CURRICULUM VITAE *August 2018*

Joseph Raymond Kurian

EDUCATION

Department **Institution,** ***Mentor***	**Degree/Position** ***specialization***	**Date**
Wisconsin National Primate Research Center University of Wisconsin-Madison, ***Ei Terasawa***	**Research Associate** *Neuroendocrinology* *Epigenetics*	July 2009 – July 2014
Psychology University of Wisconsin-Madison, ***Anthony P Auger***	**Postdoctoral Fellow** *Epigenetics* *Behavioral Neuroscience*	August 2006 – June 2009
Molecular and Environmental Toxicology University of Wisconsin-Madison, ***Lauren A Trepanier***	**Ph.D.** *Molecular Biology,* *Pharmacogenetics,* *Drug Metabolism*	June 2003 – August 2006
University of Wisconsin-Madison	**B.S.** *Major: Psychology* *Premedicine*	August 1997 – May 2001

EMPLOYMENT

Wisconsin National Primate Research Center	**Assistant Scientist**	August 2018 – Present
Southern Illinois University School of Medicine	**Assistant Professor**	July 2014 – August 2018

AWARDS and HONORS

Outstanding Reviewer Award for *Endocrinology* in 2016

Oral Abstract Award in Reproductive Science; *Endocrine Society Meeting, Chicago, IL (June 2014)*

Young Investigator Award; *2nd World Conference: Kisspeptin Signaling in the Brain Tokyo, Japan* (Nov 2012)

Endocrine Society Outstanding Abstract Award; *Endocrine Society Meeting, Houston, TX (June 2012)*

Outstanding Trainee Award; Paper of the Year in the Journal *Endocrinology (2011)*

Presidential Poster Competition Winner; *Endocrine Society Meeting, San Diego, CA (June 2010)*

NIMH Postdoctoral Fellowship; *Biological and Behavioral Approaches to Typical and Atypical Development (BBTAD) training grant (Aug. 2006)*

International Society for the Study of Xenobiotics (ISSX) Meeting trainee travel grant; *North American ISSX meeting, Wailea, Maui (Oct. 2005)*

NIEHS Predoctoral Fellowship; *Molecular and Environmental Toxicology Center training grant (Jan. 2004)*

Best Presentation by a graduate student Finalist; *International Society for the Study of Xenobiotics (ISSX) Meeting, Providence, RI (Oct. 2003)*

Summer Program for Undergraduate Research (SPUR) Scholar; *Medical College of Wisconsin, Milwaukee, WI (May 1998)*

FUNDING RECORD

NIH R00 ES020878-03 (PI: Joseph Kurian) TDC: $538,144 2014-2017

National Institute of Environmental Health Sciences

Influence of Endocrine Disruptors on Reproductive Neuroendocrine and Metabolic Function

This is an R00 award to determine whether BPA has direct effects on kisspeptin cell function and kisspeptin target tissue biology.

SIU Foundation (co-PI: Joseph Kurian) TDC: $25,000 2015-2016

Neuroendocrine development in rats after perinatal pitocin exposures

This project will evaluate the impact of perinatal pitocin exposure on the development of neuroendocrine systems and social, anxiety, and cognitive behaviors.

NIH K99 ES020878-03 (PI: Joseph Kurian) TDC: $ 151,682 2011-2014

National Institute of Environmental Health Sciences

Influence of Endocrine Disruptors on Reproductive Neuroendocrine Function

This is an K99 award to determine whether BPA has direct effects on kisspeptin and GnRH release in the female primate hypothalamus.

PUBLICATIONS

1. Pfister SL, Pratt PE, **Kurian J**, Campbell WB 2004 Glibenclamide inhibits Thromboxane-Mediated Vasoconstriction by Thromboxane Receptor Blockade. *Vascular Pharmacology*. 40: 285-292.

2. Kurian JR, Bajad SU, Miller JL, Chin NA, Trepanier LA 2004 NADH cytochrome b5 reductase and cytochrome b5 catalyze the microsomal reduction of xenobiotic hydroxylamines and amidoximes in humans. *J Pharmacol Exp Ther*. 311:1171-1178.

3. Fries AB, Ziegler TE, **Kurian JR**, Jacoris S, Pollak SD 2005 Early experience in humans is associated with changes in neuropeptides critical for regulating social behavior. *Proc Natl Acad Sci USA* 102:17237-17240.

4. Saulter JY, **Kurian JR**, Trepanier LA, Tidwell RR, Bridges AS, Boykin DW, Stephens CE, Anbazhagan M, Hall JE 2005 Unusual dehydroxylation of antimicrobial amidoxime prodrugs by cytochrome b5 and NADH cytochrome b5 reductase. *Drug Metab Dispos*. 33:1886-18893.

5. Wagner KA, Gibbon KJ, Strom TL, **Kurian JR**, Trepanier LA 2006 Adverse effects of EMLA (lidocaine/prilocaine) cream and efficacy for the placement of jugular catheters in hospitalized cats. *J Feline Med Surg* 8:141-144.

6. Lavergne SN, **Kurian JR**, Bajad SU, Maki JE, Yoder AR, Guzinski MV, Graziano FM, Trepanier LA 2006 Roles of endogenous ascorbate and glutathione in the cellular reduction and cytotoxicity of sulfamethoxazole-nitroso. *Toxicology* 222:25-36.

7. Kurian JR, Chin NA, Longlais BJ, Hayes KL, Trepanier LA 2006 Reductive detoxification of arylhydroxylamine carcinogens by human NADH cytochrome b5 reductase and cytochrome b5. *Chem Res Toxicol* 19:1366-1373.

8. Kurian JR, Longlais BJ, Trepanier LA 2007 Discovery and characterization of a cytochrome b5 variant in

humans with impaired hydroxylamine reduction capacity. *Pharmacogenet Genomics* 17:597-603.

9. Kurian JR, Forbes-Lorman RM, Auger AP 2007 Sex difference in mecp2 expression during a critical period of rat brain development. *Epigenetics* 2:173-178.

10. Kurian JR, Bychowski ME, Forbes-Lorman RM, Auger CJ, Auger AP 2008 Mecp2 organizes juvenile social behavior in a sex-specific manner. *J Neurosci* 28:7137-7142.

11. Kurian JR, Olesen KM, Auger AP. 2010 Sex differences in epigenetic regulation of the estrogen receptor-alpha promoter within the developing preoptic area. *Endocrinology*. 151(5):2297-305.

12. Kurian JR, Keen KL, Terasawa E. 2010 Epigenetic Changes Coincide with *in vitro* Primate GnRH Neuronal Maturation. *Endocrinology* 151(11):5359-68.

13. Terasawa E, **Kurian JR**, Guerriero KA, Kenealy BP, Hutz ED, Keen KL. 2010 Recent Discoveries on the Control of GnRH Neurons in Nonhuman Primates. *J Neuroendocrinol* 22(7):630-8.

14. Forbes-Lorman RM, Rautio JJ, **Kurian JR**, Auger AP, Auger CJ. 2012 Neonatal MeCP2 is important for the organization of sex differences in vasopressin expression. *Epigenetics*. 7(3):230-8.

15. Terasawa E, **Kurian JR,** Keen KL, Shiel NA, Colman RJ, Capuano SV. 2012 Body weight impact on puberty: Effects of high calorie diet on puberty onset in female rhesus monkeys. *Endocrinology*. 153(4):1696-705.

16. Kurian JR, Keen KL, Guerriero KA, Terasawa E. 2012 GABA inhibition of kisspeptin release before puberty onset: Implications on the mechanism of the pubertal increase of GnRH release. *Endocrinology*. 153(7):3331-6.

17. Kurian JR, Terasawa E. 2013 Epigenetic control of gonadotropin releasing hormone neurons. *Frontiers in Endocrinology*. 4:61.

18. Kenealy BK, Kapoor A, Guerriero KA, Keen KL, Garcia JP, **Kurian JR**, Ziegler TE, Terasawa E. 2014 Neuroestradiol in the Hypothalamus Contributes to the Regulation of Gonadotropin Releasing Hormone Release. *Journal of Neuroscience*. 33(49):19051-9.

19. Kurian JR, Keen KL, Kenealy BP, Garcia J, Hadman CL, Terasawa E. 2015 Acute influences of Bisphenol A (BPA) exposure on hypothalamic release of gonadotropin releasing hormone and kisspeptin in female rhesus monkeys. *Endocrinology*. 156(7):2563-70.

20. Kurian JR, Louis S, Keen KL, Wolfe A, Terasawa E, Levine JE. 2016 The Methylcytosine Dioxygenase Ten-Eleven Translocase 2 (tet2) Enables Elevated GnRH Gene Expression and Maintenance of Male Reproductive Function. *Endocrinology*. 157(9) 358835603.

21. Kurian JR. A shot in the dark exposes more trees in the forest; Jmjd3 and Rip-cre neurons enter the realm of reproductive function. News and Views (Invited article). *Endocrinology*. [EPub ahead of press].

BOOK CHAPTERS

Terasawa E & **Kurian JR** 2012 Neuroendocrine mechanism of puberty. In: *Handbook of Neuroendocrinology,* Fink G, Pfaff DW, Levine JE, eds., Academic press, Elsevier, London, pp 433-484.

Kurian, JR 2015 Epigenetic regulation of the *GnRH* and *kiss1* genes. In: *Epigenetics and Human Health*, Spengler D & Binder E, eds., Springer, Switzerland.

ABSTRACTS

1. Kurian JR, Trepanier LA, Miller JL, Bajad SU. NADH cytochrome b5 reductase and cytochrome b5 catalyze the reduction of xenobiotic hydroxylamines in humans. 2003, 12th North American meeting of the International Society for the Study of Xenobiotics. Providence, RI.

2. Kurian JR, Chin NA, Trepanier LA. Detoxification of arylhydroxylamine carcinogens by human NADH cytochrome b5 reductase and cytochrome b5. 2005, 13th North American ISSX/JSSX meeting. Maui, HI.

3. Kurian JR, Longlais BJ, Trepanier LA. Do cytochrome b5 variants alter hydroxylamine reduction capacity? 2005, 13th North American ISSX/JSSX meeting. Maui, HI.

4. Trepanier LA, Bajad SU, **Kurian JR**. Evaluation of the cytochrome b5/cytochrome b5 reductase pathway (Unit 4.16). *Current Protocols in Toxicology* 4.16.1-4.16.17.

5. Auger AP, Forbes-Lorman RM, **Kurian JR**. Androgen regulation of Mecp2 expression in the developing rat brain. 2007, Abstracts for the Society of Neuroscience annual meeting, San Diego, CA. Abstract number 293.5.

6. Kurian JR, Forbes-Lorman RM, Auger AP. Sex difference in mecp2 expression within the developing rat brain. 2007, Abstracts for the Society of Neuroscience annual meeting, San Diego, CA. Abstract number 293.4.

7. Kurian JR, Bychowski ME, Forbes-Lorman RM, Auger CJ, Auger AP. Sex specific influence of reduced Mecp2 expression within the developing amygdala on juvenile social behavior. 2008, Abstracts for the Society of Neuroscience annual meeting, Washington, DC. Abstract number 278.13.

8. Kurian JR, Olesen KM, Auger AP. Epigenetic contribution to sex differences in the brain. 2008, Abstracts for the Society of Neuroscience annual meeting, Washington, DC. Abstract number 278.17.

9. Forbes-Lorman RM, **Kurian JR**, Auger AP. Mecp2 disruption within the developing amygdala increases GFAP expression in female rats 2009, Abstracts for the Society for Neuroscience annual meeting, Chicago, IL.

10. Kurian JR, Auger AP, Terasawa E. Possible Epigenomic Relationship to a Sex Difference in Rhesus Monkey Hypothalamic LHRH mRNA Expression. 2009, Abstracts for the Society for Neuroscience annual meeting, Chicago, IL.

11. Forbes-Lorman RM, Krol KM, **Kurian JR**, Auger CJ, Auger AP. MeCP2 in the developing amygdala organizes sex differences in juvenile social behavior and vasopressin expression. 2010, Abstracts for the Society for Neuroscience annual meeting, San Diego, CA.

12. Terasawa E, **Kurian JR**, Guerriero KA, Kenealy BP, Hutz ED, Keen KL. Recent Discoveries on the Control of GnRH Neurons in Nonhuman Primates. 2010, Abstracts for the International Congress of Neuroendocrinology meeting, Rouen, France.

13. Kurian JR, Keen KL, Terasawa E. Epigenetic contribution to GnRH neuronal development. 2010, Abstracts for the Endocrine Society meeting, San Diego, CA Abstract number P2-280.

14. Kurian JR, Kapke JA, Terasawa E. Epigenetic contribution to GnRH neuronal development in male pubertal development. 2011, Abstracts for the Society for Neuroscience meeting, Washington, DC Abstract number 500.03.

15. Kurian JR, Terasawa E. Elevated methylcytosine dioxygenase (Tet1) levels stimulate GnRH gene expression in immature neurons. 2012, Abstracts for the Society of Behavioral Neuroendocrinology meeting, Madison, WI.

16. Kurian JR, Terasawa E. GABA Inhibition of Kisspeptin Release in Prepubertal Monkeys: Implications on the Mechanism of the Pubertal Increase of GnRH Release. 2012, Abstracts for the Endocrine Society meeting, Houston, TX.

17. Kurian JR, Keen KL, Terasawa E. Acute exposure to bisphenol-A (BPA) impairs typical gonadotropin releasing hormone (GnRH) and kisspeptin release in the adult female rhesus monkey hypothalamus. 2013, Abstracts for the Endocrine Society meeting, San Fancisco, CA.

18. Kurian JR, Terasawa E. Elevated methylcytosine dioxygenase (Tet) levels stimulate GnRH gene expression in immature neurons. 2013, Abstracts for the Endocrine Society meeting, San Fancisco, CA.

19. Kurian JR, Terasawa E, Levine JE. 2014 Ten eleven translocase 2 (Tet2) drives GnRH gene expression and enables the typical progression through puberty. Abstracts for the Endocrine Society Annual Meeting. Chicago, IL.

20. Kurian JR. 2015 Tet2 enables elevated GnRH neuron activity and maintains activating histone modifications within the *GnRH* gene. Abstracts for the Endocrine Society Annual Meeting. San Diego, CA.

21. Louis S and **Kurian JR**. 2015 Bisphenol A interferes with kisspeptin regulation of glucose stimulated insulin secretion and beta cell viability. Abstracts for the Endocrine Society Annual Meeting. San Diego, CA.

INVITED PRESENTATIONS

"Possible Epigenomic Relationship to a Sex Difference in Rhesus Monkey Hypothalamic LHRH mRNA Expression"
Society for Neuroscience annual meeting nanosymposia; Chicago, IL; October, 2009.

"Recent discoveries in nonhuman primate neurobiology of puberty"
Biology of Brain and Behavior seminar series; University of Wisconsin-Madison; December, 2010.

"Epigenetic differentiation of GnRH neurons"
Neuroendocrine Group Seminar Series; University of Wisconsin-Madison; May, 2012.

"Defining the Epigenetic Path to Puberty Onset"
Epigenetic Research Coordination Network annual meeting; University of Massachusetts-Amherst; May, 2012.

"Elevated methylcytosine dioxygenase (Tet) levels stimulate GnRH gene expression in immature neurons"
World Congress on Kisspeptin Signaling in the Brain; Tokyo Japan; November, 2012.

"Epigenetic Programming in Neuroendocrine Function"
University of Massachusettes-Amherst; February, 2013.

"Acute exposure to bisphenol-A (BPA) impairs typical gonadotropin releasing hormone (GnRH) and kisspeptin release in the adult female rhesus monkey hypothalamus"
Endocrine Society meeting; San Francisco, CA; June 2013.

"Elevated methylcytosine dioxygenase (Tet) levels stimulate GnRH gene expression in immature neurons"
Endocrine Society meeting; San Francisco, CA; June 2013.

"Epigenetic influence over neuroendocrine development and reproductive function"
Southern Illinois University School of Medicine Pharmacology department Seminar Series; Springfield, IL; April 2014.

"Probing the epigenetic basis of puberty onset and PCOS"
Southern Illinois University School of Medicine OB/GYN Grand Rounds; Springfield, IL; April 2014.

"Epigenetic influence over neuroendocrine development and reproductive function"
Meeting of the NSF Epigenetic Research Coordination Network; Madison, WI; May 2014

"The methylcytosine dioxygenases ten-eleven translocase-2 (Tet2) enables elevated GnRH gene expression and the typical development and maintenance of reproductive function"
Presentation of the Oral Abstract Award in Reproductive Sciences Competition, Endocrine Society Meeting; Chicago, IL; June 2014.

"Epigenetic influence over neuroendocrine development and reproductive function"
Southern Illinois University School of Medicine Physiology department Seminar Series; Carbondale, IL; November 2014.

"Epigenetic impact on reproductive neuroendocrine development and function"
Southern Illinois University School of Medicine Medical Microbiology, Immunology, and Cell Biology Seminar; Springfield, IL; August 2015.

"Reproducibility, Rigor and Good Research Practices"
Southern Illinois University School of Medicine Seminar Series on Research Ethics and Conduct: Springfield, IL; October 2015.

"Perinatal drug exposures: Do they alter the development of sexually dimorphic social behaviors?"
Southern Illinois University School of Medicine Neurology Grand Rounds; Springfield, IL; January 2016.

"Targeting fat physiology for treatment of metabolic disorders"
Memorial Medical Center 2nd Annual Obesity Symposium; Springfield, IL; December 2016.

"Kisspeptin in adipose development and Physiology"
3rd World Conference on Kisspeptin, Brain and Beyond; Orlando, FL; April 2017.

TEACHING EXPERIENCE

Advanced Cell Biology. Developed and taught a lecture on epigenetic regulation of genome function and the impact of environmental factors on epigenetic gene regulation. (Spring 2016)

Endocrine/Reproduction/Gastrointestinal course tutor. (Spring 2015, 2016, 2017)

Molecular and Environmental Toxicology 700. **Topics in Toxicology: Toxicogenomics**. *Course Instructor*. I developed and taught a summer course for ~20 graduate students covering topics related to the implementation of genomic techniques in current toxicology research. (Summer 2006).

Toxicology 631. **Toxicology of organ systems**. *Teaching Assistant*. For a class of ~40 students (upper level undergraduate and graduate), I led one discussion section each week based on lecture content, Lead 3 review sessions during the lectures that preceded exams, developed homework assignments and exam questions, and graded homework and exams. (Spring 2006).

PROFESSIONAL SERVICE

Editorial Board Member: *Endocrinology*

Manuscript reviewer: Endocrinology, Molecular Endocrinology, Journal of Neuroscience, PLOS One, Schizophrenia Research

Outreach: *"Southern Illinois University School of Medicine Take a Child to Work day"* **--**Provide lecture and laboratory demonstrations for children (ages 9-13) focused on the structure and function of DNA

SIU Research Strategic Planning Committee

With a diverse collection of clinical, basic science, and education research faculty, we are developing a strategic research plan for the school of medicine to ensure a sustainable and competitive research program at SIU through the next decade.

SIU Infection Control and Safety Committee

SIU Laboratory Animal Care and Use Committee

SIU Internal Grants Review Committee

Molecular and Environmental Toxicology Graduate Achievement Committee (GAC)

I was elected to serve as a student of the GAC. Our charges included 1) evaluation of program curriculum and effectiveness of curriculum administration, 2) recommendations for curriculum additions or adjustments, and 3) monitoring individual student progression in the program. (Fall 2004 thru Summer 2006)

PREACADEMIC and PERSONAL PROFESSIONAL EXPERIENCE

2007-2011 **Board of Directors (BOD): Creative Learning Preschool**. As the BOD President, I was met with the challenge of restructuring operations over an 8-month period to manage a $200k budget shortfall (20% of operating budget) upon an unforeseen termination of a State of WI contract. Served as an elected member of the BOD for 2 terms. Initially served on the personnel subcommittee to develop a new wage grid, create a means to measure performance and devise guidelines for performance based pay increases and bonuses.

2002-2003 **Associate Research Specialist**. I managed a laboratory at the University of Wisconsin-Madison School of Veterinary Medicine studying drug metabolism. Managed personnel, purchasing, and projects that required expertise in several molecular biology techniques (e.g., vector creation/cloning, PCR techniques, sequencing, site-directed mutagenesis) HPLC, Protein expression, cell culture, and *in vitro* gene expression manipulation. I eventually began a graduate program in this laboratory.

2001-2002 **Associate Research Specialist**. I co-managed a laboratory at the University of Wisconsin-Madison, Department of Psychology studying the neurobiological mechanisms of sleep/wake cycles. Outside of lab managerial tasks, research projects required expertise in small animal sugeries including implantation of cannulae to the prefrontal cortex, EEG and EMG. I also analyzed behavior and EEG and EMG recordings.

2000-2001 **Undergraduate Student**. Pursued a project individually as an undergraduate student working through a summer research program at the Medical College of Wisconsin Department of Pharmacology (Milwaukee, WI). Analyzed vascular reactivity *ex vivo* in response to prostaglandin treatments. Was invited to remain on lab staff after completing the summer program and eventually completed the project during breaks from undergraduate work in Madison, WI.

1999-2000 **Undergraduate Student**. Through the University of Wisconsin-Madison Psychology department I worked as part of the Wisconsin Family and Work Project team. I used the "Berkeley Puppet Technique" to interview children and coded child behavior during interviews and play.