

CURRICULUM VITAE

Name Frederick Charles Davis

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Education

1969-1974	BS	Stanford University, Biological Sciences
1969-1974	MA	Stanford University, Biological Sciences (Advisor: Colin S. Pittendrigh)
1974-1980	PhD	University of Texas, Austin, Zoology (Advisor: Michael Menaker)

Postdoctoral Training

1980-1983	Department of Anatomy and Brain Research Institute, UCLA School of Medicine (with Roger A. Gorski)
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Additional Training

2011	"Molecular embryology of the mouse," Cold Spring Harbor Laboratory
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Research Circadian rhythms: Neural mechanisms and development

Academic Appointments

1983-1987	Assistant Professor, University of Virginia, Department of Biology (non-tenure-track)
1988-1993	Assistant Professor, Northeastern University, Department of Biology
1993-2003	Associate Professor, Northeastern University, Department of Biology
2003-present	Professor, Northeastern University, Department of Biology

Major Administrative Leadership Positions*Northeastern University*

1995-1999	Graduate Coordinator, Department of Biology
1997-2001	Director, Behavioral Neuroscience Program, College of Arts and

& 2009-2010 Sciences
 2004-2006 Associate Chair and Chair of Tenure and Promotion Committee,
 & 2011 -2012 Department of Biology
 2006-2009 Interim Chair, Department of Biology
 2009 Principal Investigator, "Undergraduate Initiative in Interdisciplinary
 Research", proposal to Howard Hughes Medical Institute
 Undergraduate Science Education Program, Northeastern University
 (NU's first invitation, not funded).
 2015-2016 Associate Dean of Faculty Affairs, College of Science
 2016- Associate Dean of Faculty Affairs, Diversity, and Inclusion, College of
 Science

National and International

1985 Workshop organizer, Winter Conference on Brain Research
 1989 Chair, section on Development for "SCN: The Mind's Clock", NICHD
 Symposium
 1998-2000 Executive Committee, Society for Research on Biological Rhythms
 1999 Symposium Organizer and Chair, "SCN Structure and Function",
 International Congress on Chronobiology, Washington, D.C.
 2000 -2004 Regular Member, Biological Rhythms and Sleep Study Section NIH
 Center for Scientific Review
 2002 Chair, Travel Awards Committee, Society for Research on Biological
 Rhythms
 2002 Co-Chair, symposium: "Circadian Photoreception and Transduction",
 American Society for Photobiology, Quebec City
 2013 Chair, Special emphasis panel, "Circadian clocks and aging:
 molecular mechanisms," National Institute on Aging

Committee and Professional Service

1984-1987 Faculty Advisor, Undergraduate Biology Association, University
 of Virginia
 1985-1987 Coordinator, Dept of Biology Graduation, University of Virginia
 1989 -1993 Chair, Standards Subcommittee, Graduate Committee,
 Department of Biology, Northeastern University
 1989-1998 Industrial Advisory Board Committee, Department of Biology,
 Northeastern University
 1990-1993 Chair, Department of Biology Colloquium Committee,
 Northeastern University
 1991-1993 Ph.D. Qualifying Exam Committee, Department of Biology,
 Northeastern University
 1993 MacArthur Foundation Planning Initiative on Psychopathology
 and Development, Chicago

1993	College of Arts and Science Tenure and Promotion Committee, Northeastern University
1993	College Council, College of Arts and Sciences, Northeastern University
1993-1997	University Research Council, Northeastern University
1994-1995	Advisory Board Journal of Biological Rhythms
1994-1996	Committee on Animals, Institute for Circadian Physiology, Cambridge, MA.
1994-1998	Program Committee, Undergraduate Research Fellows in Cognitive and Neural Science, College of Arts and Sciences, Northeastern University
1994-present	Advisory Board, Behavioral Neuroscience Program, College of Science, Northeastern University
1995	NIH Sleep Research Coordinating Committee Workshop on Molecular Biology and Genetic Approaches to Sleep Control, Bethesda, MD
1995-1996	College Council, College of Arts and Sciences, Northeastern University
1996	Department of Biology Chair Search Committee, Northeastern University
1996	Co-author, Department of Biology Graduate Program Review, Northeastern University
1996	National Center for Research Resources, General Clinical Research Center site visit, Stanford University School of Medicine
1996	NSF Panel, Behavioral Neuroscience
1997	Faculty Search Committee, Department of Biology, Northeastern University
1997-1999	President, Sigma Xi, Northeastern University Chapter
1998	Marine Science Center Review Committee, College of Arts and Sciences, Northeastern University
1998	Department of Psychology Chair Search Committee, Northeastern University
1998-2000	Executive Committee, Society for Research on Biological Rhythms
1999-2001	Faculty Advisor for NEURON (NorthEastern Undergraduates for Research On Neuroscience)
2001	Executive Committee, Department of Biology, Northeastern University
2001	Marine Science Center Review Committee, College of Arts and Sciences, Northeastern University
2002	Department of Biology Chair Search Committee, Northeastern University

2002 Chair, Ph.D. Qualifying Exam Committee, Department of Biology, Northeastern University

2002 -2004 Treasurer, Society for Research on Biological Rhythms

2005 Chair, University Committee to Review the Dean, Bouve College of Health Sciences

2006 Member, NIH Special Emphasis Panel (ZRG1 IFCN-D 02) of the Neurobiology Of Motivated Behavior Study Section (NMB)

2004-2006 Chair, Tenure and Promotion Committee, Department of Biology, Northeastern University

2004-2006 College Council, College of Arts and Sciences, Northeastern University

2006 Department of Psychology Chair Search Committee, Northeastern University

2006 Department of Physics Chair Search Committee, Northeastern University

2007 Faculty Search Committee, Department of Biology, Northeastern University

2007 University Committee to Review the Dean, College of Computer and Information Science, Northeastern University

2007 Member, National Institute of Neurological Disorders and Stroke Special Emphasis Panel, ZNS1 SRB-M, CSR, NIH

2008 Department of Chemistry and Chemical Biology Chair Search Committee, Northeastern University

2010 National Institute on Aging workshop: "Circadian clocks and their role in aging"
National Heart Lung and Blood Institute workshop: "Pediatric sleep disturbances and their contribution to developmental pathophysiology of cardiometabolic risk"

2011 Faculty Search Committee, Department of Biology, Northeastern University

2011-2012 College of Science Tenure and Promotion and Sabbaticals Committee, Northeastern University

2012 Member, Biobehavioral and Behavioral Processes Special Emphasis Panel, NIH, Center for Scientific Review

2014 Chair Search Committee, Department of Health Science, Bouve College of Health Sciences

2014 ad hoc reviewer for NASA, Spaceflight Research Opportunities in Space Biology

2014 Chair, Biology of Aging Search Committee, Dept of Biology

2016- Northeastern University Labor-Management Committee, alternate

Grants*External*

1980-1983	Individual National Research Service Award, NIH
1984-1987	New Investigator Research Award, NIH "Development of mammalian circadian rhythms"
1989-1993	R01 Research Grant, NIH, \$317,732 "Development of mammalian circadian rhythms"
1991-1996	Program Project Grant, NIH (Charles Czeisler, PI) Project Leader for: "Transplantation analysis of circadian rhythms and aging", \$398,180.
1994-1998	R01 Research Grant, NIH, \$705,543 "Development of mammalian circadian rhythms"
2000-2004	R01 Research Grant, NIH, \$641,925 "Development of mammalian circadian rhythms"
2004-2009	R01 Research Grant, NIH, \$1,142,782 "SCN Output Signals"

Internal

1990	Junior Research Appointment, Northeastern University, \$1000, "In Vitro Entrainment of a Circadian Pacemaker"
1999	Research Scholarship Development Award, Northeastern Univ., \$5,852 "Transplantation analysis of circadian rhythms"
2011	Tier I Interdisciplinary Seed Grant (co-PI with Ferdi Hellweger, Department of Civil and Environmental Engineering), "Self-Assembly of a Biological Clock", \$49,712.

Selected Invited Presentations

1989	International Symposium on Developmental Neurobiology of the Melatonin Rhythm Generating System, NIH
1984	Program in Neuroscience, Univ. of Virginia
1986	The Johns Hopkins University, School of Public Health
1986	Oberlin College, Neuroscience Program
1987	Univ. of Virginia, School of Medicine, Endocrinology Group
1989	Department of Zoology, Univ. Massachusetts, Amherst
1989	Mailman Research Center Seminar Series, McLean Hospital
1989	KCET, Public Television, appearance in "The Time of Our Lives" SCN: The Mind's Clock, NICHD Symposium
1989	Department of Zoology, Univ. Massachusetts, Amherst
1990	Endocrinology Grand Rounds, Harvard Medical School
1991	Neuroscience Program, Dept. of Biological Sciences, University of Southern California
1992	Association of Professional Sleep Societies, Short Course Lecturer

1992	Center for Biological Timing, Univ. of Virginia, Biological Rhythms Course Invited Lecturer
1998	Program in Neuroscience, Texas AM University
2001	Center for Biological Timing, Univ. of Virginia
2002	Division of Endocrinology, Children's Hospital
2002	Circadian Photoreception and Transduction, American Society for Photobiology
2002	Sleep Grand Rounds, Sleep Disorders Program, Division of Sleep Medicine, Brigham and Women's Hospital, Harvard Medical School, November
2003	Oregon Health & Science University (OHSU), Center for Research on Occupational and Environmental Toxicology
2004	Behavioral Neuroscience, Boston University School of Medicine
2005	Neuroscience Program, Michigan State University
2005	Winter Conference on Brain Research
2006	Department of Physiology, Brody School of Medicine, Eastern Carolina University
2006	Radiation Oncology, University of Virginia Medical School
2011	World Federation of Societies on Chronobiology, Puebla de Zaragoza, Mexico
2013	Symposium speaker, "Sleep and Brain Maturation: Development of Sleep-Regulatory Mechanisms and Interactions between Sleep and Brain Maturation" Associated Professional Sleep Societies, Baltimore
2016	Symposium speaker, "Hypothalamic cell fate specification and function" International Society for Developmental Neuroscience, Antibes, France

Recent Meeting Presentations (2012-2017)

Huber, A. and F. C. Davis. Structural requirements for SCN pacemaker function. Society for Research on Biological Rhythms, May 19-23, 2012 Sandestin, FL

Richardson, C.S., B. Curley, and F. C. Davis. The Effect of Circadian Disruption on Metabolic Rate and Immune Function in Vasoactive Intestinal Protein (VIP) Deficient Mice. Society for Integrative and Comparative Biology, 2012.

Lipton, JO, Yuan, ED, Nathan, A, Leech, J, Han, J, Davis, F, Sahin, M. The Tuberous Sclerosis Complex-Mammalian Target of Rapamycin (mTOR) Pathway Regulates Mammalian Circadian Rhythms 137th Annual Meeting of the American-Neurological-Association, Oct. 2012

Noble, J., M. Kearnan, MNT Nor-Ashikian, S. Sheridan, F. Davis, and A.A. Kiessling. Onset of circadian oscillation of period 2 coincides with differentiation in embryonic stem cells. International Society for Stem Cell Research, Boston, 2013.

Davis, F.C. Embryonic development of circadian oscillations in mouse hypothalamus. Clocks Club of New England, UMass Medical School, June 2014.

Ferris, H., F. C. Davis, C. R. Kahn. Impaired Cholesterol Production by Glia Results in Protection from Obesity and Increased Respiratory Exchange Ratio in Mice. Am. Diabetes Assoc., June 2015.

Kearnan, M., N. Bulsara, F.C. Davis, R. Meier, A.A. Kiessling. The circadian oscillator period 2 is expressed in early cleaving mouse embryos and embryonic stem cells. International Society for Stem Cell Research, Stockholm, 2015.

Lipton, JO, Yuan, ED, Boyle, LM, Ebrahimi-Fakhari, D, Kwiatkowski, E Nathan, A, Guttler, T, Davis, F, Asara, JM, Sahin, M. Mechanisms of Circadian Translation. 44th Annual Meeting of the Child-Neurology-Society, Oct. 2015

Ferris, H.A., W. Cai, F.C. Davis and C. R. Kahn. Insulin and SREBP2-Regulated Cholesterol Synthesis in Glial Cells Is Critical for Brain Health, Normal Circadian Rhythms and Control of Peripheral Metabolism. Am. Diabetes Assoc., April 2016.

Patxot, M., M-T. Lo, F. C. Davis, and K. Hu. Lack of exercise leads to altered activity patterns in wild-type and VIP-deficient mice during light-dark cycles. Society for Research on Biological Rhythms, May, 2016

Patxot, M., M-T. Lo, F. C. Davis, and K. Hu. Lack of exercise leads to altered activity patterns in wild-type and VIP-deficient mice during light-dark cycles. Associated Professional Sleep Societies, June, 2016

Research Training (not including Undergraduates)

Postdoctoral Fellows

Dr. E. Hiatt, 1990-1992

Dr. N. Viswanathan, 1989-1996

Dr. J. Grosse, 1994-1996

Dr. Andrew Cary, 2006-2008

Dr. Hamid Dowlatshad, 2006-2009

Ph.D. students

Jeanne Duffy, "Age-related changes in circadian rhythms in the Syrian hamster (*Mesocricetus auratus*) and the human" 1998.

- Colette Kabrita, "Development of the mouse (*Mus musculus*, C57BL/6) suprachiasmatic nucleus" 1998.
- Mary Anne Mann, "Reovirus entry into the central nervous system after intramuscular injection" 1998.
- Xiaodong Li, "The circadian clock during development and its possible involvement in masking" 2002
- Pam Snodgrass-Belt, "Identification and analysis of a circadian output signal of the circadian clock in Syrian Hamsters" 2003
- Harry Pantazopoulos, "Regulation of Circadian Rhythms through SCN and non-SCN factors" 2010.

Masters students

- Pam Snodgrass, "Dopaminergic activation is a transient mechanism for the entrainment of Syrian hamster circadian rhythms" 1995.
- Sandra Kuhlman, "In situ hybridization of vasoactive intestinal polypeptide mRNA: The time course, distribution, and rhythmicity of gene transcription in the fetal suprachiasmatic nucleus" 1996.
- Carroll Henschel, "Expression of Fos-like immunoreactivity in Syrian hamster hypothalamus in relation to behavioral state" 1998.
- Fred Wenzel, "Harbor porpoise strandings" 2000
- Lars Schlichting, "Adaptations of the American lobster (*Homarus americanus*) to different laminar flow conditions" 2000.
- Christina Giuliano, "Overcoming jetlag: The resilience of developing fetal circadian rhythms in Syrian hamsters (*Mesocricetus auratus*)" 2004.
- John Brokars, "Administration of melatonin to lactating hamsters does not entrain the circadian rhythm of the offspring" 2005.
- Jenifer Gilbert, "The circadian output system: Hypothalamic regulation of acute activity suppression" 2006.
- Ian Gallager, "Regulation of circadian rhythms in an animal model of Huntington's disease" 2009.
- Daniel Wreschnig, "Developmental plasticity and organization of the suprachiasmatic nucleus" 2011.
- Brendan Collins – "Repairing defective SCN in different mouse models through the technique of tissue transplantation" 2013
- Carolina Aquila – "Multi-oscillator Structure of the Circadian Pacemaker" 2014

External Committees

- Reader for Honors Thesis, Jason Wells (Harvard University)
- Examiner for Ph.D. defense, David Welsh, M.D., "Circadian clock neurons in culture", Program in Neuroscience and Department of Neurobiology, Harvard Medical School 1994
- Reviewer and Examiner for Harvard Medical School Honors Thesis (Theresa Shanahan), May 1995
- Examiner for Ph.D. defense, Jamie Zeitzer "Physiology and anatomy of human circadian photoreception and melatonin regulation" Program in Neuroscience and Department of Neurobiology, Harvard Medical School 1999
- Honors Examiner, Biology, Swarthmore College, May 19-20, 2000

Examiner for Ph.D. Defense, Thomas Jhou "Role of the dorsomedial hypothalamic nucleus in circadian rhythm regulation", Program in Neuroscience and Department of Neurobiology, Harvard Medical School 2003

Examiner for Ph.D. Defense, Dennis Chang "Circadian clock molecules of a Lepidopteran insect, *Antheraea pernyi*, and comparisons with the fruit fly, *Drosophila melanogaster*", Program in Neuroscience and Department of Neurobiology, Harvard Medical School 2003

Examiner for Ph.D. Defense, Joshua Gooley "Entrainment of the circadian timing system", Program in Neuroscience and Department of Neurobiology, Harvard Medical School – 2005

Examiner for Ph.D. Defense, Quan Yuan "The Circadian Clock in Monarch Butterfly: A Tale of Two CRYs: A Dissertation" Program in Neuroscience and Graduate School of Biomedical Sciences, University of Massachusetts Medical School 2009.

Courses Taught (Northeastern, 1988-2013)

Unless indicated, all courses were full term and full credit (quarter or semester) undergraduate courses taught 2-5 times at 100% responsibility

1988-1993	BIO 3690, Graduate Physiology Seminar
1989-1993	BIO 3605, Developmental Neurobiology (Graduate)
1989-2006	BIO 3640, Biological Clocks (Graduate)
1989-1997	INT 3225, Foundations of Neural Science (team taught)
1990-1992	BIO 1152, Integrated Human Anatomy and Physiology I
1990	BIO 1151, Human Anatomy and Physiology (once)
1991-1996	BIO 1490, Senior Seminar
1993-2001	BIO 1153, Integrated Human Anatomy and Physiology II
1996	BIO 1355, Regulatory Cell Physiology (once)
1999-2008	BIOU1000, Introduction to Biology (or Behavioral Neuroscience, 1 credit)
2002-2005	BIOU701, Biology Capstone
2004	BIOU403, Animal Behavior
2010	BIOL7384, Topics in Integrative Biology (once)
2012-2017	BIOL5304, Biological Clocks
2012	BIOL2297, Inquiries in Evolution and Behavior (once)
2013, 2014	BIOL2297, Inquiries in Cell and Molecular Biology
2011-2013	BIOL5577, Developmental Biology

Publications – 8230 citations, 36 h-index (Google Scholar)

Refereed articles

1. Davis, F.C. and M. Menaker. Hamsters through time's window: temporal structure of hamster locomotor rhythmicity. American Journal of Physiology 239:R149-R155, 1980.

2. Darrow, J.M., F.C. Davis, J.A. Elliott, M.H. Stetson, F.W. Turek, and M. Menaker. Influence of photoperiod on reproductive development in the golden hamster. *Biology of Reproduction*. 22:443-450, 1980.
3. Davis, F.C. and M. Menaker. Development of the mouse circadian pacemaker: Independence from environmental cycles. *Journal of Comparative Physiology* 143:527-539, 1981.
4. Döhler, K.-D., A. Coquelin, F.C. Davis, M. Hines, J.E. Shryne, And R.A. Gorski. Differentiation of the sexually dimorphic nucleus in the preoptic area of the rat brain is determined by the perinatal hormone environment. *Neurosci. Letters* 33:295-298, 1982.
5. Döhler, K.-D., M. Hines, A. Coquelin, F. Davis, J.E. Shryne, and R.A. Gorski. Pre- and postnatal influence of diethylstilboestrol on differentiation of the sexually dimorphic nucleus in the preoptic area of the female rat brain. *Neuroendocrinology Letters* 4:361-365, 1982.
6. Davis, F.C., J.M. Darrow, and M. Menaker. Sex differences in the circadian control of hamster wheel-running activity. *American Journal of Physiology* 244:R93-R105, 1983.
7. Döhler, K.-D., A. Coquelin, F. Davis, M. Hines, J.E. Shryne, and R.A. Gorski. Pre- and postnatal influence of testosterone propionate and diethylstilbestrol on differentiation of the sexually dimorphic nucleus of the preoptic area in male and female rats. *Brain Research* 302:291-295, 1984.
8. Davis, F.C. and R.A. Gorski. Unilateral lesions of the hamster suprachiasmatic nuclei: evidence for the redundant control of circadian rhythms. *Journal of Comparative Physiology* 154:221-232, 1984.
9. Hines, M., F.C. Davis, A. Coquelin, R.W. Goy, and R.A. Gorski. Sexually dimorphic regions in the medial preoptic area and bed nucleus of the stria terminalis of the guinea pig brain: a description and an investigation of their relationship to gonadal steroids in adulthood. *Journal of Neuroscience* 5:40-47, 1984.
10. Jacobson, C.D., F.C. Davis, and R.A. Gorski. Formation of the sexually dimorphic nucleus of the preoptic area: neural growth, migration, and changes in cell number. *Developmental Brain Research* 21:7-18, 1985.
11. Davis, F.C. and R.A. Gorski. Development of hamster circadian rhythms I. Within litter synchrony of mother and pup activity rhythms at weaning. *Biology of Reproduction* 33:353-362, 1985.
12. Davis, F.C. and R.A. Gorski. Development of hamster circadian rhythms: prenatal entrainment of the pacemaker. *Journal of Biological Rhythms* 1:11-89, 1986.
13. Davis, F.C., S. Stice, and M. Menaker. Activity and reproductive state in the golden hamster: independent control by social stimuli and a circadian pacemaker. *Physiology and Behavior* 40:583-590, 1987.

14. Davis, F.C. and R.A. Gorski. Development of hamster circadian rhythms: role of the maternal suprachiasmatic nucleus. *Journal of Comparative Physiology A* 162:601-610, 1988.
15. Davis, F.C. and J. Mannion. Entrainment of hamster pup circadian rhythms by prenatal melatonin injections to the mother. *American Journal of Physiology* 255:R439-R448, 1988.
16. Davis, F.C. Daily variation in maternal and fetal weight gain in mice and hamsters. *Journal of Experimental Zoology* 250:273-282, 1989.
17. Davis, F.C., R. Boada, and J. LeDeaux. Neurogenesis of the hamster suprachiasmatic nucleus. *Brain Research* 519:192-199, 1990.
18. Ralph, M., R. Foster, F.C. Davis, and M. Menaker. Transplanted suprachiasmatic nucleus determines circadian period. *Science* 247:975-978, 1990.
19. Viswanathan, N. and F.C. Davis. Maternal entrainment of *tau* mutant hamsters. *Journal of Biological Rhythms* 7:65-74, 1992.
20. Viswanathan, N. and F.C. Davis. Timing of birth in Syrian hamsters. *Biology of Reproduction* 47:6-10, 1992.
21. Viswanathan, N. and F.C. Davis. The fetal circadian pacemaker is not involved in the timing of birth in hamsters. *Biology of Reproduction* 48:530-537, 1993.
22. Duncan, M.J. and F.C. Davis. Developmental appearance and age-related changes in specific 2-[¹²⁵I]-Iodomelatonin binding sites in the suprachiasmatic nuclei of female Syrian hamsters. *Developmental Brain Research* 73:205-212, 1993.
23. Viswanathan, N., D.R. Weaver, S.M. Reppert, and F.C. Davis. Entrainment of the fetal hamster circadian pacemaker by prenatal injections of the dopamine agonist, SKF 38393. *Journal of Neuroscience* 14:5393-5398, 1994.
24. Viswanathan, N. and F.C. Davis. Suprachiasmatic nucleus grafts restore circadian function in aged hamsters. *Brain Research* 686:10-16, 1995.
25. Grosse, J., A. Velickovic, and F.C. Davis. Entrainment of Syrian hamster circadian activity rhythms by neonatal melatonin injections. *American Journal of Physiology* 270:R533-R540, 1996.
26. McElhinny, A., F.C. Davis, and C.M. Warner. The effect of melatonin on cleavage rate of C57BL/6 and CBA/Ca pre-implantation embryos cultured in vitro. *Journal of Pineal Research* 21:44-48, 1996.
27. Davis, F.C. and N. Viswanathan. The effect of transplanting one or two suprachiasmatic nuclei on the period of the restored rhythm. *Journal of Biological Rhythms* 11:291-301, 1996.

28. Viswanathan, N. and F.C. Davis. Single prenatal injections of melatonin or the D1 dopamine receptor agonist SKF 38393 to pregnant hamsters set the offsprings' circadian rhythms to phases 180° apart. *Journal of Comparative Physiology* 180:339-346, 1997.
29. Morris, M.E., N. Gekakis, D. Staknis, N. Viswanathan, S. Kuhlman, F.C. Davis, and C.J. Weitz. A screen for genes induced by light in the suprachiasmatic nucleus. *Science* 279:1544-1547, 1998.
30. Gekakis, N., D. Staknis, H.B. Nguyen, F.C. Davis, L.D. Wilsbacher, D.P. King, J.S. Takahashi, and C.J. Weitz. Role of the CLOCK protein in the mammalian circadian mechanism. *Science* 280:1564-1569, 1998.
31. Davis, F.C. and N. Viswanathan. Stability of circadian timing with age in Syrian hamsters. *American Journal of Physiology* 275:R960-R968, 1998.
32. Grosse, J. and F.C. Davis. Melatonin entrains the restored circadian activity rhythms of Syrian hamsters bearing fetal SCN grafts. *Journal of Neuroscience*:18 8032-8037, 1998.
33. Grosse, J. and F.C. Davis. Transient entrainment of a circadian pacemaker during development by dopaminergic activation in Syrian Hamsters. *Brain Research Bulletin* 48:185-194, 1999.
34. Duffy, J.F., N. Viswanathan, and F.C. Davis. Free-running circadian period does not shorten with age in female Syrian hamsters *Neuroscience Letters* 271:77-80, 1999.
35. Furukawa, T., E.M. Morrow, T. Li, F.C. Davis, C.L. Cepko. Retinopathy and attenuated circadian entrainment in Crx-deficient mice. *Nature Genetics* 23:466-470, 1999.
36. Kramer, A., F.-C. Yang, P. Snodgrass, X. Li, T. E. Scammell, F. C. Davis, and C. J. Weitz. Regulation of daily locomotor activity and sleep by hypothalamic EGF receptor signaling. *Science* 294:2511-2515, 2001.
37. Storch, K-F., Lipan, O., Leykin, I., Viswanathan, N., Davis, F.C., Wong, W.H. and Weitz, C.J. Extensive and divergent circadian gene expression in liver and heart. *Nature* 417: 78-83, 2002.
38. Li, X., Sankrithi, N. and Davis, F.C. Transforming growth factor- α is expressed in astrocytes of the suprachiasmatic nucleus in hamster: role of glial cells in circadian clocks. *Neuroreport* 13: 2143-2147, 2002 .
39. Li, X., J. Gilbert, and F.C. Davis. Disruption of masking by hypothalamic lesions in Syrian hamsters. *J. Comp. Physiol. A* 191:23-30, 2005.
40. Snodgrass-Belt, P., J. Gilbert and F. C. Davis. Central Administration of Transforming Growth Factor-Alpha and Neuregulin-1 Suppress Active Behaviors and Cause Weight Loss in Hamsters. *Brain Res.* 1038:171-182, 2005.

41. Li, X. and F.C. Davis. Developmental expression of clock genes in the Syrian hamster. *Develop. Brain Res.* 158:31-40, 2005
42. Kabrita, C.S. and F. C. Davis. Development of the mouse suprachiasmatic nucleus: determination of time of cell origin and spatial arrangements within the nucleus. *Brain Research* 1195, 20-27, 2008.
43. Gilbert, J. and F.C. Davis. Behavioral Effects of Systemic Transforming Growth Factor-alpha in Syrian Hamsters. *Behavioural Brain Research* 198: 440–448, 2009.
44. Dolatshad, H., A. J. Cary, and F. C. Davis. Differential expression of the circadian clock in maternal and embryonic tissues of mice. *PLoS One* 5: e9855, 2010.
45. Pantazopoulos, H., H. Dolatshad, and F. C. Davis. Chronic stimulation of the hypothalamic vasoactive intestinal peptide receptor lengthens circadian period in mice and hamsters. *Am J Physiol Regul Integr Comp Physiol* 299: R379-85, 2010.
46. Lorelli, C.J., D. Wreschnig, and F.C. Davis. Resilience of circadian pacemaker development in hamsters. *J. Biol. Rhythms* 26: 221-229, 2011.
47. Pantazopoulos, H., H. Dolatshad and F.C. Davis. A fear-inducing odor alters PER2 and c-Fos expression in brain regions involved in fear memory. *PLoS One* 6(5): e20658, 2011.
48. Wreschnig, D., H. Dolatshad, and F.C. Davis. Embryonic development of circadian oscillations in the mouse hypothalamus, *J. Biol. Rhythms* 29:299-310, 2014.
49. Lipton, J. O., E. D. Yuan, L. M. Boyle, D. Ebrahimi-Fakhari, E. Kwiatkowski, A. Nathan, T. Güttler, F. Davis, J. M. Asara, and M. Sahin. The Circadian Protein BMAL1 Regulates Translation in Response to S6K1-Mediated Phosphorylation. *Cell* 161: 1138-1151, 2015
50. Lipton, JO, Boyle, D, Yuan, LM, Hochstrasser, KJ, Nathan, A, Leech, J, Samuel Goldman, S, Tsai, P, Fred Davis, F, Sahin, M. Aberrant Proteostasis of BMAL1 Underlies Circadian Abnormalities in a Paradigmatic mTOR-opathy. *Cell Reports* 20, 868-880, 2017.

Invited articles

51. Davis, F.C. Melatonin: Role in development. *Journal of Biological Rhythms* 12:498-508, 1997.
52. Dolatshad H, Davis FC, Johnson MH. Circadian clock genes in reproductive tissues and the developing conceptus. *Reproduction, Fertility and Development* 21:1-9, 2009.

Book chapters

53. Davis, F.C. Ontogeny of circadian rhythms, In: *Handbook of Behavioral Neurobiology*, Vol. 4, *Biological Rhythms* (J. Aschoff, ed.). Plenum, pp 257-274, 1981.

54. Davis, F.C. Development of circadian pacemakers. In: Melatonin rhythm generating system: developmental aspects. (D.C. Klein, ed.) Karger Publishing Co., pp 1-19, 1982.
55. Davis, F.C. Use of postnatal behavioral rhythms to monitor prenatal circadian function. In: Development of Circadian Rhythmicity and Photoperiodism in Mammals (S.M. Reppert, ed.), Perinatology Press, Ithaca, NY, pp 45-65, 1989.
56. Davis, F.C. Development of the suprachiasmatic nucleus: Introduction. In: Suprachiasmatic Nucleus: The Mind's Clock. (Klein, Moore, Reppert, eds.), Oxford Univ. Press, pp. 375-390, 1991.
57. Davis, F.C., M. Frank and C. Heller. Ontogeny of Sleep and Circadian Rhythms. In: Neurobiology of Sleep and Circadian Rhythms (for series on Lung Biology in Health and Disease), F.W. Turek and P. C. Zee, Eds. Marcel Dekker, Inc. , 1999.
58. Davis, F.C. and S.M. Reppert. Development of Mammalian Circadian Rhythms. In: Handbook of Behavioral Neurobiology: Circadian Clocks, J. Takahashi, F.W. Turek, and R.Y. Moore, Eds., Plenum Publishing Corp., Inc., 2001, pp 247-290.