

Dr. Fazal Wahab, PhD

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Domicile: District Swabi, Khyber Pakhtunkhwa

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Marital Status: Married with two children

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Current affiliation: Department of Biomedical Sciences, Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology, Mang, Haripur, KPK, Pakistan

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SUMMARY

I have 10 years of post-PhD teaching and research experiences. I have extensive practical research work experience in field of germline stem cell biology, epigenetics regulation of spermatogenesis, molecular biology, molecular and cellular endocrinology. I have worked in some of the world renown institutes such as Harvard University (among top tier USA university, 6 months), University of Sao Paulo (among top tier university in South America, 23 months), University of Science and Technology of China (among world top 100 universities, 14 months), German Primate Center, University of Goettingen (One of the best research institute in Germany, 49 months), and Quaid-i-Azam University (top university in Pakistan, 60 months) under the supervision of well-known scientists. I have published 35 publications in internationally well reputed impact factor journals. My research work is cited >600 times by peers all round the world. I have written 5 projects and successfully got research grants from the Humboldt foundation of Germany, FAPESP of Brazil, Higher Education Commission of Pakistan, and Chinese Academy of Sciences. Importantly, I have uncovered the vital role of kisspeptin signaling in the metabolic regulation of reproduction. Moreover, I received best research abstract awards and travel grants from the International Neuroendocrine Federation and International Union of Physiological Sciences.

PROFESSIONAL CAREER

- 03/2020- **Associate Professor and Chairman**, Department of Biomedical Sciences, Pak-Austria Present Fachhochschule: Institute of Applied Sciences and Technology, Mang, Haripur, KPK, Pakistan
- 12/2019- **Associate Professor of Physiology**,
02/2020 Department of Zoology, University of Malakand, Pakistan
- 08/2019- **Senior Research Scientist in Germany**
11/2019 Platform Degenerative Diseases, German Primate Center, University of Gottingen, Germany
- 04/2018- **Research Scientist in China**
07/2019 School of Life Sciences, University of Science and Technology of China, Hefei, China
- 07/2014- **Research Scientist in Germany**
03/2018 Platform Degenerative Diseases and Stem Cell Biology Unit, German Primate Center, University of Gottingen, Germany

- 08/2012– **Postdoctoral fellow in Brazil**
06/2014 Department of Physiology and Immunology, University of Sao Paulo, Brazil
- 01/2011– **Assistant Professor of Physiology**
12/2015 Institute of Basic Medical Sciences, Khyber Medical University, Peshawar, Pakistan
- 08/2009– **Visiting Researcher at Harvard University**
04/ 2010 Reproductive Endocrine Unit, Harvard Medical School, Harvard University, USA

EDUCATION

- 11/2005– **Ph.D. in Molecular Endocrinology**, Quaid-i-Azam University, Islamabad, Pakistan and
02/2011 Harvard University, USA
Thesis title: “Hypothalamic Kisspeptin-GPR54 signaling pathway in the neuroendocrine regulation of reproduction”
Supervised by Prof. Dr. Muhammad Shahab, Quaid-i-Azam University, Pakistan and co-supervised by Prof. Dr. Stephanie B. Seminara, Harvard Medical School, Harvard University, USA
Evaluated by Prof. Tony M. Plant, University of Pittsburgh and Prof. Gerhard F. Weinbauer University of Munster, Germany
Major subjects Studied: Advances in Molecular Endocrinology, Advances in Reproductive Biology, Advances in Molecular Biology, Advances in Developmental Biology, Advances in Molecular Genetics, Primatology, Physiological Basis of Animal Behavior, Medical Microbiology.
- 09/2005– **M.Phil. in Molecular Endocrinology**, Quaid-i-Azam University, Islamabad, Pakistan and
11/2006 Harvard University, USA (Converted to PhD after course work)
- 09/2002– **M.Sc. in Zoology**, University of Peshawar, Peshawar, Pakistan
03/2005
- 09/2000– **B.Sc. in Biology**, University of Peshawar, Pakistan
08/2002

TEACHING EXPERIENCE

- 11/2014– **Teaching in USTC China and University of Gottingen**: I have regularly delivered journal
07/2018 clubs/presentation/seminar/lectures on Molecular Biology, Medical Biotechnology, Epigenetics, Molecular and cellular endocrinology, and Reproductive biology
- 01/2013– **Teaching of Molecular Physiology** at Department of Morphology, Physiology and Basic
06/2014 Pathology, University of Sao Paulo, Campus in Ribeirao Preto, Brazil
- 2011-2012 **Assistant Professor** at Institute of Basic Medical Sciences, Khyber Medical University.
Courses I have taught:
- Endocrinology and Reproductive Biology (3+1)
 - Molecular Neurobiology (3+1)
 - Research Methodology (2)
 - Advances in Molecular Physiology (3+1)
- 2010–2011

- 2004–2005 **Visiting Teacher of Developmental Biology** at University of Sargodha, Pakistan
High School Biology Teacher at Iqra Model School, Peshawar, Pakistan

AWARDS, SCHOLARSHIPS, AND GRANTS

- 2018 PIFI postdoctoral Award from Chinese Academy of Sciences
- 2017 Travel Grant from European Union PRIMTRAIN cost Action for a workshop and a school in KU Leuven, Belgium (April) and University of Oxford, UK (December)
- 2014 Humboldt Fellowship from Alexander von Humboldt Foundation, Bonn, Germany
- 2012 FAPESP Postdoctoral Fellowship from FAPESP, Sao Paulo, Brazil
- 2010 Best Abstract Award and Young Investigator Travel Grant from the International Neuroendocrine Federation (INF) for presentation in a Congress of INF, Rouen, France
- 2009 The International Research Support Fellowship was provided by the Higher Education Commission (HEC) of Pakistan for research work at Harvard University, USA
- 2009 Best Research Abstract and Young Investigator Travel Grant (July 2009) provided by the International Union of Physiological Sciences for poster presentation in International Union of Physiological Sciences, Kyoto, Japan
- 2009 Young Neuroendocrinologist Travel Award (August 2009) was awarded by INF to attend 2nd School of Neuroendocrinology in Kitakyushu, Japan
- 2008 The Best Research Abstract Award and Travel Grant (October 2008) was awarded by the International Neuroendocrine Federation in Cordoba, Spain
- 2008 Ph.D. Student Travel Grant for an oral presentation (October 2008) was granted by HEC for presentation at the European Neuroendocrine Federation meeting in Antalya, Turkey
- 2008 Dr. Atique Memorial Shield for a best poster presentation (November 2008) was awarded by the South Asian Association of Physiologists and Pakistan Physiological Society for best poster presentation

RESEARCH ACCOMPLISHMENTS

Total number of publications: 35
Accumulative Impact Factor: >110
h-index: 13 **i10-index:** 15
Conference presentations: 24 (12 oral and 12 posters)
My Citations: Google Scholar: 565 Reseachgate: 520

Link to my Citations:

<https://scholar.google.com/pk/citations?user=EAzUehEAAAAJ&hl=en>

https://www.researchgate.net/profile/Fazal_Wahab2

<http://www.scopus.com/authid/detail.uri?authorId=25226056000>

RESEARCH INTERESTS

- Molecular and Cellular Endocrinology
- Reproductive Genetics and Physiology
- Epigenetic Regulation of Germ Cells differentiation
- Development of animal models via genome editing technology for study of infertility and degenerative diseases
- Cell replacement therapy in animal models of degenerative diseases and infertility

STUDENTS SUPERVISION

2006- I have supervised 12 undergraduate, 12 Master's, and 5 PhD students at Quaid-i-Azam
2019 University, Khyber Medical University, University of Sao Paulo, University of Science and Technology of China, and German Primate Center, University of Gottingen.

PUBLICATIONS**Selected Publications**

- 2020 **Wahab F***, Drummer C, Mätz-Rensing K, Fuchs E, Behr R (2020). Irisin is expressed by undifferentiated spermatogonia and modulates gene expression in organotypic primate testis cultures in vitro. *Molecular and Cellular Endocrinology*, 504:110670. doi: 10.1016/j.mce.2019.110670. (**Impact factor 3.859**)
- 2019 **Wahab F***, Khan IU, Polo IR, Zubair H, Drummer C, Shahab M, Behr R (2019). Irisin in the primate hypothalamus and its effect on GnRH in vitro. *Journal of Endocrinology* pii: 241(3):175-187. doi: 10.1530/JOE-18-0574. (**Impact factor 4.084; citation 2**)
- 2019 Zheng W, Nazish J, **Wahab F**, Khan R, Jiang X, Shi Q (2019). DDB1 Regulates Sertoli Cell Proliferation and Testis Cord Remodeling by TGF β Pathway. *Genes (Basel)*. 2019 Nov 26;10(12). pii: E974. doi: 10.3390/genes10120974. (**Impact factor 3.181; citation 0**)
- 2019 Xie Y, Khan R, **Wahab F**, Hussain HMJ, Ali A, Ma H, Jiang H, Xu J, Zaman Q, Khan M, Jiang X, Shi Q. The testis-specifically expressed Dpep3 is not essential for male fertility in mice. *Gene*. 2019 Aug 30;711:143925. doi: 10.1016/j.gene.2019.06.015 (**Impact factor 2.638; citation 1**)

- 2019 Hussain HMJ, Murtaza G, Jiang X, Khan R, Khan M, Kakakhel MBS, Khan T, Wahab F, Zhang H, Zhang Y, Khan MB, Ahmed P, Ma H, Xu Z (2019). Whole exome sequencing revealed a novel nonsense variant in GNRHR gene causing normosmic hypogonadotropic hypogonadism in a Pakistani family. *Hormone Research in Paediatrics* 4;91(1):1-8 (**Impact factor 1.7, citation 1**)
- 2018 Wahab F, Atika B, Ullah F, Shahab M, Behr R. Metabolic Impact on the Hypothalamic Kisspeptin-Kiss1r Signaling Pathway. *Frontier Endocrinology* 9:123. doi: 10.3389/fendo.2018.00123. (**Impact factor 3.5; citation 9**)
- 2017 Wahab F, Drummer C, Schlatt S, Behr R. Dynamic regulation of hypothalamic DMXL2, KISS1, and RFRP expression during postnatal development in non-human primates. *Molecular Neurobiology* 54(10):8447-8457. (**Impact factor 5.076; citation 4**)
- 2017 Wahab F, Atika B, Shahab M, Behr R. Kisspeptin signalling in the physiology and pathophysiology of the urogenital system. *Nature Reviews Urology* 13 (1): 21-32. (**Impact factor 8.089; citation 25**)
- 2016 Wahab F, Santos-Junior NN, de Almeida Rodrigues RP, Costa LH, Catalão CH, Rocha MJ. Interleukin-1 Receptor Antagonist Decreases Hypothalamic Oxidative Stress During Experimental Sepsis. *Molecular Neurobiology* 53(6):3992-3998. (**Impact factor 5.076; citation 17**)
- 2015 Wahab F, Shahab M, Behr R. The involvement of gonadotropin inhibitory hormone and kisspeptin in the metabolic regulation of reproduction. *Journal of Endocrinology* 225(2):R49-66. (**Impact factor 4.012; citation 44**)
- 2015 Wahab F, Tazinafo LF, Cárnio EC, Aguila FA, Batalhão ME, Rocha MJA. Interleukin-1 receptor antagonist decreases cerebrospinal fluid nitric oxide levels and increases vasopressin secretion in the late phase of sepsis in rats. *Endocrine*, 49(1):215-21. Springer (USA) (**Impact factor 3.179; citation 12**)
- 2015 Wahab F, Drummer C, Behr R. Marmosets. *Current Biology* 25:R780–R782. (**Impact factor 9.251; citation 3**)
- 2013 Wahab F, Atika B, Shahab M. Kisspeptin as a link between Metabolism and Reproduction: Evidences from Rodents and Primates Studies. *Metabolism* 62(7):898-910. (**Impact factor 5.5; citation 44**)
- 2011 Wahab F, Quinton R, Seminara SB. The kisspeptin signaling pathway and its role in human isolated GnRH deficiency. *Molecular and Cellular Endocrinology* 346(1-2):29-36. (**Impact factor 3.563; citation 34**)
- 2011 Chan YM, Broder-Fingert S, Paraschos S, Lapatto R, Au M, Hughes V, Bianco SD, Min L, Plummer L, Cerrato F, De Guillebon A, Wu IH, Wahab F, Dwyer A, Kirsch S, Quinton R, Cheetham T, Ozata M, Ten S, Chanoine JP, Pitteloud N, Martin KA, Schiffmann R, Van der Kamp HJ, Nader S, Hall JE, Kaiser UB, Seminara SB. (2011): GnRH-deficient phenotypes in humans and mice with heterozygous variants in KISS1/Kiss1. *J Clin Endocrinol Metab.*2008 96(11):E1771-81. (**Impact factor 6.5; citation 57**)
- 2008 Wahab F, Aziz F, Irfan S, Zaman U, Shahab M. Short-term fasting attenuates the response of the HPG axis to kisspeptin challenge in the adult male rhesus monkey (*Macaca mulatta*). *Life Sciences* 83, 633-637. (**Impact factor 3.234; citation 43**)

All Other Publications

- 2018 Nabi G, Ullah H, Khan S, **Wahab F**, Duan P, Ullah R, Yao L, Shahab M. Changes in the Responsiveness of the Hypothalamic-Pituitary-Gonadal Axis to Kisspeptin-10 Administration during Pubertal Transition in Boys. *Int J Endocrinol.* 2018 Jun 26;2018:1475967. doi: 10.1155/2018/1475967. eCollection 2018. (**Impact factor 1.9; citation 1**)
- 2017 Ullah R, Batool A, Wazir M, Naz R, Rahman TU, **Wahab F**, Shahab M, Fu J. Gonadotropin inhibitory hormone and RF9 stimulate hypothalamic-pituitary-adrenal axis in adult male rhesus monkeys. *Neuropeptides* S0143-4179 (16)30202-5. (**Impact factor 2.915; citation 4**)
- 2016 **Wahab F**, Shahab M, Behr R. Hypothesis: Irisin is a Metabolic Trigger for the Activation of the Neurohormonal Axis Governing Puberty Onset. *Medical Hypotheses* 95:1-4. (**Impact factor 1.120; citation 7**)
- 2015 Ullah R, Shen Y, Zhou YD, Huang K, Fu JF, **Wahab F**, Shahab M. Expression and actions of GnIH and its orthologs in vertebrates: Current status and advanced knowledge. *Neuropeptides* 59:9-20 (**Impact factor 2.915; citation 13**)
- 2015 Shamas S, Khan SU, Khan MY, Shabbir N, Zubair H, Shafqat S, **Wahab F**, Shahab M. Fasting induced kisspeptin signaling suppression is regulated by glutamate mediated cues in adult male rhesus macaque (*Macaca mulatta*). *Neuropeptides* 52:39-45. Elsevier Publisher 1(Austria) (**Impact factor 2.915; citation 6**)
- 2015 Ramzan MH, Ramzan M, Khan MM, Ramzan F, **Wahab F**, Khan MA, Jillani M, Shah M. Human semen quality and sperm DNA damage assessed by comet assay in clinical groups. *Turk J Med Sci.* 45(3):729-37. (**Impact factor 0.8; citation 9**)
- 2015 Ramzan MH, Ramzan M, Ramzan F, **Wahab F**, Jelani M, Khan MA, Shah M. Insight into the serum kisspeptin levels in infertile males. *Arch Iran Med.* 18(1):12-7. <http://dx.doi.org/0151801/AIM.005>. (**Impact factor 0.8; citation 17**)
- 2014 Irfan S, Ehmcke J, **Wahab F**, Shahab M, Schlatt S. Intratesticular action of kisspeptin in rhesus monkey (*Macaca mulatta*). *Andrologia* 46(6):610-7. (**Impact factor 1.89; citation 27**)
- 2014 Batool A, Naz R, Wazir M, Azam A, Ullah R, **Wahab F**, Shahab M. Acute Fasting-Induced Repression of the Hypothalamic-Pituitary-Gonadal Axis is Reversed by RF-9 Administration in the Adult Male Macaque. *Hormone and Metabolic Research* 46(13):927-832. doi: 10.1055/s-0034-1387788. (**Impact factor 2.560; citation 11**)
- 2014 **Wahab F**, Atika B, Huma T, Shahab M. Primate HPT Axis Response to the Peripheral Kisspeptin Challenge Under Different Time Periods of Food Restriction in Monkeys. *Hormone and metabolic research* 46(3):187-92. (**Impact factor 2.560; citation 5**)
- 2013 **Wahab F**, Atika B, Oliveira-Pelegrin GR, Rocha MJA. Recent Advances in the Understanding of Sepsis-Induced Alterations in the Neuroendocrine System. *Endocrine, Metabolic & Immune Disorders-Drug Targets* 13(4):335-47 (**Impact factor 2.013; citation 9**)
- 2012 Qaiser F, **Wahab F**, Wiqar MA, Hashim R, Leprince J, Vaudry H, Tena-Sempere M, Shahab M. Role of the evolutionary conserved 26 RF- and 43 RF- amides neuropeptides in the growth hormone release in the adult male rhesus monkey (*Macaca mulatta*).

- Endocrine* 42(3), 658-663. (**Impact factor 3.179; citation 8**)
- 2012 **Wahab, F**, Zaman U, Shahab, M. Differential response of the primate HPG axis to N-methyl-D, L- aspartate but not to kisspeptin challenge under euglycemic and hypoglycemic condition. *Hormone and Metabolic Research* 44(06), 451-457. (**Impact factor 2.560; citation 8**)
- 2012 **Wahab F**, Salahuddin H, Anees M, Wiqar MA, Hashim R, Leprince J, Vaudry H, Tena-Sempere M, Shahab M. Study of the effect of 26RF- and 43RF-amides on testosterone and prolactin secretion in the adult male rhesus monkey (*Macaca mulatta*). *Peptides* 36(1):23–28. (**Impact factor 2.851; citation 9**)
- 2012 **Wahab F**, Riaz T, Khan LA, Shahab M. Peripheral administration of the human kisspeptin-10 inhibits the reproductive axis in the adult male broiler breeder birds (*Gallus domesticus*). *Pakistan Journal of Zoology* 44(1):7-14. (**Impact factor 0.547; citation 5**)
- 2011 **Wahab F**, Ullah F, Chan YM, Seminara SB, Shahab M. Decrease in hypothalamic Kiss1 and Kiss1r expression: a potential mechanism for fasting-induced suppression of the HPG axis in the adult male rhesus monkey (*Macaca mulatta*). *Hormone and Metabolic Research* 43(2), 81-85. (**Impact factor 2.560; citation 51**)
- 2011 **Wahab F**, Tanzeela R, Shahab M. Study of the effect of peripheral kisspeptin administration on basal and glucose-induced insulin secretion under fed and fasting conditions in the adult male rhesus monkey (*Macaca mulatta*). *Hormone and Metabolic Research* 43(1), 37-42. (**Impact factor 2.560; citation 35**)
- 2010 **Wahab F**, Bano R, Jabeen S, Irfan S, Shahab M. Effect of peripheral kisspeptin administration on adiponectin, leptin, and resistin secretion under fed and fasting conditions in the adult male rhesus monkey (*Macaca mulatta*). *Hormone and Metabolic Research* 42(8), 570-74. (**Impact factor 2.560; citation 37**)

Submitted Manuscript: Currently, my 5 manuscripts are under review or in revision at Journal of Endocrinology, Scientific Reports, Genetics and Medicine, New England Journal of Medicine, and Human Genetics.

Journal Publications without peer review process

Fazal Wahab, Lucas F Tazinafo, Marcelo Eduardo Batalhão, Evelin Capellari Carnio, Maria Jose Alves da Rocha: Effect of IL-1 receptor antagonist on the cerebrospinal fluid nitric oxide concentrations during experimental polymicrobial sepsis in rats. *Critical Care* 11/2013; 17(Suppl 4):P93. DOI:10.1186/cc12992 (Impact factor 2.560)

Fazal Wahab, Lucas F Tazinafo, Maria Jose Alves da Rocha: Central administration of IL-1 receptor antagonist increases vasopressin secretion in late phase of sepsis in rats. *The FASEB Journal* 04/2014; 28(1 Supplement):876.7. (Impact factor 2.560)

RSEARCH PROJECTS

Current Research Projects:

- 2019 *Role of MOF and irisin signaling in hypothalamic regulation of kisspeptin and GnRH release.* This project is funding by Humboldt foundation

2018 *Role of Mof gene in regulation of Spermatogonial Stem Cells (SSCs) Differentiation.* This project was funded by the Chinese Academy of Sciences. In this project, We are studying the role of MOF (male absent on first) acetyl transferase in the epigenetics regulation of SSCs differentiation in Vasa-GFP-Cre-Mof-loxp conditional knockout mice. We were using immunofluorescence, RNA-Seq, ChIP-Seq, ChIP-RNA-Seq, western blotting, qPCR and co-immunoprecipitation techniques for deciphering downstream gene and protein targets of *Mof*.

Successfully Completed Research Projects:

- 2014-2016 *The role of irisin signaling pathways in regulation of GnRH secretion.* This project was funded (06/2016 to 03/2018) by Humboldt foundation of Germany.
- 2014-2016 *Rabconnectin-2, irisin, kisspeptin and GnIH involvement at the onset of primate puberty.* This project was also funded (11/2014 to 10/2016) by Humboldt foundation of Germany.
- 2012-2014 *Role of IL-1 β /IL-1Ra-IL-1R pathway in induction of hypothalamic neuronal oxidative stress and neuroendocrine alterations during experimental sepsis.* This project was funded (08/2012 to 06/2014) by FAPESP foundation of Brazil.
- 2006-2011 *The Role of kisspeptin-GPR54 signaling in the metabolic regulation of reproduction.* This project was funded (10/2006 to 06/2010) by Higher Education Commission of Pakistan.
- 2005-2006 *The Effect of 26 RF- and 43RF-amide on the release of anterior pituitary hormones.* This project was funded (09/2005 to 12/2006) by Higher Education Commission of Pakistan.

Research Projects with my participation:

- 2009-2010 *Mutations in KISS1 gene of isolated GnRH deficiency Human Subjects.* I worked in this project at Harvard University.
- 2009 *Changes in GPR54 of Human Female Polycystic Ovarian Syndrome Subjects.* I worked on this project at Harvard University.
- 2006-2008 *The Intratesticular role of Kisspeptin-GPR54 signaling in primates.* I worked on this project at Quaid-i-Azam University.

ORAL PRESENTATIONS IN SCIENTIFIC MEETINGS

- 2018 *Male absent on first gene (MOF) role in epigenetics regulation of spermatogonia differentiation in annual meeting of China Healthy Birth Science Association at Dalian, China*
- 2017 *Irisin is a spermatogonial stem cell regulator in the testis* in 96th Meeting of German Physiological Society at Griefswald, Germany
- 2014 *Central administration of IL-1r antagonist decreases hypothalamic IL-1 gene expression in septic rats* in 6th International Congress on drug discovery and therapy in Dubai, UAE.
- 2013 *Mechanisms of sepsis-induced alterations in vasopressin secretion: elucidating the potential role of IL-1-IL-1r pathway* in XV Congresso Interno de Pesquisa (XV CIP2013), University of Sao Paulo Campus de Ribeirao Preto, Brazil.
- 2010 *Quantification of hypothalamic Kiss1 and GnRH1 expression under fed and fasting in the adult male rhesus monkey (Macaca mulatta)* in the 3rd National Symposium on Recent Advances in Endocrinology and Reproductive Sciences at University of Lahore, Lahore, Pakistan.

- 2010 *Changes in GPR54 of human PCOS subjects* in Genes Team meeting at Massachusetts General Hospital, Harvard Medical School, Harvard University, USA
- 2008 *The Differential response of primate HPG axis to kisspeptin and NMA challenge in hypoglycemic conditions* in 1st world conference on kisspeptin signaling in the brain in Cordoba, Spain.
- 2008 *Study of the effect of 26 RF and 43 RF amides on neuroendocrine reproductive axis in adult male rhesus monkey (Macaca mulatta)* in the 13th Congress of the European Neuroendocrine Association (ENEA), Antalya, Turkey.
- 2008 *Study of the effect of peripheral kisspeptin administration on leptin secretion under fed and fasting conditions in adult male rhesus monkey (Macaca mulatta)* in the 1st South Asian Conference of Physiological Societies & 11th Biennial Conference of Pakistan Physiological Society, Islamabad, Pakistan.
- 2007 *HPG Axis Response to Kisspeptin Challenge Attenuates in Short-Term Fasting While Remains Preserved under Hypoglycemic Condition in the Adult Male Rhesus Monkey (Macaca mulatta)*. Program of the 90th Annual Meeting of the Endocrine Society in San Francisco, CA, USA.
- 2007 *Short-term fasting attenuates GnRH neuronal response to kisspeptin challenge in the adult male rhesus monkey (Macaca mulatta)* in International Symposium on “Recent trends in Endocrinology and Reproductive Sciences” at University of Health Sciences, Lahore, Pakistan.

TRAINING COURSES

- 12/2017 *Oxford Primate Neuroscience Workshop* at University of Oxford, UK
- 04/2017 *Train the trainer - Behavioral Management and Positive Reinforcement Training - COST action CA 15131: PrimTrain training workshop* at University of Leuven, Belgium
- 06/2015 *Laboratory Animal Science Course on Primates and Rodents according to FELASA guidelines- Functions A and B* arranged by European Primate Network (EUPRIM-Net) at German Primate Center, Gottingen, Germany
- 09/2013 *Techniques in Neuroimmunoendocrinology* organized by the Brazilian Physiological Society at University of Sao Paulo, Brazil
- 09/2011 *Essential Biostatistics* at Khyber Medical University, Peshawar, Pakistan
- 08/2011 *Professional Competency Enhancement Program for Teachers* at Khyber Medical University, Peshawar, Pakistan, organized by Higher Education Commission, Pakistan
- 07/2011 *Enhancing Quality of Teaching, Learning and Research (Self-Assessment Report Writing and Assessment Procedures)* at the Khyber Medical University, Peshawar, Pakistan, Quality Enhancement Cell, Khyber Medical University, Pakistan
- 03/2011 *Teaching Methodology* at Khyber Medical University, Peshawar, Pakistan
- 10/2009 *How to Give a Presentation* at Massachusetts General Hospital, Boston, USA
- 10/2009 *Writing Your First Investigator Initiated NIH Grant as a Young Investigator* at Massachusetts General Hospital, Boston, USA

MEMBER OF INSTITUTIONAL COMMITTEES:

- 2011- Member of Khyber Medical University Faculty Recruitment Scrutiny committee

- 2012 Member of M.Phil. and PhD students synopsis evaluation committee
M.Phil. Molecular Biology and Physiology students admission committee

SERVICE AS A PEER REVIEWER

- 2015 Reviewed manuscripts for Endocrine, Molecular Neurobiology, and Vaccine
- 2016 Reviewed manuscripts for Journal of Animal and Plant Sciences, PLOS One, and Peptides
- 2017 Reviewed manuscripts for Biomedicine & Pharmacotherapy, International Journal of Endocrinology, and KMU Journal of Basic Medical Science
- 2018 Reviewed Manuscripts for Frontiers in Endocrinology, Molecular Neurobiology, Reproductive Biology
- 2019 Reviewed Manuscripts for Heliyon,

TECHNIQUES AND SKILLS

- Expert in all major biochemical techniques
- ICV cannulation of mice and rat, isolation and culture of hypothalami, cerebrospinal fluid harvesting from rat
- Culture and genome editing of the hypothalamic GT1-7 cell-line
- Isolation and culture of testicular spermatogonial cells, testicular organotypic culture, flow cytometry especially MACS/FACS for testicular cells sorting, preparation of testicular cells for transcriptomic analysis, and synaptonemal complex spreading.
- Extensive *in vivo* experimentation experience relating to genetics, endocrinology, neuroimmunoendocrinology, reproductive biology and immunology in mouse, rat and nonhuman primate models.
- ELISA, RIA, chemiluminescence assays for hormones analysis
- Genotype and reproductive phenotype analyses of conditional knockout/knockin mice
- Use of CRISPR-Cas9 to knockout gene in cell lines and mouse model
- ChIP, ChIP-Seq, RNA ChIP-Seq for testicular samples and neuronal cell lines
- Gene cloning, transformation/transfection, qPCR, PCR, gel electrophoresis, western blotting, co-immunoprecipitation, immunohistochemistry, and immunofluorescence.
- Expert user of several Bioinformatics tools (Gene ontology for transcriptomic data analysis, Primer3, PrimerExpress, serial Cloner, gene runner, splice site predictor, function prediction programs for amino acid substitutions, species conservation analysis, basic local alignment search tool (BLAST), Graphpad prism, ImageJ, Photoshop).

SCIENTIFIC COLLABORATIONS

- 2009 - 2012 **Collaborator:** Prof. Stephanie B. Seminara, Harvard University, **USA**
Project: Mutations in *KISS1* and *GPR54* genes of isolated GnRH deficiency and PCOS subjects
- 2006 - 2009 **Collaborator:** Prof. Manuel Tena-Sempere, University of Cordoba, **Spain**
Project: Effect of 26 RF- and 43RF-amides on the reproductive axis in the adult male rhesus monkey and birds.
- 2006 - 2009 **Collaborator:** Prof. Hubert Vaudry, University of Rouen, **France**
Project: Effect of 26 RF- and 43RF-amides on the reproductive axis in the adult male rhesus monkey and birds.
- 2011 - 2016 **Collaborator:** Prof. Muhammad Shahab, Quaid-i-Azam University, Islamabad, **Pakistan**
Project: Role of kisspeptin-GPR54 signaling in metabolic regulation of reproduction in rhesus monkey.

- 2012 – 2017 **Collaborator:** Prof. Stefan Schlatt, University of Münster, **Germany**
Project: Kisspeptin, GnIH, and Neurokinin signalings role in hypothalamic and testicular regulation of reproduction in non-human primates
- 2013 – 2014 **Collaborator:** Prof. Maria Jose Alves da Rocha and Evelin Capellari Cárnio, University of Sao Paulo, **Brazil**
Project: Neuroendocrine alterations during experimental sepsis in rodent models of sepsis

MEMBERSHIP of PROFESSIONAL BODIES

- Brazilian Physiological Society (2012-2015)
- German Physiological Society (2014-2019)
- International Brain Research Organization (2008- to date)
- International Neuroendocrine Federation (2009- to date)
- Pakistan Neuroendocrine Group (2007-to date)
- Member of the International Neuroscience Society, student member (2009- to date)
- Pakistan Physiological Society (2008- to date)
- University of Peshawar Science Society (2003-2005)

LANGUAGE PROFICIENCY

- Very well speaking, writing, and hearing of English, Urdu, Pashto
- Fair/Good speaking, reading and hearing German (4 months language course in Goethe Institute, Goettingen)
- Very basic Arabic, Hindko, Punjabi, and Portuguese

REFERENCES

Prof. Dr. Rudiger Behr

Platform Degenerative Diseases,
 German Primate Center,
 University of Gottingen, Germany
 Phone: +49 551 3851 132
 Email: RBehr@dpz.eu

Prof. Dr. Muhammad Shahab

Department of Animal Sciences
 Faculty of Biological Sciences,
 Quaid-i-Azam University, Islamabad,
 Pakistan.
 Phone: +92-51-90643014
 Email: shahab@qau.edu.pk

Prof. Dr. Maria Jose da Rocha

Department of Morphology, Physiology and
 Basic Pathology,
 University of Sao Paulo, SP, Brazil
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Prof. Dr. Stephanie B. Seminara

Reproductive Endocrine Unit,
 Massachusetts General Hospital,
 Harvard Medical School, Harvard University,
 MA, USA
 SSEMINARA@partners.org