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Personal Statement:

I am a Lasker Clinical Research Scholar in the Clinical Research Branch of the NIEHS. As a Pediatric Endocrinologist, I am particularly interested in the environmental and genetic control of pubertal development. This includes the effect of obesity on pubertal initiation and on the developmental trajectory from the irregular cycles that follow menarche to the establishment of regular, ovulatory cycles in young adulthood. Studies in healthy pediatric volunteers are complemented by genotypic and deep phenotypic studies in patients with rare, syndromic forms of hypogonadotropism and functional studies in patient-derived neural stem cells.

Education

2000 Cornell University, Ithaca, NY. BS, *summa cum laude*, Biological sciences.
2004 State University of New York at Buffalo, Buffalo, NY. MD, *magna cum laude*, Medicine.
2011 Harvard Medical School, Boston, MA. MMSc, Medical Science.

Training

2004-2005 Intern, Pediatrics, Children's Hospital Pittsburgh, Pittsburgh, PA
2005-2007 Resident, Pediatrics, Children's Hospital Pittsburgh, Pittsburgh, PA
2007-2010 Clinical Fellow, Pediatric Endocrinology, Children's Hospital Boston, Boston, MA
2010-2015 Research Fellow, Reproductive Endocrinology, Massachusetts General Hospital, Boston, MA

Employment

2010 – 2013 Instructor in Pediatrics, Harvard Medical School, Boston, MA
2013 – 2015 Assistant Professor in Pediatrics, Harvard Medical School, Boston, MA
2010 - 2015 Attending in Pediatric Endocrinology, Children's Hospital Boston, Boston, MA
2010 - 2015 Endocrine Consultant, Newborn Medicine, Brigham and Women's Hospital, Boston, MA
2012 – 2015 Affiliate Faculty, Sleep Medicine, Harvard Medical School, Boston, MA
2015 – 2016 Clinical Associate, Pediatrics, Massachusetts General Hospital, Boston, MA
2016 – 2019 Research Associate, Pediatrics, Massachusetts General Hospital, Boston, MA
2015 – Present Lasker Clinical Research Scholar, NIEHS, RTP, NC
2015 – Present Adjunct Assistant Professor, Pediatrics, UNC Medical School, Chapel Hill, NC
2016 – Present Adjunct Assistant Professor, Pediatrics, Duke School of Medicine, Durham, NC

Certifications and Licensure

10/15/08 General Pediatrics Certifying Examination – passed
11/17/11 Pediatric Endocrinology Certifying Examination - passed
7/1/07 Physician's License, Massachusetts Board of Registration in Medicine
4/1/15 Physician's License, North Carolina Board of Registration in Medicine

Honors

1996-2000: Elected to 400 Club. Cornell Varsity athletes with at least a 4.0 GPA
1998: Selected for Internship at the National Institute on Aging (NIH)
2000: Merrill Presidential Scholar. Thirty-five members of Cornell's graduating class selected based on academic excellence, leadership ability, and the potential for continued contributions to society.
2000: Selected for Internship at Weizmann Institute of Science, Rehovot, Israel
2001: Edward L. Curvish Award. Highest average in biochemistry.

2001: McGraw-Hill/Appleton and Lange Award. Top two students in first year medical school class.
2001: Selected for the Medical Student Research Program in Diabetes, Endocrinology, and Metabolism at Vanderbilt Medical School
2002: Kornel Terplan Award. Highest average in pathology.
2002: Lawson Wilkins Pediatric Endocrine Society Research Fellowship Award
2004: Dr. Heinrich Leonhardt Prize in Surgery for academic excellence in surgery.
2004: Morris and Sadie Stein Neuroanatomy Award for academic excellence in neuroanatomy.
2004: American Medical Women's Association Glasgow-Rubin Achievement Citation for women in top 10% of medical school class.
2007: Mark A. Sperling Resident Research Award for best scholarly project.
2007: A. Vincent Londino Memorial Pediatric Senior Resident Award. Given to one senior resident, chosen by peers, for outstanding role as a resident teacher and clinician.
2007: American Academy of Pediatrics Resident Research Grant
2009: Genentech Clinical Fellows Travel Grant to attend Endocrine Society meeting June 2009
2009: Endocrine Society Abstract Travel Grant
2009: Endocrine Trainee Day Award, Endocrine Society meeting June 2009
2009: Genentech/Lawson Wilkins Pediatric Endocrine Society Research Fellowship Award
2009: Endocrine Society Presidential Poster Competition Winner
2009: Lawson Wilkins Pediatric Endocrine Society Travel Grant
2009: Award to attend the Lawson Wilkins Pediatric Endocrine Society Fellows Workshop on Growth
2011: Award to attend the ESPE Science School and NICHe Conference, Berlin, Germany
2011: Endocrine Society Presidential Poster Competition Winner
2011: Women in Endocrinology Young Investigator Award
2012: Award to attend the American Academy of Sleep Medicine Young Investigators Forum at the NIH
2013: International Award for Publishing Excellence, Endocrine Society, recognizes the 14 best clinical research papers published in the *Journal of Clinical Endocrinology and Metabolism* each year.
2015: NIH Lasker Clinical Research Scholar Award
2016: Featured in Alumni Spotlight, PittMed Magazine
2017: American Society for Clinical Investigation Young Physician-Scientist Award
2017: Endocrine Society Early Investigator Award
2018: Research selected for Dr. Francis Collins' annual report to Alex Azar, Secretary of HHS
2019: Selected to attend the National Academy of Medicine's Emerging Leaders in Health and Medicine Forum

Professional Societies

2008 – Present Endocrine Society
2009 – Present Women in Endocrinology
2008 – Present Pediatric Endocrine Society
2013-2017 Member, Research Affairs Council
2013-Present Member, Standardized Clinical Assessment and Management Plans Committee
2011 – Present American Academy of Sleep Medicine

Publications

Original articles

1. Brosh, RM Jr, Karow JK, White EJ, **Shaw ND**, Hickson ID, Bohr VA, "Potent inhibition of werner and bloom helicases by DNA minor groove binding drugs", Nucleic Acids Research, 2000, 28(12): 2420-30. (PMID 10871376)
2. Quattrin T, Liu E, **Shaw N**, Shine B, Chiang E, "Obese children who are referred to the pediatric endocrinologist: characteristics and outcome", Pediatrics, 2005, 115 (2): 348-351. (PMID 15687443)
3. **Shaw N**, and Hoover E. "Postoperative Pleural Effusion in Bronchioloalveolar Cancer," Annals of Thoracic Surgery, 2005, 80(3):1124-26. (PMID 16122510)
4. **Shaw ND**, Histed S, Srouji SS, Hall JE. "Aging attenuates the pituitary response to gonadotropin releasing hormone (GnRH) in postmenopausal women, "Journal of Clinical Endocrinology and Metabolism, 2009, 94:3259-64. (PMID 19549740)
5. **Shaw ND** and Majzoub JA. "Permanent neonatal diabetes in a patient with a *KCNJ11/* Q52R mutation

accompanied by intermittent hypoglycemia and liver failure" International Journal of Pediatric Endocrinology 2009, 4 pages. (PMID 19956803)

6. **Shaw ND**, Histed S, Srouji SS, Yang J, Lee H, Hall JE. "Estrogen negative feedback: evidence for a direct pituitary effect in women," Journal of Clinical Endocrinology and Metabolism, 2010, 95: 1955-1961. (PMID 20133465)
7. **Shaw ND**, Seminara SB, Welt CK, Martin KA, Au MG, Plummer LC, Hughes VA, Dwyer AA, Martin KA, Quinton R, Mericq V, Merino PM, Gusella JF, Crowley WF Jr, Pitteloud N, Hall JE. "Expanding the Phenotype and Genotype of Female GnRH Deficiency," Journal of Clinical Endocrinology and Metabolism, 2011, 96: E566–E576. (PMID 21209029)
8. **Shaw ND***, Gill S*, Lavoie HB, Marsh EE, Hall JE. "Persistence of sleep-associated decrease in GnRH pulse frequency in the absence of gonadal steroids," Journal of Clinical Endocrinology and Metabolism, 2011, 96(8):2590-5. (PMID 21646369)
9. **Shaw ND**, Srouji SS, Histed SN, Hall JE. "Differential effects of aging on estrogen negative and positive feedback," American Journal of Physiology - Endocrinology and Metabolism, 2011, 301(2):E351-5. (PMID 21558550)
10. Marsh EE*, **Shaw ND***, Klingman KM, Tiamfook-Morgan TO, Yialamas MA, Sluss PM, Hall JE. "Estrogen levels are higher in African American women compared to Caucasian women," Journal of Clinical Endocrinology and Metabolism, 2011, 96(10):3199-206. (PMID 21849524)
11. **Shaw, ND***, Klingman KM*, Srouji SS, Histed SN, Hall JE. " Gonadotropin responses to estrogen positive and negative feedback are identical in African American and Caucasian women," Journal of Clinical Endocrinology and Metabolism, 2012, 97(1): E106-9. (PMID 22049179)
12. **Shaw ND**, Butler JP, McKinney SM, Nelson SA, Ellenbogen JM, Hall JE. "Insights into puberty: The relationship between sleep stages and pulsatile LH secretion," Journal of Clinical Endocrinology and Metabolism, 2012, 97 (11): E2055-62. (PMID 22948756)
13. Abel BA*, **Shaw ND***, Brown JM, Adams JM, Alati T, Martin KA, Pitteloud N, Seminara SB, Plummer L, Pignatelli D, Crowley WF, Jr, Welt CK, Hall JE. "Responsiveness to a physiologic regimen of GnRH therapy and relation to genotype in women with isolated hypogonadotropic hypogonadism." Journal of Clinical Endocrinology and Metabolism, 2013, 98(2): E206-216. (PMID 23341491)
14. Costa-Barbosa FA, Balasubramanian R, Keefe KW, **Shaw ND**, Al-Tassan N, Plummer L, Dwyer AA, Buck CL, Choi JH, Seminara SB, Quinton R, Monies D, Meyer B, Hall JE, Pitteloud N, Crowley WF Jr. Prioritizing genetic testing in patients with Kallmann syndrome using clinic phenotypes. Journal of Clinical Endocrinology and Metabolism 2013; 98(5): E943-53. (PMID 23533228)
15. **Shaw ND**, Goodwin JL, Silva GE, Hall JE, Quan SF, Malhotra A. Obstructive sleep apnea (OSA) in preadolescent girls is associated with delayed breast development compared to girls without OSA. Journal of Clinical Sleep Medicine 2013; 9(8):813-8. (PMID 23946712)
16. **Shaw ND***, Srouj SS*, Welt CK, Cox KH, Fox JH, Adams JA, Sluss PM, Hall JE. Evidence that ovarian aromatase activity and expression account for higher estradiol levels in African American compared with Caucasian women. Journal of Clinical Endocrinology and Metabolism 2014; 99(4):1384-92. (PMID 24285681)
17. **Shaw ND**, Butler J, Nemati S, Kangarloo T, Ghassemi M, Malhotra A, Hall JE. Accumulated deep sleep is a powerful predictor of LH pulse onset in pubertal children. Journal of Clinical Endocrinology and Metabolism 2015; 100(3):1062-70.
18. Rosenfield RL, DiMeglio LA, Mauras N, Ross J, **Shaw ND**, Greeley SA, Haymond M, Rubin K, Rhodes ET. Launch of a quality improvement network for evidence-based management of uncommon pediatric endocrine disorders: Turner syndrome as a prototype. Journal of Clinical Endocrinology and Metabolism 2015; 100(4):1234-6.
19. **Shaw ND***, Srouj SS*, Welt CK, Cox KH, Fox JH, Adams JA, Sluss PM, Hall JE. Compensatory Increase in Ovarian Aromatase in Older Regularly Cycling Women. Journal of Clinical Endocrinology and Metabolism 2015; 100(9):3539-47.
20. Choi JH, Balasubramanian R, Lee PH, **Shaw ND**, Hall JE, Plummer L, Buck CL, Kottler ML, Jarzabek K, Wolczynski S, Quinton R, Latronico AC, Dode C, Ogata T, Kim HG, Layman LC, Gusella JF, Crowley WF. Expanding the spectrum of founder mutations causing isolated GnRH deficiency. Journal of Clinical Endocrinology and Metabolism 2015; 100(10):E1378-85.
21. **Shaw ND**, McHill AW, Schiavon M, Kangarloo T, Mankowski PW, Cobelli C, Klerman EB, Hall JE. Effect of slow wave sleep disruption on metabolic parameters in adolescents. *SLEEP* 2016; 39(8): 1591-9.

22. **Shaw ND***, Brand H*, Kupchinsky ZA, Bengani H, Plummer L, Jones TI, Erdin S, Williamson KA, Rainger J, Stortchevoi A, Samocha K….Davis EE, FitzPatrick DR, Talkowski ME. [78 authors total] Mutations in SMCHD1 are associated with isolated arhinia, Bosma Arhinia Microphthalmia syndrome, and facioscapulohumeral muscular dystrophy type 2. Nature Genetics 2017; 49: 238-48.
NIEHS Environmental Factor March 2017 Intramural Paper of the Month
NIEHS Environmental Factor 2017 Intramural Paper of the Year
23. McHill AW, Klerman EB, Slater B, Kangarloo T, Mankowski PW, **Shaw ND**. The relationship between estrogen and the decline in delta power during adolescence. *SLEEP* 2017; 40(3).
24. Mul K, Lemmes RJLF, Kriek M, van den Boogaard ML, Badrising UA, Graham JM, Lin AE, Sacconi S, Tawil R, van der Vliet PJ, Voermans NC…..***Shaw ND**, *van der Maarel SM. Facioscapulohumeral muscular dystrophy type 2 and Bosma arhinia microphthalmia syndrome: two faces of the same mutation. *Neurology* July 2018.
25. Swartz Topor L, Bowerman K, Machan JT, Gilbert C, Kangarloo T, and **Shaw ND**. Central precocious puberty in Boston boys: a 10-year single center experience. PLoS ONE 2018; 13(6): e0199019.
26. Sun BZ, Kangarloo T, Adams JM, Sluss PM, Welt CK, Chandler DW, Zava DT, McGrath JA, Umbach DM, Hall JE and **Shaw ND**. Post-menarchal adolescent girls demonstrate multi-level reproductive axis immaturity. Journal of Clinical Endocrinology and Metabolism 2019; 104(2): 613-23.
One of 30 papers nominated for a 2019 Endocrine Society thematic issue celebrating high-impact research performed by women in endocrinology.
27. Lippincott MF, Leon S, Chan YM, Fergani C, Farooqi IS, Jones C, Arlt W, Stewart S, Cole T, Terasawa E, Hall JE, **Shaw ND**, Naavarro VM, and Seminara SB. Hypothalamic Reproductive Endocrine Pulse Generator Activity Independent of Neurokinin B and Dynorphin Signaling. Journal of Clinical Endocrinology and Metabolism 2019; May 27 [Epub ahead of print]
28. Carlson L, Flores V, Sun BZ, Mosley B, Kirste I, Rice Annette, Sridhar R, Kangarloo T, Vesper HW, Duke L, Botelho JC, Filie AC, Adams JM, and **Shaw ND**. Early breast development in overweight girls: does estrogen made by adipose tissue play a role? Int J Obes (Lond) 2019.
NIEHS Environmental Factor December 2019 Intramural Paper of the Month
29. Sun BZ, Kangarloo T, Adams JM, Sluss PM, Chandler DW, Zava DT, McGrath JA, Umbach DM, and **Shaw ND**. The relationship between progesterone, sleep, and LH and FSH secretory dynamics in post-menarchal girls. Journal of Clinical Endocrinology and Metabolism 2019; 104(6): 2184-94.
NIEHS Environmental Factor March 2019 Intramural Paper of the Month.
30. Lemmers RJLF, van der Stoep N, Vliet PJV, Moore SA, San Leon Granado D, Johnson K, Topf A, Straub V, Evangelista T, Mozaffar T, Kimonis V, **Shaw ND**, Selvatici R…van der Maarel SM. SMCHD1 mutation spectrum for FSHD2 and BAMS reveals disease-specific localization of variants in the ATPase domain. J Med Genet 2019 Oct 56(10):693-700.
31. Delaney A, Volochayev R, Meader B, Lee J, Almpani K, Noukelak GY, Henkind J, Chalmers L, Law JR, Williamson KA, Jacobsen CM, Buitrago TP, Perez O…**Shaw ND**. [34 authors total] Insight into the ontogeny of GnRH neurons from patients born without a nose. *in review, JCEM*
32. Pedersen LC, Inoue K, Kim S, Perera L, **Shaw ND**. A ubiquitin-like domain is required for stabilizing the N-terminal ATPase module of human SMCHD1. Communications Biology 2019; Jul 10;2:255.
33. Wang CY, Brand H, **Shaw ND**, Talkowski ME, and Lee JT. Role of the chromosomal architectural factor SMCHD1 in X-chromosome inactivation, gene regulation, and disease in humans. Genetics 2019; Aug 16 [Epub ahead of print].
34. Ortega MT, Carlson L, McGrath JA, Kangarloo T, Adams JM, Sluss PM, Lambert-Messerlian G, and **Shaw ND**. AMH is higher across the menstrual cycle in early post-menarchal girls than in ovulatory women. *In review, JCEM*
35. Hayes LH, Yun P, Mohassel P, Norato G, Donkervoort S, Leach ME, Alvarez R, Rutkowski A, **Shaw ND**, Foley AR, Bonnemann CG. Hypoglycemia in patients with congenital muscle disease. *in review, BMC Pediatrics.*

Reviews

1. Carlson L and **Shaw ND**. Invited Review: Development of ovulatory cycles in adolescent girls. 2019 Feb 14. Journal of Pediatric and Adolescent Gynecology 2019; Jun 32(3): 249-53.

* Contributed equally.

Abstracts

1. **Shaw, N**, Libman, I, Sun, K, Arena, V, and Becker, D. "Oral glucose tolerance test superior to fasting glucose in predicting conversion to insulin-treated diabetes in first degree relatives of children with type 1 diabetes, " Poster session at International Diabetes Federation 19th World Diabetes Congress December 2006, Cape Town, South Africa and at the Pediatric Academic Societies' Annual Meeting Toronto, Canada May 2007.
2. Welt, CK, Hayden-Karp, KR, **Shaw, ND**, Srouji, SS, and Hall, JE, "Both Estradiol and the Inhibins are Critical for Restraint of FSH Secretion during the Follicular Phase in Normal Women." 2011 Endocrine Society Meeting.

Speaking Invitations

2007 Neonatal adrenal insufficiency
Endocrine Grand Rounds, Boston Children's Hospital and Brigham and Women's Hospital
Boston, MA

2008 Neonatal diabetes
Grand Rounds - Joslin Diabetes Center
Boston, MA

2010 GnRH Antagonists as Clinical Research Tools in Reproductive Endocrinology
Mini-Retreat, Endocrine Division, Boston Children's Hospital
Boston, MA

2010 Variable Reproductive Phenotypes in Women with Isolated GnRH Deficiency.
Oral presentation of selected abstract. Endocrine Society Meeting
San Diego, CA

2013 Obstructive sleep apnea (OSA) in preadolescent girls is associated with delayed breast development compared to girls without OSA. Oral presentation of selected abstract, SLEEP Annual meeting.
Baltimore, MD

2013 Gonadotropin pulsatility in children
Invited lecturer, Pediatric Endocrine Division Massachusetts General Hospital
Boston, MA

2014 Evidence That Ovarian Aromatase Action Is Preserved with Aging in Regularly Cycling Women. Oral presentation of selected abstract at Endocrine Society Meeting
Chicago, IL

2014 Neuroendocrine control of puberty: internal and external modifiers
Invited presentation at NIEHS.
Research Triangle Park, NC

2015 Interaction between sleep and the reproductive axis during puberty
Endocrine Grand Rounds - Boston Children's Hospital and Brigham and Women's Hospital
Boston, MA

2015 Cross-talk between the sleep and reproductive systems during puberty
Invited Presentation, Triangle Pediatric Endocrine Collaborative (T-PEC) Meeting
Chapel Hill, NC

2016 The phenotypic spectrum of arhinia associated with mutations in *SMCHD1*: from isolated arhinia to Bosma arhinia microphthalmia syndrome. Oral presentation of selected abstract. American Society of Human Genetics meeting
Vancouver, Canada

2016 Mutations in *SMCHD1* are associated with isolated arhinia, Bosma arhinia microphthalmia syndrome, and facioscapulohumeral muscular dystrophy type 2. Oral presentation of selected abstract. FSHD Society International Research Consortium meeting
Boston, MA

2017 Identification of *SMCHD1* mutations in a severe form of Kallmann syndrome with absent external nose (arhinia) attests to the power of extreme phenotypes in human reproductive gene discovery. Oral presentation of selected abstract. Endocrine Society meeting
Orlando, FL

2017 *SMCHD1* mutations cause Bosma arhinia microphthalmia syndrome: a novel neurocristopathy? Oral presentation of selected abstract. Gordon Research Conference on Neural Crest and Cranial Placodes.
Ventura, CA

2017 The power of extreme phenotypes in human gene discovery: lessons learned from patients with congenital arhinia.
Department of Pediatrics Grand Rounds, UNC Children's Hospital
Chapel Hill, NC

2017 *SMCHD1* mutations cause a severe form of Kallmann syndrome with absent external nose (arhinia)
Translational Research in Reproduction National Meeting
Bethesda, MD

2017 SMCHD1 dysfunction, congenital arhinia, and hypogonadotropism
Oral presentation of selected abstract. Pediatric Endocrine Society Meeting
Washington, DC

2017 Lessons learned from patients with congenital arhinia and hypogonadism
Department of Endocrinology Grand Rounds, Duke Medical Center
Durham, NC

2018 Bedside to the Bench in Bosma Syndrome
NIEHS Reproductive Development and Biology Laboratory Seminar Series
NIEHS, RTP, NC

2018 Bosma syndrome: finding the gene raises more questions
NIH Clinical Center Grand Rounds
Bethesda, MD

2018 Missense mutations in SMCHD1 cause congenital nasal hypoplasia (Binder phenotype)
Oral presentation of selected abstract. American Cleft Palate-Craniofacial Association Meeting
Pittsburgh, PA

2018 The story of SMCHD1: epigenetic repression and craniofacial development
Division of Intramural Research Council Meeting
NIEHS, RTP, NC

2018 Congenital arhinia and gene discovery
Endocrine Grand Rounds, Warren Alpert Medical School of Brown University
Providence, RI

2018 Deep neuromuscular phenotyping of arhinia patients with SMCHD1 mutations reveals a mild myopathy distinct from FSHD2

Oral presentation of selected abstract. FSHD Society International Research Consortium
Las Vegas, NV

2018 Delineating the full phenotypic spectrum of Bosma arhinia microphthalmia syndrome
Clinical Research Branch Seminar Series
NIEHS, RTP, NC

2018 Healthy post-menarchal girls demonstrate multi-level reproductive axis immaturity
Duke Pediatric Endocrinology Division Seminar Series
Durham, NC

2018 Sleep and the Female Reproductive System: From Puberty Through the Reproductive Years
NHLBI Research Conference on Sleep and the Health of Women
Bethesda, MD

2019 Sleep and Female Reproductive Physiology
HHS Adolescent Health Working Group meeting
Rockville, MD (webex)

2019 Reproductive axis development in post-menarchal girls
Van Wyk Day Research Discussant
Chapel Hill, NC

Funding (completed)

1K23HD073304-01 (Shaw PI) 7/1/12-9/8/15
NIH/NICHD
The interaction between sleep and reproductive hormone secretion during puberty

Nutrition Obesity Research Center at Harvard Pilot Grant (Shaw PI) 2/1/13-7/30/15
Defining the cause of obesity in narcolepsy

Pfizer ASPIRE Young Investigator Award in Endocrine Research (Shaw PI) 12/1/12-11/30/15
The effect of sleep disruption on growth hormone secretion during childhood

1F32HD062315-01A1 (Shaw PI) 7/1/10-6/30/12
NIH-NICHD
The effect of sleep apnea on nocturnal GnRH/LH secretion in children in early puberty.

Charles King Trust Fellowship (Shaw PI) 7/1/10-6/30/12
The effect of sleep apnea on nocturnal GnRH/LH secretion in children in early puberty.

Thrasher Research Fund Early Career Award (Shaw PI) 10/1/09-9/30/11
The effect of sleep apnea on nocturnal GnRH/LH secretion in children in early puberty.

American Medical Association Seed Grant (Shaw PI) 6/2/10-6/1/11
The effect of sleep apnea on nocturnal GnRH/LH secretion in children in early puberty.

Genentech Center for Clinical Research in Endocrinology Fellowship Grant (Shaw PI) 12/15/09-12/14/11
The effect of sleep apnea on nocturnal GnRH/LH secretion in children in early puberty.

Endocrine Fellows Foundation Research Grant (Shaw PI) 11/1/09-10/31/10
The effect of sleep apnea on nocturnal GnRH/LH secretion in children in early puberty.

Pediatric Endocrine Society Research Fellowship Award (Shaw PI) 7/1/09-6/30/10

The effect of sleep apnea on nocturnal GnRH/LH secretion in children in early puberty.

Boston Area Diabetes Endocrinology Research Center Pilot and Feasibility Grant (Shaw PI) 7/1/12-6/30/14
The effect of slow-wave sleep deprivation on insulin sensitivity in pubertal children

Pediatric Endocrine Society Clinical Scholar Award (Shaw PI) 7/1/12-6/30/14
The interaction between sleep and reproductive hormone secretion during puberty

Funding (current)

1SI2ES025429-01 (Shaw PI) 9/8/15-9/7/20
NIH/NIEHS
Adolescent anovulation: Neuroendocrine Mechanisms and Environmental Modulators

http://www.ncbi.nlm.nih.gov/sites/myncbi/natalie.shaw.1/bibliography/43047342/public/?sort=date&direction=ascending