman. 2006. Phenotypic plasticity of reproduction in response to timed food access and photoperiod in artificially selected white-footed mice (*Peromyscus leucopus*). *Oecologia* 150:373-382.  
<http://www.springerlink.com/content/k856786847614771/fulltext.html>
- Heideman, Paul D., David R. Broussard, **Jessica A. Tate\***, **Mauricio Avigdor<sup>†</sup>**. 2007. Number of immunoreactive GnRH-containing neurons is heritable in a wild-derived population of white-footed mice (*Peromyscus leucopus*). *Physiological and Biochemical Zoology*. 80: 534-541
- Seroka, Cheryl D.\***, **Cynthia E. Johnson\***, and Paul D. Heideman. 2008. Variation in nocturnality and circadian activity rhythms between photoresponsive F344 and nonphotoresponsive Sprague Dawley rats. *Journal of Circadian Rhythms* 6:8 (9 pgs).
- Broussard, David R., **Jessica L. Robertson\***, **Tracy J. Evans II\***, **Gregory K. Faucher\***, **Michael G. Semanik\***, Paul D. Heideman. 2009. Age-related decline in reproductive sensitivity to inhibition by short photoperiod in *Peromyscus leucopus*. *Journal of Mammalogy* 90: 32-39.
- Ross, A.W., **Cynthia E. Johnson\***, L. M. Bell, L. Reilly, J. S. Duncan, P. Barret, Paul D. Heideman, and Peter J. Morgan. 2009. Divergent regulation of hypothalamic neuropeptide Y and agouti-related protein by photoperiod in F344 rats with differential food intake and growth. *Journal of Neuroendocrinology* 21:610-619
- Heideman, Paul D., and Julian T. Pittman. 2009. Microevolution of neuroendocrine mechanisms regulating reproductive timing in *Peromyscus leucopus*. *Integrative and Comparative Biology* 49: 550-562
- Heideman, Paul D., Julian T. Pittman, **Kristin A. Schubert\***, **Christen A. DuBois\***, **Jennifer Bowles\***, **Sean M. Lowe\***, and **Matthew R. Price\***. 2010. Variation in levels of luteinizing hormone and reproductive photoresponsiveness in a population of white-footed mice (*Peromyscus leucopus*). *American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology*. 298:R1543-1548.
- Kaseloo, Paul A., **Madelyn G. Crowell\*<sup>VSU</sup>**, **Jazmin J. Jones\*<sup>VSU</sup>**, and Paul D. Heideman. 2012. Variation in basal metabolic rate and activity in relation to reproductive condition and photoperiod in white-footed mice (*Peromyscus leucopus*). *Canadian Journal of Zoology* 90(5): 602-615. [<sup>VSU</sup> indicates undergraduate students at Virginia State University.]
- Kaseloo, Paul A., **Madelyn G. Crowell\*<sup>VSU</sup>**, and Paul D. Heideman. 2014. Heritable variation in reaction norms of metabolism and activity across temperatures in a wild-derived population of white-footed mice (*Peromyscus leucopus*). *Journal of Comparative Physiology – B*. 184:525-534 [<sup>VSU</sup> indicates undergraduate at Virginia State University.]
- White, Jordan T.\***, **Cori L. DeSanto\***, **Connie Gibbons\***, **Casey K. Lardner\***, **Andrew Panakos\***, **Salehin Rais\***, **Kathy Sharp<sup>†</sup>**, **Shannon D. Sullivan\***, Wendy Tidhar, **Leanne Wright\***, David Berrigan, and Paul D. Heideman. 2014. Insulins, leptin and

feeding in a population of *Peromyscus leucopus* (white-footed mouse) with variable fertility. *Hormones and Behavior* 66:1169-179.

Heideman, Paul D. 2014. Circannual clocks in tropical bats and heritable variation in seasonal reproductive timing in temperate zone mice. In *Annual, Lunar, and Tidal Clocks: Patterns and Mechanisms of Nature's Enigmatic Rhythms*. (Ch 15; pgs 309-331) (Eds. Hideharu Numata and Barbara Helm) Springer: Japan. 360 p.

**Kathleen Sharp**<sup>+</sup>, Donna Bucci\*, **Paul Zelensky**\*, **Alanna Chesney**\*, Wendy Tidhar, David Broussard, Paul D. Heideman. 2015. Genetic variation in male sexual behavior in short photoperiod in a population of white-footed mice. *Animal Behaviour* 104:203-212.

Stevenson TJ, Visser ME, Arnold W, Barrett P, Biello S, Dawson A, Denlinger DL, Dominoni D, Ebling FJ, Elton S, Evans N, Ferguson H, Foster RG, Hau M, Haydon DT, Hazlerigg DG, Heideman P, Hopcraft JGC, Jonsson NN, Kronfeld-Schor N, Kumar V, Lincoln GA, MacLeod R, Martin S, Martinez-Bakker, M, Nelson RJ, Reed T, Robinson JE, Rock D, Schwartz WJ, Steffan-Dewenter I, Tauber E, Thackeray SJ, Umstatter C, Yoshimura T, Helm B. 2015. Disrupted Seasonal Biology Impacts Health, Food Security, and Ecosystems. *Proceedings of the Royal Society B*.

**Kaugars**, **Katherine E.**\*, **Charlotte I. Rivers**\*, Margaret S. Saha, Paul D. Heideman. 2016. Genetic variation in total number and locations of GnRH neurons identified using in situ hybridization in a wild-source population. *Journal of Experimental Zoology A* 325A:106-115 (*KEK and CIR contributed equally to this research; order of first authorship was determined by coin flip*)

Heideman, Paul D., **Adryan Flores**\*, **Lu Sevier**\*, and **Kelsey Trouton**\*. 2017. Effectiveness and Adoption of a Drawing-to-Learn Study Tool for Recall and Problem Solving: Minute Sketches with Folded Lists. *CBE Life Sciences Education*:16:ar28 doi:10.1187/cbe.16-03-0116 <http://www.lifescied.org/content/16/2/ar28.full>

van der Veen, Daan R., Riede, Sjaak J., Heideman, Paul D., Hau, Michaela, van der Vinne, Vincent, and Hut, Roelof A. (In Press). Flexible Clock Systems: Adjusting the Temporal Program. *Philosophical Transactions of the Royal Society B: Biological Sciences*.

**pdf files of recent papers are available at:**

[http://pdheid.people.wm.edu/PDHWeb\\_Pubs\\_1990-present.html](http://pdheid.people.wm.edu/PDHWeb_Pubs_1990-present.html)

**Book Review:**

1984. Heideman, P. D. *Philippine Birds and Mammals* (by D. S. Rabor. 1977. Univ. Philippines Science Education Center: Quezon City. 284 pp.) *Pilipinas* 3:92-94.

**Presented Papers and Abstracts:**

Papers presented at meetings of:

American Physiological Society Conference: Understanding the Biological Clock (1995)

American Society of Mammalogists (1986, 1988, 1995, 1998, 2010)

American Society of Zoologists (1990)

Cold Spring Harbor Meeting: Physiological Genomics and Rat Models (1999)

Effective Practices in Special Education Conference (2015)

Gordon Research Conference: Ecological Evolutionary Functional Genomics (2003)

Gordon Research Conference: Pineal Cell Biology (2010)

Midwest Population Biology Meetings (1986)

National Association for Research on Science Teaching (2010)

North American Symposium on Bat Research (1991)

Robert Noyce Teacher Scholarship Program Annual Conference: Building Excellence in STEM Teaching (2009, 2011, 2012, 2013, 2014)  
Seasons of Life Symposium (2013)  
Society for Behavioral Neuroendocrinology (2003, 2005, 2012, 2013)  
Society for Integrative and Comparative Biology (2009)  
Society for Research on Biological Rhythms (1994, 1996, 1998, 2000, 2002)  
Society for the Study of Evolution (1992, 1993)  
Society for the Study of Reproduction (1986, 1990, 1991)  
Southeast Regional Noyce Conference (2012)  
Southwestern Regional Conference on Comparative Endocrinology (1990, 1992)  
Zoological Society of London Symposium on Bat Biology, "Synchrony and Seasonality of Reproduction in Tropical Bats" (1993).

**Invited seminars:**

University of Iowa (1987)  
University of Delaware (1988)  
Field Museum of Natural History, Chicago (1990)  
Southwest Texas State University (1992)  
Oxford University, Oxford, UK (1993)  
Auburn University (1994)  
Old Dominion University (1995)  
University of Virginia (Center for Biological Timing) (1995)  
Virginia Commonwealth University (1998)  
Mountain Lake Biological Station, University of Virginia (1999)  
North Carolina State University (1999)  
Old Dominion University (2000)  
James Madison University (2001)  
Northwestern University (2001)  
University of Virginia (Neuroscience Seminar) 2002  
Eastern Carolina University (Department of Biology Seminar). 2003.  
Virginia State University (2012)  
Lehigh University (2014)  
University of Memphis (2014)  
Virginia Tech (2015)

**Scientific Societies:**

American Physiological Society  
American Society of Mammalogists  
Society for Behavioral Neuroscience