

PEROTIMES



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THE NEWSLETTER OF THE PEROMYSCUS GENETIC STOCK CENTER

Editorial

Dear *Peromyscus* users,

Welcome to the second issue of *Perotimes*, the newsletter of the Peromyscus Genetic Stock Center. The last few months, since the first issue of *Perotimes*, marked the decision of NSF to reinstate funding for the Collections in Support of Biological Research (CSBR). Thus, applications will be received in 2017 to support selected Centers. Although this does not solve the concerns of the living stock Centers' community for sustainability, it mitigates the fears that have recently emerged.

The highly respectable Review Journal "*Seminars in Cell and Developmental Biology*" decided to dedicate a special issue on *Peromyscus*. This was a great recognition for the *Peromyscus*-related research (and researchers) and is indicative for the increasingly appreciated potential of this model in biomedical research. A presentation of the topics covered in this special issue follows, at the end of this issue of *Perotimes*.

In an attempt to bring together the various researchers working on *Peromyscus*, the Center is planning to organize a small

Symposium, in Columbia SC. The format of such meeting as well as the time remains open and your suggestions are welcome.

Recently the Center has launched its new website which you are welcome to browse at <http://www.pgsc.cas.sc.edu>.

Hippokratis Kiaris

SYMPOSIUM

In order to bring the Peromyscus users together the PGSC is planning to organize a Symposium sometime in 2017. Your ideas especially regarding timing are greatly appreciated. You can email us at kiarish@sccp.sc.edu.

Living Stocks Workshop at DLC

This September the Duke Lemur Center (Duke University, Durham, NC), hosted a Living Stocks Workshop as part of its 50th Anniversary Scientific Symposium. PGSC was represented by H. Kiaris who had the opportunity to exchange ideas and



Dr Meg Dye (senior scientist at DLC, 6) is showing the Center to the Living Stocks Community. From Left to right Kevin (1), Erich (2), Reed (3), a DLC scientist (4), Anne (5), Gregg, Britt Keith (DLC scientist), Roland and Maxi

to participate in a “plan for action” with other Living Stocks Collections Directors/Curators. Participants included Anne Yoder (DLC Director and host, Duke University), Gregg F. Gunnell, (Director of DLC’s Division of Fossil Primates), Kevin McCluskey (Curator, Fungal Genetics Stock Center, Kansas State University), Maxi Richmond (Associate Director, Drosophila Species Stock Center, University of California, San Diego), Erich Grotewold (Director, Arabidopsis Biological Resource Center, Ohio State University) and the NSF’s Program Officers Reed S. Beaman, and Roland P. Roberts.



From J. Heredity 1993:84(4)

FROM THE RECENT LITERATURE

1. Host associations and genomic diversity of *Borrelia hermsii* in an endemic focus of tick-borne relapsing fever in western North America. Johnson TL, Fischer RJ, Raffel SJ, Schwan TG. *Parasit Vectors*. 2016 Nov 10;9(1):575.
2. Characterization of a male reproductive transcriptome for *Peromyscus eremicus* (Cactus mouse). Kordonowy LL, MacManes MD. *PeerJ*. 2016 Oct 27;4:e2617.
3. Effects of exposure to bisphenol A and ethinyl estradiol on the gut microbiota of parents and their offspring in a rodent model. Javurek AB, Spollen WG, Johnson SA, Bivens NJ, Bromert KH, Givan SA, Rosenfeld CS. *Gut Microbes*. 2016 Nov;7(6):471-485.
4. Variable Infection Dynamics in Four *Peromyscus* Species Following Experimental Inoculation with *Baylisascaris procyonis*. Sapp SG, Weinstein SB, McMahan CS, Yabsley MJ. *J Parasitol*. 2016 Oct;102(5):538-544.
5. Changes in Trap Temperature as a Method to Determine Timing of Capture of Small Mammals. Orrock JL, Connolly BM. *PLoS One*. 2016 Oct

28;11(10):e0165710.

6. Nematofauna of Rodents of the Families Heteromyidae and Cricetidae from the Mexican Plateau. Iturbe-Morgado JC, FalcN-Ordaz J, Lira-Guerrero G, FernNdez JS, Acosta R. *J Parasitol*. 2016 Oct 27.
7. Expression Kinetics of RANTES and MCP-1 in the Brain of Deer Mice (*Peromyscus maniculatus*) Infected with Vesicular Stomatitis New Jersey Virus. Mesquita LP, Bruhn FR, Maiorka PC, Howerth EW. *J Comp Pathol*. 2016 Oct 22. pii: S0021-9975(16)30131-1.
8. Maporal Hantavirus Causes Mild Pathology in Deer Mice (*Peromyscus maniculatus*). McGuire A, Miedema K, Fauver JR, Rico A, Aboellail T, Quackenbush SL, Hawkinson A, Schountz T. *Viruses*. 2016 Oct 18;8(10). pii: E286.
9. Genetic evidence of enzootic leishmaniasis in a stray canine and Texas mouse from sites in west and central Texas. Kipp EJ, Mariscal J, Armijos RX, Weigel M, Waldrup K. *Mem Inst Oswaldo Cruz*. 2016 Oct;111(10):652-654. doi: 10.1590/0074-02760160225.

10. Evaluating the influence of life-history characteristics on genetic structure: a comparison of small mammals inhabiting complex agricultural landscapes. Kierepka EM, Anderson SJ, Swihart RK, Rhodes OE Jr. *Ecol Evol*. 2016 Aug 18;6(17):6376-96

11. Insights on the host associations and geographic distribution of *Hymenolepis folkertsi* (Cestoda: Hymenolepididae) among rodents across temperate latitudes of North America. Hoberg EP, Makarikov AA, Tkach VV, Meagher S, Nims TN, Eckerlin RP, Galbreath KE. *Parasitol Res*. 2016 Dec;115(12):4627-4638.

12. Identification of *Bartonella* Species Isolated from Rodents from Yucatan, Mexico, and Isolation of *Bartonella vinsonii* subsp. *yucatanensis* subsp. nov. Schulte Fishedick FB, Stuckey MJ, Aguilar-Setién A, Moreno-Sandoval H, Galvez-Romero G, Salas-Rojas M, Arechiga-Ceballos N, Overgaauw PA, Kasten RW, Chomel BB. *Vector Borne Zoonotic Dis*. 2016 Oct;16(10):636-42.

13. Modeling estrogen receptor-positive breast cancers in mice: is it the best we can do? Chatzistamou I, Kiaris H. *Endocr Relat Cancer*. 2016 Nov;23(11):C9-C12.

14. Effects of a maternal high-fat diet on offspring behavioral and metabolic parameters in a rodent model. Johnson SA, Javurek AB, Painter MS, Murphy CR, Conard CM, Gant KL, Howald EC, Ellersieck MR, Wiedmeyer CE, Vieira-Potter VJ, Rosenfeld CS. *J Dev Orig Health Dis*. 2016 Sep 9:1-14

15. Photoperiodic Regulation of Cerebral Blood Flow in White-Footed Mice (*Peromyscus leucopus*). Borniger JC, Teplitsky S, Gnyawali S, Nelson RJ, Rink C. *eNeuro*. 2016 Jul 27;3(4). pii: ENEURO.0058-16.2016. doi: 10.1523/ENEURO.0058-16.2016.

16. *Peromyscus* transcriptomics: understanding adaptation and gene expression plasticity within and between species of deer mice. Munshi-South J, Richardson JL. *Semin Cell Dev Biol*. 2016 Aug 12. pii: S1084-9521(16)30249-X. 6/j.semcdb.2016.

Why Peromyscus from PGSC

PGSC is the only *Peromyscus* Center in the US and indeed the in world

PGSC maintains and can supply truly outbred animals from a number of different species reflecting naturally occurring wild type populations

All animals are pedigreed and can be traced back to the time that the populations had been established in captivity

NEWS AND NOTES

NOTICE

Perotimes, the PGSC newsletter is not a formal scientific publication. Therefore, information and data should not be cited or used without permission of the contributor.

PERO-RESEARCHERS

PIs are welcome to indicate postdocs and graduate students that recently published on *Peromyscus* or defended a Thesis, in order to promote their work in *Perotimes*.

Grant applications

The PGSC will be happy to assist you in your grant proposals by providing quotes that will help you justify your budget as well as letters for the availability of specific stocks.

e-mailing list

If you want to be included in our email list and receive future *Perotimes* editions, email Janet Crossland at janet@sc.edu

PGSC is supported by NSF grant 1349230: “CSBR: Living Stocks - A Genetic Stock Center for *Peromyscus*”

17. *Peromyscus* as a model system for human hepatitis C: An opportunity to advance our understanding of a complex host parasite system. Vandegrift KJ, Critchlow JT, Kapoor A, Friedman DA, Hudson PJ. *Semin Cell Dev Biol.* 2016 Aug 3. pii: S1084-9521(16)30235-X.
18. *Peromyscus* burrowing: A model system for behavioral evolution. Hu CK, Hoekstra HE. *Semin Cell Dev Biol.* 2016 Aug 2. pii: S1084-9521(16)30239-7.
19. Cluster Analysis of *Campylobacter jejuni* Genotypes Isolated from Small and Medium-Sized Mammalian Wildlife and Bovine Livestock from Ontario Farms. Viswanathan M, Pearl DL, Taboada EN, Parmley EJ, Mutschall SK, Jardine CM. *Zoonoses Public Health.* 2016
20. Social and physical environments as a source of individual variation in the rewarding effects of testosterone in male California mice (*Peromyscus californicus*). Zhao X, Marler CA. *Horm Behav.* 2016 Sep;85:30-5.
21. Cost and Effectiveness of Commercially Available Nesting Substrates for Deer Mice (*Peromyscus maniculatus*). Martin TL, Balsler SR, Young GS, Lewis SD. *J Am Assoc Lab Anim Sci.* 2016;55(4):412-8.
22. How much effort is required to accurately describe the complex ecology of a rodent-borne viral disease? Douglass RJ, Vadel MV. *Ecosphere.* 2016 n;7(6).
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25. Infection resistance and tolerance in *Peromyscus* spp., natural reservoirs of microbes that are virulent for humans. Barbour AG. *Semin Cell Dev Biol.* 2016 Jul 2. pii: S1084-9521(16)30186-0
26. *Peromyscus* as a model system for understanding the regulation of maternal behavior. Bester-Meredith JK, Burns JN, Conley MF, Mammarella GE, Ng ND. *Semin Cell Dev Biol.* 2016 Jul 2. pii: S1084-9521(16)30185-9.
27. *Peromyscus* as a model of human disease. Havighorst A, Crossland J, Kiaris H. *Semin Cell Dev Biol.* 2016
28. Sex differences in the effects of social defeat on brain and behavior in the California mouse: Insights from a monogamous rodent. Steinman MQ, Trainor BC. *Semin Cell Dev Biol.* 2016 Jun 30.
29. A method to distinguish morphologically similar *Peromyscus* species using extracellular RNA and high-resolution melt analysis. Seifert VA, Clarke BL, Crossland JP, Bemis LT. *Anal Biochem.* 2016
30. Photoperiodic regulation of behavior: *Peromyscus* as a model system. Borniger JC, Nelson RJ. *Semin Cell Dev Biol.* 2016
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32. Pathogenesis of Vesicular Stomatitis New Jersey Virus Infection in Deer Mice (*Peromyscus maniculatus*) Transmitted by Black Flies (*Simulium vittatum*). Mesquita LP, Diaz MH, Howerth EW, Stallknecht DE, Noblet R, Gray EW, Mead DG. *Vet Pathol.* 2016
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38. The role of isoforms in the evolution of cryptic coloration in *Peromyscus* mice. Mallarino R, Linden TA, Linnen CR, Hoekstra HE. *Mol Ecol.* 2016 Apr 22.

39. Population genomics of the Anthropocene: urbanization is negatively associated with genome-wide variation in white-footed mouse populations. Munshi-South J, Zolnik CP, Harris SE. *Evol Appl.* 2016 Feb 11;9(4):546-64.

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Peromyscus Special Issue

Seminars in Cell and Developmental Biology dedicated a special issue on *Peromyscus*. The issue will be available soon and authors include articles by:

- Vandegrift, Critchlow, Kapoor, Friedman, Hudson who discuss “Peromyscus as a model system for human hepatitis C: An opportunity to advance our understanding of a complex host parasite system”
- Hu and Hoekstra who discuss “Peromyscus burrowing: A model system for behavioral evolution”
- He and Toth who discuss “In vitro culture of ovarian follicles from Peromyscus”
- Barbour who discusses “Infection resistance and tolerance in Peromyscus spp., natural reservoirs of microbes that are virulent for humans”
- Bester-Meredith, Burns, Conley, Mammarella, Ng who discuss “Peromyscus as a model system for understanding the regulation of maternal behavior”
- Steinman and Trainor who discuss “Sex differences in the effects of social defeat on brain and behavior in the California mouse: Insights from a monogamous rodent”
- Havighorst, Crossland, and Kiaris who discuss “Peromyscus as a model of human disease”
- Borniger and Nelson who discuss the “Photoperiodic regulation of behavior: Peromyscus as a model system”
- Munshi-South and Richardson who discuss “Peromyscus transcriptomics: Understanding adaptation and gene expression plasticity within and between species of deer mice”

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